

MOTIVATIONAL INTERVIEWING ANNOTATED BIBLIOGRAPHY BY SUBJECT



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Category 1: MI Effectiveness with Different Conditions

Ackerman E, Falsetti SA, Lewis P, Hawkins AO, & Heinschel JA. (2011).

Motivational interviewing: A behavioral counseling intervention for the family medicine provider.

BACKGROUND AND OBJECTIVES: This study investigated whether adult participants who receive a brief motivational interviewing (MI) intervention delivered by a family medicine provider (family nurse practitioner or family medicine resident [MDI]) progress to the next stage of change and increase physical activity.

METHOD: A pilot study that included enrollment of 30 patients who failed usual care counseling to increase physical activity by their family medicine provider. Each study participant received three MI sessions over a 3- month period and an initial face-to-face session followed by two telephone counseling sessions scheduled approximately a month apart. Stages of Change were measured by the Exercise Stages of Change Short Form, and physical activity was measured using the Community Healthy Activities Model Program (CHAMPS) activities questionnaire.

RESULTS: Among the study participants, 80% (n=24) progressed to the next stage of change. Study participants also increased activity from baseline to completion.

CONCLUSIONS: MI counseling offers promise as a valuable intervention that can be used by family medicine providers to address patients' ambivalence to promote advancement through the stages of change and increase physical activity in the overweight patients.

Allsop S. (2007). What is this thing called motivational interviewing?

The authors review what is known about Motivational Interviewing, then pose critical questions:

- What theoretical models best help us understand and advance MI?
- How do we effectively assess the impact of MI and what does the current body of evidence tell us?
- Why, or by what processes, does MI work?
- How do we define, operationalize and measure the essence, or spirit, as well as the techniques of MI?
- How do we measure reliably and practically the effective application of MI?

American College of Obstetricians and Gynecologists. Obstet Gynecol (2009).

Motivational Interviewing: A tool for behavioral change.

ABSTRACT: Applying the principles of motivational interviewing to everyday patient interactions has been proved effective in eliciting "behavior change" that contributes to positive health outcomes and improved patient- physician communication. Current Procedural Terminology codes are available to aid in obtaining reimbursement for time spent engaging patients in motivational interviewing for some conditions.

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Arkowitz H, Westra HA, Miller WR, & Rollnick S. (2007).

Motivational interviewing in the treatment of psychological problems.

This book brings together leading experts to describe MI applications in the treatment of anxiety, depression, PTSD, suicidal behavior, obsessive-compulsive disorder, eating disorders, gambling addictions, schizophrenia, and dual diagnoses. Also addressed are MI approaches in the criminal justice system. Each chapter provides a concise overview of the disorder or population under discussion; describes how MI has been integrated with standard treatment approaches; illustrates the nuts and bolts of intervention, using vivid clinical examples; and reviews the empirical evidence base.

Berger BA, Villaume WA. (2013).

Motivational Interviewing for Health Care Professionals. American Pharmacists Association.

Motivational interviewing has been shown to improve treatment adherence and outcomes, promote health behavior change, improve patient satisfaction with care, and increase retention rates in complex case management.

Motivational Interviewing for Health Care Professionals: A Sensible Approach presents a new way of teaching the theory and practice of motivational interviewing to health care professionals. The book illustrates how motivational interviewing effectively replaces everyday persuasive strategies and language habits that trigger resistance in patients. It addresses those aspects of motivational interviewing that typically pose problems for health care professionals such as how to share medical expertise while at the same time empowering the patient by maintaining his or her autonomy in the decision-making process. Using motivational interviewing skills will enable health care professionals to communicate with patients in a clear, concise, and structured way. Health care professionals in all practice settings will have a greater impact on improving patient outcomes by using the tools and skills in this book.

KEY FEATURES: New theoretical description of motivational interviewing developed specifically for health care professionals

Practical, step-by-step approach to motivational interviewing

Over 35 health care professional/patient dialogues demonstrate motivational interviewing skills

Three case studies including comprehensive dialogues and analyses demonstrate effectiveness of motivational interviewing in health care

Carels RA, Darby L, Cacciapaglia HM, Konrad K, Coit C, Harper J, Kaplar ME, Young K, Baylen CA, & Versland A. (2007).

Using motivational interviewing as a supplement to obesity treatment: A stepped-care approach.

OBJECTIVE: This investigation was designed to improve behavioral weight loss program (BWLP) treatment outcomes by providing stepped care (SC) to individuals experiencing difficulties with weight loss during treatment. SC entails transition to more intensive treatments when less intensive treatments fail to meet treatment goals. In a BWLP, motivational interviewing (MI) may increase participants' motivation toward behavioral change and thus complement the acquisition of behavioral change skills. It was hypothesized that BWLP + SC (MI) participants (i.e., participants who failed to meet weight loss goals and received MI) would demonstrate superior treatment outcomes when compared with BWLP (SC matched) participants (i.e., participants who failed to meet weight loss goals but did not receive MI).

DESIGN: Fifty-five obese, sedentary adults were randomly assigned to a BWLP + SC or a BWLP. Main outcome measures: Changes in weight, cardiorespiratory fitness, self-reported physical activity, and diet (i.e., calories, percentage daily intake of fat, protein, and carbohydrates) in response to treatment were assessed.

RESULTS: Participants significantly decreased their weight, increased physical activity/fitness, and improved dietary intake ($ps < .05$). BWLP + SC (MI) participants lost more weight and engaged in greater weekly exercise than BWLP (SC matched) participants who did not receive MI ($ps < .05$).

CONCLUSION: For individuals experiencing weight loss difficulties during a BWLP, MI may have considerable promise.

Creber RM, Patey M, Lee CS, Kuan A, Jurgens C, Riegel B. (2015).

Motivational interviewing to improve self-care for patients with chronic heart failure: MITI-HF randomized controlled trial.

HIGHLIGHTS

- Clinically significant difference in self-care maintenance in the MI group. •MI is a promising approach for improving self-care maintenance.
- No difference between groups in physical HF symptoms or quality of life.

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OBJECTIVE: The purpose of this study was to test the efficacy of a tailored motivational interviewing (MI) intervention versus usual care for improving HF self-care behaviors, physical HF symptoms and quality of life.

METHODS: This is a single-center, randomized controlled trial. Participants were enrolled in the hospital. Immediately after discharge, those in the intervention group received a single home visit and 3–4 follow-up phone calls by a nurse over 90 days.

RESULTS: A total of 67 participants completed the study (mean age 62 ± 12.8 years), of which 54% were African American, 30% were female, 84% had class III/IV symptoms, and 63% were educated at a high school level or less. There were no differences between the groups in self-care maintenance, self-care confidence, physical HF symptoms, or quality of life at 90 days.

CONCLUSION: Patients who received the MI intervention had significant and clinically meaningful improvements in HF self-care maintenance over 90 days that exceeded that of usual care.

PRACTICE IMPLICATIONS: These data support the use of a nurse-led MI intervention for improving HF self-care. Identifying methods to improve HF self-care may lead to improved clinical outcomes.

Cummings SM, Cooper RL, & McClure Cassie K. (2009).

Motivational interviewing to affect behavioral change in older adults.

This article reviews and assesses the existing research literature on the efficacy of motivational interviewing (MI) to promote lifestyle changes and improve functioning among older adults confronting serious health challenges. A comprehensive literature review was conducted of intervention studies that tested the use of MI to achieve behavioral change among older adults with acute and chronic illnesses. Although limited in number, the studies revealed a significant improvement in physical activity, diet, cholesterol, blood pressure and glycemic control, and increased smoking cessation following MI. MI and its derivatives can be useful in dealing with a range of health issues faced by older adults. Further research to extend findings and address methodological issues is recommended. The integration of MI into social work courses focused on practice with older adults should be considered.

Efrainsson EÖ, Fossum B, Ehrenberg A, Larsson K, Klang B. (2012).

Use of motivational interviewing in smoking cessation at nurse-led chronic obstructive pulmonary disease clinics.

AIM: This paper is a report of a study to describe to what extent Registered Nurses, with a few days of education in motivational interviewing based communication, used motivational interviewing in smoking cessation communication at nurse-led chronic obstructive pulmonary disease clinics in primary health care.

BACKGROUND: For smokers with chronic obstructive pulmonary disease the most crucial and evidence-based intervention is smoking cessation. Motivational interviewing is often used in healthcare to support patients to quit smoking.

METHOD: The study included two videotaped consultations, the first and third of three at the clinic, with each of 13 smokers. Data were collected from March 2006 to April 2007. The nurses' smoking cessation communication was analyzed using the Motivational Interviewing Treatment Integrity scale. To get an impression of the consultation, five parameters were judged on a five-point Likert-scale, with five indicating best adherence to Motivational Interviewing.

RESULTS: Evocation', 'collaboration', 'autonomy-support' and 'empathy' averaged between 1.31 and 2.23 whereas 'direction' scored five in all consultations. Of communication behaviours, giving information was the most frequently used, followed by 'closed questions', 'motivational interviewing non-adherent' and 'simple reflections'. 'Motivational interviewing adherent', 'open questions' and 'complex reflections' occurred rarely.

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There were no important individual or group-level differences in any of the ratings between the first and the third consultations.

CONCLUSION: In smoking cessation communication the nurses did not employ behaviors that are important in motivational interviewing.

Fernandez WG, Mitchell PM, Jamanka AS, Winter MR, Bullock H, Donovan J, George JS, Feldman JA, Gallagher SS, McKay MP, Bernstein E, & Colton T. (2008).

Brief motivational intervention to increase self-reported safety belt use among emergency department patients.

OBJECTIVES: Brief motivational interventions have shown promise in reducing harmful behaviors. The authors tested an intervention to increase safety belt use (SBU) among emergency department (ED) patients.

METHODS: From February 2006 to May 2006, the authors conducted a randomized trial of adult ED patients at a teaching hospital in Boston. ED patients were systematically sampled for self-reported SBU. Those with SBU other than "always" were asked to participate. At baseline, participants answered a 9-item series of situational SBU questions, each scored on a 5-point Likert scale. SBU was defined as a continuous variable (9-item average) and as a dichotomous variable (response of "always" across all items). Participants were randomized to an intervention or a control group. The intervention group received a 5- to 7-minute intervention, adapted from classic motivational interviewing techniques, by a trained interventionist. Participants completed a 3-month follow-up phone survey to determine changes from baseline SBU. Continuous and dichotomous SBU were analyzed via analysis of covariance and chi-square testing.

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RESULTS: Of 432 eligible patients, 292 enrolled (mean age 35 years, standard deviation [SD] +/- 11 years; 61% male). At baseline, the intervention and control groups had similar mean (+/-SD) SBU scores (2.8 [+/-1.1] vs. 2.6 [+/-1.1], $p = 0.31$) and SBU prevalence (each 0%). At 3 months, 81% completed follow-up. The intervention group had significantly greater improvement in mean (+/-SD) SBU scores than controls (0.76 [+/-0.91] vs. 0.34 [+/-0.88], $p < 0.001$). Also, SBU prevalence of "always" was higher for the intervention group than controls (14.4% vs. 5.9%, $p = 0.03$).

CONCLUSIONS: Participants receiving a brief motivational intervention reported higher SBU at follow-up compared to controls. An ED-based intervention may be useful to increase SBU.

Fiore MC, & Baker TB. (2011).

Treating smokers in the health care setting.

At all health care visits, smokers should be encouraged to quit and asked about their willingness to make an attempt to quit. For a patient who is initially unwilling to try to quit smoking, either motivational interviewing or the "five Rs" (discussion of personally relevant reasons to quit, risks of continued smoking, rewards for quitting, and roadblocks to successful quitting, with repetition of the counseling at subsequent clinic visits) should be used at each visit. There is more evidence in support of motivational interviewing, but it requires more time and training. In addition, patients who are willing to try to reduce their smoking should be encouraged to do so and to use nicotine-replacement therapy, generally for at least several months. For patients who are (or become) willing to attempt to quit, the clinician should provide practical advice on avoiding smoking triggers, such as exposure to other smokers and use of alcohol, and encourage the use of available resources for smoking cessation, including adjuvant counseling through a state quitline (e.g., 1-800-QUIT NOW), online resources (e.g., www.smokefree.gov or www.women.smokefree.gov), or both. The clinician should discuss the benefits and risks associated with various medications and address any misconceptions the patient may have (e.g., that nicotine-replacement therapy is as addictive as smoking). If the patient became ready to quit, we recommend combination nicotine-replacement therapy. Nicotine-replacement therapy has been shown to be safe and effective in persons with depressive symptoms and in persons with high levels of nicotine dependence (e.g., smoking within 5 minutes after awakening 49,50) and does not require close monitoring for symptoms. A follow-up visit should be scheduled 2 weeks after the quit day, at which time challenges associated with smoking cessation should be reviewed and support provided. This discussion should be repeated at subsequent visits. Many smokers will not engage in counseling, especially if it involves long sessions or multiple visits. Therefore, patients should be offered options for quitting, including brief and accessible counseling. Nonadherence to medications for smoking cessation is common and is linked with beliefs that they are dangerous, ineffective, and should not be used if a person has had a relapse. Because nonadherence to medication regimens is related to failure of smoking cessation, the clinician should discuss with the patient any concerns regarding medications for smoking cessation and encourage adherence to the regimen for their use. More research is needed to identify effective strategies for increasing patients' acceptance and use of counseling and pharmacotherapy and to identify optimal combinations of treatments (both before and during attempts to quit smoking). Further research is needed on how to prevent relapse among newly abstinent patients and how best to integrate new forms of technology.

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Fu S, Roth S, Battaglia C, Nelson D, Farmer M, Do T, Goldstein M, Widome R, Hagedorn H, Zillich A. (January 2015).

Training Primary Care Clinicians in Motivational Interviewing: A Comparison of Two Models.

HIGHLIGHTS:

- Few health professionals utilize motivational interviewing (MI) as part of routine practice due to lack of expertise and training.
- This study evaluated two training models for motivational interviewing and tobacco cessation counseling for primary care clinicians.

- Using enhancement strategies (i.e., MI clinical champions as peer coaches and telephone interactions with simulated patients) to supplement or boost initial training workshops is feasible in busy primary care settings.
- Booster training sessions improve proficiency of MI training programs for primary care clinicians.

OBJECTIVES: To evaluate implementing two training models for motivational interviewing (MI) to address tobacco use with primary care clinicians.

METHODS: Clinicians were randomized to moderate or high intensity. Both training modalities included a single 1/2 day workshop facilitated by MI expert trainers. The high intensity (HI) training provided six booster sessions including telephone interactions with simulated patients and peer coaching by MI champions over 3 months. To assess performance of clinicians to deliver MI, an objective structured clinical evaluation (OSCE) was conducted before and 12 weeks after the workshop training.

RESULTS: Thirty-four clinicians were enrolled; 18 were randomly assigned to HI. Compared to the moderate intensity group, the HI group scored significantly higher during the OSCE for three of six global Motivational Interviewing Treatment Integrity scale scores. There was also significant improvement for three of the four measures of MI counseling knowledge, skills and confidence.

CONCLUSIONS: Using champions and telephone interactions with simulated patients as enhancement strategies for MI training programs is feasible in the primary care setting and results in greater gains in MI proficiency.

PRACTICE IMPLICATIONS: Results confirm and expand evidence for use of booster sessions to improve the proficiency of MI training programs for primary care clinicians.

Gold MA & Kokotailo PK. (2007).

Motivational interviewing strategies to facilitate adolescent behavior change.

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Haeseler F, Fortin AH 6th, Pfeiffer C, Walters C, & Martino S. (2011).

Assessment of a motivational interviewing curriculum for year 3 medical students using a standardized patient case.

OBJECTIVE: We sought to evaluate a year 3 motivational interviewing (MI) curriculum using a standardized patient case.

METHODS: The 2-h small group MI curriculum included a didactic presentation followed by interactive role-plays. During a clinical skills assessment at the end of year 3 the MI skills of 80 students who had participated in the curriculum were compared with those of 19 students who had not participated.

RESULTS: The standardized patient reliably rated the students on their performance of 8 items. Students who had participated in the MI curriculum were significantly more proficient than nonparticipating students in the performance of 2 strategic MI skills, importance and confidence rulers ($ps < .006$). The groups did not differ in their use of patient-centered counseling skills or collaborative change planning commonly used in MI.

CONCLUSIONS: Third year medical students can learn to use MI skills that specifically aim to enhance patients' motivations for change.

PRACTICE IMPLICATIONS: Medical schools should consider providing students with MI training and MI skill assessments using standardized patient cases to help students prepare to counsel patients for behavior change.

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Hohman M. (2011).

Motivational interviewing in social work practice.

Motivational interviewing (MI) offers powerful tools for helping social work clients draw on their strengths to make desired changes in their lives. This reader-friendly book introduces practitioners and students to MI and demonstrates how to integrate this evidence-based method into direct practice. Melinda Hohman and her associates describe innovative applications for diverse clients and practice areas, including substance abuse treatment, mental health, child welfare, community organizing, and others. Extensive sample dialogues illustrate MI skills in action with individuals and groups. The book also presents best practices for MI training, teaching, and agency-wide integration.

Huttunen-Lenz M, Song F, & Poland F. (2010).

Are psychoeducational smoking cessation interventions for coronary heart disease patients effective? Meta-analysis of interventions.

PURPOSE: This systematic review aimed to assess the effectiveness of psychoeducational smoking cessation interventions for coronary heart disease (CHD) patients; and to examine behavior change techniques used in interventions and their suitability to change behavioral determinants.

METHODS: Multiple bibliographic databases and references of retrieved articles were searched for relevant randomized controlled studies. One reviewer extracted and a second reviewer checked data from included trials. Random effects meta-analyses were conducted to estimate pooled relative risks for smoking cessation and mortality outcomes. Behavior change techniques used and their suitability to change behavioral determinants were evaluated using a framework by Michie, Johnston, Francis, Hardeman, and Eccles.

RESULTS: A total of 14 studies were included. Psychoeducational interventions statistically significantly increased point prevalent (RR 1.44, 95% CI, 1.20–1.73) and continuous (RR 1.51, 95% CI, 1.18–1.93) smoking cessation, and statistically non-significantly decreased total mortality (RR 0.73, 95% CI, 0.46–1.15). Included studies used a mixture of theories in intervention planning.

Despite superficial differences, interventions appear to deploy similar behavior change techniques, targeted mainly at motivation and goals, beliefs about capacity, knowledge, and skills.

CONCLUSIONS: Psychoeducational smoking cessation interventions appear effective for patients with CHD. Although questions remain about what characteristics distinguish an effective intervention, analysis indicates similarities between the behavior change techniques used in such interventions.

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Kaplan S, & Elliott H. (2011).

Using motivational interviewing to meet core competencies in psychiatric resident training.

OBJECTIVE: The authors propose that motivational interviewing (MI), a brief intervention designed to manage ambivalence regarding complex behavior change, is well suited for integration into psychiatric residency training programs.

METHODS: The authors provide a brief description of MI. In addition, based on a review of the literature the authors explore which core competencies the empirically validated, client-centered, and directive method of MI would address.

RESULTS: The authors argue that psychiatric residency programs can effectively address several core competencies through the addition of MI training in their curricula, including Brief Psychotherapy, Patient Care, and Interpersonal and Communication Skills.

CONCLUSION: The implementation of MI training offers psychiatric residency programs potential benefits in several key areas. However, the authors provide guidance for important research questions to more confidently ascertain whether MI training for psychiatric residents is worthwhile.

Karatay G, Kublay G, & Emiroglu ON. (2010).

Effect of motivational interviewing on smoking cessation in pregnant women.

AIM: This paper is a report of an evaluation of the effects of a motivational interviewing smoking cessation programme on smoking rates of pregnant women.

BACKGROUND: Cigarette smoking during pregnancy is an important public health problem. Smoking cessation programmes provide women with an opportunity to learn how to protect their own health and that of their developing babies.

METHOD: An intervention study was conducted between December 2007 and June 2008. Thirty-eight pregnant and literate women who were smoking at least one cigarette each day and had not reached their 16th week of pregnancy applied to participate in the research at the prenatal unit of a public hospital. A total of eight home visits was made for each woman with 12- to 13-day intervals between visits; five visits were for intervention, with three follow-up visits at 1-month intervals. The intervention content was based on the transtheoretical model. The data were collected using an evaluation form, carbon monoxide level in expired air, cotinine measurements and a Self-efficacy Scale.

FINDINGS: A total of 39.5% of pregnant smokers gave up smoking; a further 44.7% reduced their smoking by 60% from their starting rate. The rate of passive smoking before the intervention (86.8%) decreased to 55.3%. The mean (sd) pre-intervention self-efficacy score was 61.36 (12.61), and it increased to 93.34 (27.04) after the intervention.

CONCLUSION: The success of this programme shows the need for further development and application of similar programmes by nurses and midwives working in primary health care and antenatal settings.

Kivelä K, Elo S, Kyngäs H & Kääriäinen. (2014).

The effects of health coaching on adult patients with chronic diseases: A systematic review.

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HIGHLIGHTS

- The review describes the effects of health coaching on patients with chronic diseases.
- Health coaching produces positive effects on chronically ill patient's lives.
- Health coaching motivates changes in chronically ill patients' lifestyle behavior.
- Health coaching improves a patient's physical and mental health status.
- Health coaching supports the management of chronic diseases.

OBJECTIVE: The aim of this systematic review was to describe the effects of health coaching on adult patients with chronic diseases.

METHODS: The reviewers searched electronic databases and performed a manual search for studies published from 2009 to 2013. The inclusion criteria covered health coaching for adults with chronic diseases by health care professionals. The studies were original, randomized controlled trials or quasi-experimental designs.

RESULTS: Thirteen studies were selected using the inclusion criteria. The results indicate that health coaching produces positive effects on patients' physiological, behavioral and psychological conditions and on their social life. In particular, statistically significant results revealed better weight management, increased physical activity and improved physical and mental health status.

CONCLUSION: Health coaching improves the management of chronic diseases. Further research into the cost- effectiveness of health coaching and its long-term effectiveness for chronic diseases is needed.

PRACTICE IMPLICATIONS: Health care professionals play key roles in promoting healthy behavior and motivating good care for adults with chronic diseases. Health coaching is an effective patient education method that can be used to motivate and take advantage of a patient's willingness to change their life style and to support the patient's home-based self-care.

Kreman R, Yates BC, Agrawal S, Fiantt K, Briner W, & Shurmur S. (2006).

The effects of motivational interviewing on physiological outcomes.

This study examined the effects of a motivational interviewing (MI) intervention on physiological outcomes among hyperlipidemic persons randomly assigned to an MI (n = 12) or an attention-control (AC; n = 12) group. Lipid and cardiorespiratory fitness levels were measured pre- and post intervention. The MI intervention was significant in reducing total cholesterol and low-density-lipoprotein cholesterol but not in increasing VO₂max when compared with the AC group. Contrary to what was expected, the MI intervention significantly reduced high-density-lipoprotein cholesterol. Although this study was limited by a small sample size, findings suggested that an MI telephone session can have a positive effect on lipid profiles and fitness levels.

Linden A, Biuso TJ, & Butterworth SW. (2010).

Help patients with chronic kidney disease stave off dialysis.

Screening and timely referral are, of course, key to helping patients with chronic kidney disease stave off dialysis. Effective treatment must also emphasize lifestyle management. This article describes Motivational Interviewing as a health coaching technique and includes a "motivational interviewing tool kit" which summarizes the approach.

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Lundahl BW, Kunz C, Brownell C, Tollefson D, & Burke BL. (2010).

A meta-analysis of motivational interviewing: Twenty-five years of empirical studies.

OBJECTIVE: The authors investigated the unique contribution motivational interviewing (MI) has on counseling outcomes and how MI compares with other interventions.

METHOD: A total of 119 studies were subjected to a meta-analysis. Targeted outcomes included substance use (tobacco, alcohol, drugs, marijuana), health-related behaviors (diet, exercise, safe sex), gambling, and engagement in treatment variables.

RESULTS: Judged against weak comparison groups, MI produced statistically significant, durable results in the small effect range (average $g = 0.28$). Judged against specific treatments, MI produced non-significant results (average $g = 0.09$). MI was robust across many moderators, although feedback (Motivational Enhancement Therapy [MET]), delivery time, manualization, delivery mode (group vs. individual), and ethnicity moderated outcomes.

CONCLUSIONS: MI contributes to counseling efforts, and results are influenced by participant and delivery factors.

**Lundahl B, Moleni T, Burke BL, Butters R, Tollefson D, Butler C, & Rollnick S. (2013).
Motivational interviewing in medical care settings: A systematic review and meta-analysis of
randomized controlled trials.**

OBJECTIVE: Motivational Interviewing (MI) is a method for encouraging people to make behavioral changes to improve health outcomes. We used systematic review and meta-analysis to investigate MI's efficacy in medical care settings.

METHODS: Database searches located randomized clinical trials that compared MI to comparison conditions and isolated the unique effect of MI within medical care settings.

RESULTS: Forty-eight studies (9618 participants) were included. The overall effect showed a statistically significant, modest advantage for MI: Odd ratio = 1.55 (CI: 1.40–1.71), $z = 8.67$, $p < .001$. MI showed particular promise in areas such as HIV viral load, dental outcomes, death rate, body weight, alcohol and tobacco use, sedentary behavior, self-monitoring, confidence in change, and approach to treatment. MI was not particularly effective with eating disorder or self-care behaviors or some medical outcomes such as heart rate.

CONCLUSION: MI was robust across moderators such as delivery location and patient characteristics, and appears efficacious when delivered in brief consultations.

PRACTICE IMPLICATIONS: The emerging evidence for MI in medical care settings suggests it provides a moderate advantage over comparison interventions and could be used for a wide range of behavioral issues in health care.

**Manahan JD. (2012). Motivational interviewing:
A curriculum proposal for graduate nursing students.**

ABSTRACT: Over the past decade, motivational interviewing (MI) techniques have slowly been incorporated into the management of chronic diseases. By using the techniques of MI, patient-physician rapport is fostered, change talk is promoted, and the patient, with the guidance of the physician, makes goals toward healthy behavior changes. The aim is to empower patients, help them move past ambivalence, and promote behavior changes that may improve their current and future health. There have been many studies outlining the benefits MI training has had on physicians' and medical students' confidence and delivery of MI techniques but there is a gap in evidence and literature supporting an MI curriculum specific to graduate nursing school. Development of a course curriculum could possibly be beneficial for graduate nursing students. The enhanced communication training would allow the advanced practice nurse to further their assessment skills, stimulate the patients' innate desire to change, and focus the plan of care to promote best outcomes for their health and the health of others.

Mata J, Silva MN, Vieira PN, Carraça EV, Andrade AM, Coutinho SR, Sardinha LB, & Teixeira PJ. (2009).

Motivational “spill-over” during weight control: Increased self-determination and exercise intrinsic motivation predict eating self-regulation.

OBJECTIVE: Successful weight management relies on at least two health behaviors, eating and exercise. However, little is known about their interaction on a motivational and behavioral level. Based on the Hierarchical Model of Motivation the authors examined whether exercise-specific motivation can transfer to eating regulation during a lifestyle weight control program. The authors further investigated whether general, treatment-related, and exercise motivation underlie the relation between increased exercise and improved eating regulation.

DESIGN: Overweight/obese women participated in a 1-year randomized controlled trial (N = 239). The intervention focused on promoting physical activity and internal motivation for exercise and weight loss, following Self-Determination Theory. The control group received general health education.

MAIN OUTCOME MEASURES: General and exercise specific self-determination, eating self-regulation variables, and physical activity behavior.

RESULTS: General self-determination and more autonomous exercise motivation predicted eating self-regulation over 12 months. Additionally, general and exercise self-determination fully mediated the relation between physical activity and eating self-regulation.

CONCLUSION: Increased general self-determination and exercise motivation seem to facilitate improvements in eating self-regulation during weight control in women. These motivational mechanisms also underlie the relationship between improvements in exercise behavior and eating regulation.

McGann E. (2012).

Ten-minute nutrition, exercise counseling makes a difference: An expert interview with Lynne Braun, PhD, CNP, CLS, and Jane Nelson-Worel, MSN, APRN-BC, APNP.

Nurse practitioners see patients for the primary or secondary prevention of cardiovascular disease. Most patients have multiple risk factors. Although some patients require medication to treat their risk factors, healthy lifestyle changes (good nutrition, portion control, and regular exercise) can benefit all risk factors. Many people know what they should eat, but often they eat too much. They need help with motivation and strategies to make healthy dietary changes. It is a challenge to provide this level of counseling during a single patient encounter. Often it takes a few visits and telephone/email follow-up to assist patients in making changes. While it can be a challenge to fit heart-healthy lifestyle counseling into limited visit times, this counseling is essential to preventing and managing cardiovascular disease. Patients respond well to motivational interviewing and similar techniques because a partnership is established between provider and patient. These approaches are nonjudgmental and non-confrontational, and the decision to change and strategies belong to the patient. Weight is a sensitive topic. Using the term “obesity” when discussing weight can “turn patients off” and damage the provider-patient partnership. Successes are the patient’s

successes, which increases his/her self-efficacy or confidence. The challenge for providers is that these conversations take time, so it is often necessary to set the stage and begin the initial conversation, and then to schedule a follow-up appointment devoted to counseling.

Miller CE, & Johnson JL. (2001).

Motivational interviewing. Canadian Nurse, 97(7): 32-33

MillerWR, & RollnickS. (2nd ed.). (2002).

Motivational interviewing: Preparing people to change addictive behavior. Guilford Publications.

DESCRIPTION OF CONTEXT: An intervention for facilitating behavior change in the area of addiction.

TOPIC/SCOPE: In preparing people to change addictive behaviors, there are two phases with specific tasks which individuals progress through. Phase I focuses on building the patient's motivation to change. This can be accomplished by: (1) asking open-ended questions; (2) listening reflectively; (3) directly affirming and supporting the patient; (4) summarizing statements, and (5) eliciting self-motivational statements from the patient who presents the argument for change. Phase II focuses on strengthening patients' commitment to change. This can be accomplished by: (1) summarizing the patient's current situation; (2) asking open-ended questions; (3) offering a cluster of the best information/advice upon request, but being careful not to fall into the "yes, but..." trap and (4) negotiating a plan and arriving at the plan. When helping patients go through Phase I and Phase II, five principles of motivational interviewing must be considered: (1) express empathy; (2) develop discrepancy; (3) avoid argumentation; (4) roll with resistance, and, (5) support self-efficacy.

CONCLUSIONS/RECOMMENDATIONS: Motivational interviewing has been empirically tested and shown to be an effective intervention in preparing people to change addictive behaviors.

Moral RR, Pérula de Torres LA, Ortega LP, Larumbe MC, Villalobos AR, García JAF, Rejano

Effectiveness of motivational interviewing to improve therapeutic adherence in patients over 65 years old with chronic diseases: A cluster randomized clinical trial in primary care. Patient Education and Counseling, 98(8): 977- 983

HIGHLIGHTS

- The most common intervention used by doctors is to prescribe drugs.
- Related to this is the problem of poor medication adherence.
- Motivational interviewing is an interview style designed to promote behavioral changes
- Motivational Interviewing includes patient-centered methods that can be used to improve medication adherence in primary care.

OBJECTIVE: To evaluate the effectiveness of motivational interviewing (MI) in improving medication adherence in older patients being treated by polypharmacy.

METHODS: Cluster randomized clinical trial in 16 primary care centers with 27 health care providers and 154 patients. Thirty-two health care providers were assigned to an experimental (EG) or control group (CG). Interventions: MI training program and review of patient treatments. Providers in the EG carried out MI, whereas those in the CG used an "advice approach". Three follow-up visits were completed, at 15 days and at 3 and 6 months. Medication adherence in both groups was compared ($p < 0.05$).

RESULTS: Patients recruited: 70/84 (EG/CG). Mean age: 76 years; female: 68.8%. The proportion of subjects changing to adherence was 7.6% higher in the EG ($p < 0.001$). Therapeutic adherence was higher for patients in the EG (OR = 2.84), women (OR = 0.24) and those with high educational levels (OR = 3.93).

CONCLUSION: A face-to-face motivational approach in primary care helps elderly patients with chronic diseases who are being treated by polypharmacy to achieve an improved level of treatment adherence than traditional strategies of providing information and advice.

PRACTICE IMPLICATIONS: MI is a patient-centered approach that can be used to improve medication adherence in primary care.

www.motivationalinterview.org

The materials included on this website are designed to facilitate the dissemination, adoption and implementation of MI among clinicians, supervisors, program managers and trainers, and improve treatment outcomes for clients with substance use disorders.

Resnicow K, Dilorio C, Soet JE, Ernst D, Borrelli B, & Hecht J. (2002).

Motivational interviewing in health promotion: It sounds like something is changing.

Motivational interviewing (MI), initially developed for addiction counseling, has increasingly been applied in public health, medical, and health promotion settings. This article provides an overview of MI, outlining its philosophic orientation and essential strategies. Major outcome studies are reviewed, nuances associated with the use of MI in health promotion and chronic disease prevention are described, and future directions are offered.

Rubak S, Sandbaek, A, Lauritzen T, & Christensen B. (2005).

Motivational interviewing: A systematic review and meta-analysis.

BACKGROUND: Motivational Interviewing is a well-known, scientifically tested method of counseling clients developed by Miller and Rollnick and viewed as a useful intervention strategy in the treatment of lifestyle problems and disease.

AIM: To evaluate the effectiveness of motivational interviewing in different areas of disease and to identify factors shaping outcomes.

DESIGN OF STUDY: A systematic review and meta-analysis of randomized controlled trials using motivational interviewing as the intervention.

METHOD: After selection criteria a systematic literature search in 16 databases produced 72 randomized controlled trials the first of which was published in 1991. A quality assessment was made with a validated scale. A meta-analysis was performed as a generic inverse variance meta-analysis.

RESULTS: Meta-analysis showed a significant effect (95% confidence interval) for motivational interviewing for combined effect estimates for body mass index, total blood cholesterol, systolic blood pressure, blood alcohol concentration and standard ethanol content, while combined effect estimates for cigarettes per day and for HbA1c were not significant. Motivational interviewing had a significant and clinically relevant effect in approximately three out of four studies, with an equal effect on physiological (72%) and psychological (75%) diseases. Psychologists and physicians obtained an effect in approximately 80% of the studies, while other healthcare providers obtained an effect in 46% of the studies. When using motivational interviewing in brief encounters of 15 minutes, 64% of the studies showed an effect. More than one encounter with the patient ensures the effectiveness of motivational interviewing.

CONCLUSION: Motivational interviewing in a scientific setting outperforms traditional advice giving in the treatment of a broad range of behavioral problems and diseases. Large-scale studies are now needed to prove that motivational interviewing can be implemented into daily clinical work in primary and secondary health care.

Naar-King S, & Suarez M. (2010).

Motivational interviewing with adolescents and young adults.

This pragmatic guide spells out how to use motivational interviewing (MI) to have productive conversations about behavior change with adolescents and young adults in any clinical context. Filled with examples, sample dialogues, and "dos and don'ts," the book shows how conducting MI from a developmentally informed standpoint can help practitioners quickly build rapport with young patients, enhance their motivation to make healthy changes, and overcome ambivalence. Experts on specific adolescent problems describe MI applications in such key areas as substance abuse, smoking, sexual risk taking, eating disorders and obesity, chronic illness management, and externalizing and internalizing behavior problems.

Norris SL, Nichols PJ, Caspersen CJ, Glasgow RE, Engelgau MM, & Jack L, Isham G, Snyder SR, Carande-Kulis VG, Garfield S, Briss P, & McCulloch D (2002).

The effectiveness of disease and case management for people with diabetes: A systematic review.

DESCRIPTION OF CONTEXT: This report presents the results of a systematic review of the effectiveness and economic efficiency of disease management and case management for people with diabetes and forms the basis for recommendations by the Task Force on Community Preventive Services on the use of these two interventions.

TOPIC/SCOPE: Evidence supports the effectiveness of disease management on glycemic control; on screening for diabetic retinopathy, foot lesions and peripheral neuropathy, and proteinuria; and on the monitoring of lipid concentrations. This evidence is applicable to adults with diabetes in managed care organizations and community clinics in the United States and Europe.

CONCLUSIONS/RECOMMENDATIONS: Case management is effective in improving both glycemic control and provider monitoring of glycemic control. This evidence is applicable primarily in the U.S. managed care setting for adults with type 2 diabetes. Case management is effective both when delivered in conjunction with disease management and when delivered with one or more additional educational, reminder, or support interventions.

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Pollak KI, Nagy P, Bigger J, Bilheimer A, Lyna P, Gao X, Lancaster M, Watkins RC, Johnson F, Batish S, Skelton JA, Armstrong S (2015).

Effect of teaching motivational interviewing via communication coaching on clinician and patient satisfaction in primary care and pediatric obesity-focused offices.

HIGHLIGHTS

- Clinic staff can learn MI techniques via a coaching model. • Learning as a team improves perceived team cohesion. • Learning MI improves perceived burnout.
- Learning MI can improve patient satisfaction.

OBJECTIVE: Studies indicate needed improvement in clinician communication and patient satisfaction. Motivational interviewing (MI) helps promote patient behavior change and improves satisfaction. In this pilot study, we tested a coaching intervention to teach MI to all clinic staff to improve clinician and patient satisfaction.

METHODS: We included four clinics (n = 29 staff members). In the intervention clinics (one primary care and one pediatric obesity-focused), we trained all clinic staff in MI through meetings as a group seven times, directly observing clinicians in practice 4–10 times, and providing real-time feedback on MI techniques. In all clinics, we assessed patient satisfaction via anonymous surveys and also assessed clinician burnout and self-rated MI skills.

RESULTS: Clinicians in the intervention clinics reported improvements in burnout scores, self-rated MI skills, and perceived cohesion whereas clinicians in the control clinic reported worse scores. Patient satisfaction improved in the intervention clinics more than in the control clinics.

CONCLUSION: This is the first study to find some benefit of training an entire clinic staff in MI via a coaching model.

PRACTICE IMPLICATIONS: It might help to train staff in MI to improve clinician satisfaction, team cohesion, perceived skills, and patient satisfaction.

Pollak KI, Ostbye T, Alexander SC, Gradison M, Bastian LA, Namenek Brouwer RJ, & Lyna P. (2007).
Empathy goes a long way in weight loss discussions: Female patients are more likely to step up weight loss efforts when a physician shows empathy and offers support.

PURPOSE: This study explores how weight-related topics are discussed between physicians and their overweight and obese female patients.

METHODS: We surveyed and audio-recorded preventive health and chronic care visits with 25 overweight and obese female patients. We coded both for quantity (content and time) of weight related discussions and quality (adherence to Motivational Interviewing [MI] techniques). We then tested correlations of these measures with patients' reported attempts to lose weight, change diet, and change exercise patterns 1 month after the visit.

RESULTS: Weight was routinely addressed (19 of 25 encounters). Patients usually initiated the topic (67% of time). Physicians' use of MI techniques resulted in patients attempting to lose weight and changing their exercise patterns.

CONCLUSION: Physicians may benefit from MI training to help patients lose weight. Practice recommendation: A physician's empathy, collaborative approach, and words of support can have a positive effect on overweight and obese women's weight loss efforts.

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Randomized trial of teaching brief motivational interviewing to pediatric trainees to promote healthy behaviors in families.

Archives of Pediatrics & Adolescent Medicine, 164(6): 561-566.

HYPOTHESIS: That pediatric resident trainees would demonstrate increased counseling skill following training in brief motivational interviewing (MI).

DESIGN: Randomized controlled trial.

SETTING: University of Washington Pediatric Residency.

PARTICIPANTS: Pediatric residents (N=18), including residents in postgraduate years 1, 2, 3, and 4.

INTERVENTIONS: Collaborative Management in Pediatrics, a 9-hour behavior change curriculum based on brief MI plus written feedback on communication skills (based on a 3-month Objective Standardized Clinical Evaluation [OSCE]).

MAIN OUTCOME MEASURE: The percentage of MI consistent behavior (%MICO), a summary score for MI skill, was assessed via OSCEs in which standardized patients portray parents of children with asthma in 3 clinical scenarios (stations). The OSCEs were conducted at baseline and 3 and 7 months. Blinded coders rated videotaped OSCEs using a validated tool to tally communication behaviors. Training effects were assessed using linear regression controlling for baseline %MICO. Global ratings of counseling style served as secondary outcome measures.

RESULTS: Trained residents demonstrated a trend toward increased skill (%MICO score) at 3 months compared with control residents. At 7 months, %MICO scores increased 16% to 20% (P=.02) across all OSCE stations after the combined intervention of Collaborative Management in Pediatrics training plus written feedback. The effect of training on global ratings supported the main findings.

CONCLUSIONS: Pediatric trainees' skills in behavior change counseling improved following the combination of training in brief MI plus personalized feedback.

Ream E, Gargaro G, Barsevick A, Richardson A. (2015).

Management of cancer-related fatigue during chemotherapy through telephone motivational interviewing: Modeling and randomized exploratory trial.

HIGHLIGHTS

- Psychologically-based interventions for cancer-related fatigue can successfully be delivered by telephone. •Similar outcomes can be generated when interventions are delivered by telephone as when they are delivered face-to-face.
- Motivational interviewing is seldom used when delivering interventions for supported self-management in people with cancer. This study suggests that it may enhance their uptake; opportunities should be sought to use this approach more often in clinical practice.

OBJECTIVE: Fatigue is a common cancer-related symptom and exacerbated by chemotherapy. Psychological interventions for fatigue show promise. One, Beating Fatigue, was adapted for delivery by telephone and evaluated in an exploratory trial.

METHODS: Eight patients and 12 professionals contributed to focus groups that guided adaptation of the intervention. The intervention, modified for delivery by telephone using motivational interviewing, was tested in an exploratory trial. Forty-four patients were recruited to the trial and randomized between the intervention (n = 23) and control (n = 21). Outcome data were collected on fatigue intensity, fatigue distress; fatigue self- efficacy, anxiety and depression at baseline and following completion of chemotherapy. These data were augmented by interviews conducted to inform understanding of the intervention's mechanism, feasibility and acceptability.

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RESULTS: The intervention was both feasible and acceptable to patients and most reduced fatigue distress (Effect Size ES = 0.62). It also reduced fatigue intensity (ES = 0.18), fatigue self-efficacy (ES = -0.34), and anxiety (ES = 0.31). It did not reduce depression.

CONCLUSION: These preliminary data are encouraging and support the delivery of interventions for cancer-related fatigue by telephone. Motivational interviewing appeared key to the intervention's success. A larger definitive RCT is indicated.

PRACTICE IMPLICATIONS: Opportunities should be sought to deliver psychologically based interventions for fatigue by telephone.

Resnicow K, Dilorio C, Soet JE, Ernst D, Borrelli B, & Hecht J. (2002).

Motivational interviewing in health promotion: It sounds like something is changing.

Motivational interviewing (MI), initially developed for addiction counseling, has increasingly been applied in public health, medical, and health promotion settings. This article provides an overview of MI, outlining its philosophic orientation and essential strategies. Major outcome studies are reviewed, nuances associated with the use of MI in health promotion and chronic disease prevention are described, and future directions are offered.

Resnicow, K, McMaster, F, Bocian, A, Harris, D, Zhou, Y, Snetselaar, L, Schwartz, R, Myers, E, Gotlieb, J, Foster, J, Hollinger, D, Smith, K, Woolford, S, Mueller, D, Wasserman, RC. (2015).

Motivational interviewing and dietary counseling for obesity in primary care: an RCT.

BACKGROUND AND OBJECTIVE: Few studies have tested the impact of motivational interviewing (MI) delivered by primary care providers on pediatric obesity. This study tested the efficacy of MI delivered by providers and registered dietitians (RDs) to parents of overweight children aged 2 through 8.

METHODS: Forty-two practices from the Pediatric Research in Office Settings Network of the American Academy of Pediatrics were randomly assigned to 1 of 3 groups. Group 1 (usual care) measured BMI percentile at baseline and 1- and 2-year follow-up. Group 2 (provider only) delivered 4 MI counseling sessions to parents of the index child over 2 years. Group 3 (provider + RD) delivered 4 provider MI sessions plus 6 MI sessions from a RD. The primary outcome was child BMI percentile at 2-year follow up.

RESULTS: At 2-year follow-up, the adjusted BMI percentile was 90.3, 88.1, and 87.1 for groups 1, 2, and 3, respectively. The group 3 mean was significantly ($P = .02$) lower than group 1. Mean changes from baseline in BMI percentile were 1.8, 3.8, and 4.9 across groups 1, 2, and 3.

CONCLUSIONS: MI delivered by providers and RDs (group 3) resulted in statistically significant reductions in BMI percentile. Research is needed to determine the clinical significance and persistence of the BMI effects observed. How the intervention can be brought to scale (in particular, how to train physicians to use MI effectively and how best to train RDs and integrate them into primary care settings) also merits future research.

Rollnick S, Heathe N, & Bell A. (1992).

Negotiating behavior change in medical settings: The development of brief motivational interviewing.

DESCRIPTION OF CONTEXT: A brief intervention for medical settings using a form of motivational interviewing. The intervention is patient-centered and developed for patients with varying degrees of readiness to change.

TOPIC/SCOPE: The interviewer (or clinician) selects a strategy from a menu of the following to match the patient's degree of readiness to change: (1) address issues of lifestyle, stresses, and substance use; (2) address health and substance use; (3) discuss a typical day; (4) discuss the pros and cons of engaging in the behavior; (5) provide information; (6) discuss the future and the present; (7) explore concerns, or (8) help with decision- making. Implications and criticism of the approach are provided as well as suggestions for further research.

CONCLUSIONS/RECOMMENDATIONS: Motivational interviewing can be an effective strategy to help patients articulate their reasons and arguments for and against a behavior change. The goal of motivational interviewing is to work with the patient's need for autonomy through the encouragement of an exploration of his/her ambivalence towards behavior change.

Rollnick S, Miller WR, & Butler CC. (2007).

Motivational interviewing in health care: Helping patients change behavior.

Much of health care today involves helping patients manage conditions whose outcomes can be greatly influenced by lifestyle or behavior change. Written specifically for health care professionals, this concise book presents powerful tools to enhance communication with patients and guide them in making choices to improve their health, from weight loss, exercise, and smoking cessation, to medication adherence and safer sex practices. Engaging dialogues and vignettes bring to life the core skills of motivational interviewing (MI) and show how to incorporate this brief evidence-based approach into any health care setting. Appendices include MI training resources and publications on specific medical conditions.

Rollnick S, Butler CC, Kinnersley P, Gregory J, & Mash B. (2010).

Motivational interviewing.

Motivational interviewing has been shown to promote behavior change in a wide range of healthcare settings.

KEY POINTS: Simply giving patients advice to change is often unrewarding and ineffective. Motivational interviewing uses a guiding style to engage with patients, clarify their strengths and aspirations, evoke their own motivations for change, and promote autonomy of decision making. You can learn motivational interviewing in three steps: practice a guiding rather than directing style; develop strategies to elicit the patient's own motivation to change; and refine your listening skills and respond by encouraging change talk from the patient. Motivational interviewing has been shown to promote behavior change in various healthcare settings and can improve the doctor-patient relationship and the efficiency of the consultation.

Reprinted from article: Examples of contrasting "directive style" and "guiding style":

DIRECTING STYLE: "OK, so your weight is putting your health at serious risk. You already have early diabetes. (Patient often resists at this point.) Overweight is conceptually very simple, if you think about it. Too much in, not enough out. So you need to eat less and exercise more. There no way you can get around that simple fact." (Patient replies with a "yes, but . . ." argument.)

GUIDING STYLE: "OK, let's have a look at this together and see what you think. From my side, losing some weight and getting more exercise will help your diabetes and your health, but what feels right for you? (Patient often expresses ambivalence at this point.) . . . So you can see the value of these things, but you struggle to see how you can succeed at this point in time. OK. It's up to you to decide when and how to make any changes. I wonder, what sort of small changes might make sense to you?" (Patient says how change might be possible.)

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Sansom-Daly UM, Peate M, Wakefield CE, Bryant RA, Cohn RJ. (2012).

A systematic review of psychological interventions for adolescents and young adults living with chronic illness.

OBJECTIVE: There is increasing recognition that adolescents and young adults (AYAs) with chronic illnesses experience common psychological challenges. This article reviewed published psychological interventions for AYAs with cancer, diabetes, juvenile idiopathic arthritis, sickle cell disease, and asthma. Common, efficacious intervention components were examined to generate clearer recommendations for future age-appropriate, evidence-based intervention development.

METHODS: Five databases including MEDLINE, MEDLINE In Process & Non-Indexed Citations, PsycINFO, EMBASE, and CINAHL, were searched for studies involving AYAs aged 10–30 years, using quantitative two-group methods, published from 1979–2010. Of 1,233 abstracts, 87 were extracted for further analysis and a final 25 studies were eligible for inclusion. Thirteen of these studies included AYAs with diabetes, 7 studies involved AYAs with cancer, and 5 included AYAs with other illnesses.

RESULTS: Educational interventions showed some significant positive results, particularly when targeted knowledge outcomes were measured. Several skills-based programs, some including parents, showed positive results, with moderate effect sizes. Interventions which taught communication skills, incorporated practical components (e.g., role-plays, homework), involved =6 sessions, and spanned at least 3 months in length, appeared more likely to achieve positive outcomes.

CONCLUSIONS: Skills-based interventions delivered over multiple sessions may yield the most positive results in AYAs with chronic illness. Given the few peer-support groups eligible for review, their efficacy remains unclear. This review points to the need for intervention development that teaches adaptive coping skills, is grounded in theoretical frameworks, and adheres to strict randomization and independent assessments

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Schwartz RP. (2010).

Motivational interviewing (patient-centered counseling) to address childhood obesity.

Behavior change is difficult to achieve and even more difficult to maintain. Motivation is a major factor in determining whether we change our behavior. When a person seems unmotivated, it is often assumed that there is little we can do. This assumption is often false. The way physicians talk with patients can have a significant influence on their motivation for behavioral change. People do not like to be forced or coerced to change their behavior. Sometimes, merely acknowledging this autonomy or freedom not to change makes change possible.² Physicians have been trained to provide information, but not how to help patients change their behavior. This article is an introduction to the spirit, principles, and tools of motivational interviewing (MI).

Schwartz RP, Hamre R, Dietz WH, Wasserman RC, Slora EJ, Myers EF, Sullivan S, Rockett H, Thoma KA, Dumitru G, & Resnicow KA. (2007).

Office-based motivational interviewing to prevent childhood obesity.

OBJECTIVE: To determine whether pediatricians and dietitians can implement an office-based obesity prevention program using motivational interviewing as the primary intervention.

DESIGN: Nonrandomized clinical trial. Fifteen pediatricians belonging to Pediatric Research in Office Settings, a national practice-based research network, and 5 registered dietitians were assigned to 1 of 3 groups: (1) control; (2) minimal intervention (pediatrician only); or (3) intensive intervention (pediatrician and registered dietitian).

SETTING: Primary care pediatric offices.

PARTICIPANTS: Ninety-one children presenting for well child care visits met eligibility criteria of being aged 3 to 7 years and having a body mass index (calculated as the weight in kilograms divided by the height in meters squared) at the 85th percentile or greater but lower than the 95th percentile for the age or having a normal weight and a parent with a body mass index of 30 or greater.

INTERVENTIONS: Pediatricians and registered dietitians in the intervention groups received motivational interviewing training. Parents of children in the minimal intervention group received 1 motivational interviewing session from the physician, and parents of children in the intensive intervention group received 2 motivational interviewing sessions each from the pediatrician and the registered dietitian.

MAIN OUTCOME MEASURE: Change in the body mass index–for-age percentile.

RESULTS: At 6 months' follow-up, there was a decrease of 0.6, 1.9, and 2.6 body mass index percentiles in the control, minimal, and intensive groups, respectively. The differences in body mass index percentile change between the 3 groups were nonsignificant ($P=.85$). The patient dropout rates were 2 (10%), 13 (32%), and 15 (50%) for the control, minimal, and intensive groups, respectively. Fifteen (94%) of the parents reported that the intervention helped them think about changing their family's eating habits.

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CONCLUSIONS: Motivational interviewing by pediatricians and dietitians is a promising office-based strategy for preventing childhood obesity. However, additional studies are needed to demonstrate the efficacy of this intervention in practice settings.

Söderlund LL, Nordqvist C, Angbratt M, & Nilsen P. (2009).

Applying motivational interviewing to counseling overweight and obese children.

The aim of this study was to identify barriers and facilitators to nurse's application of motivational interviewing (MI) to counseling overweight and obese children aged 5 and 7 years, accompanied by their parents. Ten welfare center and school health service nurses trained and practiced MI for 6 months, then participated in focus group interviews concerning their experiences with

applying MI to counseling overweight and obese children. Important barriers were nurses lack of recognition that overweight and obesity among children constitute a health problem, problem ambivalence among nurses who felt that children's weight might be a problem although there was no immediate motivation to do anything and parents who the nurses believed were unmotivated to deal with their children's weight problem. Facilitators included nurse's recognition of the advantages of MI, parents who were cooperative and aware of the health problem and working with obese children rather than those who were overweight.

Smith West D, DiLillo V, Bursac Z, Gore SA, & Greene PG. (2007).

Motivational interviewing improves weight loss in women with type 2 diabetes.

OBJECTIVE: We sought to determine whether adding motivational interviewing to a behavioral weight control program improves weight loss outcomes and glycemic control for overweight women with type 2 diabetes.

RESEARCH DESIGN AND METHODS: We conducted a randomized, controlled, clinical trial in which participants all received an 18-month, group-based behavioral obesity treatment and were randomized to individual sessions of motivational interviewing or attention control (total of five sessions) as an adjunct to the weight control program. Overweight women with type 2 diabetes treated by oral medications who could walk for exercise were eligible. Primary outcomes were weight and A1C, assessed at 0, 6, 12, and 18 months.

RESULTS: A total of 217 overweight women (38% African American) were randomized (93% retention rate). Women in motivational interviewing lost significantly more weight at 6 months ($P = 0.01$) and 18 months ($P = 0.04$). Increased weight losses with motivational interviewing were mediated by enhanced adherence to the behavioral weight control program. African-American women lost less weight than white women overall and appeared to have a diminished benefit from the addition of motivational interviewing. Significantly greater A1C reductions were observed in those undergoing motivational interviewing at 6 months ($P = 0.02$) but not at 18 months.

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CONCLUSIONS: Motivational interviewing can be a beneficial adjunct to behavioral obesity treatment for women with type 2 diabetes, although the benefits may not be sustained among African-American women.

Steinberg MC, Miller WR. (2015).

Motivational Interviewing in Diabetes Care (Applications of Motivational Interviewing).

People with diabetes often struggle to make healthy choices and stay on top of managing their illness. Filling a vital need, this is the first book to focus on the use of motivational interviewing (MI) in diabetes care. The uniquely qualified authors--physician Marc P. Steinberg has devoted much of his career to diabetes care, and renowned clinical psychologist William R. Miller is the co-developer of MI--present proven counseling techniques that can make any conversation with a patient more efficacious and motivating. Numerous sample dialogues illustrate specific ways to elicit patients' strengths and help them overcome barriers to change in such areas as eating habits, physical activity, medication use, insulin treatment, substance abuse, psychological issues, and more.

Wadden T, Butryn M, Hong P, Tsai A. (2014).

Behavioral treatment of obesity in patients encountered in primary care settings: a systematic review.

IMPORTANCE: In 2011, the Centers for Medicare & Medicaid Services (CMS) approved intensive behavioral weight loss counseling for approximately 14 face-to-face, 10- to 15-minute sessions over 6 months for obese beneficiaries in primary care settings, when delivered by physicians and other CMS-defined primary care practitioners.

OBJECTIVE: To conduct a systematic review of behavioral counseling for overweight and obese patients recruited from primary care, as delivered by primary care practitioners working alone or with trained interventionists (e.g., medical assistants, registered dietitians), or by trained interventionists working independently.

EVIDENCE REVIEW: We searched PubMed, CINAHL, and EMBASE for randomized controlled trials published between January 1980 and June 2014 that recruited overweight and obese patients from primary care; provided behavioral counseling (i.e., diet, exercise, and behavioral therapy) for at least 3 months, with at least 6 months of post randomization follow-up; included at least 15 participants per treatment group and objectively measured weights; and had a comparator, an intention-to-treat analysis, and attrition of less than 30% at 1 year or less than 40% at longer follow-up.

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FINDINGS: Review of 3304 abstracts yielded 12 trials, involving 3893 participants that met inclusion-exclusion criteria and prespecified quality ratings. No studies were found in which primary care practitioners delivered counseling that followed the CMS guidelines. Mean 6-month weight changes from baseline in the intervention groups ranged from a loss of 0.3 kg to 6.6 kg. In the control group, mean change ranged from a gain of 0.9 kg to a loss of 2.0 kg. Weight loss in both groups generally declined with longer follow-up (12-24 months). Interventions that prescribed both reduced energy intake (e.g., ≥ 500 kcal/d) and increased physical activity (e.g., ≥ 150 minutes a week of walking), with traditional behavioral therapy, generally produced larger weight loss than interventions without all 3 specific components. In the former trials, more treatment sessions, delivered in person or by telephone by trained interventionists, were associated with greater mean weight loss and likelihood of patients losing 5% or more of baseline weight.

CONCLUSIONS AND RELEVANCE: Intensive behavioral counseling can induce clinically meaningful weight loss, but there is little research on primary care practitioners providing such care. The present findings suggest that a range of trained interventionists, who deliver counseling in person or by telephone, could be considered for treating overweight or obesity in patients encountered in primary care settings.

Wagner CC, & Ingersoll KS. (2012).

Motivational interviewing in groups.

This book shows how to infuse the methods and spirit of motivational interviewing (MI) into group-based interventions. The authors demonstrate how the four processes of MI with individuals translate into group contexts. They explain both the challenges and the unique benefits of

MI groups, guiding practitioners to build the skills they need to lead psychoeducational, psychotherapeutic, and support groups successfully. A wealth of clinical examples are featured. Chapters by contributing authors present innovative group applications targeting specific problems: substance use disorders, dual diagnosis, chronic health conditions, weight management, adolescent risk behaviors, intimate partner violence, and sexual offending.

WestraHA, AviramA, &DoellFK. (2011).

Extending motivational interviewing to the treatment of major mental health problems: Current directions and evidence.

Motivational interviewing (MI) was originally developed for the treatment of substance abuse but is rapidly expanding to other major mental health populations beyond addictions. This brief review considers the use of MI and related motivational enhancement therapies (METs) in the treatment of anxiety, depression, and eating disorders, and concurrent psychosis and substance use disorders. MI-MET has been added and (or) integrated into treatment for these problems in a wide variety of ways, most commonly as a pretreatment to other therapies (psychosocial treatments and pharmacotherapy) or integrated into standard assessment procedures. In each problem domain, the bulk of the current evidence supports the value of adding MI to existing therapies in increasing engagement with treatment and in improving clinical outcomes. This is particularly encouraging in that many of the populations included in these investigations represent severe and treatment-recalcitrant populations. However, research on the application of MI to other major mental health problems beyond addictions is in the early stages, with existing studies having numerous limitations (for example, small uncontrolled studies or lack of adequate control groups, and failure to establish both MI treatment integrity and the unique contribution of MI in integrated treatments). In short, the substantial body of promising preliminary findings strongly support the continued investigation of MI and related methods for these populations in well-designed clinical trials that examine not only the additive value of MI but also mechanisms underlying these effects and individual differences (moderators) indicating the need for MI.

Westra HA. (2012).

Motivational interviewing in the treatment of anxiety.

This book provides strategies for helping therapy clients with anxiety resolve ambivalence and increase their intrinsic motivation for change. The author shows how to infuse the spirit and methods of motivational interviewing (MI) into cognitive-behavioral therapy or any other anxiety-focused treatment. She describes specific ways to use MI as a pretreatment intervention or integrate it throughout the course of therapy whenever motivational impasses occur. Vivid clinical material--including a chapter-length case example of a client presenting with anxiety and depression--enhances the utility of this accessible guide.

Whitlock EP, Polen MR, Green CA, Orleans T, Klein J, & U.S. Preventive Services Task Force. (2004).

Behavioral counseling interventions in primary care to reduce risky/harmful alcohol use by adults: A summary of the evidence for the U.S. preventive services task force

BACKGROUND: Primary health care visits offer opportunities to identify and intervene with risky or harmful drinkers to reduce alcohol consumption.

PURPOSE: To systematically review evidence for the efficacy of brief behavioral counseling interventions in primary care settings to reduce risky and harmful alcohol consumption.

DATA SOURCES: Cochrane Database of Systematic Reviews, Database of Research Effectiveness (DARE), MEDLINE, Cochrane Controlled Clinical Trials, PsycINFO, HealthSTAR, CINAHL databases, bibliographies of reviews and included trials from 1994 through April 2002; update search through February 2003.

STUDY SELECTION: An inclusive search strategy (alcohol* or drink*) identified English-language systematic reviews or trials of primary care interventions to reduce risky/harmful alcohol use. Twelve controlled trials with general adult patients met our quality and relevance inclusion criteria.

DATA EXTRACTION: Investigators abstracted study design and setting, participant characteristics, screening and assessment procedures, intervention components, alcohol consumption and other outcomes, and quality- related study details.

DATA SYNTHESIS: Six to 12 months after good-quality, brief, multicontact behavioral counseling interventions (those with up to 15 minutes of initial contact and at least 1 follow-up), participants reduced the average number of drinks per week by 13% to 34% more than controls did, and the proportion of participants drinking at moderate or safe levels was 10% to 19% greater compared with controls. One study reported maintenance of improved drinking patterns for 48 months.

CONCLUSIONS: Behavioral counseling interventions for risky/harmful alcohol use among adult primary care patients could provide an effective component of a public health approach to reducing risky/harmful alcohol use. Future research should focus on implementation strategies to facilitate adoption of these practices into routine health care.



Category 2: MI and Health Behavior Changes

Ajzen I, & Fishbein M. (1980).

Understanding attitudes and predicting social behavior.

CONCEPT OF PROBLEM DEVELOPMENT: A person's intention is a function of his/her attitude toward the behavior and the perception of the social pressures put on him/her to perform or not to perform the behavior (also known as the "subjective norm"). In order to define and measure behavior, one should determine whether the interest is in the behaviors or the outcomes of those behaviors.

CONCEPT OF CHANGE: Any behavior is described as having the following four elements: the action, the target at which the action is directed, the context in which it occurs, and the time at which it is performed. Behaviors have been found to be predictable from the intentions of individuals. However, unlike behaviors, outcomes are not completely under a person's volitional control. To be able to predict outcome, intentions should be measured, behaviors should be identified, and other factors that can potentially control the outcome must be addressed. The theory of reasoned action offers a conceptual understanding of attitudes and provides theoretical measures for predicting behaviors and outcomes of those behaviors. It has shown to be applicable to understanding and predicting areas of weight loss, women's occupational orientations, family planning behaviors, consumer behavior, voting in American and British elections, and the behavior of alcoholics.

INTERVENTIONS: Not specifically defined.

Apollonio DE, & Malone RE. (2009).

Turning negative into positive: Public health mass media campaigns and negative advertising.

Literature suggests that negative advertising is an effective way to encourage behavioral changes, but it has enjoyed limited use in public health media campaigns. However, as public health increasingly focuses on non-communicable disease prevention, negative advertising could be more widely applied. This analysis considers an illustrative case from tobacco control. Relying on internal tobacco industry documents, surveys and experimental data and drawing from political advocacy literature, we describe tobacco industry and public health research on the American Legacy Foundations truth campaign, an example of effective negative advertising in the service of public health. The tobacco industry determined that the most effective advertisements run by Legacy's truth campaign were negative advertisements. Although the tobacco industry's own research suggested that these negative ads identified and effectively reframed the cigarette as a harmful consumer product rather than focusing solely on tobacco companies, Philip Morris accused Legacy of vilifying it. Public health researchers have demonstrated the effectiveness of the truth campaign in reducing smoking initiation. Research on political advocacy demonstrating the value of negative advertising has rarely been used in the development of public health media campaigns, but negative advertising can effectively communicate certain public health messages and serve to counter corporate disease promotion.

Bacon L & Aphramor L. (2011).

Weight science: Evaluating the evidence for a paradigm shift.

ABSTRACT: Current guidelines recommend that "overweight" and "obese" individuals lose weight through engaging in lifestyle modification involving diet, exercise and other behavior change. This approach reliably induces short-term weight loss, but the majority of individuals are unable to maintain weight loss over the long term and do not achieve the putative benefits of improved morbidity and mortality. Concern has arisen that this weight focus is not only ineffective at producing thinner, healthier bodies, but may also have unintended consequences, contributing to food and body preoccupation, repeated cycles of weight loss and regain, distraction from other personal health goals and wider health determinants, reduced self-esteem, eating disorders, other health decrement, and weight stigmatization and discrimination. This concern has drawn increased attention to the ethical implications of recommending treatment that may be ineffective or damaging. A growing trans-disciplinary movement called Health at Every Size (HAES) challenges the value of promoting weight loss and dieting behavior and argues for a shift in focus to weight-neutral outcomes. Randomized controlled clinical trials indicate that a HAES approach is associated with statistically and clinically relevant improvements in physiological measures (e.g., blood pressure, blood lipids), health behaviors (e.g., eating and activity habits, dietary quality), and psychosocial outcomes (such as self-esteem and body image), and that HAES achieves these health outcomes more successfully than weight loss treatment and without the contraindications associated with a weight focus. This paper evaluates the evidence and rationale that justifies shifting the health care paradigm from a conventional weight focus to HAES.

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Balmford J, Borland R, & Burney S. (2010).

The influence of having a quit date on prediction of smoking cessation outcome.

The aim of this study was to explore whether factors predicting making a quit attempt are uniform within the preparation stage of the transtheoretical model (TTM). Participants were 283 smokers, all planning to quit in the next 30 days (preparation stage), who used a computer-generated tailored advice programme. Evidence of differences in prediction of making a quit attempt was found between smokers with and without a quit date, with the predictive power of a multivariate model markedly higher among those with a set date. In particular, one aspect of pros of smoking (smoking helps you feel better when things are bad) was predictive of progression among those with a quit date, but not among those without. The results suggest that factors predicting stage progression are not uniform within the preparation stage. The results complement other recent research that has questioned the stage definitions used in the TTM and provide evidence in support of an alternative stage boundary defined by the commitment of setting a quit date.

Bandura A. (2004).

Health promotion by social cognitive means.

DESCRIPTION OF CONTEXT: This article examines health promotion and disease prevention from the perspective of social cognitive theory.

TOPIC/SCOPE: This theory posits a multifaceted causal structure in which self-efficacy beliefs operate together with goals, outcome expectations, and perceived environmental impediments and facilitators in the regulation of human motivation, behavior, and well-being. Belief in one's efficacy to exercise control is a common pathway through which psychosocial influences affect health functioning. This core belief affects each of the basic processes of personal change-- whether people even consider changing their health habits, whether they mobilize the motivation and perseverance needed to succeed should they do so, their ability to recover from setbacks and relapses, and how well they maintain the habit changes they have achieved.

CONCLUSIONS/RECOMMENDATIONS: Human health is a social matter, not just an individual one. A comprehensive approach to health promotion also requires changing the practices of social systems that have widespread effects on human health.

Bauer UE, Briss PA, Goodman RA & Bowman BA. (2014).

Prevention of chronic disease in the 21st century: elimination of the leading preventable causes of premature death and disability in the USA.

With non-communicable conditions accounting for nearly two-thirds of deaths worldwide, the emergence of chronic diseases as the predominant challenge to global health is undisputed. In the USA, chronic diseases are the main causes of poor health, disability, and death, and account for most of health-care expenditures. The chronic disease burden in the USA largely results from a short list of risk factors—including tobacco use, poor diet and physical inactivity (both strongly associated with obesity), excessive alcohol consumption, uncontrolled high blood pressure, and hyperlipidemia—that can be effectively addressed for individuals and populations. Increases in the burden of chronic diseases are attributable to incidence and prevalence of leading chronic conditions and risk factors (which occur individually and in combination), and population demographics, including ageing and health disparities. To effectively and equitably address the chronic disease burden, public health and health-care systems need to deploy integrated approaches that bundle strategies and interventions, address many risk factors and conditions simultaneously, create population-wide changes, help the population subgroups most affected, and rely on implementation by many sectors, including public—private partnerships and involvement from all stakeholders. To help to meet the chronic disease burden, the US Centers for Disease Control and Prevention (CDC) uses four cross-cutting strategies: (1) epidemiology and surveillance to monitor trends and inform programmes; (2) environmental approaches that promote health and support healthy behaviors; (3) health system interventions to improve the effective use of clinical and other preventive services; and (4) community resources linked to clinical services that sustain improved management of chronic conditions. Establishment of community conditions to support healthy behaviors and promote effective management of chronic conditions will deliver healthier students to schools, healthier workers to employers and businesses, and a healthier population to the health-care system. Collectively, these four strategies will prevent the occurrence of chronic diseases, foster early detection and slow disease progression in people with chronic conditions, reduce complications, support an improved quality of life, and reduce demand on the health-care system. Of crucial importance, with strengthened collaboration between the public health and health-care sectors, the health-care system better uses prevention and early detection services, and population health is improved and sustained by solidifying collaborations between communities and health-care providers. This collaborative approach will improve health equity by building communities that promote health rather than disease, have more accessible and direct care, and focus the health-care system on improving population health.

Becker MH. (1974).

The Health belief model and personal health behavior. Thorofare, New Jersey: Charles B. Slack, Inc.

CONCEPT OF CHANGE: An individual's perception and beliefs of health will affect his/her decision about the health behaviors. This assumes that cognition is necessary for attitude change and motivation is necessary for action. Central to this model are four beliefs: (1) perceived susceptibility--subjective risks of contracting a condition; (2) perceived seriousness--perception of the severity of a condition; (3) perceived benefits-- subjective utility of taking an action, and (4) perceived barriers--impediments that individual beliefs will affect his/her decision to pursue a behavior change. In addition to the four beliefs, there are factors (both internal and external) that serve as cues to action. Some examples of these factors are the environment, family, friends, mood, and feelings.

INTERVENTION: Present in the model is the assumption that direct persuasion is one tactic to modify beliefs. Having said this, the model does not imply a strategy for change. Instead the model invites eliciting views of belief change from different aspects of the biopsychosocial realm. For one, people are social beings, always in contact with other people and actively engaging in their environment. Because of this, there are social and structural factors that affect behavior through the mediation of beliefs.

Benne GG, Foley P, Levine E, et al. (2013).

Behavioral treatment for weight gain prevention among black women in primary care practice: A randomized clinical trial.

IMPORTANCE: Few weight loss treatments produce clinically meaningful weight loss outcomes among black women, particularly in the primary care setting. New weight management strategies are necessary for this population. Weight gain prevention might be an effective treatment option, with particular benefits for overweight and class 1 obese black women.

OBJECTIVE: To compare changes in weight and cardiometabolic risk during a 12-month period among black women randomized to a primary care-based behavioral weight gain prevention intervention, relative to usual care.

DESIGN, SETTING, AND PARTICIPANTS: Two-arm randomized clinical trial (the Shape Program). We recruited patients from a 6-site community health center system. We randomized 194 overweight and class 1 obese (body mass index [calculated as weight in kilograms divided by height in meters squared], 25-34.9) premenopausal black women aged 25 to 44 years. Enrollment began on December 7, 2009; 12- and 18-month assessments were completed in February and October 2, 2012.

INTERVENTIONS: The medium-intensity intervention included tailored behavior change goals, weekly self- monitoring via interactive voice response, monthly counseling calls, tailored skills training materials, and a gym membership.

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MAIN OUTCOMES AND MEASURES: 12-month change in weight and body mass index and maintenance of change at 18 months.

RESULTS: Participants had a mean age of 35.4 years, a mean weight of 81.1 kg, and a mean body mass index of 30.2 at baseline. Most were socioeconomically disadvantaged (79.7% with educational level less than a college degree; 74.3% reporting annual income <\$30,000). The 12-month weight change was larger among intervention participants (mean [SD], -1.0 [0.5] kg), relative to usual care (0.5 [0.5] kg; mean difference, -1.4 kg [95% CI, -2.8 to -0.1 kg]; $P=?.04$). At month 12, 62% of intervention participants were at or below their baseline weights compared with 45% of usual-care participants ($P=?.03$). By 18 months, intervention participants maintained significantly larger changes in weight (mean difference, -1.7 kg; 95% CI, -3.3 to -0.2 kg).

CONCLUSIONS AND RELEVANCE: A medium-intensity primary care-based behavioral intervention demonstrated efficacy for weight gain prevention among socioeconomically disadvantaged black women. A "maintain, don't gain" approach might be a useful alternative treatment for reducing obesity-associated disease risk among some premenopausal black women.

Botelho RJ, & Skinner H. (1995).

Motivating change in health behavior: Implications for health promotion and disease prevention.

CORE ARGUMENT: Practitioners can motivate patients to reduce the risks and harms associated with unhealthy behaviors by utilizing effective motivational agents and a motivational approach to behavior change. Examples relate to smoking and excessive alcohol use but can be applied to a broad range of behavior modifications.

PRIMARY EVIDENCE: Practitioner approaches to health behavior change include Traditional Advice Giving ("Don't Drink!"), Patient-Centered Advice-Giving ("What really concerns me is that you don't seem to be bothered by your drinking.") and the Cognitive Behavioral Approach which assumes the patient lacks the skills to initiate and maintain change. The Motivational Approach to change assumes that most patients know how to change and have the skills to change but may lack the motivation to change. Practitioners are encouraged to utilize Motivational Interviewing techniques and apply the principles of Self-Determination Theory as patients move through the stages of change, which consist of precontemplation, contemplation, preparation, action, and maintenance. These stages of change within the Transtheoretical Model give the practitioner a clear picture of the patient's progression toward behavior change. Practitioners are encouraged to assist patients in initiating change from within rather than being imposed from external or internal sources. Effective motivational agents to ensure that practitioners encourage movement through the stages of change include an empathic relationship, support of the patient's autonomy, provide information in a nonthreatening manner, work with rather than against patient resistance, and an understanding of personal assumptions about behavior that will affect the practitioner-patient relationship. The Motivational Approach is extensively outlined with numerous narrative examples that apply to the medical interview. Direct and indirect interventions initiated by the practitioner that help patients enhance their priorities for change and diminish their priorities against change are clearly outlined.

CONCLUSIONS/RECOMMENDATIONS: Practitioners are more likely to help patients initiate and maintain behavior change for health promotion and disease prevention if they use a Motivational Approach to behavior change rather than a controlling approach.

Brownell KD, Marlatt GA, Lichtenstein E, & Wilson GT. (1986).

Understanding and preventing relapse.

DESCRIPTION OF CONTEXT: Examination of the concept of relapse by integrating knowledge from addictive disorders of alcoholism, smoking, and obesity.

TOPIC/SCOPE: Commonalties are observed across many addictive behaviors. The term, lapse, refers to a single slip or mistake which may or may lead to the state of relapse. This term does not imply loss of control, but merely that corrective action can be taken so that a full blown relapse will not occur. Individual's responses to lapse will vary from person to person. So far, there have been no reliable measures to assess individual responses to lapse. However, findings from research have generated predictors of lapse and relapse. Predictors of lapse and relapse involve an interaction of the following: (1) individual and intrapersonal factors such as negative emotional states, inadequate motivation, response to treatment, and coping skills; (2) physiological factors (i.e. genetic factors, craving, and urges); and (3) environmental and social factors. From common findings across addictive behaviors, prevention of lapse and relapse were targeted to the stages of change model.

CONCLUSIONS/RECOMMENDATIONS: The concept of lapse (the process of slips or mistakes) and relapse (the outcome that resulted from slips and/or mistakes) has important implications for conceptualizing, preventing, and treating relapse.

Byrne C, Walsh J, Kola S, & Sarma KM. (2012).

Predicting intention to uptake H1N1 influenza vaccine in a university sample.

OBJECTIVE: Global pandemic H1N1 was atypical of influenza in that it was associated with high symptom severity among young adults. Higher education institutions were therefore understandably concerned about the potential for high infection rates among students. This study examined intention to uptake H1N1 vaccine between November and December 2009, when the virus was classified by the World Health Organization (WHO) as being in the pandemic phase.

DESIGN: A cross-sectional survey design was employed.

METHOD: Two hundred university students completed a questionnaire battery comprised of health, belief/attitudes, and behavioral intention measures.

RESULTS: Findings suggested that non-intention to vaccinate is associated with a strong disbelief in its efficacy, in negative attitudes towards vaccinations, and in lack of perceived threat, which is underscored by a disinterest in others' opinions, including authoritative bodies. Findings also suggested that there is resistance to the idea of vaccinations being mandatory.

CONCLUSIONS: Vaccination intent is in some way linked to a range of attitudes and beliefs. The implication for health practitioners is that behavior intent may be open to influence where psycho-education can create pro- vaccine attitudes and beliefs.

Cahill K, Lancaster T, & Green N. (2010).

Stage-based interventions for smoking cessation (review).

BACKGROUND: The transtheoretical model is the most widely known of several stage-based theories of behavior. It proposes that smokers move through a discrete series of motivational stages before they quit successfully. These are precontemplation (no thoughts of quitting), contemplation (thinking about quitting), preparation (planning to quit in the next 30 days), action (quitting successfully for up to six months), and maintenance (no smoking for more than six months). According to this influential model, interventions which help people to stop smoking should be tailored to their stage of readiness to quit, and are designed to move them forward through subsequent stages to eventual success. People in the preparation and action stages of quitting would require different types of support from those in precontemplation or contemplation.

OBJECTIVES: Our primary objective was to test the effectiveness of stage-based interventions in helping smokers to quit.

SEARCH STRATEGY: We searched the Cochrane Tobacco Addiction Group's specialized register for trials, using the terms ('stage* of change', 'transtheoretical model*', 'trans-theoretical model*', 'precaution adoption model*', 'health action model', 'processes of change questionnaire*', 'readiness to change', 'tailor*') and 'smoking' in the title or abstract, or as keywords. The latest search was in August 2010.

SELECTION CRITERIA: We included randomized controlled trials, which compared stage-based interventions with non-stage-based controls, with 'usual care' or with assessment only. We excluded trials, which did not report a minimum follow-up period of six months from start of treatment, and those which measured stage of change but did not modify their intervention in the light of it.

DATA COLLECTION AND ANALYSIS: We extracted data in duplicate on the participants, the dose and duration of intervention, the outcome measures, the randomization procedure, concealment of allocation, and completeness of follow up. The main outcome was abstinence from smoking for at least six months. We used the most rigorous definition of abstinence, and preferred biochemically validated rates where reported. Where appropriate we performed meta-analysis to estimate a pooled risk ratio, using the Mantel-Haenszel fixed-effect model.

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MAIN RESULTS: We found 41 trials (>33,000 participants) which met our inclusion criteria. Four trials, which directly compared the same intervention in stage-based and standard versions, found no clear advantage for the staging component. Stage-based versus standard self-help materials (two trials) gave a relative risk (RR) of 0.93 (95% CI 0.62 to 1.39). Stage-based versus standard counseling (two trials) gave a relative risk of 1.00 (95% CI 0.82 to 1.22). Six trials of stage-based self-help systems versus any standard self-help support demonstrated a benefit for the staged groups, with an RR of 1.27 (95% CI 1.01 to 1.59). Twelve trials comparing stage-based self help with 'usual care' or assessment-only gave an RR of 1.32 (95% CI 1.17 to 1.48). Thirteen trials of stage-based individual counseling versus any control condition gave an RR of 1.24 (95% CI 1.08 to 1.42). These findings are consistent with the proven effectiveness of these interventions in their non-stage-based versions. The evidence was unclear for telephone counseling, interactive computer programs or training of doctors or lay supporters. This uncertainty may be due in part to smaller numbers of trials.

AUTHORS' CONCLUSIONS: Based on four trials using direct comparisons, stage-based self-help interventions (expert systems and/or tailored materials) and individual counseling were neither more nor less effective than their non-stage-based equivalents. Thirty-one trials of stage-based self-help or counseling interventions versus any control condition demonstrated levels of effectiveness, which were comparable with their nonstage-based counterparts. Providing these forms of practical support to those trying to quit appears to be more productive than not intervening. However, the additional value of adapting the intervention to the smoker's stage of change is uncertain. The evidence is not clear for other types of staged intervention, including telephone counseling, interactive computer programs and training of physicians or lay supporters. The evidence does not support the restriction of quitting advice and encouragement only to those smokers perceived to be in the preparation and action stages.

Carter GL, Clover K, Whyte IM, Dawson AH & D'Este C. (2013).

Postcards from the Edge: 5-year outcomes of a randomized controlled trial for hospital-treated self-poisoning.

BACKGROUND: Repetition of hospital-treated self-poisoning and admission to psychiatric hospital are both common in individuals who self-poison.

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AIMS: To evaluate efficacy of postcard intervention after 5 years.

METHOD: A randomized controlled trial of individuals who have self-poisoned: postcard intervention (eight in 12 months) plus treatment as usual v. treatment as usual. Our primary outcomes were self-poisoning admissions and psychiatric admissions (proportions and event rates).

RESULTS: There was no difference between groups for any repeat-episode self-poisoning admission (intervention group: 24.9%, 95% CI 20.6-29.5; control group: 27.2%, 95% CI 22.8-31.8) but there was a significant reduction in event rates (incidence risk ratio (IRR) = 0.54, 95% CI 0.37-0.81), saving 306 bed days. There was no difference for any psychiatric admission (intervention group: 38.1%, 95% CI 33.1-43.2; control group: 35.5%, 95% CI 30.8-40.5) but there was a significant reduction in event rates (IRR = 0.66, 95% CI 0.47- 0.91), saving 2565 bed days.

CONCLUSIONS: A postcard intervention halved self-poisoning events and reduced psychiatric admissions by a third after 5 years. Substantial savings occurred in general hospital and psychiatric hospital bed days.

Chambers JA, O'Carroll RE, Hamilton B, Whittaker J, Johnson M, Sudlow C, & Dennis M. (2011).

Adherence to medication in stroke survivors: A qualitative comparison of low and high adherers.

OBJECTIVES: The aim of this study was to investigate factors that may explain variance in adherence to medication in stroke patients.

DESIGN: A qualitative comparison of high and low adherers to medication.

METHODS: Thirteen participants, selected from a sample of 180 stroke survivors because they self-reported the lowest adherence to medication regimes, were matched with 13 reporting maximal adherence. All took part in semi-structured qualitative interviews.

RESULTS: Thematic analysis revealed that those with poor adherence to medication reported both intentional and non-intentional non-adherence. Two main themes emerged: the importance of stability of a medication routine and beliefs about medication and treatment. High adherers reported remembering to take their medication and seeking support from both family and health professionals. They also had a realistic understanding of the consequences of non-adherence, and believed their medicine did them more good than harm. Low adherers reported forgetting their medication, sometimes intentionally not taking their medication and receiving poor support from medical staff. They disliked taking their medication, had limited knowledge about the medication rationale or intentions, and often disputed its benefits.

CONCLUSIONS: Our findings suggest that appropriate medication and illness beliefs coupled with a stable medication routine are helpful in achieving optimal medication adherence in stroke patients. Interventions designed to target both intentional and non-intentional adherence may help maximize medication adherence in stroke patients.

Corabian P & Harstall C. (2001).

Patient diabetes education in the management of adult type 2 diabetes. HTA 23: Series 23, Health Technology Assessment, Alberta Heritage Foundation for Medical Research.

The Alberta Heritage Foundation for Medical Research conducted a review of reviews of diabetes education intervention.

TOPIC/SCOPE: Included in this review were 17 studies with at least one-year follow-up and more than one patient contact, including 3 meta-analyses, 7 systematic reviews and 7 additional trials.

CONCLUSIONS/RECOMMENDATIONS: The authors concluded that, although patient education is associated with short-term diabetes control, long-term outcomes have yet to be established. This report also concluded that providing patients with knowledge about diabetes is necessary, but insufficient to improve diabetes care. Goal setting, assessment of patient-specific barriers and a focus on behavioral strategies and problem solving to address barriers appear to be important to produce an impact on diabetes outcomes.

Corbin JM & Strauss A. (1988).

Unending work & care: Managing chronic illness at home.

ABSTRACT: Corbin and Strauss's Model for Chronic Illness Management provides a multi-dimensional framework for the study of the unfolding of a chronic illness that affects individuals and their social networks. The researchers identified the three tasks that persons with chronic illness need to attend: 1. take care of the illness; 2. carry out the normal activities of daily life; and 3. manage the emotional changes that accompany the experience of chronic illness.

Deci EL, & Ryan RM. (1985).

Intrinsic motivation and self-determination in human behavior.

Conceptualization of the theories of intrinsic motivation and self-determination in understanding human behaviors.

TOPIC/SCOPE: Central to the psychology of behavior is the concept of motivation. The study of motivation is the exploration of the energization and direction of behavior. Building on the concept of motivation are four theories: (1) drive theories, (2) intrinsic motivation, (3) self-determination, and (4) alternative (non-motivational) approaches. The drive theory formulates that individual behavior is said to be motivated when it is being pushed by some kind of driving force. According to Freud, there are two important drives (sex and aggression), whereas there are four (hunger, thirst, sex, and avoidance of pain) according to Hull. Complementing the theory of drive is intrinsic motivation, which suggests that there is an energy that comes from within the individual to motivate behavior. Adding on to the theory of intrinsic motivation is the theory of self-determination. This theory posits that behaviors are influenced by elements of volition, autonomy, choice, competence, and perceived locus of causality. Along the same line in the psychology of motivation and behavior is the notion of alternative approaches, or also known as the non-motivational approach of operant psychology. Most clearly represented by cognitive-behaviorism and social learning theory, the theory of alternative approaches asserts that behavior is influenced by an individual's self-efficacy, efficacy expectations, and future reinforcements.

CONCLUSIONS/RECOMMENDATIONS: The concept of intrinsic motivation in concomitant with self-determination is useful in explaining human behaviors. Researchers have adopted this concept to understand behaviors in many areas, including learning and education, psychotherapy, employment, organizations and sports.

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Detweiler JB, Bedell BT, Salovey P, Pronin E, & Rothman AJ. (1999).

Message framing and sunscreen use: Gain- framed messages motivate beach-goers

ABSTRACT: Prospect theory suggests that people respond differentially to factually equivalent messages depending on how these messages are framed (A. Tversky & D. Kahneman, 1981). A. J. Rothman and P. Salovey (1997) relied on prospect theory to predict that messages highlighting potential "gains" should promote prevention behaviors such as sunscreen use best. This experiment compared the effectiveness of 4 differently framed messages (2 highlighting gains, 2 highlighting losses) to persuade 217 beach-goers to obtain and use sunscreen. Attitudes and intentions were measured before and immediately following the delivery of the framed information, and after completing the questionnaire participants were given a coupon redeemable for a small bottle of sunscreen later that same day. People who read either of the 2 gain-framed brochures, compared with those who read either of the 2 loss-framed brochures, were significantly more likely to (a) request sunscreen, (b) intend to repeatedly apply sunscreen while at the beach, and (c) intend to use sunscreen with a sun protection factor of 15 or higher.

DiClemente CC. (1986).

Self-efficacy and the addictive behaviors.

DESCRIPTION OF CONTEXT: Review of the application of self-efficacy theory to a variety of addictive-behavior problems.

TOPIC/SCOPE: The construct of self-efficacy has been found to be useful in the process of smoking cessation. The challenges, however, are to define the target behavior for which self-efficacy is to be assessed, and to apply self-efficacy to the abstinence of the addictive behaviors. Currently, many self-efficacy scales exist that can accurately and reliably measure the three levels of self-efficacy expectations (generality, strength, and magnitude). Among them are smoking cessation scales, alcohol abstinence scales, and obesity and bulimic control scales. In addition to its relevance and usefulness for addictive behavioral change, the construct of self-efficacy has also been examined with other demographic, historical, habit, and personality variables. This relationship will further enhance our understanding of self-efficacy and addictive behaviors.

CONCLUSIONS/RECOMMENDATIONS: The function of self-efficacy has been explored in understanding the etiology and treatment of addictive behaviors. It can be applied to smoking cessation, excessive alcohol consumption, and eating disorders. It can also be used to assess demographic and personal predictors of the problem behaviors.

Diggins, K. (2014).

Family nurse practitioner/pharmacist collaborative medication counseling in patients with diabetes.

HIGHLIGHTS

- Family nurse practitioners working together with pharmacists are essential to improving critical indicators in chronic disease, such as A1C.
- Pharmaceutical counseling with pharmacists was provided in a clinic setting. FNPs worked with pharmacists to individualize medication regimens of diabetic patients.
- Pre- and post-intervention A1C was measured.
- A paired samples t test was conducted on these data to test the null hypothesis that there was no change in A1C level. The mean change in A1C of -1.04 was found to be highly significant ($P < .001$).

ABSTRACT: Medication adherence is an ongoing challenge in patients with diabetes on multidrug regimens. With multiple prescription medications, adherence to the individualized drug regimen can become a problem, and diabetes management worsens. It is pivotal for patients and nurse practitioners to have the opportunity to work with a pharmacist in the outpatient setting to review individualized medication regimens. In this study, the medication regimens of diabetic patients were reviewed with a pharmacist, and suggested changes to the regimen were implemented by the nurse practitioner. Follow-up A1Cs were reviewed 6 months after implementation, and there was a statistically significant improvement in the A1C levels.

DiMatteo MR, Giordani PJ, Lepper HS, & Croghan TW. (2002).

Patient adherence and medical treatment outcomes: A meta-analysis.

BACKGROUND: Adherence is a factor in the outcome of medical treatment, but the strength and moderators of the adherence-outcome association have not been systematically assessed.

OBJECTIVES: A quantitative review using meta-analysis of three decades of empirical research correlating adherence with objective measures of treatment outcomes.

METHOD: Sixty-three studies assessing patient adherence and outcomes of medical treatment were found involving medical regimens recommended by a nonpsychiatrist physician, and measuring patient adherence and health outcomes. Studies were analyzed according to disease (acute/chronic, severity), population (adult/child), type of regimen (preventive/treatment, use of medication), and type and sensitivity of adherence and outcomes measurements.

RESULTS: Overall, the outcome difference between high and low adherence is 26%. According to a stringent random effects model, adherence is most strongly related to outcomes in studies of nonmedication regimens, where measures of adherence are continuous, and where the disease is chronic (particularly hypertension, hypercholesterolemia, intestinal disease, and sleep apnea). A less stringent fixed effects model shows a trend for higher adherence-outcome correlations in studies of less serious conditions, of pediatric patients, and in those studies using self-reports of adherence, multiple measures of adherence, and less specific measures of outcomes. Intercorrelations among moderator variables in multiple regression show that the best predictor of the adherence-outcome relationship is methodological-the sensitivity/quality of the adherence assessment.

Dunbar-Jacob J. (1990).

Predictors of patient adherence: Patient characteristics. In: Shumaker S, Schron EB, Ockene JK, & McBee WL, eds. The Handbook of Health Behavior Change: Second Edition.

DESCRIPTION OF CONTEXT: Review of the literature and discussion of patient characteristics that are likely to be predictors of adherence.

TOPIC/SCOPE: There are factors under the control of the providers (i.e., prescribing regimens, lack of consistency in care providers, providers' behavior and attitudes, adequacy of instructions, and convenience) that are likely to lead to non-adherence in patients. However, this paper discusses not factors of the providers but characteristics of the patients, which are likely to influence adherence or non-adherence. Four areas of patient characteristics have been found to predict adherence to medical regimen. These include psychological characteristics, cognitive-motivational factors, behavior, and somatic factors. Numerous studies have defined depression and anxiety as the two most important psychological characteristics of patients that would predict non-adherence to treatment. It was noted that depression and anxiety were related to the element of motivation. Henceforth, cognitive-motivational components were examined and found to be important. Specifically, patients' intention and self-efficacy levels were successful predictors of adherence. Patients' health beliefs showed inconsistency in predicting behavior and vary as a

function of the population and setting studied as well as a function of the time of assessment. In the area of patients' health behavior, many studies have shown that the initial behavior predicts adherence to the same behavior in the future but were inconsistent in terms of adherence to a specific behavior being predictors of a set of different behaviors in the future. One study in the area of somatic factors concluded that beliefs about symptoms (i.e., mood or physical discomfort) may be important predictors of non-adherence. However, this area of somatic factors may have some overlap with health beliefs and perception of symptoms.

CONCLUSIONS/RECOMMENDATIONS: With non-adherence rates ranging from 20% to 80% in medical and research settings, it is imperative to understand and identify characteristics of the patients that will aid in predicting non-adherence or adherence. Psychological characteristics, cognitive-motivational factors, behavior, and somatic factors are the four areas of patient characteristics found to best predict adherence.

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Elis A, Lishner M, & Melamed S. (2011).

Treatment beliefs and attending follow-up visits in a lipid clinic.

OBJECTIVE: To explore the value of demographics, clinical parameters, and treatment beliefs in predicting attendance at follow-up visits in a lipid clinic.

DESIGN: Prospective cohort study.

METHODS: A total of 104 consecutive patients, who attended the Meir Medical Center lipid clinic for the first time, were followed for an average of 14 months. During the first visit, demographic and clinical parameters were obtained and a treatment beliefs and a self-rated health questionnaire were completed. Those who kept all scheduled follow-up visits were categorized as attendees and those who were lost to follow up as non- attendees. The two groups were compared on demographic and clinical parameters, as well as on treatment and health beliefs.

RESULTS: Lipid target level achievement was higher in attendees ($p < .001$). However, only 49 patients (47%) attended the scheduled clinic visits. None of the demographic or clinical parameters significantly predicted attendance. Both groups scored high on perceived risk-to-health of uncontrolled lipid levels and on perceived effectiveness and benefits of treatment. Non-attendees reported significantly more perceived barriers and treatment misconceptions/disbeliefs, and lower self-rated health.

CONCLUSIONS: Beliefs concerning lipid-lowering treatment should be identified so that they may be effectively addressed in order to improve patient attendance at follow-up visits to a lipid clinic.

Fiore MC, Bailey WC, & Cohen SJ. (2000).

Treating tobacco use and dependence. A clinical practice guideline.

DESCRIPTION OF CONTEXT: Clinical Practice Guideline, published by the Agency for Health Care Research and Policy.

TOPIC/SCOPE: Systematic and comprehensive review of tobacco treatment intervention research. Meta- analyses were conducted to determine the efficacy of a wide range of clinical tobacco interventions, including brief advice and counseling, pharmacotherapy and behavioral and psychosocial treatments.

CONCLUSIONS/RECOMMENDATIONS: The Guideline documents the impact of brief clinician advice and counseling on smoking cessation outcome. A significant effect was noted for brief advice and a dose-response relationship was found for the intensity of clinician intervention (i.e., number of minutes of counseling) and smoking cessation outcome. The guideline strongly recommends that clinicians to provide a 5A-based counseling intervention to every smoker at every visit. Nicotine replacement or other effective pharmacotherapy should be offered to all patients, if not contraindicated. Clinician training in brief counseling and use of reminder and other organizational systems are also recommended.

Fishbein M, & Ajzen I. (1975).

Belief, attitude, intention, and behavior.

CONCEPT OF CHANGE: Beliefs about consequences of a particular behavior will influence one's attitude towards that behavior which in turn influences the intention to perform the behavior. With this assumption in mind, behavioral change can be achieved by targeting one's beliefs, attitudes, and intentions. The first principle of change asserts that "the effects of an influence attempt on change in a dependent variable depend on its effects on the primary beliefs underlying that variable." The second principle of change states "the effects of an influence attempt on change in a dependent variable are ultimately the result of changes in proximal beliefs and of impact effects." The third principle posits "the effects of an influence attempt on change in beliefs, attitudes, intentions, and behaviors depend, in that order, on an increasing number of intervening processes." Lastly, the fourth principle of change describes the effect of experimental manipulations. An experimental manipulation can affect the amount of change in a dependent variable only to the extent that it influences amount of change in proximal and external beliefs."

INTERVENTION: One strategy of change is that of active participation (as opposed to passive exposure). This strategy includes interpersonal contact, role-playing, counter-attitudinal behavior, and choice between alternatives. A second strategy of behavioral change involves the use of persuasive communication to induce changes in beliefs, attitudes, and intentions.

Fjeldsoe B, Neuhaus M, Winkler E, Eakin E. (2011).

Systematic review of maintenance of behavior change following physical activity and dietary interventions.

OBJECTIVE: In the past decade, there has been no systematic review of the evidence for maintenance of physical activity and/or dietary behavior change following intervention (follow-up). This systematic review addressed three questions:

1. How frequently do trials report on maintenance of behavior change?
2. How frequently do interventions achieve maintenance of behavior change?
3. What sample, methodologic, or intervention characteristics are common to trials achieving maintenance?

DESIGN: Systematic review of trials that evaluated a physical activity and/or dietary behavior change intervention among adults, with measurement at pre-intervention, post-intervention, and at least 3 months following intervention completion (follow-up).

MAIN OUTCOME MEASURES: Maintenance of behavior change was defined as a significant between-groups difference at post-intervention and at follow-up, for one or more physical activity and/or dietary outcome.

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RESULTS: Maintenance outcomes were reported in 35% of the 157 intervention trials initially considered for review. Of the 29 trials that met all inclusion criteria, 21 (72%) achieved maintenance. Characteristics common to trials achieving maintenance included those related to sample characteristics (targeting women), study methods (higher attrition and pretrial behavioral screening), and intervention characteristics (longer duration [>24 weeks], face-to-face contact, use of more intervention strategies [>6], and use of follow-up prompts).

CONCLUSIONS: Maintenance of physical activity and dietary behavior change is not often reported; when it is, it is often achieved. To advance the evidence, the field needs consensus on reporting of maintenance outcomes, controlled evaluations of intervention strategies to promote maintenance, and more detailed reporting of interventions.

Fortmann AL, Gallo LC, & Philis-Tsimikas A. (2011).

Glycemic control among Latinos with type 2 diabetes: The role of social-environmental support resources.

OBJECTIVE: Although active diabetes self-management is required to achieve glycemic control, adherence is poor among ethnic minorities, especially Latinos. Research shows that individuals who report greater social- environmental support resources for disease management manage their diabetes more effectively than those with fewer support resources.

METHODS: Path analysis was conducted to investigate the value of a multiple-mediator model in explaining how support resources for disease management influence hemoglobin A1c (HbA1c) levels in a sample of 208 Latinos with Type 2 diabetes recruited from low-income serving community clinics in San Diego County. We hypothesized that the relationship between support resources for disease-management and HbA1c would be mediated by diabetes self-management and/or depression.

RESULTS: Participants who perceived greater support resources for disease-management reported better diabetes self-management ($\beta = .40, p < .001$) and less depression ($\beta = -.19, p < .01$). In turn, better diabetes self-management and less depression were associated with tighter glycemic control (HbA1c; $\beta = -.17, p < .05$ and $\beta = .15, p < .05$, respectively). Once the indirect effects via diabetes self-management (95% CI [-.25; -.03]) and depression (95% CI [-.14; -.01]) were statistically controlled, the direct pathway from support resources to HbA1c was markedly reduced ($p = .57$).

CONCLUSIONS: These findings demonstrate the important connection that support resources for disease management can have with diabetes self-management, emotional well-being, and glycemic control among Latinos. Thus, programs targeting diabetes self-management and glycemic control in this population should consider culturally relevant, multilevel influences on health outcomes.

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Fruh, Sharon M. "Obesity Stigma and Bias" (July/August 2016)

The Journal for Nurse Practitioners

Overweight and obesity are quickly becoming rampant in the United States. Individuals with overweight and obesity rarely seek medical help, not only for weight reduction but also for any health issue because of perceived provider discrimination. Providers who are biased against individuals with obesity can harm any efforts to effectively fight the obesity epidemic. By addressing weight bias in the provider setting, individuals affected by obesity may be more likely to engage in a meaningful and productive discussion of weight. Providers need to be the go-to source for obesity-focused information on new and emerging treatments.

Gillison F, Sebire S, & Standage M. (2012).

What motivates girls to take up exercise during adolescence? Learning from those who succeed.

OBJECTIVES: The present study explored factors that underpin increased internalization (i.e., perceived autonomy) in motivation towards exercise over a 1-year period in adolescent girls.

DESIGN: A mixed methods prospective study.

METHODS: A total of 107 girls (mean age = 13.28 years) reported their exercise behavior, exercise goals, and a multidimensional measure of motivation towards exercise on two occasions, 1 year apart. Ten girls reporting increased autonomous motivation were then interviewed.

RESULTS: Two themes were extracted; growing up and seeking challenge. Most participants reported being more interested in exercising for their health as a result of growing up, through having greater understanding of the health-behaviour link and willingness to act now for future health gain. However, their motivation appeared to be only partially internalized, as health was still viewed primarily as a value promoted by respected others (parents, teachers, media). Furthermore, as many girls conflated being healthy with being thin, health for appearance-related weight control was experienced as an extrinsic (controlling) goal. The second theme was more suggestive of autonomous motivation; girls reported valuing exercise for the opportunity it provides to set and achieve personally meaningful challenges, facilitating a sense of competence and achievement.

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CONCLUSIONS: The findings may have a useful application in suggesting how exercise settings could be manipulated to increase enjoyment and participation during adolescence. In particular, the findings suggest that means of increasing the salience of the rewarding nature of setting and reaching personal challenges in an exercise setting are investigated.

**Godin G, Sheeran P, Conner M, Bélanger-Gravel A, Gallani MCBJ, & Nolin B. (2010).
Social structure, social cognition, and physical activity: A test of four models.**

OBJECTIVE: This study investigated the combined influence of social structural factors (e.g. income) and cognitions in predicting changes in physical activity. Four models were tested: (a) direct effects (social structural factors influence behavior controlling for cognitions), (b) mediation (cognitions mediate social structural influence), (c) moderation (social structural factors moderate cognition-behavior relations), and (d) mediated moderation (cognitions mediate the moderating effects of social structural position).

DESIGN: Baseline and 3-month follow-up surveys.

METHODS: A random sample of 1,483 adults completed self-report measures of physical activity at baseline and 3-month follow-up. Measures of age, gender, education, income, material and social deprivation, intention, perceived behavioral control (PBC), and intention stability also were taken.

RESULTS: Apart from age, social structural factors exhibited very small or marginal effects on behavior change, and only education moderated the intention-behavior relation. In contrast, the magnitude of direct effects of the social cognition variables was comparatively large and intention stability mediated the moderating effect of education.

CONCLUSIONS: Stable intentions and PBC are the key predictors of changes in physical activity. Consequently, our findings would suggest the value of focusing on cognitions rather than social structural variables when modeling the determinants of physical activity.

Goldstein MG, Whitlock EP, DePue J & Planning Committee of the Addressing Multiple Behavioral Risk Factors in Primary Care Project. (2004).

Multiple behavioral risk factor interventions in primary care: Summary of research evidence.

BACKGROUND: An important barrier to the delivery of health behavior change interventions in primary care settings is the lack of an integrated screening and intervention approach that can cut across multiple risk factors and help clinicians and patients to address these risks in an efficient and productive manner.

METHODS: We review the evidence for interventions that separately address lack of physical activity, an unhealthy diet, obesity, cigarette smoking, and risky/harmful alcohol use, and evidence for interventions that address multiple behavioral risks drawn primarily from the cardiovascular and diabetes literature.

RESULTS: There is evidence for the efficacy of interventions to reduce smoking and risky/harmful alcohol use in unselected patients, and evidence for the efficacy of medium- to high-intensity dietary counseling by specially trained clinicians in high-risk patients. There is fair to good evidence for moderate, sustained weight loss in obese patients receiving high-intensity counseling, but insufficient evidence regarding weight loss interventions in nonobese adults. Evidence for the efficacy of physical activity interventions is limited. Large gaps remain in our knowledge about the efficacy of interventions to address multiple behavioral risk factors in primary care.

CONCLUSIONS: We derive several principles and strategies for delivering behavioral risk factor interventions in primary care from the research literature. These principles can be linked to the "5A's" construct (assess, advise, agree, assist, and arrange-follow up) to provide a unifying conceptual framework for describing, delivering, and evaluating health behavioral counseling interventions in primary healthcare settings. We also provide recommendations for future research.

Grogan S, Flett K, Clark-Carter D, Gough B, Davey R, Richardson D, & Rajaratnam G. (2011).

Women smokers' experiences of an age-appearance anti-smoking intervention: A qualitative study.

OBJECTIVES: This study was designed to investigate women's experiences of engaging in an age-appearance anti-smoking intervention.

METHODS: Ten 18- to 34-year-old women gave accounts of their experiences after engaging in an age-appearance facial morphing anti-smoking intervention in interviews (n= 7) and a focus group (n= 3), and 37 women gave their accounts while they were engaged in the intervention. Transcripts were analyzed using a thematic analysis broadly informed by the procedures of Grounded Theory.

RESULTS: Women were very concerned about the impact of ageing on their faces in general, and in particular the additional impact of smoking on their skin. Women were concerned about other people's reactions to them as older smokers with wrinkled skin, and many experienced a physical shock reaction (including reports of nausea) to seeing how they would age if they continued to smoke. They reported that seeing their own face aged on the computer screen increased their

perceived risk of skin wrinkling. Women reported being highly motivated to quit smoking as a result of the intervention, and many reported that they would take active steps to quit having seen how they would look if they continued to smoke. This was linked with increased perceived personal responsibility for quitting.

CONCLUSIONS: Results are discussed in relation to suggestions for anti-smoking interventions aimed at women in the 18- to 34-year-old age group. It is concluded that interventions incorporating age-appearance morphing techniques are likely to be effective in helping women to take active steps to quit smoking.

Guidetti M, Conner M, Prestwich A, & Cavazza N. (2012).

The transmission of attitudes towards food: Twofold specificity of similarities with parents and friends.

OBJECTIVES: The present study explored whether similarity of students' food attitudes with those of their parents and friends varies as a function of both the food and type of measurement. We expected greater resemblance with parents for attitudes towards fruit and for implicit attitudes and greater resemblance with friends for attitudes towards snacks and for explicit attitudes.

DESIGN: We compared the resemblance in implicit and explicit attitudes towards fruit and preference for sweet over savoury snacks between target-parent and target-friend pairings. The parental-peer mutual influence effect was separated from cultural effect by comparing real and random dyads.

METHODS: Target participants were 85 students who recruited one parent and one best friend each. All participants completed online two Implicit Association Tests and rated their liking for fruit and sweet/savoury snacks.

RESULTS: Our target participants' attitudes towards fruit were predicted by those of their parents rather than friends, with this relationship being detected through implicit but not explicit measures. Conversely, target participants' preference for sweet over savoury snacks was predicted with those of their friends but not parents, with this relationship being detected through explicit but not implicit measures.

CONCLUSIONS: Young adults' resemblance to parents and friends, in terms of food attitudes, seems specific both to the food type and to the attitude measure, suggesting that parents' influence concerns healthy food and is exerted at an implicit attitude level; whereas friends' influence concerns junk food and is exerted at an explicit attitude level. The theoretical and practical implications are discussed.

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GuoJ,WhittemoreR,&HeGP.(2011).

The relationship between diabetes self-management and metabolic control in youth with type 1 diabetes: An integrative review.

AIMS: The purpose of this integrative review was to describe the relationship between diabetes self- management and metabolic control in youth with type 1 diabetes and to explore factors which affect this relationship.

BACKGROUND: In the past 15 years, research has indicated that youth with type 1 diabetes face considerable self-management challenges and are at increased risk for poor metabolic control. To enhance the development of behavioral interventions for youth with type 1 diabetes, the relationship between diabetes self- management and metabolic control needs to be more clearly elucidated.

DATA SOURCES: Research studies that examined the relationship between diabetes self- management and metabolic control in youth with type 1 diabetes were included (n=18). The electronic databases searched included OVID, MEDLINE (1996 to present), SCOPUS (1996 to January 2010) and PubMed (1996 to January 2010).

REVIEW METHOD: An integrative literature review was carried out using Whittemore's modified framework for data collection, analysis and synthesis.

RESULTS: A positive relationship between diabetes self-management and metabolic control in youth with type 1 diabetes was supported in longitudinal studies and in studies where the mean age was >13 years. Factors influencing this relationship are identified. Measurement of self- management was quite variable.

CONCLUSION: Interventions targeting self-management in youth with type 1 diabetes are indicated, particularly in families of diverse race and ethnicity globally. Further evaluation of the measures of self- management and more longitudinal research are also indicated.

Harms-Chicago, William.

"Your Risk of Dying Hinges on Well-being Not Diseases" (18 May 2016) University of Chicago

A new study has determined that how old you are plays little or no role in determining differences in health and well being. Some of the findings of this study include: Cancer is not related to other conditions that undermine health. Poor mental health effects health in previously unknown ways. Obesity poses little risk to older adults with excellent physical and mental health. Sensory function and social participation play critical roles in sustaining or undermining health. Breaking a bone after age 45 is a major indicator for future health issues. Older men and women have different patterns of health and well being during aging. Mobility is one of the best markers of well-being.

Helfand BKI, & Mukamal KJ. (2013).

Healthcare and lifestyle practices of healthcare workers: Do healthcare workers practice what they preach?

ABSTRACT: Interestingly, health care professionals are no better than most patients in adhering to healthy behaviors. In one population-based study conducted at the Center for Disease Control, researchers found that health care professionals did not differ significantly from the general population in the likelihood of "having a recent Papanicolaou test or dental visit, ever having a sigmoidoscopy or colonoscopy, being overweight or obese, drinking and driving, failing to wear a seatbelt, smoking, using smokeless tobacco, engaging in [HIV] risk behaviors, getting sunburned, or being dissatisfied with life."

Hibbard JH, & Cunningham PJ. (2008).

How engaged are consumers in their health and health care, and why does it matter?

Patient activation refers to a person's ability to manage their health and health care. Engaging or activating consumers has become a priority for employers, health plans and policy makers. The level of patient activation varies considerably in the U.S. population, with less than half of the adult population at the highest level of activation, according to a new study by the Center for Studying Health System Change (HSC) (see Figure 1). Activation levels are especially low for people with low incomes, less education, Medicaid enrollees, and people with poor self-reported health. Higher activation levels are associated with much lower levels of unmet need for medical care and greater support from health care providers for self-management of chronic conditions.

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Jebb SA, Ahern AL, Olson AD, Aston LM, Holzapfel C, Stoll J, Amann-Gassner U, Simpson AE, Fuller NR, Pearson S, Lau NS, Mander AP, Hauner H, & Caterson ID. (2011).

Primary care referral to a commercial provider for weight loss treatment versus standard care: A randomized controlled trial.

ABSTRACT: People who attended a commercial weight-loss program, Weight Watchers, lost twice as much weight over a year as those who were given standard care by their primary-care provider, a new randomized, controlled trial shows. The study, conducted in the UK, Australia, and Germany, is the first to illustrate that a commercial provider--for which people normally pay themselves--is more effective for weight loss than primary-care management. Jebb et al assigned 377 overweight or obese participants to the Weight Watchers program, of whom 230 (61%) completed the 12-month assessment. In this study, the participants attended Weight Watchers free of charge. The remaining 395 overweight or obese people were assigned to standard of care in their given country, of whom 214 (54%) completed 12 months. Of those who completed the 12 months, those attending Weight Watchers lost a mean of 6.7 kg compared with 3.3 kg in those who got standard care. The greater weight loss in those assigned to Weight Watchers was accompanied by larger reductions in waist circumference and fat mass than in participants assigned to standard care.

Jha AK, Aubert RE, Yao J, Teagarden JR, & Epstein RS. (2012).

Greater adherence to diabetes drugs is linked to less hospital use and could save nearly \$5 billion annually.

ABSTRACT: Improving adherence to medication offers the possibility of both reducing costs and improving care for patients with chronic illness. We examined a national sample of diabetes patients from 2005 to 2008 and found that improved adherence to diabetes medications was associated with 13 percent lower odds of subsequent hospitalizations or emergency department visits. Similarly, losing adherence was associated with 15 percent higher odds of these outcomes. Based on these and other effects, we project that improved adherence to diabetes medication could avert 699,000 emergency department visits and 341,000 hospitalizations annually, for a saving of \$4.7 billion. Eliminating the loss of adherence (which occurred in one out of every four patients in our sample) would lead to another \$3.6 billion in savings, for a combined potential savings of \$8.3 billion. These benefits were particularly pronounced among poor and minority patients. Our analysis suggests that improved adherence among patients with diabetes should be a key goal for the health care system and policy makers. Strategies might include reducing copayments for certain medications or providing feedback about adherence to patients and providers through electronic health records.

Johnson B, Abouassaly R, Ghiculete D, & Stewart RJ. (2013).

Evaluating the effectiveness of a smoking warning label on raising patient awareness of smoking and bladder cancer.

PURPOSE: To assess the knowledge of patients with regard to the association between smoking and bladder cancer and to examine the impact of a novel smoking warning label on raising awareness of this issue.

MATERIALS AND METHODS: We conducted a prospective cross-sectional study involving patients who presented to urology and family practice clinics. A questionnaire was used to assess knowledge regarding the association between smoking and various diseases. Participants were also asked to evaluate a novel smoking warning label for bladder cancer.

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RESULTS: A total of 291 (97%) patients responded to the questionnaire: 143 (95.3%) in urology clinics vs. 148 (98.7%) in family practice clinics. Overall, only 45.2% of people were aware of the association between smoking and bladder cancer compared to 97.4% who knew that there was an association between smoking and lung cancer. There were not significant differences in knowledge between those in urology and family practice clinics. After viewing the warning label, 58.1% of responders stated that it had changed their opinion on smoking and bladder cancer and 74.8% felt that this label would be an effective tool to raise awareness of the issue. Patients who changed their opinion had statistically significant less initial knowledge about the association between smoking and bladder cancer (36.7% vs. 57.5% the ones who did not change their opinion, $p < 0.001$).

CONCLUSIONS: Awareness regarding the link between smoking and bladder cancer remains low. The use of a smoking warning label may help raise awareness of this important public health issue.

Kelly RB, Zyzanski SJ, & Alemagno SA. (1991).

Prediction of motivation and behavior change following health promotion: Role of health beliefs, social support, and self-efficacy.

OBJECTIVE: To examine health beliefs, social support, and self-efficacy theories in predicting motivation and behavior change for six lifestyle areas (smoking, stress, amount of food, exercise, type of food, and seat belts).

DESIGN: Experimental.

SETTING: An outpatient clinic of a family practice residency program in suburban Cleveland.

SUBJECTS: Two-hundred fifteen patients were recruited to participate in the study of whom 70% were women, 97% were White, 90% had a high school education or higher, 12% had family incomes below \$10,000 annually, 58% had used the practice for more than 2 years, and 45% had been seen by the physician they saw at study entry more than twice before.

INTERVENTIONS: Three health promotion interventions were employed: (1) a brief assessment of lifestyle risk factors by questionnaire, (2) physician prescription of lifestyle change, and (3) patient self-help instructional material. Participants were randomly assigned to one of the above three treatment groups and then asked to answer questionnaires. An additional group served as the control group. Individuals in the control group were participants outside of this treatment program.

MEASURES: No standardized methods were used to measure health beliefs, support for change, or self-efficacy. Visual analog scales were used, and participant's marks were measured by ruler.

RESULTS: There were two outcomes of interest: predictors of motivation to change and predictors of actual behavioral change. At the time of the initial assessment, 67, 113, 112, 132, 127, 142 individuals were at risk for the above lifestyle areas, respectively, and 75%, 72%, 63%, 50%, 46%, and 12% of the subjects were motivated to change for the above lifestyle areas, respectively. Perceived benefits and risk (Health Belief Model) and efficacy (Self-Efficacy Model) were the strongest predictors of motivation. For at-risk patients, the greater the perceived risk and benefits of change, the lower the self-efficacy (patients believe it more difficult to change the behavior). From this study, motivation (not Health Belief, Social Support, and self-efficacy models) was able to predict behavior change. The variable of social support was not able to predict motivation or change but was related to efficacy of expectations.

CONCLUSIONS: Health beliefs and self-efficacy are good predictors of motivation for change in most lifestyle areas. Motivation for change is clearly related to behavioral responses to the health promotion intervention.

Leong A, Rahme E & Dasgupta K. (2014).

Spousal diabetes as a diabetes risk factor: A systematic review and meta-analysis.

BACKGROUND: Diabetes history in biologically-related individuals increases diabetes risk. We assessed diabetes concordance in spouses (that is, biologically unrelated family members) to gauge the importance of socioenvironmental factors.

METHODS: We selected cross-sectional, case-control and cohort studies examining spousal association for diabetes and/or prediabetes (impaired fasting glucose or impaired glucose tolerance), indexed in Medline, Embase or Scopus (1 January 1997 to 28 February 2013). Effect estimates (that is, odds ratios, incidence rate ratios, and so on) with body mass index (BMI) adjustment were pooled separately from those without BMI adjustment (random effects models) to distinguish BMI-dependent and independent concordance.

RESULTS: Searches yielded 2,705 articles; six were retained (n=75,498 couples) for systematic review and five for meta-analysis. Concordance was lowest in a study that relied on women's reports of diabetes in themselves and their spouses (effect estimate 1.1, 95% CI 1.0 to 1.30) and highest in a study with systematic assessment of glucose tolerance (2.11, 95% CI 1.74 to 5.10). The random-effects pooled estimate adjusted for age and other covariates but not BMI was 1.26 (95% CI 1.08 to 1.45). The estimate with BMI adjustment was lower (1.18, 95% CI 0.97 to 1.40). Two studies assessing between-spouse associations of diabetes/prediabetes determined by glucose testing reported high concordance (OR 1.92, 95% CI 1.55 to 2.37 without BMI adjustment; 2.32, 95% CI 1.87 to 3.98 with BMI adjustment). Two studies did not distinguish type 1 and type 2 diabetes. However given that around 95% of adults is type 2, this is unlikely to have influenced the results.

CONCLUSIONS: Our pooled estimate suggests that a spousal history of diabetes is associated with a 26% diabetes risk increase. Recognizing shared risk between spouses may improve diabetes detection and motivate couples to increase collaborative efforts to optimize eating and physical activity habits.

Lister Z, Fox C & Wilson CM.

Couples and diabetes: A 30-year narrative review of dyadic relational research.

ABSTRACT: Diabetes is a chronic condition that affects both members of a couple. However, relatively few studies have focused on the entire couple system as the unit of observation when examining the psychosocial impact of this disease. This narrative review examines the literature between 1980 and 2010 that uses the couple as the unit of observation. A total of 49 articles were identified for review. Articles were grouped by their central themes or outcomes: (1) sexual functioning, (2) relationship adjustment and support, (3) culture and spirituality, (4) treatment/education programs, and (5) diabetes as a risk factor. Research and clinical implications such as increasing the utilization of dyadic analytical strategies and the importance of assessing illness burden from each partners' perspective are discussed. Identified benefits of incorporating the couple dyad for future research and clinical practice included: (1) understanding the influence of variables such as a non-diabetic partner and gender have on diabetes adjustment and management, (2) the role disease severity and management of diabetes by the partner living with diabetes has on spousal support and non-diabetic partner emotional wellbeing, (3) the interdependent nature of couple outcomes in the areas of adjustment to sexual dysfunction, perceived illness burden, and couple satisfaction, as well as, (4) disease as both an individual and a shared experience among couples.

Marlatt GA, & Gordon JR. (1985).

Relapse prevention: Maintenance strategies in the treatment of addictive behaviors.

CONCEPT OF PROBLEM DEVELOPMENT: Statistics show that approximately 80% of patients who quit smoking eventually relapse at 1 year. The cost-benefit perspective, in which the reward of instant gratification outweighs cost of potential negative effects, justifies why people plan their own relapse.

CONCEPT OF CHANGE: Relapse prevention focuses on the maintenance stage of addictive behavior cessation. Its goal is to help patients to anticipate and cope with problems of relapse. This model has two applications: (1) maintenance strategy to prevent relapse, or (2) facilitate change in personal habits and lifestyle so as to reduce the risk of physical disease or psychological stress. The purpose is to achieve a balanced lifestyle and to prevent the formation of unhealthy habit patterns.

INTERVENTION: Two intervention strategies have been proposed: specific strategies and global self-control strategies. Specific strategies help patients to anticipate, and identify high-risk situations by self-monitoring and self-assessment procedures. Global strategies emphasize skill training, cognitive reframing, and healthy lifestyle maintenance. If one is able to execute effective coping response, the probability of relapse will decrease. If unable to cope with high risk situations, the probability of relapse will increase. Patients are also trained to become their own therapist and carry on the thrust of the maintenance techniques after termination of the **formal therapeutic relationship**.

Martin LR, Haskard-Zolnierok KB, & DiMatteo MR. (2010).

Health behavior change and treatment adherence: Evidence-based guidelines for improving healthcare.

Each year, millions of people resolve to take better care of their health and almost a billion medical visits take place. Yet as many as half of these visits result in patient non-adherence, and most people who successfully begin necessary health behavior changes fail to maintain them. Healthcare professionals often struggle to provide their patients with the tools necessary for successful maintenance of healthy behavior. This book synthesizes the results from an overwhelming number of empirical research articles on adherence and health behavior change, providing simple, powerful, and practical guidance for health professionals. A set of effective evidence-based strategies for putting long-term health-relevant behavioral changes into practice includes the straightforward 3-ingredient Information–Motivation–Strategy model that has been supported by decades of outcomes research. In order to change, individuals must (1) know what change is necessary information; (2) desire the change (motivation); and then (3) have the tools to achieve and maintain the change (strategy). Numerous clinical examples illustrate the important practice principles offered. Health Behavior Change and Treatment Adherence brings together major research findings in a succinct, readable, practical, and usable format for making real changes. It is written for a wide variety of practitioners and students including those in medicine, chiropractic, osteopathy, nursing, health education, physician assistant programs, dentistry, clinical and health psychology, marriage and family counseling, social work, school psychology, and care administration. This book is also for anyone who wishes to take an active role in their health.

Mason P & Butler C. (2nd ed.) (2010).

Health behavior change.

The second edition of Health Behavior Change presents an exciting method which can be used to help patients change their behavior in both hospital and community settings. The method is applicable to any behavior, such as overeating, physical inactivity and smoking or with patients struggling with the consequences of chronic conditions like diabetes and heart disease. Using brief, structured consultations with the client, the practitioner encourages the patient to take charge of decision-making concerning their health. It relies upon partnership between professional and patient rather than dominance of one over the other and is carried out in a spirit of negotiation rather than confrontation.

The text clearly outlines the fundamental principles behind the method while applying it to practice. Problems of resistance and lack of motivation are explored and practical strategies to manage them are suggested. The patient is at the center throughout. Short case examples and dilemmas from clinical settings ground the method in the reality of practice.

McGann E. (2012).

Ten-minute nutrition, exercise counseling makes a difference: An expert interview with Lynne Braun, PhD, CNP, CLS, and Jane Nelson-Worel, MSN, APRN-BC, APNP.

Nurse practitioners see patients for the primary or secondary prevention of cardiovascular disease. Most patients have multiple risk factors. Although some patients require medication to treat their risk factors, healthy lifestyle changes (good nutrition, portion control, and regular exercise) can benefit all risk factors. Many people know what they should eat, but often they eat too much. They need help with motivation and strategies to make healthy dietary changes. It is a challenge to provide this level of counseling during a single patient encounter. Often it takes a few visits and telephone/email follow-up to assist patients in making changes. While it can be a challenge to fit heart-healthy lifestyle counseling into limited visit times, this counseling is essential to preventing and managing cardiovascular disease. Patients respond well to motivational interviewing and similar techniques because a partnership is established between provider and patient. These approaches are nonjudgmental and non-confrontational, and the decision to change and strategies belong to the patient. Weight is a sensitive topic. Using the term "obesity" when discussing weight can "turn patients off" and damage the provider-patient partnership. Successes are the patient's success, which increases his/her self-efficacy or confidence. The challenge for providers is that these conversations take time, so it is often necessary to set the stage and begin the initial conversation, and then to schedule a follow-up appointment devoted to counseling.

Meichenbaum D, & Turk D. (1987).

Facilitating treatment adherence: A practitioner's guidebook. Plenum Press.

DESCRIPTION OF CONTEXT: A textbook that provides practical clinical guidelines and describes techniques for enhancing patient adherence to treatment regimens.

TOPIC/SCOPE: The text is divided into three sections. The first part deals with the nature of adherence. The current research on incidence of non-adherence and its causes is summarized.

Part two outlines clinical procedures to enhance adherence such as relationship building, patient education, and behavioral and cognitive techniques. Part three further explores the procedures and discusses possible impediments to their incorporation into clinical practice.

CONCLUSIONS/RECOMMENDATIONS: Facilitating treatment adherence is an ongoing process and not something that can be satisfactorily addressed by a brief discussion or simple techniques. It is essential to consider a patient perspective and to take this into account.

Menninga KM, Dijkstra A, Gebhardt WA. (2011).

Mixed feelings: Ambivalence as a predictor of relapse in ex- smokers.

OBJECTIVES: Ambivalence can be viewed as a normal temporary psychological state in a decision process, for example, on quitting smoking. However, when ambivalence is still present after the decision has been made, it may undermine the motivation to stick to the decision. In smoking cessation, ambivalence can be expected to increase the risk for relapse.

DESIGN: In a cohort of 352 ex-smokers, felt ambivalence measured at baseline was used to predict relapse after 1 month.

RESULTS: Firstly, felt ambivalence was a predictor of relapse. Secondly, felt ambivalence moderated the strength of the relation between a psychological determinant of behavior and actual behavior: anticipated negative self-evaluative emotions only predicted relapse when felt ambivalence was low. Thirdly, the relation of felt ambivalence with relapse was partly mediated by ex-smokers' evaluations of risk situations (situations in which they used to smoke in the past).

CONCLUSION: Ambivalence is related to relapse in different ways and in ex-smokers it may be conceptualized as a non-optimal decision process. Although the role of felt ambivalence needs further study, the data suggest that ambivalence must be taken into account in the practice of relapse prevention.

Mercken L, Candel M, van Osch L, & de Vries H. (2011).

No smoke without fire: The impact of future friends on adolescent smoking behavior.

OBJECTIVE: This study examined the impact of future friends and the contribution of different social influence and selection processes in predicting adolescents' smoking behavior by extending the theory of planned behavior (TPB). We investigated the impact of previous smoking, direct pressure from friends, descriptive norms of present and future friends, smoking-based selection of future friends, and distinguished between reciprocal and desired friends.

DESIGN: A longitudinal design with three measurements was used.

METHODS: The sample consisted of 1,475 Dutch high school students (mean age = 12.7 years) that participated as a control group in the European Smoking prevention Framework Approach study at three measurements.

RESULTS: Structural equation modeling revealed that adolescent smoking was influenced by intention, previous smoking, descriptive norms of parents and siblings, and that desired as well as reciprocal friends were selected based on similar smoking behavior. Future friends indirectly influenced adolescent smoking through intention, as did attitude, subjective norms of parents and siblings, previous smoking, and descriptive norms of reciprocal friends and siblings.

CONCLUSIONS: The present results suggest that descriptive norms and selection of friends need to be considered as major factors explaining smoking behavior among adolescents besides the TPB components. These insights contribute to the further refinement of smoking prevention strategies.

Ministry of Health (MOH) and Long-Term Care. (2007).

Preventing and managing chronic disease: Ontario's framework.

This document has been developed to inform planning for chronic disease prevention and management (CDPM) in Ontario. It provides the evidence base for Ontario's CDPM Framework, which has evolved from the Chronic Care Model developed at the MacColl Institute of Healthcare Innovation, U.S.A.; and been informed by the Expanded Chronic Care Model from British Columbia, that incorporates the "Ottawa Charter of Health Promotion.

Mishali M, Omer H, Heymann AD. (2011).

The importance of measuring self-efficacy in patients with diabetes.

OBJECTIVES: Self-efficacy is an important factor influencing diabetes self-management behaviors. Previous studies have examined self-efficacy as a general measure in diabetes care for all self-care treatment recommendations together. This current study was designed to examine if low self-efficacy in each of the measured self-care treatment recommendations is related to decreased adherence for each specific recommendation.

METHODS: The self-efficacy was measured in 119 patients for four different treatment recommendations: blood glucose self-monitoring, exercise, diet and oral medication intake and correlated with The Resistance to Treatment Questionnaire.

RESULTS: Significant and positive Pearson's correlations were found between the frequency of adherence to treatment recommendations and the self-efficacy regarding different recommendations. The correlation between self-efficacy and diet and physical activity was 0.5 and 0.67, respectively. The higher the resistance to treatment score, the less confident the patient is in his or her ability to adhere with treatment recommendations. This pattern was not present in adherence to medication intake.

CONCLUSIONS: Self-efficacy impacts adherence to treatment and therefore plays a role in the clinical outcome. The practical implication is that assessment of self-efficacy in people with diabetes may be a first step in the development of individually tailored interventions.

Mo PKH, Blake H, & Batt ME. (2011).

Getting healthcare staff more active: The mediating role of self-efficacy.

OBJECTIVES: Physical activity has been associated with positive health outcomes. The objective of the study was to investigate the relationship between knowledge of physical activity, social support, self-efficacy, perceived barriers to physical activity, and level of physical activity among healthcare employees and students in a National Health Service (NHS) Trust.

DESIGN: This study was secondary analysis of questionnaire data on the health and well-being of staff and students within the NHS.

METHOD: A total of 325 student nurses and 1,452 NHS employees completed the questionnaire. The data were analyzed using descriptive statistics, zero-order correlations, and structural equation modeling.

RESULTS: Self-efficacy fully mediated the relationship between social support, perceived barriers, and level of physical activity in the student sample and partially mediated the relationship between social support, perceived barriers, and level of physical activity in the healthcare staff sample. Knowledge of physical activity had no significant effect on physical activity.

CONCLUSION: Findings suggest that instead of instilling knowledge, interventions to promote physical activity among healthcare staff and students should enhance social support and self-efficacy and also to remove perceived barriers to physical activity.

Mokdad AH, Marks JS, Stroup DF, & Gerberding JL. (2004).

Actual causes of death in the United States, 2000.

DESCRIPTION OF CONTEXT: Comprehensive MEDLINE searches of English-language articles that identified epidemiological, clinical, and laboratory studies linking risk behaviors and mortality. The authors used 2000 mortality data reported to the Centers for Disease Control and Prevention to identify the causes and the number of deaths. The estimates of causes of death were computed by multiplying estimates of the cause-attributable fraction of preventable deaths with the total mortality data.

TOPIC/SCOPE: The leading causes of death in 2000 were tobacco (435,000 deaths; 18.1% of total US deaths), poor diet and physical inactivity (400,000 deaths; 16.6%), and alcohol consumption (85,000; 3.5%). Other actual causes of death were microbial agents (75,000), toxic agents (55,000), motor vehicle crashes (43,000), incidents involving firearms (29,000), sexual behaviors (20,000), and illicit drug use (17,000).

CONCLUSIONS/RECOMMENDATIONS: Though smoking remains the leading cause of mortality, poor diet and physical inactivity may soon overtake tobacco as the leading cause of death. These findings, along with escalating health care costs and aging population, argue persuasively that the need to establish a more preventive orientation in the US health care and public health systems has become more urgent.

Morrison F, Shubina M, & Turchin A. (2012).

Lifestyle counseling in routine care and long-term glucose, blood pressure, and cholesterol control in patients with diabetes.

OBJECTIVE: In clinical trials, diet, exercise, and weight counseling led to short-term improvements in blood glucose, blood pressure, and cholesterol levels in patients with diabetes. However, little is known about the long-term effects of lifestyle counseling on patients with diabetes in routine clinical settings.

RESEARCH DESIGN AND METHODS: This retrospective cohort study of 30,897 patients with diabetes aimed to determine whether lifestyle counseling is associated with time to A1C, blood pressure, and LDL cholesterol control in patients with diabetes. Patients were included if they had at least 2 years of follow-up with primary care practices affiliated with two teaching hospitals in eastern Massachusetts between 1 January 2000 and 1 January 2010.

RESULTS: Comparing patients with face-to-face counseling rates of once or more per month versus less than once per 6 months, median time to A1C <7.0% was 3.5 versus 22.7 months, time to blood pressure <130/85 mmHg was 3.7 weeks versus 5.6 months, and time to LDL cholesterol <100 mg/dL was 3.5 versus 24.7 months, respectively (P < 0.0001 for all). In multivariable analysis, one additional monthly face-to-face lifestyle-counseling episode was associated with hazard ratios of 1.7 for A1C control (P < 0.0001), 1.3 for blood pressure control (P < 0.0001), and 1.4 for LDL cholesterol control (P = 0.0013).

CONCLUSION: Lifestyle counseling in the primary care setting is strongly associated with faster achievement of A1C, blood pressure, and LDL cholesterol control. These results confirm that the findings of controlled clinical trials are applicable to the routine care setting and provide evidence to support current treatment guidelines.

Moskowitz D, & Bodenheimer T. (2009).

Moving from evidence-based medicine to evidence-based health.

While evidence-based medicine (EBM) has advanced medical practice, the health care system has been inconsistent in translating EBM into improvements in health. Disparities in health and health care play out through patients' limited ability to incorporate the advances of EBM into their daily lives. Assisting patients to self-manage their chronic conditions and paying attention to unhealthy community factors could be added to EBM to create a broader paradigm of evidence-based health. A perspective of evidence-based health may encourage physicians to consider their role in upstream efforts to combat socially patterned chronic disease.

Mullen PD, Hersey JC, & Iverson DC. (1987).

Health behavior models compared.

OBJECTIVE: To compare three health behavior models (Health Belief, Fishbein/Ajzen, PRECEDE) for predicting changes in smoking, exercise, and consumption of sweet and fried foods.

DESIGN: Survey.

SETTING: Two hour-long household interviews were conducted in Denver and Phoenix.

SUBJECTS: Three hundred twenty-six individuals (56% Caucasian, 23% Hispanic, 20% Black, 17-65 years old) participated in this study. In the sample, 54% were female. 50% of the sample had an income between \$10,000 and \$25,000, and 38% had more than a high school education.

INTERVENTIONS: None

MEASURES: Questions assessing smoking and exercising were taken from the National Health Practices and Consequences Survey and the Stanford Three Community Study. Questions assessing dietary habits were taken from the National Health and Nutrition Examination Survey. Measurements for these behaviors relied on self-report. For each behavioral area, a seven-point response scale was used to assess components of the three models. The interval between the interviews was eight months, resulting in effects of seasonality that influenced components of the exercise questionnaire. The first interview, conducted in the spring, reported more swimming and walking. The second interview, held in the fall, reported more bicycling and gardening.

RESULTS: Initial behavior was a good predictor of final behavior, reflecting stability of behavior. Demographic characteristics proved to be important predictors of behavior. Older subjects exercised less and were less likely to attempt to quit smoking. Younger subjects were most frequent consumers of sweet foods. Women exercised less than men. Smoker's concern about susceptibility to serious illness was associated with attempts to quit smoking. Perceived benefits, confidence, and behavioral intention were all important in predicting behavior. PRECEDE was the most effective model in predicting all the behaviors except for attempts to quit smoking. Except for ability to predict smoking cessation attempts, the Fishbein/Ajzen model was the least effective.

CONCLUSIONS: Fishbein/Ajzen model was not as effective as PRECEDE and the Health Belief Model in predicting behavior. Self-efficacy was a key predictor of change in health behavior.

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Mulligan K, Mehta PA, Fteropoulli T, Dubrey SW, McIntyre HF, McDonagh TA, Sutton GC, Walker DM, Cowie MR, & Newman S. (2012).

Newly diagnosed heart failure: Change in quality of life, mood, and illness beliefs in the first 6 months after diagnosis.

OBJECTIVES: This study sought to examine how patients' mood and quality of life (QoL) change during the early high-risk period after a diagnosis of heart failure (HF) and to identify factors that may influence change.

DESIGN: A within-subjects, repeated-measures design was used. Assessments took place within 4 weeks of diagnosis and 6 months later.

METHODS: One hundred and sixty six patients with HF completed assessments of their mood, QoL, and beliefs about HF and its treatment. Correlation analysis was conducted between the variables and analysis of variance and t-tests were used to assess differences in categorical variables. To examine which variables predicted mood and QoL, hierarchical multiple regressions were conducted.

RESULTS: At follow-up, patients' beliefs indicated a realization of the chronicity of their HF, however their beliefs about the consequences of having HF did not change and their satisfaction with their treatment remained high. QoL and anxiety improved significantly over time but there was no significant change in depressed mood. As would be expected, improvement in symptoms was a key factor in improved mood and QoL. Other significant explanatory variables included age, comorbid chronic obstructive pulmonary disease, depressed mood, patients' beliefs about the consequences of their HF and their concerns about treatment.

CONCLUSIONS: This study suggests that addressing patients' mood and beliefs about their illness and its treatment may be additional ways of improving patient QoL in the early period after the diagnosis of HF.

Nainggolan L. (2011).

New data show couples change habits together.

Couples who attended a preventive cardiology program together, after one partner had suffered a coronary disease event, changed their dietary and exercise habits in tandem, a new analysis from the EUROACTION study shows. Catriona Jennings (Imperial College London, UK), a cardiovascular nurse, told heartwire: "Patients who made the most changes were more likely to be associated with partners who did the same, supporting the principle of family-based CVD prevention." The tenet of familybased intervention was central to EUROACTION, and at the time the study was performed, it was unique in its use of this approach. Jennings presented her findings during a poster session today at the EuroPREvent 2011 meeting. The new analysis looked specifically at patients and their partners from EUROACTION who participated in the intervention program and examined the outcomes of diet and physical activity. "We saw particularly strong concordance for fruit and vegetable intake," Jennings noted; for body mass index (BMI), the correlation was "not quite so strong, but it was still statistically significant." Hence, patients who managed to increase their fruit and vegetable consumption and/or increase physical activity were mirrored by partners who did the same. And those patients who did not succeed as well in achieving the goals set had partners who also fared poorly. EUROACTION is the largest-ever Europe-wide preventive cardiology project, and it spanned eight countries-- Denmark, France, Italy, the Netherlands, Poland, Spain, Sweden, and the UK--and 24 hospital and general-practice (GP) centers in a cluster-randomized trial comparing a 16-week structured multidisciplinary nurse-led intervention with usual care in 8500 heart-disease and high-risk patients. The basis of the trial was lifestyle change--i.e., avoidance of tobacco, achievement of a healthy diet, and physical activity, which were all given equal weighting. The program was intentionally set up in busy general hospitals and general practices, outside specialist cardiac-rehabilitation centers, to provide a service for all. As reported previously, significant improvements were observed after one year in those attending the intervention program in EURACTION compared with patients treated by usual care, across a number of key lifestyle and risk factors. In this new observational substudy, just coronary heart disease patients

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from the intervention arm who attended the program within a couple of weeks of their coronary event with their partners were assessed. There were 645 patients and 645 partners; 80% of the patients were male. During weekly or biweekly attendance at the 16-week program--for which all the healthcare professionals were centrally trained, in London, in how to perform assessment in a

standardized way--the couples saw a nurse who assessed smoking habits, risk factors, adherence to drug therapy where relevant, and health-related quality of life. They also saw a dietician and a physical-activity specialist and attended an exercise class and an interactive health promotion workshop. "The advice was all based on very individual assessment; it was tailored,"

Newton BJ, Southall JL, Raphael JH, Ashford RL, & LeMarchand K. (2013).

Although the experience of being believed is frequently alluded to in chronic pain literature, few studies have specifically explored this phenomenon and even fewer reviews have been offered. This narrative review sought to explore the wider social context in which individuals with chronic pain may experience disbelief toward their pain. Articles were obtained through a search of eight databases and a hand search of the references of full-text papers. Key results within the articles were noted and integrated to form three main themes: stigma, the experience of isolation, and the experience of emotional distress. The experience of stigma can occur in a number of ways. It may be through actual or perceived encounters with others; it can be through the use of psychological explanations of pain; it can come through a perceived challenge to one's integrity and subsequently affect an individual's identity; and such stigma may be influenced by negative female stereotypes. The loss of relationships associated with being disbelieved can lead to the experience of isolation. This may be self-initiated, particularly when an individual has been given a contested diagnosis. Finally, disbelief can lead to emotional distress. This can take the form of guilt, depression, and anger. Throughout the article, implications for health care professionals, working with individuals living with chronic pain, are discussed.

Park LG, Howie-Esquivel J & Dracup K. (2014)

A quantitative systematic review of the efficacy of mobile phone interventions to improve medication adherence.

AIMS: To evaluate the characteristics and efficacy of mobile phone interventions to improve medication adherence. Secondary aims are to explore participants' acceptability and satisfaction with mobile phone interventions and to evaluate the selected studies in terms of study rigour, impact, cost and resource feasibility, generalizability and implications for nursing practice and research.

BACKGROUND: Medication non-adherence is a major global challenge. Mobile phones are the most commonly used form of technology worldwide and have the potential to promote medication adherence.

DESIGN: Guidelines from the Centre for Reviews and Dissemination were followed for this systematic review.

DATA SOURCES: A comprehensive search of databases (PubMed, Web of Science, CINAHL, PsycInfo, Google Chrome and Cochrane) and bibliographies from related articles was performed from January 2002–January 2013 to identify the included studies.

REVIEW METHODS: A quantitative systematic review without meta-analysis was conducted and the selected studies were critically evaluated to extract and summarize pertinent characteristics and outcomes.

RESULTS: The literature search produced 29 quantitative research studies related to mobile phones and medication adherence. The studies were conducted for prevention purposes as well as management of acute and chronic illnesses. All of the studies used text messaging. Eighteen studies found significant improvement in medication adherence.

CONCLUSION: While the majority of investigators found improvement in medication adherence, long-term studies characterized by rigorous research methodologies, appropriate statistical and economic analyses and the test of theory-based interventions are needed to determine the efficacy of mobile phones to influence medication adherence.

Parkin, DM, Boyd, L, Walker, LC. (2011).

The fraction of cancer attributable to lifestyle and environmental factors in the UK in 2010.

This chapter summarizes the results of the preceding sections, which estimate the fraction of cancers occurring in the UK in 2010 that can be attributed to sub-optimal, past exposures of 14 lifestyle and environmental risk factors. For each of 18 cancer types, we present the percentage of cases attributable to one or all of the risk factors considered (tobacco, alcohol, four elements of diet (consumption of meat, fruit and vegetables, fiber, and salt), overweight, lack of physical exercise, occupation, infections, radiation (ionising and solar), use of hormones, and reproductive history (breast feeding)). Exposure to less than optimum levels of the 14 factors was responsible for 42.7% of cancers in the UK in 2010 (45.3% in men, 40.1% in women) – a total of about 134,000 cases. Tobacco smoking is by far the most important risk factor for cancer in the UK, responsible for 60,000 cases (19.4% of all new cancer cases) in 2010. The relative importance of other exposures differs by sex. In men, deficient intake of fruits and vegetables (6.1%), occupational exposures (4.9%) and alcohol consumption (4.6%) are next in importance, while in women, it is overweight and obesity (because of the effect on breast cancer) – responsible for 6.9% of cancers, followed by infectious agents (3.7%). Population- attributable fractions provide a valuable quantitative appraisal of the impact of different factors in cancer causation, and are thus helpful in prioritizing cancer control strategies. However, quantifying the likely impact of preventive interventions requires rather complex scenario modeling, including specification of realistically achievable population distributions of risk factors, and the timescale of change, as well as the latent periods between exposure and outcome, and the rate of change following modification in exposure level.

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Peters LWH, Wiefferink CH, Hoekstra F, Buijs GJ, ten Dam GTM, & Paulussen TGWM. (2009).

A review of similarities between domain-specific determinants of four health behaviors among adolescents.

Schools are overloaded with health promotion programs that, altogether, focus on a broad array of behavioral domains, including substance abuse, sexuality and nutrition. Although the specific content of programs varies according to the domain focus, programs usually address similar concepts: knowledge, attitudinal beliefs, social influences and skills. This apparent conceptual overlap between behaviors and programs provides opportunities for a transfer-oriented approach which will stimulate students to apply the knowledge and skills they have learned in one domain (e.g. skills for resisting tobacco use) to other domains (e.g. alcohol, sex). A requirement for such

an approach is that behaviors share at least some determinants. This review addresses this issue by examining similarities between domain-specific determinants of smoking, drinking, safe sex and healthy nutrition among adolescents. Recent empirical studies and reviews were examined. The results show that the following determinants are relevant to all four behaviors: beliefs about immediate gratification and social advantages, peer norms, peer and parental modeling and refusal self-efficacy. Several other determinants have been found to relate to at least two behaviors, e.g. health risk beliefs and parental norms. These results can be used for the development of a transfer-oriented school health promotion curriculum.

Petrie KJ, Perry K, Broadbent E, & Weinman J. (2012).

A text message programme designed to modify patients' illness and treatment beliefs improves self-reported adherence to asthma preventer medication.

OBJECTIVE: While effective preventative medication is readily available for asthma, adherence is a major problem due to patients' beliefs about their illness and medication. We investigated whether a text message programme targeted at changing patients' illness and medication beliefs would improve adherence in young adult asthma patients.

METHODS: Two hundred and sixteen patients aged between 16 and 45 on asthma preventer medication were recruited from pamphlets dispensed with medication and e-mails sent to members of a targeted marketing website. Participants were randomized to receive individually tailored text messages based on their illness and medication beliefs over 18 weeks or no text messages. Illness and medication beliefs were assessed at baseline and at 18 weeks. Adherence rates were assessed by phone calls to participants at 6, 12, and 18 weeks and at 6 and 9 months.

RESULTS: At 18 weeks, the intervention group had increased their perceived necessity of preventer medication, increased their belief in the long-term nature of their asthma, and their perceived control over their asthma relative to control group (all p 's < .05). The intervention group also significantly improved adherence over the follow-up period compared to the control group with a relative average increase in adherence over the follow-up period of 10% (p < .001). The percentage taking over 80% of prescribed inhaler doses was 23.9% in the control group compared to 37.7% in the intervention group (p < .05).

CONCLUSION: A targeted text message programme increases adherence to asthma preventer inhaler and may be useful for other illnesses where adherence is a major issue.

Pignone MP, Ammerman A, Fernandez L, Orleans CT, Pender N, Woolf S, Lohr KN, & Sutton S. (2003).

Counseling to promote a healthy diet in adults: A summary of the evidence for the U.S. preventive services task force.

DESCRIPTION OF CONTEXT: The purpose of this study was to examine the effectiveness of counseling to promote a healthy diet among patients in primary care settings. Design and data sources. We conducted a MEDLINE search from 1966 to December 2001. Study selection. We included randomized controlled trials of at least 3 months' duration with measures of dietary behavior that were conducted in patient populations similar to those found in primary care practices. We excluded studies that reported only biochemical or anthropomorphic endpoints, had dropout rates greater than 50%, or enrolled patients based on the presence of a chronic disease.

TOPIC/SCOPE: One author extracted relevant data from each included article into evidence tables. Using definitions developed by the research team, two authors independently rated each study in terms of its effect size, the intensity of its intervention, the patient risk level, and the use of well-proven counseling techniques. We identified 21 trials for use in this review. Dietary counseling produces modest changes in self-reported consumption of saturated fat, fruits and vegetables, and possibly dietary fiber. More-intensive interventions were more likely to produce important changes than brief interventions, but they may be more difficult to apply to typical primary care patients. Interventions using interactive health communications, including computer-generated telephone or mail messages, can also produce moderate dietary changes.

CONCLUSIONS/RECOMMENDATIONS: Moderate- or high-intensity counseling interventions, including use of interactive health communication tools, can reduce consumption of saturated fat and increase intake of fruit and vegetable. Brief counseling of unselected patients by primary care providers appears to produce small changes in dietary behavior, but its effect on health outcomes is unclear.

Pollak KI, Alexander SC, Bennett G, Lyna P, Coffman cJ, Bilheimer A, Farrell D, Bodner ME, Swamy GK, Østbye T (2014).

Weight-related SMS texts promoting appropriate pregnancy weight gain: A pilot study.

HIGHLIGHTS:

- Gestational weight gain has an impact on maternal and fetal health.
- Few effective and disseminable interventions have been successful at promoting healthful gestational weight gain.
- SMS texting might be an innovative way to promote healthful gestational weight gain.

OBJECTIVES: Excessive gestational weight gain (GWG) puts women and children at risk of obesity. We piloted an SMS-texting intervention to promote healthy GWG among overweight and obese women.

METHODS: We recruited 35 women and randomized them in a 2:1 fashion to: a tailored SMS-texting intervention (Preg CHAT) vs. a generic texting intervention (Txt4baby). Preg CHAT texts provided personalized feedback based on women's intake of sweetened beverages, fruits and vegetables, fast food, daily steps taken, and weight. We abstracted women's weights from charts and surveyed women at baseline and 32 weeks gestation.

RESULTS: Few women refused the study; many (30%) did not complete the study, however. Of those in the Preg CHAT arm, 86% responded to texts, and 80% said they would recommend this program to a friend. For women who completed the surveys (n = 23), those in the Preg CHAT arm had a mean gain of 6 less pounds than women in the Txt4Baby arm (95% CI -15.9, 4.0; p = 0.24).

CONCLUSIONS: This pilot study shows feasibility, acceptability, and potential efficacy of a low-intensity and disseminable intervention to help overweight and obese women reduce GWG.

PRACTICE IMPLICATIONS: An SMS texting program might help overweight women reduce excessive GWG.

Pollak KI, Coffman CJ, Alexander SC, Tulsy JA, Lyna P, Dolor RJ, Cox ME, Brouwer RJ, Bodner ME, & Ostbye T. (2012).

Can physicians accurately predict which patients will lose weight, improve nutrition and increase physical activity?

BACKGROUND: Physician counseling may help patients increase physical activity, improve nutrition and lose weight. However, physicians have low outcome expectations that patients will change. The aims are to describe the accuracy of physicians' outcome expectations about whether patients will follow weight loss, nutrition and physical activity recommendations. The relationships between physician outcome expectations and patient motivation and confidence also are assessed.

METHODS: This was an observational study that audio recorded encounters between 40 primary care physicians and 461 of their overweight or obese patients. We surveyed physicians to assess outcome expectations that patients will lose weight, improve nutrition and increase physical activity after counseling. We assessed actual patient change in behaviors from baseline to 3 months after the encounter and changes in motivation and confidence from baseline to immediately post-encounter.

RESULTS: Right after the visit, 55% of the time physicians were optimistic that their individual patients would improve. Physicians were not very accurate about which patients actually would improve weight, nutrition and physical activity. More patients had higher confidence to lose weight when physicians thought that patients would be likely to follow their weight loss recommendations.

CONCLUSIONS: Physicians are moderately optimistic that patients will follow their weight loss, nutrition and physical activity recommendations. Patients might perceive physicians' confidence in them and thus feel more confident themselves. Physicians, however, are not very accurate in predicting which patients will or will not change behaviors. Their optimism, although helpful for patient confidence, might make physicians less receptive to learning effective counseling techniques.

Prochaska, J. O. (1994).

Strong and weak principles for progressing from pre-contemplation to action on the basis of twelve problem behaviors.

OBJECTIVE: To explore the methods and principles people use to move from the pre-contemplation to action stage in their cessation of high-risk health behaviors.

DESIGN: Retrospective analysis of data from two previous studies.

SETTING: Subjects were recruited from Texas and Rhode Island.

SUBJECTS: 3,858 individuals were taken from a previous study to participate as subjects in the first part of this present study and 1,466 smokers participated in the second part of the study. Of this sample, 166 were in the pre-contemplation stage, 794 smokers were in the contemplation stage and 506 smokers were in the preparation stage. All smokers averaged 29 cigarettes per day. The majority was female

INTERVENTIONS: None.

MEASURES: A 5-item scale and a 4-to-5-item algorithm was used for staging subjects and assessing decision-making. In the second study, ie, a 20-item version of the Decisional Balance scale assessed the subjects' pros and cons of smoking at each stage.

RESULTS: The results supported the hypothesis that in relation to the cons of a healthy behavior change, the pros increased considerably more in groups representing progress from precontemplation to action. Two principles that explain the progression from precontemplation to action were formulated. The strong principle posited that progression from pre-contemplation to action is a function of about 1 standard deviation increase in the pros of a healthy behavior change. The weak principle posited that progression from pre-contemplation to action is a function of about 1/2 standard deviation decrease in the cons of a healthy behavior change. Results from the second study showed that the strong principle was able to successfully predict progression from pre-contemplation to action. The weak principle was also able to predict progression from pre-contemplation to action, but its predictions were not as great as the strong principle.

CONCLUSIONS: The results of this study provide the ability to predict progress from pre-contemplation to action as a function of a large difference in the pros of behavior change. These principles can predict the relative magnitude of the difference.

Prochaska JO, Norcross JC, & DiClemente CC. (1992).

In search of how people change, applications to addictive behaviors.

DESCRIPTION OF CONTEXT: Summary of the research on self-initiated and professionally facilitated change of addictive behaviors using the transtheoretical constructs of stages and processes of change.

TOPIC/SCOPE: Change occurs in spiral movements through specific stages of change where relapse and recycling often occurs. Progression through the Stages of Change (pre-contemplation, contemplation, preparation, action and maintenance) is not linear. The second dimension of the transtheoretical model is the process of change, which needs to be integrated with the stages of change. The processes of change include: consciousness raising, self-re-evaluation, self-liberation, counter-conditioning, reinforcement management, helping relationships, dramatic relief, environmental reevaluation, and social liberation.

CONCLUSIONS/RECOMMENDATIONS: A systematic integration of the stages and processes of change will result in successful self-change and/or psychotherapy. This means doing the right thing (processes) at the right time (stages). The ability of a health professional to ascertain the process and stage of a person will greatly enhance a successful behavior change.

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Prochaska JO, Velicer WF, Rossi JS, Goldstein MG, Marcus BH, Rakowski W, Fiore C, Harlow LL, Redding CA, Rosenbloom D, & Rossi SR. (1994).

Stages of change and decisional balance for 12 problem behaviors.

OBJECTIVES: To test the generalizability of transtheoretical model across twelve- problem behaviors. The 12 problem behaviors were smoking cessation, cocaine quitting, weight control, high-fat diet, adolescent delinquency, safe sex, condom-use, sunscreen-use, radon-gas exposure, exercise acquisition, mammography screening, and physicians assisting smokers.

DESIGN: Survey.

SETTING: Individuals were recruited in Rhode Island, Massachusetts, Texas, and California.

SUBJECTS: 3,858 subjects were divided into one of the above 12 problem behavior samples.

INTERVENTIONS: None.

MEASURES: A 5-item algorithm was used for determining the stages of change and the decisional balance (pros and cons of the behavior), ranging from 1=not important to 5=extremely important.

RESULTS: The pros of changing behavior outweigh the cons before participants take action to modify behavior. For all twelve behaviors, pre-contemplators reported more cons of changing than pros of changing. In contrast, individuals in the action stage reported more pros than cons of changing their behavior.

CONCLUSIONS: The Stages of Change and the decisional balance were found to be generalizable across the twelve behaviors. The results suggest that progress from pre-contemplation to contemplation involves an increase in the evaluation of the pros of changing. Progressing from contemplation to action involves a decrease in the cons of changing.

Rizzuto D, Orsini N, Qiu C, Wang H, & Fratiglioni L. (2012).

Lifestyle, social factors, and survival after age 75: Population based study.

OBJECTIVE: To identify modifiable factors associated with longevity among adults aged 75 and older.

DESIGN: Population based cohort study.

SETTING: Kungsholmen, Stockholm, Sweden.

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PARTICIPANTS: 1810 adults aged 75 or more participating in the Kungsholmen Project, with follow-up for 18 years.

MAIN OUTCOME MEASURE: Median age at death. Vital status from 1987 to 2005.

RESULTS: During follow-up 1661 (91.8%) participants died. Half of the participants lived longer than 90 years. Half of the current smokers died 1.0 year (95% confidence interval 0.0 to 1.9 years) earlier than non-smokers. Of the leisure activities, physical activity was most strongly associated with survival; the median age at death of participants who regularly swam, walked, or did gymnastics was 2.0 years (0.7 to 3.3 years) greater than those who did not. The median survival of people with a low risk profile (healthy lifestyle behaviors, participation in at least one leisure activity, and a rich or moderate social network) was 5.4 years longer than those with a high-risk profile (unhealthy lifestyle behaviors, no participation in leisure activities, and a limited or poor social network). Even among the oldest old (85 years or older) and people with chronic conditions, the median age at death was four years higher for those with a low risk profile compared with those with a high risk profile.

CONCLUSION: Even after age 75 lifestyle behaviors such as not smoking and physical activity are associated with longer survival. A low risk profile can add five years to women's lives and six years to men's. These associations, although attenuated, were also present among the oldest old (=85 years) and in people with chronic conditions.

Schilling D, Handley M, Wang F, & Hammer H. (2009).

Effects of self-management support on structure, process, and outcomes among vulnerable patients with diabetes.

OBJECTIVE: Despite the importance of self-management support (SMS), few studies have compared SMS interventions, involved diverse populations, or entailed implementation in safety net settings. We examined the effects of two SMS strategies across outcomes corresponding to the Chronic Care Model.

RESEARCH DESIGN AND METHODS: A total of 339 outpatients with poorly controlled diabetes from county-run clinics were enrolled in a three-arm trial. Participants, more than half of whom spoke limited English, were uninsured, and/or had less than a high school education, were randomly assigned to usual care, interactive weekly automated telephone self-management support with nurse follow-up (ATSM), or monthly group medical visits with physician and health educator facilitation (GMV). We measured 1-year changes in structure (Patient Assessment of Chronic Illness Care [PACIC]), communication processes (Interpersonal Processes of Care [IPC]), and outcomes (behavioral, functional, and metabolic).

RESULTS: Compared with the usual care group, the ATSM and GMV groups showed improvements in PACIC, with effect sizes of 0.48 and 0.50, respectively ($P < 0.01$). Only the ATSM group showed improvements in IPC (effect sizes 0.40 vs. usual care and 0.25 vs. GMV, $P < 0.05$). Both SMS arms showed improvements in self-management behavior versus the usual care arm ($P < 0.05$), with gains being greater for the ATSM group than for the GMV group (effect size 0.27, $P = 0.02$). The ATSM group had fewer bed days per month than the usual care group (-1.7 days, $P = 0.05$) and the GMV group (-2.3 days, $P < 0.01$) and less interference with daily activities than the usual care group (odds ratio 0.37, $P = 0.02$). We observed no differences in A1C change.

CONCLUSIONS: Patient-centered SMS improves certain aspects of diabetes care and positively influences self-management behavior. ATSM seems to be a more effective communication vehicle than GMV in improving behavior and quality of life.

Schokker MC, Links TP, Luttik ML, & Hagedoorn M. (2010).

The association between regulatory focus and distress in patients with a chronic disease: The moderating role of partner support.

OBJECTIVES: To determine the association between two regulatory foci (i.e. promotion and prevention focus) and distress in patients with chronic disease requiring self-management, and to determine whether these associations were moderated by partner support.

DESIGN AND METHOD: Four hundred and seventy-seven patients with diabetes, asthma, or heart disease completed a postal survey consisting of the Regulatory Focus Questionnaire, questionnaires measuring active engagement (i.e. supportive behavior) and protective buffering and overprotection (i.e. unsupportive behavior) by the partner as perceived by the patient, and the General Health Questionnaire-12 to measure distress.

RESULTS: A promotion focus was negatively associated with distress. This association was only found when patients reported that their partner engaged in relatively low levels of active engagement or relatively high levels of protective buffering and overprotection. The positive association between prevention focus and distress was not consistently found to be moderated by partner support.

CONCLUSION: Active engagement appears to buffer against high distress in patients with a weak promotion focus, while protective buffering and overprotection appear to aggravate distress in these patients.

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Schüz B, Sniehotta FF, Mallach N, Wiedemann AU, & Schwarzer R. (2009).

Predicting transitions from preintentional, intentional and actional stages of change.

Stage theories of health behavior change assume that individuals pass through qualitatively different stages on their way to the adoption of health behaviors. Three common stages (preintention, intention and action) can be defined by stage transitions included in current stage theories and supported by evidence. The present study examines whether transitions between these stages can be predicted by social cognition variables derived from prevailing health behavior theories. At two points in time, the motivation for interdental hygiene behaviors and oral self-care was assessed in 288 participants recruited in dental practices. Stage progression and regression over time were analyzed using discriminant function analysis. Progression from preintention to intention was predicted by action planning, whereas coping planning and self-efficacy predicted transitions from intention. Regression from action was predicted by self-efficacy. Results support the distinction of three common stages. Findings are discussed in terms of their contribution to health behavior theory.

**Sleath B, Carpenter DM, Slota C, Williams D, Tudor G, Yeatts K, Davis S, & Ayala GX. (2012).
Communication during pediatric asthma visits and self-reported asthma medication adherence.**

OBJECTIVE: Our objectives were to examine how certain aspects of provider-patient communication recommended by national asthma guidelines (i.e., provider asking for child and caregiver input into the asthma treatment plan) were associated with child asthma medication adherence 1 month after an audio-taped medical visit.

METHODS: Children ages 8 through 16 with mild, moderate, or severe persistent asthma and their caregivers were recruited at 5 pediatric practices in nonurban areas of North Carolina. All medical visits were audio-tape recorded. Children were interviewed 1 month after their medical visits, and both children and caregivers reported the child's control medication adherence. Generalized estimating equations were used to determine if communication during the medical visit was associated with medication adherence 1 month later.

RESULTS: Children (n = 259) completed a home visit interview ~1 month after their audio-taped visit, and 216 of these children were taking an asthma control medication at the time of the home visit. Children reported an average control medication adherence for the past week of 72%, whereas caregivers reported the child's average control medication adherence for the past week was 85%. Child asthma management self-efficacy was significantly associated with both child- and caregiver-reported control medication adherence. When providers asked for caregiver input into the asthma treatment plan, caregivers reported significantly higher child medication adherence 1 month later.

CONCLUSIONS: Providers should ask for caregiver input into their child's asthma treatment plan because it may lead to better control medication adherence.

**Soureti A, Hurling R, van Mechelen W, Cobain M, & ChinAPaw M. (2012).
Moderators of the mediated effect of intentions, planning, and saturated-fat intake in obese individuals.**

OBJECTIVE: The present study aimed to advance our understanding of health-related theory, that is, the alleged intention-behavior gap in an obese population. It examined the mediating effects of planning on the intention-behavior relationship and the moderated mediation effects of age, self-efficacy and intentions within this relationship.

METHOD: The study was conducted over a five-week period. Complete data from 571 obese participants were analyzed. The moderated mediation hypothesis was conducted using multiple-regression analysis. To test our theoretical model, intentions (Week 2), action self-efficacy (Week 2), maintenance self-efficacy (Week 5), planning (Week 5), and saturated-fat intake (Weeks 1 and 5) were measured by self-report.

RESULTS: As hypothesized, planning mediated the intention-behavior relationship for perceived (two-item scale) and percentage-saturated-fat intake (measured by a food frequency questionnaire). Age, self-efficacy, and intention acted as moderators in the above mediation analysis. In specific, younger individuals, those with stronger intention, and people with higher levels of maintenance self-efficacy at higher levels of planning showed greater reductions in their perceived saturated-fat intake.

CONCLUSIONS: For successful behavior change, knowledge of its mediators and moderators is needed. Future interventions targeting planning to change saturated-fat intake should be guided by people's intentions, age, and self-efficacy levels.

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Tierney S, Mamas M, Skelton D, Woods S, Rutter MK, Gibson M, Neyses L, & Deaton C. (2011). What can we learn from patients with heart failure about exercise adherence? A systematic review of qualitative papers.

OBJECTIVES: Keeping physically active has been shown to bring positive outcomes for patients diagnosed with heart failure (HF). However, a number of individuals with this health problem do not undertake regular exercise. A review of extant qualitative research was conducted to explore what it can tell us about barriers and enablers to physical activity among people with HF.

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METHODS: A systematic search, involving electronic databases and endeavors to locate gray literature, was carried out to identify relevant qualitative studies published from 1980 onward. Data from retrieved papers were combined using framework analysis. Papers read in full numbered 32, and 20 were included in the review.

RESULTS: Synthesis of results from the 20 studies resulted in 4 main themes: Changing soma, negative emotional response, adjusting to altered status, and interpersonal influences. How individuals responded to their diagnosis and their altered physical status related to their activity levels, as did the degree of encouragement to exercise coming from family, friends, and professionals. These findings can be connected to the theory of behavioral change developed by Bandura, known as social cognitive theory (SCT).

CONCLUSIONS: SCT may be a useful framework for developing interventions to support patients with HF in undertaking and maintaining regular exercise patterns. Specific components of SCT that practitioners may wish to consider include self-efficacy and outcome expectancies. These were issues referred to in papers for the systematic review that appear to be particularly related to exercise adherence.

Van Osch L, Lechner L, Reubsaet A, Steenstra M, Wigger S, & de Vries H. (2009). Optimizing the efficacy of smoking cessation contests: An exploration of determinants of successful quitting.

ABSTRACT: The present study describes the short- and long-term efficacy and program evaluation of a Quit and Win smoking cessation campaign, organized in The Netherlands. To be able to fine-tune smoking cessation contests to the needs of the target population, utilization, appreciation and efficacy of various contest elements were investigated. Data from 1551 Quit and Win participants and 244 control respondents were collected by web-based surveys at baseline (pre-contest) and 1 and 12 months after the contest. Demographic and contest predictors of successful quitting were determined by logistic regression analyses. Quit and Win proved to be an effective as well as highly

appreciated program among participants. Conservative 1-month (35%) and continuous 12-month abstinence (12%) rates were significantly higher in Quit and Win participants than in the control group (1 month: 11%; continuous: 3%). Use of a supportive e-mail message service predicted short- and long-term abstinence. A buddy support system was the most used and highly appreciated cessation aid, and its use significantly predicted short-term abstinence. Radio commercials and Internet advertisements were the most effective recruitment channels. Although non-exhaustive, implementation of the results and recommendations discussed in this study could lead to an increased use, appreciation and efficacy of future smoking cessation campaigns.

Vervloet M, Linn AJ, van Weert JCM, de Bakker DH, Bouvy ML, & van Dijk L. (2011).

The effectiveness of interventions using electronic reminders to improve adherence to chronic medication: A systematic review of the literature.

BACKGROUND: Many patients experience difficulties in adhering to long-term treatment. Although patients' reasons for not being adherent are diverse, one of the most commonly reported barriers is forgetfulness. Reminding patients to take their medication may provide a solution. Electronic reminders (automatically sent reminders without personal contact between the healthcare provider and patient) are now increasingly being used in the effort to improve adherence.

OBJECTIVE: To examine the effectiveness of interventions using electronic reminders in improving patients' adherence to chronic medication.

METHODS: A comprehensive literature search was conducted in PubMed, Embase, PsycINFO, CINAHL and Cochrane Central Register of Controlled Trials. Electronic searches were supplemented by manual searching of reference lists and reviews. Two reviewers independently screened all citations. Full text was obtained from selected citations and screened for final inclusion. The methodological quality of studies was assessed.

RESULTS: Thirteen studies met the inclusion criteria. Four studies evaluated short message service (SMS) reminders, seven audiovisual reminders from electronic reminder devices (ERD), and two pager messages. Best evidence synthesis revealed evidence for the effectiveness of electronic reminders, provided by eight (four high, four low quality) studies showing significant effects on patients' adherence, seven of which measured short-term effects (follow-up period <6 months). Improved adherence was found in all but one study using SMS reminders, four studies using ERD and one pager intervention. In addition, one high quality study using an ERD found subgroup effects.

CONCLUSION: This review provides evidence for the short-term effectiveness of electronic reminders, especially SMS reminders. However, long-term effects remain unclear.

Viswanathan M, Golin CE, Jones CD, Ashok M, Blalock S, Wines RCM, Coker-Schwimmer EJJ, Grodensky CA, Rosen DL, Yuen A, Sista P, & Lohr KN. (2012).

Closing the quality gap: Revisiting the state of the science

OBJECTIVES: To assess the effectiveness of patient, provider, and systems interventions (Key Question [KQ] 1) or policy interventions (KQ 2) in improving medication adherence for an array of chronic health conditions. For interventions that are effective in improving adherence, we then assessed their effectiveness in improving health, health care utilization, and adverse events.

DATA SOURCES: MEDLINE®, the Cochrane Library. Additional studies were identified from reference lists and technical experts.

REVIEW METHODS: Two people independently selected, extracted data from, and rated the risk of bias of relevant trials and systematic reviews. We synthesized the evidence for effectiveness separately for each clinical condition, and within each condition, by type of intervention. We also evaluated the prevalence of intervention components across clinical conditions and the effectiveness of interventions for a range of vulnerable populations. Two reviewers graded the strength of evidence using established criteria.

RESULTS: We found a total of 62 eligible studies (58 trials and 4 observational studies) from our review of 3,979 abstracts. These studies included patients with diabetes, hyperlipidemia, hypertension, heart failure, myocardial infarction, asthma, depression, glaucoma, multiple sclerosis, musculoskeletal diseases, and multiple chronic conditions. Fifty-seven trials of patient, provider, or systems interventions (KQ 1) evaluated 20 different types of interventions; 4 observational studies and one trial of policy interventions (KQ 2) evaluated the effect of reduced out-of-pocket expenses or improved prescription drug coverage. We found the most consistent evidence of improvement in medication adherence for interventions to reduce out-of-pocket expenses or improve prescription drug coverage, case management, and educational interventions across clinical conditions. Within clinical conditions, we found the strongest support for self-management of medications for short-term improvement in adherence for asthma patients; collaborative care or case management programs for short-term improvement of adherence and to improve symptoms for patients taking depression medications; and pharmacist-led approaches for hypertensive patients to improve systolic blood pressure.

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CONCLUSIONS: Diverse interventions offer promising approaches to improving medication adherence for chronic conditions, particularly for the short term. Evidence on whether these approaches have broad applicability for clinical conditions and populations is limited, as is evidence regarding long-term medication adherence or health outcomes.

Vitória PD, Siqueira MF, Silva SA, & De Vries H. (2009).

The impact of social influence on adolescent intention to smoke: Combining types and referents of influence.

OBJECTIVES: Theory and research suggest that the intention to smoke is the main determinant of smoking initiation and emphasizes the role of cognitive and social factors on the prediction of the intention to smoke. However, extended models such as the I-Change and results from published studies reveal inconsistencies regarding the impact of social influence on the intention to smoke. Possible explanations for this may be the definition and measurement of the constructs that have been used.

DESIGN AND METHODS: The current study was designed with two main goals: (i) to test a measurement model for social influence, combining different types of social influence (subjective norms, perceived behavior, and direct pressure) with various referents of influence (parents, siblings, peers, and teachers); (ii) to investigate the impact of social influence on adolescent

intention to smoke, controlling for smoking behavior. LISREL was used to test these models. The sample includes 3,064 Portuguese adolescents, with a mean age of 13.5 years, at the beginning of the seventh school grade.

RESULTS: The hypothesized measurement model of social influence was supported by results and explained 29% of the variance of the intention to smoke. A more extended model, including attitude and self-efficacy, explained 55% of the variance of the intention to smoke. Perceived behavior of peers, parental norms, and perceived behavior of parents were the social influence factors with impact on adolescent intention to smoke.

CONCLUSIONS: Results suggest that different referents exert their influence through distinct types of social influence and recommend further work on the definition and measurement of social influence.

Wagner EH, Glasgow RE, Davis C, Bonomi AE, Provost L, McCulloch D, Carver P, & Sixta C. (2001). Quality improvement in chronic illness care: A collaborative approach.

DESCRIPTION OF CONTEXT: Despite rapid advances in the clinical and psycho-educational management of diabetes, the quality of care received by the average patient with diabetes remains lackluster. The "collaborative" approach--the Breakthrough Series (BTS; Institute for Healthcare Improvement [IHI]; Boston)--coupled with a Chronic Care Model was used in an effort to improve clinical care of diabetes in 26 health care organizations.

TOPIC/SCOPE: Descriptive and pre-post data are presented from 23 health care organizations participating in the 13-month (August 1998-September 1999) BTS to improve diabetes care. The BTS combined the system changes suggested by the chronic care model, rapid cycle improvement, and evidence-based clinical content to assist teams with change efforts. The characteristics of organizations participating in the diabetes BTS, the collaborative process and content, and results of system-level changes are described.

CONCLUSIONS/RECOMMENDATIONS: Twenty-three of 26 teams completed participation. Both chart review and self-report data on care processes and clinical outcomes suggested improvement based on changes teams made in the collaborative. Many of the organizations evidencing the largest improvements were community health centers, which had the fewest resources and the most challenged populations.

DISCUSSION: The initial Chronic Illness BTS was sufficiently encouraging that replication and evaluation of the BTS collaborative model is being conducted in more than 50 health care systems for diabetes, congestive heart failure, depression, and asthma. This model represents a feasible method of improving the quality of care across different health care organizations and across multiple chronic illnesses.

Wagner EH, Austin BT, & Von Korff M. (1996). Improving outcomes in chronic illness.

DESCRIPTION OF CONTEXT: Usual medical care often fails to meet the needs of chronically ill patients, even in managed, integrated delivery systems. The medical literature suggests strategies to improve outcomes in these patients.

TOPIC/SCOPE: Effective interventions tend to fall into one of five areas: the use of a protocol, reorganization of practice systems and provider roles, improved patient education, increased access to expertise, and greater availability of clinical information.

CONCLUSIONS/RECOMMENDATIONS: The challenge is to organize these components into an integrated system of chronic illness care.

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**White R, Eden S, Wallston K, Kripalani S, Barto S, Shintani A, Rothman R, (2015).
Health communication, self-care, and treatment satisfaction among low-income diabetes patients in a public health setting.**

HIGHLIGHTS

- Poor health communication (HC) may influence diabetes care for patients with limited resources.
- We examined the association of HC with select diabetes factors for patients in a safety-net system in TN. •Predictors included self-reports of provider communication using validated measures.
- Better communication was associated with lower medication non-adherence and higher treatment satisfaction.
- Communication quality may be an important modifiable strategy for improving diabetes care for vulnerable populations.

Objective: Diabetes patients with limited resources often experience suboptimal care. Less is known about the role of effective health communication (HC) in caring for low-income diabetes patients.

Methods: Ten health department clinics in TN participated in a trial evaluating a literacy-sensitive communication intervention. We assessed the quality of baseline HC and measured associations with diabetes outcomes. Assessments included: demographics, measures of HC, health literacy, self-care behaviors, self-efficacy, medication non-adherence, treatment satisfaction, and A1C. Unadjusted and adjusted multivariable regression models were used to test associations.

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Results: Participants (N = 411) were 49.7 ± 9.5 years, 61% female, uninsured (96%), with A1C 9.6 ± 2.1 . In unadjusted analyses, better communication, was associated with lower medication non-adherence (OR 0.40–0.68, all $p < 0.05$), higher treatment satisfaction (OR 1.76–1.96, all $p < 0.01$), portion size reduction (OR 1.43, $p < 0.05$), diabetes self-efficacy (OR 1.41, $p < 0.05$), and lower A1C ($\beta = -0.06$, $p < 0.01$). In adjusted analyses, communication quality remained associated with lower medication non-adherence (AOR 0.39–0.68, all $p < 0.05$), and higher treatment satisfaction (AOR 1.90–2.21, all $p < 0.001$).

Conclusions: Better communication between low-income patients and providers was independently associated with lower medication non-adherence and higher treatment satisfaction.

Practice Implications: Communication quality may be an important modifiable approach to improving diabetes care for vulnerable populations.

Wiles R, & Kinmonth AL. (2001).

Patients' understanding of heart attack: Implications for prevention of recurrence.

Patients' willingness to undertake secondary preventive strategies following heart attack are likely to be affected by their understandings of their condition. This qualitative study explored patients' understandings of heart attack in order to contribute to the design of effective secondary prevention services. In-depth interviews were conducted with 25 patients with myocardial infarction (MI). These data indicate that information received from health professionals encourages patients to view heart attack as an acute event rather than a symptom of a chronic condition and that this understanding provides patients with low motivation for long-term lifestyle change. Patients may benefit from understanding a heart attack as an acute symptom of an underlying disease process which long-term medication and behavioral change can help to check. In order to achieve this, health professionals need to examine patients' understandings of their heart attack and recovery and to provide information about lifestyle, which engages with these understandings.

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Wilson A, Agarwal S, Bonas S, Murtagh G, Coleman T, Taub N, Chernova J. (2010).

Management of smokers motivated to quit: A qualitative study of smokers and GPs.

BACKGROUND: The National Institute for Health and Clinical Excellence (NICE) guidelines state that GPs should manage smokers motivated to quit by offering referral to Stop Smoking Services (SSS) and that nicotine addiction treatment (NAT) should be offered only to those who decline referral.

OBJECTIVE: To explore how smokers motivated to quit are managed in the GP consultation, specifically how treatment and referral are negotiated from the perspectives of both parties.

METHODS: Twenty patients, identified in a consultation with their GP as motivated to quit smoking, and 10 participating GPs were interviewed. Interviews were recorded, transcribed, coded and analyzed using the framework approach.

RESULTS: Three strategies (treatment and follow-up by the GP, referral to SSS without treatment and immediate treatment with referral for follow-up) were evidenced in-patient and GP accounts. Most patients were satisfied with their management and how this was negotiated, but some expressed surprise or dissatisfaction with lack of immediate treatment and questioned the need for referral to SSS. GPs welcomed the availability of SSS but some felt it important that they themselves also continued to support a quit attempt. Several saw advantages in offering NAT at the time the patient was motivated to stop.

CONCLUSIONS: Smokers appear less convinced than GPs about the value of referral to SSS, although these differences may be resolved through negotiation. An alternative strategy to that proposed by NICE, which may be more acceptable to some smokers, is immediate treatment with subsequent support from SSS.

Wolitski, R., Pals, S., Kidder, D., Courtenay-Quirk, C., Holtgrave, D., (December 2009)

The Effects of HIV Stigma on Health, Disclosure of HIV Status, and Risk Behavior of Homeless and Unstably Housed Persons Living with HIV. *Aids and Behavior*.

HIV-related stigma has negative effects on the lives of those living with HIV/AIDS (PLWHA). Homeless/unstably housed PLWHA experience challenges and are more vulnerable to the effects of HIV-related stigma. Homeless/unstably housed PLWHA from 3 U.S. cities were surveyed and higher levels of stigma were experienced by women, homeless participants, those with a high school education or less, and those more recently diagnosed with HIV. Stigma was strongly associated with poorer self-assessed physical and mental health, and perceived external stigma was associated with recent non-adherence to HIV treatment.

Wright JA, Velicer WF, & Prochaska JO. (2009).

Testing the predictive power of the transtheoretical model of behavior change applied to dietary fat intake.

This study evaluated how well predictions from the transtheoretical model (TTM) generalized from smoking to diet. Longitudinal data were used from a randomized control trial on reducing dietary fat consumption in adults (n 1207) recruited from primary care practices. Predictive power was evaluated by making a priori predictions of the magnitude of change expected in the TTM constructs of temptation, pros and cons, and 10 processes of change when an individual transitions between the stages of change. Generalizability was evaluated by testing predictions based on smoking data. Three sets of predictions were made for each stage: Precontemplation (PC), Contemplation (C) and Preparation (PR) based on stage transition categories of no progress, progress and regression determined by stage at baseline versus stage at the 12-month follow-up. Univariate analysis of variance between stage transition groups was used to calculate the effect size [omega squared (2)]. For diet predictions based on diet data, there was a high degree of confirmation: 92%, 95% and 92% for PC, C and PR, respectively. For diet predictions based on smoking data, 77%, 79% and 85% were confirmed, respectively, suggesting a moderate degree of generalizability. This study revised effect size estimates for future theory testing on the TTM applied to dietary fat.

Zhang KM, Dindoff K, Arnold JMO, Lane J, Swartzman LC (2015).

What matters to patients with heart failure? The influence of non-health-related goals on patient adherence to self-care management.

HIGHLIGHTS

- Patients valued autonomy and social relationships as much as physical health.
- Importance attributed to health goals did not predict self-care adherence.
- Predictors of self-care adherence varied depending on the type of health behavior.
- Compatibility between exercise and personal goals predicted exercise adherence.

OBJECTIVE: To describe the life goals of heart failure (HF) patients and to determine whether adherence is influenced by the extent to which these priorities are perceived as compatible with HF self-care regimens.

METHOD: Forty HF outpatients identified their top-five life goals and indicated the compatibility of HF self-care regimens (diet, exercise, weighing) with these priorities. HF knowledge, self-efficacy and reported adherence were also assessed.

RESULTS: Patients valued autonomy and social relationships as much as physical health. However, the rated importance of these domains did not predict adherence. Adherence positively correlated with the extent to which the regimen, specifically exercise, was considered compatible with life goals ($r = .34, p < .05$). Exercise adherence also correlated with illness severity and self-efficacy ($r_s = -.42$ and $.36, p < .05$, respectively). The perceived compatibility of physical activity with personal goals predicted 11% of the variance in exercise adherence above and beyond that accounted for by illness severity and self-efficacy ($F(1, 36) = 7.11, p < .05$).

CONCLUSIONS: Patients' goals outside of the illness management context influence self-care practices.

PRACTICE IMPLICATIONS: Exploring patients' broad life goals may increase opportunities to resolve ambivalence and enhance motivation for self-care adherence.



Category 3: Specific MI Strategies

(Evoking, open-ended? s, enhancing self-efficacy, empathy conveyance, reflecting, agenda setting)

Anderson RM, Funnell MM, Butler PM, Arnold MS, Fitzgerald JT, & Feste CC. (1995).

Patient empowerment: Results of a randomized controlled trial.

OBJECTIVE: The purpose of the study was to determine if participation in a patient empowerment program would result in improved psychosocial self-efficacy and attitudes toward diabetes, as well as a reduction in blood glucose levels.

DESIGN: This study was conducted as a randomized, wait-listed control group trial.

INTERVENTIONS: The intervention group received a six-session (one session per week) patient empowerment education program; the control group was assigned to a wait-list. At the end of 6 weeks, the control group completed the six-session empowerment program. Six weeks after the program, both groups provided follow-up data

RESULTS: The intervention group showed gains over the control group on four of the eight self-efficacy subscales and two of the five diabetes attitude subscales. Also, the intervention group showed a significant reduction in glycosylated hemoglobin levels. Within groups, analysis of data from all program participants showed sustained improvements in all of the self-efficacy areas and two of the five diabetes attitude subscales and a modest improvement in blood glucose levels.

CONCLUSIONS: This study indicated that patient empowerment is an effective approach to developing educational interventions for addressing the psychosocial aspects of living with diabetes. Furthermore, patient empowerment is conducive to improving blood glucose control. In an ideal setting, patient education would address equally blood glucose management and the psychosocial challenges of living with diabetes

Ashford S, Edmunds J, & French DP. (2010).

What is the best way to change self-efficacy to promote lifestyle and recreational physical activity? A systematic review with meta-analysis.

PURPOSE: Increasing self-efficacy is an effective method to increase physical activity. Despite this, the evidence concerning the most effective techniques to increase self-efficacy in physical activity interventions has not been systematically reviewed. The aim of the present research is to systematically gather, and meta-analyse, intervention studies which aimed to increase self-efficacy for physical activity; to estimate the association between intervention techniques used, and change in self-efficacy achieved.

METHODS: A systematic database search was conducted for papers reporting lifestyle or recreational physical activity interventions. Published intervention studies explicitly targeting self-efficacy in order to change physical activity behavior in 'healthy' adults were eligible for inclusion.

RESULTS: The search strategy identified 27 unique physical activity intervention studies, with a total of 5,501 participants. A significant, yet small, relationship between the interventions and changes in self-efficacy was found (mean $d = 0.16$, $p < .001$). Owing to significant heterogeneity, moderator analyses were conducted, examining the association of changes in self-efficacy with whether or not specific intervention techniques were used. Interventions that included feedback on past or others' performance produced the highest levels of self-efficacy found in this review. Vicarious experience was also associated with higher levels of self-efficacy. Persuasion, graded mastery, and barrier identification were associated with lower levels of self-efficacy.

CONCLUSIONS: This meta-analysis forms an evidence base for which psychological techniques are most effective in increasing self-efficacy for physical activity. The results are presented in terms of recommendations for those developing interventions and directions for future research.

**Bandura A. (1977). Self-efficacy:
Toward a unifying theory of behavioral change.**

DESCRIPTION OF CONTEXT: An integrative approach to explaining the divergence of theory and practice in the field of behavioral change. The author suggests that cognitive processes mediate change and cognitive events are induced and altered most readily by the experience of mastery, which arises from effective performance.

TOPIC/SCOPE: Through experience of mastery and effective performance, cognitive processes can play a role in the acquisition and cessation of behavior. Partly rooted in cognitive activities lies the state of motivation, which is concerned primarily with activation and persistence of a particular behavior. Motivation comes in two forms: cognitive representation and intervening influences of goal setting and self-evaluation. With this in mind, a conceptual theoretical framework for the analysis of behavioral change is presented. The theory is referred to as Self-efficacy. Self-efficacy is defined as one's perception, attitude, and beliefs about his/her ability to cognitively represent future outcomes, set goals, and to successfully execute a particular task. Expectations of personal efficacy (as opposed to expectations of outcome) can determine the length and amount of coping behavior that will be sustained in the face of obstacles to reach an outcome. Efficacy expectations can vary on three dimensions (magnitude, generality, and strength) and come from four sources (performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal). One source, performance accomplishments, is based on personal experiences of mastering the specific behavior. Another source, vicarious experience, refers to the concept of witnessing someone else perform the threatening activity without adverse consequences. A third source of self-efficacy expectations, verbal persuasion, accounts for the idea that people are led, through suggestion or another form of verbal communication, into believing that they can cope successfully with problems. A fourth source, emotional arousal, provides anxiety or vulnerability to stress as examples that affect self-efficacy expectations.

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CONCLUSIONS/RECOMMENDATIONS: People process, weigh, and integrate diverse sources of information concerning their capability, while regulating choice behavior and effort expenditure accordingly.

Berger BA, Villaume WA. (2013).

Motivational Interviewing for Health Care Professionals. American Pharmacists Association.

Motivational interviewing has been shown to improve treatment adherence and outcomes, promote health behavior change, improve patient satisfaction with care, and increase retention rates in complex case management.

Motivational Interviewing for Health Care Professionals: A Sensible Approach presents a new way of teaching the theory and practice of motivational interviewing to health care professionals. The book illustrates how motivational interviewing effectively replaces everyday persuasive strategies and language habits that trigger resistance in patients. It addresses those aspects of motivational interviewing that typically pose problems for health care professionals such as how to share medical expertise while at the same time empowering the patient by maintaining his or her autonomy in the decision-making process. Using motivational interviewing skills will enable health care professionals to communicate with patients in a clear, concise, and structured way. Health care professionals in all practice settings will have a greater impact on improving patient outcomes by using the tools and skills in this book.

KEY FEATURES:

- New theoretical description of motivational interviewing developed specifically for health care professionals
- Practical, step-by-step approach to motivational interviewing
- Over 35 health care professional/patient dialogues demonstrate motivational interviewing skills
- Three case studies including comprehensive dialogues and analyses demonstrate effectiveness of motivational interviewing in health care

Brock DM, Mauksch LB, Wieborn S, Hummel J, Nagasawa P & Robins LS. (2011).

Effectiveness of intensive physician training in upfront agenda setting.

BACKGROUND: Patients want all their concerns heard, but physicians fear losing control of time and interrupt patients before all concerns are raised.

OBJECTIVE: We hypothesized that when physicians were trained to use collaborative upfront agenda setting, visits would be no longer, more concerns would be identified, fewer concerns would surface late in the visit, and patients would report greater satisfaction and improved functional status.

DESIGN AND PARTICIPANTS: Post-only randomized controlled trial using qualitative and quantitative methods. Six months after training (March 2004-March 2005) physician-patient encounters in two large primary care organizations were audio taped and patients (1460) and physicians (48) were surveyed.

INTERVENTION: Experimental physicians received training in upfront agenda setting through the Establishing Focus Protocol, including two hours of training and two hours of coaching per week for four consecutive weeks.

MAIN MEASURES: Outcomes included agenda setting behaviors demonstrated during the early, middle, and late encounter phases, visit length, number of raised concerns, patient and physician satisfaction, trust and functional status.

KEY RESULTS: Experimental physicians were more likely to make additional elicitations ($p < 0.01$) and their patients were more likely to indicate agenda completion in the early phase of the encounter ($p < 0.01$). Experimental group patients and physicians raised fewer concerns in the late encounter phase ($p < 0.01$). There were no significant differences in visit length, total concerns addressed, patient or provider satisfaction, or patient trust and functional status.

CONCLUSION: Collaborative upfront agenda setting did not increase visit length or the number of problems addressed per visit but may reduce the likelihood of "oh by the way" concerns surfacing late in the encounter. However, upfront agenda setting is not sufficient to enhance patient satisfaction, trust or functional status. Training focused on physicians instead of teams and without regular reinforcement may have limited impact in changing visit content and time use.

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Fuller C, & Taylor P. (2008).

A toolkit of motivational skills: Encouraging and supporting change in individuals.

Motivational interviewing is a style of communication developed for working with substance abuse, but found to be effective for work with a variety of people who are struggling with the idea of behavior change. This workbook is a complete guide to the motivational approach for any professional who needs to help others to change.

Gance-Cleveland B. (2007).

Motivational interviewing: Improving patient education.

Many health care conditions require behavior change by the patient or parent to improve health outcomes. Poor outcomes may be attributed to the lack of adherence to the behavior change recommendations. A shift from the authoritarian, expert providing advice to a more family-centered, collaborative model using motivational interviewing (MI) results in improved adherence. The principles of MI are exploring ambivalence, reflective listening, reinforcing positive behavior, and rolling with resistance. The process for MI is establishing relationships; setting an agenda; assessing importance, confidence, and readiness; exploring importance; and helping families select an action plan and building confidence in their ability to change.

Gold MA & Kokotailo PK. (2007).

Motivational interviewing strategies to facilitate adolescent behavior change.

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Gordon T. (1970, 2000).

Parent effectiveness training: The proven program for raising responsible children.

Thomas Gordon was an American clinical psychologist and student, then colleague of Carl Rogers. Dr. Gordon coined the term "active listening" as part of his work on Parent Effectiveness Training, which was first published in 1970 and most recently revised in 2000.

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Hohman M. (2011).

Motivational interviewing in social work practice.

Motivational interviewing (MI) offers powerful tools for helping social work clients draw on their strengths to make desired changes in their lives. This reader-friendly book introduces practitioners and students to MI and demonstrates how to integrate this evidence-based method into direct practice. Melinda Hohman and her associates describe innovative applications for diverse clients and practice areas, including substance abuse treatment, mental health, child welfare, community organizing, and others. Extensive sample dialogues illustrate MI skills in action with individuals and groups. The book also presents best practices for MI training, teaching, and agency-wide integration.

Kelly RB, Zyzanski SJ, & Alemagno SA. (1991).

Prediction of motivation and behavior change following health promotion: Role of health beliefs, social support, and self-efficacy.

OBJECTIVE: To examine health beliefs, social support, and self-efficacy theories in predicting motivation and behavior change for six lifestyle areas (smoking, stress, amount of food, exercise, type of food, and seat belts).

DESIGN: Experimental.

SETTING: An outpatient clinic of a family practice residency program in suburban Cleveland.

SUBJECTS: Two-hundred fifteen patients were recruited to participate in the study of whom 70% were women, 97% were White, 90% had a high school education or higher, 12% had family incomes below \$10,000 annually, 58% had used the practice for more than 2 years, and 45% had been seen by the physician they saw at study entry more than twice before.

INTERVENTIONS: Three health promotion interventions were employed: (1) a brief assessment of lifestyle risk factors by questionnaire, (2) physician prescription of lifestyle change, and (3) patient

self-help instructional material. Participants were randomly assigned to one of the above three treatment groups and then asked to answer questionnaires. An additional group served as the control group. Individuals in the control group were participants outside of this treatment program.

MEASURES: No standardized methods were used to measure health beliefs, support for change, or self-efficacy. Visual analog scales were used, and participant's marks were measured by ruler.

RESULTS: There were two outcomes of interest: predictors of motivation to change and predictors of actual behavioral change. At the time of the initial assessment, 67, 113, 112, 132, 127, 142 individuals were at risk for the above lifestyle areas, respectively, and 75%, 72%, 63%, 50%, 46%, and 12% of the subjects were motivated to change for the above lifestyle areas, respectively. Perceived benefits and risk (Health Belief Model) and efficacy (Self-Efficacy Model) were the strongest predictors of motivation. For at-risk patients, the greater the perceived risk and benefits of change, the lower the self-efficacy (patients believe it more difficult to change the behavior). From this study, motivation (not Health Belief, Social Support, and self-efficacy models) was able to predict behavior change. The variable of social support was not able to predict motivation or change but was related to efficacy of expectations.

CONCLUSIONS: Health beliefs and self-efficacy are good predictors of motivation for change in most lifestyle areas. Motivation for change is clearly related to behavioral responses to the health promotion intervention.

Korpershoek C, van der Bijl J, Hafsteinsdóttir TB. (2011).

Self-efficacy and its influence on recovery of patients with stroke: A systematic review.

AIMS: To provide an overview of the literature focusing on the influence of self-efficacy and self-efficacy enhancing interventions on mobility, activities of daily living, depression and quality of life of patients with stroke.

BACKGROUND: There is growing evidence for the importance of self-efficacy in the care of people with enduring illness. Therefore, it is important to describe the association of self-efficacy and patient outcomes and the evidence for the effects of self-efficacy interventions for stroke patients.

DATA SOURCES: Studies were retrieved from a systematic search of published studies over the period of 1996- 2009, indexed in the Cumulative Index to Nursing and Allied Health Literature, Medline, Psychinfo and Embase and focusing on stroke, the influence of self-efficacy and self-efficacy enhancing interventions.

METHODS: A systematic review was carried out. Studies were critically appraised and important characteristics and outcomes were extracted and summarized.

RESULTS: Seventeen articles were included in the review. Self-efficacy was positively associated with mobility, activities of daily living and quality of life and negatively associated with depression. Four self-efficacy interventions were identified. The evidence for the effects of these interventions was inconclusive.

CONCLUSIONS: Patients with high self-efficacy are functioning better in daily activities than patients with low self-efficacy. The evidence concerning the determinants influencing self-efficacy and the self-efficacy interventions makes clear how nurses can develop and tailor self-efficacy interventions for the clinical practice of people with stroke. Therefore, it is necessary to further emphasize the role of self-efficacy in the care for stroke patients in the nursing curriculum.

Krichbaum K, Aarestad V, & Buethe M. (2003).

Exploring the connection between self-efficacy and effective diabetes self-management.

PURPOSE: The purpose of this study was to review the existing empirical evidence about factors that contribute to effective diabetes self-management as indicated by healthy outcomes in persons with the disease, with a specific focus on self-efficacy, to determine the link between learned self-efficacy and effective diabetes self-management in adults.

METHODS: A systematic review was conducted of the extant literature from 1985-2001 that described factors related to effective self-management of diabetes. The review included theoretical and empirical articles. The search engines included CINAHL, MEDLINE, PUBMED, and COCHRANE.

RESULTS: Empirical evidence supports the following factors to improve the education outcomes for adults with diabetes: involve people with diabetes in their own care, guide them in actively learning about the disease, explore their feelings about having the disease, and teach them the skills necessary to adjust their behavior to control their own health outcomes. Thus, the goal for educating people with diabetes is to improve their individual self-efficacy and, accordingly, their self-management ability.

CONCLUSIONS: Education sessions need to involve fewer lectures and more practical, interactive exercises that focus on developing specific skills. Follow-up contact is a valuable method for helping people make a healthy adjustment to living with diabetes.

Mason P & Butler C. (2nd ed.) (2010).

Health behavior change.

The second edition of Health Behavior Change presents an exciting method which can be used to help patients change their behavior in both hospital and community settings. The method is applicable to any behavior, such as overeating, physical inactivity and smoking or with patients struggling with the consequences of chronic conditions like diabetes and heart disease. Using brief, structured consultations with the client, the practitioner encourages the patient to take charge of decision-making concerning their health. It relies upon partnership between professional and patient rather than dominance of one over the other and is carried out in a spirit of negotiation rather than confrontation.

The text clearly outlines the fundamental principles behind the method while applying it to practice. Problems of resistance and lack of motivation are explored and practical strategies to manage them are suggested. The patient is at the center throughout. Short case examples and dilemmas from clinical settings ground the method in the reality of practice.

MacGregor K, Handley M, Wong S, Sharifi C, Gjeltema K, Schillinger D, & Bodenheimer T. (2006)
Behavior-change action plans in primary care: A feasibility study of clinicians.

PURPOSE: Collaborative goal setting—with clinician and patient together deciding on concrete behavior-change goals—may be more effective in encouraging healthy behaviors than traditional clinician-directed advice. This study explores whether it is feasible for clinicians to engage patients with coronary heart disease (CHD) risk factors in collaborative goal setting and concrete action planning during the primary care visit.

METHODS: Primary care clinicians were trained in goal setting and action planning techniques and asked to conduct action plan discussions with study patients during medical visits. Clinicians' experiences were documented through post-visit surveys and with questionnaires and semi-structured interviews at the end of the study.

RESULTS: Forty-three clinicians and 274 patients with CHD risk factors participated in the study; 83% of the patient encounters resulted in a behavior-change action plan. Goal-setting discussions lasted an average of 6.9 minutes. Clinicians rated 75% of the discussions as equally or more satisfying than previous behavior-change discussions, and identified time constraints as the most important barrier to adopting the goal-setting process.

CONCLUSIONS: Collaborative goal setting between clinicians and patients for improved health behaviors is viewed favorably by clinicians in primary care. Time constraints could be addressed by delegating goal setting to other caregivers.

Meichenbaum D, & Turk D. (1987).

Facilitating treatment adherence: A practitioner's guidebook. Plenum Press.

DESCRIPTION OF CONTEXT: A textbook that provides practical clinical guidelines and describes techniques for enhancing patient adherence to treatment regimens.

TOPIC/SCOPE: The text is divided into three sections. The first part deals with the nature of adherence. The current research on incidence of non-adherence and its causes is summarized. Part two outlines clinical procedures to enhance adherence such as relationship building, patient education, and behavioral and cognitive techniques. Part three further explores the procedures and discusses possible impediments to their incorporation into clinical practice.

CONCLUSIONS/RECOMMENDATIONS: Facilitating treatment adherence is an ongoing process and not something that can be satisfactorily addressed by a brief discussion or simple techniques. It is essential to consider a patient perspective and to take this into account.

Miller WR, Rose GS. (2010).

Motivational interviewing in relational context.

One of the puzzles of motivational interviewing is why it works at all. How can it be that an individual interview or two yields change in a long-standing problem behavior even without any effort to alter social context? The time involved is such a tiny part of the person's ongoing daily

life. How does it work? That is a question that has fascinated us and that prompted our article (Miller & Rose, September 2009). The model we proposed is intentionally focused on individual intervention, for that is how motivational interviewing (MI) has been delivered and tested in most studies. The current science base is drawn primarily from MI interventions that do not include concerned significant others (CSOs). Of course it is possible for CSOs to be included in MI sessions. The domain of "social context" encompasses a broad range of factors (such as employment, family history, peer influence, and religious involvement), and any number of other components might also be considered in predicting substance use outcomes (e.g., age, conceptual level, severity of dependence, comorbidity). The model that we proposed (Miller & Rose, 2009) was focused on interpersonal and intrapersonal factors involved when a therapist interacts with an individual client. MI as an individual intervention has been found to be efficacious across a broad range of problem areas. As the processes and efficacy of MI become better understood, it will also be possible to explore how these operate within the person's ongoing social context.

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Miller WR, & Rollnick S. (3rd ed.) (2012).

Motivational interviewing: Helping people change.

This bestselling work for professionals and students is the authoritative presentation of motivational interviewing (MI), the powerful approach to facilitating change. The book elucidates the four processes of MI-- engaging, focusing, evoking, and planning--and vividly demonstrates what they look like in action. A wealth of vignettes and interview examples illustrate the "dos and don'ts" of successful implementation in diverse contexts. Highly accessible, the book is infused with respect and compassion for clients. The companion Web page provides additional helpful resources, including reflection questions, an extended bibliography, and annotated case material.

Mishali M, Omer H, Heymann AD. (2011).

The importance of measuring self-efficacy in patients with diabetes.

OBJECTIVES: Self-efficacy is an important factor influencing diabetes self-management behaviors. Previous studies have examined self-efficacy as a general measure in diabetes care for all self-care treatment recommendations together. This current study was designed to examine if low self-efficacy in each of the measured self-care treatment recommendations is related to decreased adherence for each specific recommendation.

METHODS: The self-efficacy was measured in 119 patients for four different treatment recommendations: blood glucose self-monitoring, exercise, diet and oral medication intake and correlated with The Resistance to Treatment Questionnaire.

RESULTS: Significant and positive Pearson's correlations were found between the frequency of adherence to treatment recommendations and the self-efficacy regarding different recommendations. The correlation between self-efficacy and diet and physical activity was 0.5 and 0.67, respectively. The higher the resistance to treatment score, the less confident the patient is in his or her ability to adhere with treatment recommendations. This pattern was not present in adherence to medication intake.

CONCLUSIONS: Self-efficacy impacts adherence to treatment and therefore plays a role in the clinical outcome. The practical implication is that assessment of self-efficacy in people with diabetes may be a first step in the development of individually tailored interventions.

Mo PKH, Blake H, & Batt ME. (2011).

Getting healthcare staff more active: The mediating role of self-efficacy.

OBJECTIVES: Physical activity has been associated with positive health outcomes. The objective of the study was to investigate the relationship between knowledge of physical activity, social support, self-efficacy, perceived barriers to physical activity, and level of physical activity among healthcare employees and students in a National Health Service (NHS) Trust.

DESIGN: This study was secondary analysis of questionnaire data on the health and well being of staff and students within the NHS.

METHOD: A total of 325 student nurses and 1,452 NHS employees completed the questionnaire. The data were analyzed using descriptive statistics, zero-order correlations, and structural equation modeling.

RESULTS: Self-efficacy fully mediated the relationship between social support, perceived barriers, and level of physical activity in the student sample and partially mediated the relationship between social support, perceived barriers, and level of physical activity in the healthcare staff sample. Knowledge of physical activity had no significant effect on physical activity.

CONCLUSION: Findings suggest that instead of instilling knowledge, interventions to promote physical activity among healthcare staff and students should enhance social support and self-efficacy and also to remove perceived barriers to physical activity.

Motivational Interviewing Network of Trainers (MINT)

<http://www.motivationalinterviewing.org>

This website provides resources for those seeking information on Motivational Interviewing. It includes general information about the approach, as well as links, training resources, and information on reprints and recent research. In addition to the contributions of Professors Miller and Rollnick, the site has benefited from the input of several members of the Motivational Interviewing Network of Trainers (MINT), and hosts information about the MINT organization. In addition to providing information on Motivational Interviewing, the site serves as a resource for agencies or organizations who wish to find a skilled and knowledgeable trainer to assist them in implementing or supplementing current motivational services.

MITRIP (Motivational Interviewing: Training, Research, Implementation, Practice) commenced publishing two issues per year (April and October) of an online journal in 2012 which contain a variety of formal and informal articles pertaining to the practice and training of motivational interviewing, and the activities of the international Motivational Interviewing Network of Trainers.

MillerWR, & RoseGS. (2009).

Toward a theory of motivational interviewing. *American Psychologist*, 64(6): 527- 537.

The widely disseminated clinical method of motivational interviewing (MI) arose through a convergence of science and practice. Beyond a large base of clinical trials, advances have been made toward "looking under the hood" of MI to understand the underlying mechanisms by which it affects behavior change. Such specification of outcome-relevant aspects of practice is vital to theory development, and can inform both treatment delivery and clinical training. An emergent theory of MI is proposed, emphasizing two specific active components: a relational component focused on empathy and the interpersonal spirit of MI, and a technical component involving the differential evocation and reinforcement of client change talk. A resulting causal chain model links therapist training, therapist and client responses during treatment sessions, and post-treatment outcomes.

Post, S. (2011).

Compassionate touch: Benefits & effects of long term care. *PsycEXTRA Dataset*, 1(4).

This review of outcome studies demonstrates that compassionate care benefits patients with regard to elected treatment adherence, wound healing, satisfaction and well-being; it benefits physicians with regard to lowered depression rates, elevated meaning, lower burnout, and more diligent technical care; it benefits healthcare systems that establish reputational gains at no greater use of time or resources; it benefits medical students with regard to their diminished complaints of abusive clinical environments and maladaptive team interactions. There is no doubt that compassionate care has many dimensions of beneficial impact.

Rodriguez HP, Anastario MP, Frankel RM, Odigie EG, Rogers WH, von Glahn T & Safran DG. (2008).

Can teaching agenda-setting skills to physicians improve clinical interaction quality? A controlled intervention.

BACKGROUND: Physicians and medical educators have repeatedly acknowledged the inadequacy of communication skills training in the medical school curriculum and opportunities to improve these skills in practice. This study of a controlled intervention evaluates the effect of teaching practicing physicians the skill of "agenda-setting" on patients' experiences with care. The agenda-setting intervention aimed to engage clinicians in the practice of initiating patient encounters by eliciting the full set of concerns from the patient's perspective and using that information to prioritize and negotiate which clinical issues should most appropriately be dealt with and which (if any) should be deferred to a subsequent visit.

METHODS: Ten physicians from a large physician organization in California with baseline patient survey scores below the statewide 25th percentile participated in the agenda-setting intervention. Eleven physicians matched on baseline scores, geography, specialty, and practice size were selected as controls. Changes in survey summary scores from pre- and post-intervention surveys were compared between the two groups. Multilevel regression models that accounted for the clustering of patients within physicians and controlled for respondent characteristics were used to examine the effect of the intervention on survey scale scores.

RESULTS: There was statistically significant improvement in intervention physicians' ability to "explain things in a way that was easy to understand" ($p = 0.02$) and marginally significant improvement in the overall quality of physician-patient interactions ($p = 0.08$) compared to control group physicians. Changes in patients' experiences with organizational access, care coordination, and office staff interactions did not differ by experimental group.

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CONCLUSION: A simple and modest behavioral training for practicing physicians has potential to positively affect physician-patient relationship interaction quality. It will be important to evaluate the effect of more extensive trainings, including those that work with physicians on a broader set of communication techniques.

RosengrenDB. (2009).

Building motivational interviewing skills: A practitioner workbook.

Developing expertise in motivational interviewing (MI) takes practice, which is exactly the point of this engaging, user-friendly workbook. The volume is packed with real-world examples from a range of clinical settings, as well as sample interactions and hands-on learning activities. The author is an experienced MI researcher, clinician, and trainer who facilitates learning with quizzes, experiential exercises, and reproducible worksheets. The reader learns step by step how to practice core MI skills: raising the importance of behavior change, fostering the client's confidence, resolving ambivalence, solidifying commitment to change, and negotiating a change plan. The utility of the book is enhanced by the large-size format and lay-flat binding. The book shows how to navigate each session using micro skills that many clinicians already know: open-ended questions, affirmations, reflective listening and summaries, or OARS for short.

Roter D, & Kinmonth AL. (2002).

What is the evidence that increasing participation of individuals in self- management improves the processes and outcomes of care?

DESCRIPTION OF CONTEXT: This chapter reviews the evidence linking levels of patient engagement in medical visit communication and self-management to diabetes-related outcomes.

CONCLUSIONS/RECOMMENDATIONS: It defines the principles emerging from this evidence, to inform better clinical practice. The authors conclude that "the balance of evidence from the studies reviewed suggests that when the physician is patient-centered (and non-controlling), when patients are verbally active overall, and especially in information-seeking, and when the patient is empowered to make treatment decisions, self- reported health and functional status, and metabolic control are improved." The authors offer 5 principles for improving self-management through improved clinician-patient communication: 1) hear the patient's perspective; 2) provide information that is useful and relevant; 3) negotiate a plan and anticipate problems; 4) offer ongoing monitoring of compliance and compliance difficulties; 5) find problems and re-negotiating solutions; and 6) provide emotional support to the patient.

Sim MG, Wain T, & Khong E. (2009).

Influencing behavior change in general practice: Part 1 – brief intervention and motivational interviewing.

BACKGROUND: Behavior change toward achieving a healthy lifestyle is important for all Australians, and general practitioners have a key role to play in assisting patients to make these changes.

OBJECTIVE: This is the first of a two-part series which provides the background to approaches to influencing behavior change in general practice, from brief interventions to motivational interviewing (MI). The second part of the series will explore motivational interviewing in more detail.

DISCUSSION: General practitioners have a key role in changing their patients' health behaviors. There are a range of tools GPs can use to help enhance their patients' motivation to achieve their health goals.

Sim MG, Wain T, & Khong E. (2009).

Influencing behavior change in general practice: Part 2 – motivational interviewing approaches.

BACKGROUND: Behavior change toward achieving a healthy lifestyle is important for all Australians, and general practitioners have a key role to play in assisting patients to make these changes.

OBJECTIVE: This is the second of two articles on influencing behavior change in general practice. This article deals with the 'how to' of motivational interviewing in the general practice setting.

DISCUSSION: Motivational interviewing can help build motivation, commitment and confidence to change. General practitioners can use motivational interviewing to help their patients achieve their health goals. Motivational interviewing is not about a set of techniques and questions; it is about creating a climate that facilitates change; it is more about listening than telling, evoking rather than instilling. Motivational interviewing can be done in the brief periods available in consultations over time.

Wagner C. (2012).

Client-centered direction: Or how to get there when you're not sure where you're going.

Change is broader than behavior, and often starts before a goal or plan is conceived, with clients first opening up to the vague possibility of betterness. Collaboration is a hallmark of MI spirit, and therapeutic direction can be developed collaboratively in MI through the process of evoking client values, desires, needs, hopes, and goals. Counselors may initially aspire to help clients find better lives, and narrow the focus to discrete change goals when specific client behaviors are collaboratively identified as obstacles to achieving a better life, or when absence of behaviors is identified as inhibiting progress toward it.

Williams GC, Deci EL, & Ryan RM. (1998).

Building partnerships by supporting autonomy: Promoting maintained behavior change and positive health outcomes. In: A. Suchman et al. (eds), Partnerships in healthcare.

DESCRIPTION OF CONTEXT: Application of self-determination theory and autonomy support in facilitating behavior change for health reasons.

TOPIC/SCOPE: Most current theories of motivation focus on the direction of behavior toward desired outcomes and are not concerned with the energization of behavior (why certain outcomes are desired). According to the self-determination theory, there are three psychological needs in human life (needs for competence, relatedness, and autonomy) that facilitate the direction and energization of motivation, behavior, and outcome. The need for autonomy emanates from the self and thus implies choice and self-determination rather than control. Behaviors become autonomous through the process of integration and internalization. Internalization entails the patient transforming external regulatory processes into internal regulatory processes. Through internalization, regulation that initially resides in the urgings of a health professional can be assumed by the patient. Integration involves bringing an internalized regulation or value into harmony with other aspects of one's self.

CONCLUSIONS/RECOMMENDATIONS: When patients behave for autonomous reasons, (rather than controlled reasons) they will be more successful in long-term maintenance of behavior change, which, in turn, will have positive health consequences. When patients are genuinely supported for making their own choices, they will be more likely to choose the behaviors that are in their best interest.

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Category 3B: MI's Foundation of Empathy

Bein, B. (2011, March 23).

Empathy Is 'Powerful Tool' in Improving Patient Outcomes, Say Family Physicians. Retrieved December 2, 2015.

Family physicians often have to make a point of displaying empathy to each of their patients while also striving to meet the demands of everyday practice. But, according to a recent study by family physicians and others, when a physician is highly empathetic, his or her patients' clinical outcomes are likely to improve. "Empathy is one of the most powerful tools that physicians have at their disposal," said Richard Wender, M.D., professor and chair of the department of family and community medicine at Jefferson Medical College in Philadelphia and president of the Association of Departments of Family Medicine.

Bergland, Christopher.

"The Neuroscience of Empathy" (October 2013) Psychology Today: The Athlete's Way

Are some people born with a brain that is wired to be more empathetic? Can compassion be learned? What daily habits or life experiences reinforce selfishness, narcissism and extreme psychopathy? A new study was released by the Max Planck Institute for Human and Cognitive Brain Sciences that revealed the neurobiological roots of how our own feelings and experiences can distort someone's capacity for empathy. Last month, another study from the University of Chicago found the neurobiological roots of psychopathic behavior. Together, these studies offer valuable clues for ways neuroscientists identify specific brain areas linked to compassion. Luckily, researchers have found that compassion can be trained.

Boodman, S. (2015, March 12).

Efforts To Instill Empathy Among Doctors Are Paying Dividends. Retrieved December 02, 2015, from <http://khn.org/news/efforts-to-instill-empathy-among-doctors-is-paying-dividends/>

Increasingly, empathy is considered essential to establishing trust, the foundation of a good doctor-patient relationship. Studies have linked empathy to greater patient satisfaction, better outcomes, decreased physician burnout and a lower risk of malpractice suits and errors.

Bonvicini KA, Perlin MJ, Byland CL, Carroll G, Rouse RA, & Goldstein MG. (2009).

Impact of communication training on physician expression of empathy in patient encounters.

NOTE: The Institute for Healthcare Communication's Choices and Changes: Patient Action and Clinician Influence workshop was included as part of this RCTstudy. See also Haskard, et al. (2008).

OBJECTIVE: To examine whether an educational intervention that focused on physician communication training influenced physician empathic expression during patient interactions.

METHODS: This study used a quantitative research method to investigate the influence of communication training on physician-expressed empathy using two measures (global and hierarchical) of physician empathic behavior.

RESULTS: The differences in global empathy scores in the physician training group from baseline to follow-up improved by 37%, and hierarchical scores of physician empathic expression improved by up to 51% from baseline scores for the same group

CONCLUSION: The results strongly supported the hypotheses that training made a significant difference in physician empathic expression during patient interactions demonstrated by both outside observer measures of global ratings and hierarchical ratings of physician empathic behavior. Practice implications: These findings have significant implications for program design and development in medical education and professional training with the potential to improve patient outcomes.

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Brugel S, Postma-Nilsenová M, Tates K. (2015).

The link between perception of clinical empathy and nonverbal behavior: The effect of a doctor's gaze and body orientation.

HIGHLIGHTS

- A link between a doctor's gaze and body orientation and the viewer's perception of empathy is hypothesized.
- A doctor's gaze and body orientation both influence the viewer's perception of empathy.
- The effect of a doctor's gaze on the perception of empathy appears to be slightly gender-dependent.

OBJECTIVES: Clinical empathy is considered to be one of the most important skills for medical professionals. It is primarily conveyed by nonverbal behavior; however, little is known about the importance of different types of cues and their relation to engagement and sincerity as possible correlates of perceived clinical empathy (PCE). In this study, we explored the effect of doctor's gaze and body orientation on PCE with the help of 32 video vignettes.

METHODS: Actors impersonating medical interns displayed different combinations of gaze and body orientation while uttering an empathetic verbal statement. The video vignettes were evaluated in terms of the perceived clinical and general empathy, engagement and sincerity.

RESULTS: A principal component analysis revealed a possible single-factor solution for the scales measuring the two types of empathy, engagement and sincerity; therefore, they were subsumed under general perceived empathy (GPE). An analysis of variance showed a main effect of gaze and body orientation, with a stronger effect of gaze, on GPE. We subsequently performed a linear random effects analysis, which indicated possible gender-related differences in the perception of gaze.

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CONCLUSIONS: The outcomes of our experiment confirm that both gaze and body orientation have an influence on the GPE. The effect of gaze, however, appears to be gender-dependent: in the experiment, males were perceived as slightly more empathetic with patient-centered gaze, while for females averted gaze resulted in higher GPE scores.

PRACTICE IMPLICATIONS: The findings are directly relevant in the context of medical communication training. Perception of clinical empathy supports medical information transfer, diagnosis quality and other patient outcomes.

Decety, J., & Fotopoulou, A. (2015).

Why empathy has a beneficial impact on others in medicine: Unifying theories. *Front. Behav. Neurosci. Frontiers in Behavioral Neuroscience.*

The past decades have seen an explosion of studies on empathy in various academic domains including affective neuroscience, psychology, medicine, and economics. However, the volumes of research have almost exclusively focused on its evolutionary origins, development, and neurobiological bases, as well as how the experience of empathy is modulated by social context and interpersonal relationships. In the present paper, we examine a much less attended side of empathy: why it has a positive impact on others? After specifying what the construct of empathy encompasses, we briefly review the various effects of empathy on health outcomes in the domain of medicine. We then propose two non-mutually exclusive mechanistic explanations that contribute to explain the positive effects of physician empathy on patients. (1) The social baseline theory (SBT), building on social support research, proposes that the presence of other people helps individuals to conserve metabolically costly somatic and neural resources through the social regulation of emotion. (2) The free energy principle (FEP) postulates that the brain optimizes a (free energy) bound on surprise or its complement value to respond to environmental changes adaptively. These conceptualizations can be combined to provide a unifying integrative account of the benefits of physicians' empathetic attitude on their patients and how it plays a role in healing beyond the mere effect of the therapeutic alliance.

Del Canale S, Louis DZ, Maio V, Wang X, Rossi G, Hojat M, & Gonnella JS. (2012).

The relationship between physician empathy and disease complications: An empirical study of primary care physicians and their diabetic patients in Parma, Italy.

PURPOSE: To test the hypothesis that scores of a validated measure of physician empathy are associated with clinical outcomes for patients with diabetes mellitus.

METHOD: This retrospective correlational study included 20,961 patients with type 1 or type 2 diabetes mellitus from a population of 284,298 adult patients in the Local Health Authority, Parma, Italy, enrolled with one of 242 primary care physicians for the entire year of 2009. Participating physicians' Jefferson Scale of Empathy scores were compared with occurrence of acute metabolic complications (hyperosmolar state, diabetic ketoacidosis, coma) in diabetes patients hospitalized in 2009.

RESULTS: Patients of physicians with high empathy scores, compared with patients of physicians with moderate and low empathy scores, had a significantly lower rate of acute metabolic complications (4.0, 7.1, and 6.5 per 1,000 patients, respectively, $P < .05$). Logistic regression analysis showed physicians' empathy scores were associated with acute metabolic complications: odds ratio (OR) = 0.59 (95% confidence interval [CI], 0.37–0.95, contrasting physicians with high and low empathy scores). Patients' age ($=69$ years) also contributed to the prediction of acute metabolic complications:

OR = 1.7 (95% CI, 1.2–1.4). Physicians' gender and age, patients' gender, type of practice (solo, association), geographical location of practice (mountain, hills, plain), and length of time the patient had been enrolled with the physician were not associated with acute metabolic complications.

CONCLUSIONS: These results suggest that physician empathy is significantly associated with clinical outcome for patients with diabetes mellitus and should be considered an important component of clinical competence.

Halpern, J. (2003),

What is Clinical Empathy?. *Journal of General Internal Medicine*, 18: 670–674.

doi: 10.1046/j.1525-1497.2003.21017.x

Patients seek empathy from their physicians. Medical educators increasingly recognize this need. Yet in seeking to make empathy a reliable professional skill, doctors change the meaning of the term. Outside the field of medicine, empathy is a mode of understanding that specifically involves emotional resonance. In contrast, leading physician educators define empathy as a form of detached cognition. In contrast, this article argues that physicians' emotional attunement greatly serves the cognitive goal of understanding patients' emotions. This has important implications for teaching empathy.

Hojat M, Louis DZ, Markham FW, Wender R, Rabinowitz C & Gonnella JS. (2011).

Physicians' empathy and clinical outcomes for diabetic patients.

PURPOSE: To test the hypothesis that physicians' empathy is associated with positive clinical outcomes for diabetic patients.

METHOD: A correlational study design was used in a university-affiliated outpatient setting. Participants were 891 diabetic patients, treated between July 2006 and June 2009, by 29 family physicians. Results of the most recent hemoglobin A1c and LDL-C tests were extracted from the patients' electronic records. The results of hemoglobin A1c tests were categorized into good control (<7.0%) and poor control (>9.0%). Similarly, the results of the LDL-C tests were grouped into good control (<100) and poor control (>130). The physicians, who completed the Jefferson Scale of Empathy in 2009, were grouped into high, moderate, and low empathy scorers. Associations between physicians' level of empathy scores and patient outcomes were examined.

RESULTS: Patients of physicians with high empathy scores were significantly more likely to have good control of hemoglobin A1c (56%) than were patients of physicians with low empathy scores (40%, $P < .001$). Similarly, the proportion of patients with good LDL-C control was significantly higher for physicians with high empathy scores (59%) than physicians with low scores (44%, $P < .001$). Logistic regression analyses indicated that physicians' empathy had a unique contribution to the prediction of optimal clinical outcomes after controlling for physicians' and patients' gender and age, and patients' health insurance.

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CONCLUSIONS: The hypothesis of a positive relationship between physicians' empathy and patients' clinical outcomes was confirmed, suggesting that physicians' empathy is an important factor associated with clinical competence and patient outcomes.

Hughes HK, Korthuis PT, Saha S, Eggly S, Sharp V, Cohn J, Moore R, Beach MC (2015).
A mixed methods study of patient-provider communication about Opioid Analgesics.

OBJECTIVE: To describe patient-provider communication about opioid pain medicine and explore how these discussions affect provider attitudes toward patients.

METHODS: We audio-recorded 45 HIV providers and 423 patients in routine outpatient encounters at four sites across the country. Providers completed post-visit questionnaires assessing their attitudes toward patients. We identified discussions about opioid pain management and analyzed them qualitatively. We used logistic regression to assess the association between opioid discussion and providers' attitudes toward patients.

RESULTS: 48 encounters (11% of the total sample) contained substantive discussion of opioid-related pain management. Most conversations were initiated by patients (n = 28, 58%) and ended by the providers (n = 36, 75%). Twelve encounters (25%) contained dialog suggesting a difference of opinion or conflict. Providers more often agreed than disagreed to give the prescription (50% vs. 23%), sometimes reluctantly; in 27% (n = 13) of encounters, no decision was made. Fewer than half of providers (n = 20, 42%) acknowledged the patient's experience of pain. Providers had a lower odds of positive regard for the patient (adjusted OR = 0.51, 95% CI: 0.27–0.95) when opioids were discussed.

CONCLUSIONS: Pain management discussions are common in routine outpatient HIV encounters and providers may regard patients less favorably if opioids are discussed during visits. The sometimes-adversarial nature of these discussions may negatively affect provider attitudes toward patients.

PRACTICE IMPLICATIONS: Empathy and pain acknowledgment are tools that clinicians can use to facilitate productive discussions of pain management.

Killam, K. (2015, January 10).

Building Empathy in Healthcare. Retrieved December 02, 2015,
from <http://www.dailygood.org/story/930/building-empathy-in-healthcare-kasley-killam/>

A Q&A with Dr. Helen Riess of Harvard Medical School about her efforts to nurture empathy among health care workers.

Kim, S.S., Kaplowitz, S., & Johnston, M. (2004).

The Effects of Physician Empathy on Patient Satisfaction and Compliance. *Evaluation & the Health Professions*, 27, 237-251.

This study develops scales of patient perceived, empathy-related constructs, and tests a model of the relationships of physician empathy to patient satisfaction and compliance.

The present study attempted to develop new scales of patient-perceived, empathy-related constructs and to test a model of the relationships of physician empathy and related constructs to patient satisfaction and compliance. Five hundred fifty outpatients at a large university hospital in Korea were interviewed with the questionnaire. The data were analyzed using structural equation modeling. Patient-perceived physician empathy significantly influenced patient satisfaction and compliance via the mediating factors of information exchange, perceived expertise, inter-personal trust, and partnership. Improving physician empathic communication skills should increase

patient satisfaction and compliance. Health providers who wish to improve patient satisfaction and compliance should first identify components of their empathic communication needing improvement and then try to refine their skills to better serve patients.

Lussier M, & Richard C. (2007).

Reflecting back: Empathic process.

The author's follow-up on a previous Communication Tip feature (Can Fam Physician 2007; 53:640-1) that discussed empathy. They describe the "empathic process" or "empathy cycle," for it is a phenomenon that can spread over many exchanges and be expressed in different ways. This article shows how reflection plays a part of every empathic process.

Miller WR. (2000).

Rediscovering fire: Small interventions, large effects.

Journal of the Society of Psychologists in Addictive Behaviors, 14(1): 6-18.

DESCRIPTION OF CONTEXT: Unexpected findings are often the spark for new discoveries and theories. A puzzle emerged from a series of unanticipated findings over 3 decades, indicating that for problem drinkers (a) relatively brief interventions can trigger significant change, (b) increasing the intensity of treatment does not consistently improve outcome, (c) therapist empathy can be a potent predictor of client change, and (d) a single empathic counseling session can substantially enhance the outcome of subsequent treatment.

TOPIC/SCOPE: These phenomena are considered in light of other findings in the addictions-treatment-outcome literature.

CONCLUSIONS/RECOMMENDATIONS: There is, at present, no cogent explanation for the efficacy of brief interventions. An ancient construct is explored as one possible factor in how some brief encounters may exert large effects in human change. That construct is agape, or unconditional love.

Montague E, Chen P, Xu J, Chewning B, & Barrett B. (2013).

Nonverbal interpersonal interactions in clinical encounters and patient perceptions of empathy.

OBJECTIVE: The relationship between nonverbal behaviors and patient perceptions of clinicians has been underexplored. The aim of this study was to understand the relationship between nonverbal communication behaviors (eye contact and social touch) to patient assessments of clinician (empathy, connectedness, and liking).

METHODS: Hypotheses were tested including clinician and patient nonverbal behaviors (eye contact, social touch) were coded temporally in 110 videotaped clinical encounters. Patient participants completed questionnaires to measure their perception of clinician empathy, connectedness with clinician, and how much they liked their clinician.

RESULTS: Length of visit and eye contact between clinician and patient were positively related to the patient's assessment of the clinician's empathy. Eye contact was significantly related to patient perceptions of clinician attributes, such as connectedness and liking.

CONCLUSION: Eye contact and social touch were significantly related to patient perceptions of clinician empathy. Future research in this area is warranted, particular with regards to health information technology and clinical system design.

PRACTICE IMPLICATIONS: Clinical environments designed for patient and clinician interaction should be designed to facilitate positive nonverbal interactions such as eye contact and social touch. Specifically, health information technology should not restrict clinicians' ability to make eye contact with their patients.

Moyers, T., & Miller, W. (2012).

Is low therapist empathy toxic? *Psychology of Addictive Behaviors*, 27(3), 878-884.

"One of the largest determinants of client outcomes is the counselor who provides treatment. Therapists often vary widely in effectiveness, even when delivering standardized manual-guided treatment. In particular, the therapeutic skill of accurate empathy originally described by Carl Rogers has been found to account for a meaningful proportion of variance in therapeutic alliance and in addiction treatment outcomes. High-empathy counselors appear to have higher success rates regardless of theoretical orientation. Low-empathy and confrontational counseling, in contrast, has been associated with higher drop-out and relapse rates, weaker therapeutic alliance and less client change. The authors propose emphasis on empathic listening skills as an evidence based practice in the hiring and training of counselors to improve outcomes and prevent harm in addiction treatment."

Mohammadreza H, Daniel L, Markham F, Wender R, Rabinowitz C, Gonnella J (2011).

Physicians' Empathy and Clinical Outcomes for Diabetic Patients

PURPOSE: To test the hypothesis that physicians' empathy is associated with positive clinical outcomes for diabetic patients.

METHOD: A correlational study design was used in a university-affiliated outpatient setting. Participants were 891 diabetic patients, treated between July 2006 and June 2009, by 29 family physicians. Results of the most recent hemoglobin A1c and LDL-C tests were extracted from the patients' electronic records. The results of hemoglobin A1c tests were categorized into good control (<7.0%) and poor control (>9.0%). Similarly, the results of the LDL-C tests were grouped into good control (<100) and poor control (>130). The physicians, who completed the Jefferson Scale of Empathy in 2009, were grouped into high, moderate, and low empathy scorers. Associations between physicians' level of empathy scores and patient outcomes were examined.

RESULTS: Patients of physicians with high empathy scores were significantly more likely to have good control of hemoglobin A1c (56%) than were patients of physicians with low empathy scores (40%, $P < .001$). Similarly, the proportion of patients with good LDL-C control was significantly higher for physicians with high empathy scores (59%) than physicians with low scores (44%, $P < .001$). Logistic regression analyses indicated that physicians' empathy had a unique contribution to the prediction of optimal clinical outcomes after controlling for physicians' and patients' gender and age, and patients' health insurance.

CONCLUSIONS: The hypothesis of a positive relationship between physicians' empathy and patients' clinical outcomes was confirmed, suggesting that physicians' empathy is an important factor associated with clinical competence and patient outcomes.

Neumann, M., Wirtz, M., Bollschweiler, E., Mercer, S., Warm, M., Wolf, J., & Pfaff, H. (2007). Determinants and patient-reported long-term outcomes of physician empathy in oncology: A structural equation modeling approach. *Patient Education and Counseling*, 69(1-3), 63-75. <http://dx.doi.org/10.1016/j.pec.2007.07.003>

This cross-sectional study explores patient- and physician-specific determinants of physician empathy (PE) and to analyze the influence of PE on patient-reported long-term outcomes in German cancer patients. A postal survey was administered to 710 cancer patients, who had been inpatients at the University Hospital Cologne (response rate 49.5%). PE measure, and patient-reported long-term outcomes were assessed using the major (ICD-10) depression inventory (MDI) and the EORTC quality of life (QoL) questionnaire QLQ-C30. Hypotheses were tested by structural equation modeling. The results suggest PE seems to be an important pre-requisite for information giving by physicians and through this pathway having a preventive effect on depression and improving QoL. Conversely, physicians' stress negatively influences these relationships.

Pollak KI, Ostbye T, Alexander SC, Gradison M, Bastian LA, Namenek Brouwer RJ, & Lyna P. (2007). Empathy goes a long way in weight loss discussions: Female patients are more likely to step up weight loss efforts when a physician shows empathy and offers support.

PURPOSE: This study explores how weight-related topics are discussed between physicians and their overweight and obese female patients.

METHODS: We surveyed and audio-recorded preventive health and chronic care visits with 25 overweight and obese female patients. We coded both for quantity (content and time) of weight related discussions and quality (adherence to Motivational Interviewing [MI] techniques). We then tested correlations of these measures with patients' reported attempts to lose weight, change diet, and change exercise patterns 1 month after the visit.

RESULTS: Weight was routinely addressed (19 of 25 encounters). Patients usually initiated the topic (67% of time). Physicians' use of MI techniques resulted in patients attempting to lose weight and changing their exercise patterns.

CONCLUSION: Physicians may benefit from MI training to help patients lose weight. Practice recommendation: A physician's empathy, collaborative approach, and words of support can have a positive effect on overweight and obese women's weight loss efforts.

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Rakel DP, Hoelt TJ, Barrett BP, Chewing BA, Craig BM, & Niu M. (2009). Practitioner empathy and the duration of the common cold.

OBJECTIVE: This study's objective was to assess the relationship of empathy in medical office visits to subsequent outcomes of the common cold.

METHODS: A total of 350 subjects = 12 years of age received either a standard or enhanced physician visit as part of a randomized controlled trial. Enhanced visits emphasized empathy on the part of the physician. The patient-scored Consultation and Relational Empathy (CARE)

questionnaire assessed practitioner-patient interaction, especially empathy. Cold severity and duration were assessed from twice-daily symptom reports. Nasal wash was performed to measure the immune cytokine interleukin-8 (IL-8).

RESULTS: Eighty-four individuals reported perfect (score of 50) CARE scores. They tended to be older with less education but reported similar health status, quality of life, and levels of optimism. In those with perfect CARE scores, cold duration was shorter (mean 7.10 days versus 8.01 days), and there was a trend toward reduced severity (mean area under receiver-operator characteristics curve 240.40 versus 284.49). After accounting for possible confounding variables, cold severity and duration were significantly lower in those reporting perfect CARE scores. In these models, a perfect score also correlated with a larger increase in IL-8 levels.

CONCLUSIONS: Clinician empathy, as perceived by patients with the common cold, significantly predicts subsequent duration and severity of illness and is associated with immune system changes.

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Riess, H. (2010).

Empathy in Medicine—A Neurobiological Perspective. *JAMA*, 304(14), 1604-1605.

A physician's attitude and approach affect every aspect of medical care for patients and their families. An empathic bedside manner is no quaint relic of the past. To restore and ensure public trust in the medical profession, new generations of physicians must understand the emotional, physiological, and practical consequences of discarding empathy. One legacy of medical education is overvaluing scientific measurement and undervaluing subjective experiences. The neurobiology of empathy offers hope for those who value the subjective experience of empathy and for those who find comfort in what can be measured.

Riess H & Kraft-Todd G. (2014).

E.M.P.A.T.H.Y.: A tool to enhance nonverbal communication between clinicians and their patients.

There is a gap in the medical education literature on teaching nonverbal detection and expression of empathy. Many articles do not address nonverbal interactions, instead focusing on "what to say" rather than "how to be." This focus on verbal communication overlooks the essential role nonverbal signals play in the communication of emotions, which has significant effects on patient satisfaction, health outcomes, and malpractice claims. This gap is addressed with a novel teaching tool for assessing nonverbal behavior using the acronym E.M.P.A.T.H.Y.- E: eye contact; M: muscles of facial expression; P: posture; A: affect; T: tone of voice; H: hearing the whole patient; Y: your response. This acronym was the cornerstone of a randomized controlled trial of empathy training at Massachusetts General Hospital, 2010-2012. Used as an easy-to-remember checklist, the acronym orients medical professionals to key aspects of perceiving and responding to nonverbal emotional cues. An urgent need exists to teach nonverbal aspects of communication, as medical practices must be reoriented to the increasing cultural diversity represented by patients presenting for care. Where language proficiency may be limited, nonverbal communication becomes more crucial for understanding patients' communications. Furthermore, even in the absence of cultural differences, many patients are reluctant to disagree with their clinicians, and subtle nonverbal cues may be the critical entry point for discussions leading to shared medical decisions. A detailed description of the E.M.P.A.T.H.Y. acronym and a brief summary of the literature that supports each component of the teaching tool are provided.

Rogers, Carl R.

"Empathic: An Unappreciated Way of Being". Centre for Studies of the Person.

Empathy is an essential yet undervalued quality that usually goes by overlooked, but should not be. Empathy is necessary because by listening and understanding someone more carefully we can help them more accurately. A caring attitude is the most significant quality a therapist can have.



Category 4: Patient-Provider and Staff Interactions/Communication

Anhang Price R, Ellio MN, Zaslavsky AM, Hays RD, Lehrman WG, Rybowski L, Edgman-Levitan S & Cleary PD. (2014).

Examining the role of patient experience surveys in measuring health care quality.

ABSTRACT: Patient care experience surveys evaluate the degree to which care is patient-centered. This article reviews the literature on the association between patient experiences and other measures of health care quality. Research indicates that better patient care experiences are associated with higher levels of adherence to recommended prevention and treatment processes, better clinical outcomes, better patient safety within hospitals, and less health care utilization. Patient experience measures that are collected using psychometrically sound instruments, employing recommended sample sizes and adjustment procedures, and implemented according to standard protocols are intrinsically meaningful and are appropriate complements for clinical process and outcome measures in public reporting and pay-for-performance programs.

American College of Obstetricians and Gynecologists. *Obese Gynecol* (2009).

Motivational Interviewing: A tool for behavioral change.

ABSTRACT: Applying the principles of motivational interviewing to everyday patient interactions has been proved effective in eliciting "behavior change" that contributes to positive health outcomes and improved patient-physician communication. Current Procedural Terminology codes are available to aid in obtaining reimbursement for time spent engaging patients in motivational interviewing for some conditions.

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Beach, MC, Roter DL, Saha S, Korthuis PT, Eggly S, Cohn J, Sharp V, Moore RD, Wilson IB (2015).

Impact of a brief patient and provider intervention to improve the quality of communication about medication adherence among HIV patients.

HIGHLIGHTS

- We randomized providers to receive or not receive brief communication training.
- Patients were coached to discuss medication adherence with their providers.
- Intervention providers made more emotional and positive statements to patients.
- Intervention providers asked for patient opinion more often.
- Intervention providers and patients talked more about therapeutic regimens.

INTRODUCTION: Medication adherence is essential in HIV care, yet provider communication about adherence is often suboptimal. We designed this study to improve patient-provider communication about HIV medication adherence.

METHODS: We randomized 26 providers at three HIV care sites to receive or not receive a one-hour communication skills training based on motivational interviewing principles applied to medication adherence. Prior to routine office visits, non-adherent patients of providers who received the training were coached to discuss adherence with their providers. Patients of providers who did not receive the training providers were not coached. We audio-recorded and coded patient-provider interactions using the roter interaction analysis system (RIAS).

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RESULTS: There was more dialogue about therapeutic regimen in visits with intervention patients and providers (167 vs. 128, respectively, $p = .004$), with the majority of statements coming from providers. These visits also included more brainstorming solutions to non-adherence (41% vs. 22%, $p = 0.026$). Intervention compared with control visit providers engaged in more positive talk (44 vs. 38 statements, $p = 0.039$), emotional talk (26 vs. 18 statements, $p < 0.001$), and probing of patient opinion (3 vs. 2 statements, $p = 0.009$).

CONCLUSION: A brief provider training combined with patient coaching sessions, improved provider communication behaviors and increased dialogue regarding medication adherence.

Bodenheimer T, & Handley MA. (2009).

Goal-setting for behavior change in primary care: An exploration and status report. Patient Education and Counseling

OBJECTIVE: This paper explores the behavior change method of goal setting and reviews the literature on goal-setting in primary care for patients with chronic conditions.

METHODS: A literature search was conducted resulting in eight articles meeting the criteria of goal-setting interventions in primary care for adults or adolescents with chronic conditions.

RESULTS: Hypotheses are advanced that goal setting is generally conducted by collaboratively working with patients to set short-term and specific goals, with follow-up to provide feedback to patients. The articles reviewed generally confirmed these hypotheses. This review did not focus on clinical outcomes, but on the processes of engaging patients in goal-setting discussions.

CONCLUSION: Evidence that goal setting is superior to other behavior change methods has not been shown. Since goal setting is being utilized as a behavior change technique in many primary care sites, primary care practices can benefit from information on how best to implement this innovation.

PRACTICE IMPLICATIONS: Generally, clinicians are minimally involved in goal-setting discussions with their patients. Engaging patients in goal setting can be done with interactive computer programs and nonclinical members of the primary care team.

Boughton B. (2012).

Engaging patients in decision helps reduce antibiotic use.

Training physicians to engage patients in decision-making can reduce the prescription of unnecessary antibiotics for acute respiratory infections, according to a randomized trial of 359 patients in Quebec. In the cluster randomized trial, the use of antibiotics for acute respiratory

infection was reduced by 25% among patients of Canadian physicians from 5 family practices who were trained in physician–patient shared decision-making compared with use among patients of physicians who provided “usual care” (27.2% vs. 52.2%; adjusted relative risk, 0.48; 95% confidence interval, 0.34 - 0.68). As well as reducing use of antibiotics for acute respiratory infections, patients of physicians who took the training program took a more active role in decision-making about their treatment compared with patients of physicians in the control group ($P < .001$). Active patient decision-making was assessed by a questionnaire after the physician–patient consultation and the Control Preference Scale, which assessed patient perceptions that shared decision-making, had occurred. The shared decision-making training program, known as DECISION+2, consisted of a 2-hour online tutorial followed by a 2-hour interactive seminar on shared physician–patient decision-making. The program included information about the scientific evidence for use of antibiotics in acute respiratory infection as well as training in communication with patients about the risks and benefits of antibiotic use. In the training program, physicians were also educated about ways to promote active patient participation in the decision of whether or not to use antibiotics. These techniques included asking patients about their preferences and values and verifying patient comfort with the final decision about use of antibiotics. The authors noted that training programs in shared patient–clinician decision-making might be useful in other settings such as emergency departments or to train nurses to help patients make informed decisions based on their values before visiting a physician or emergency department.

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Breslin, M (2013).

The Power of Conversation, Mayo Clinic <http://swselfmanagement.ca/videos.aspx?pageID=343>

Addresses the essential character of satisfying conversations between patients and providers. Conversation is not a soft skill. It is the essence of Health Care Delivery

Bristowe K, Patrick PL. (2014).

'Any questions?'—Clinicians' usage of Invitations to Ask Questions (IAQs) in outpatient plastic surgery consultations. Patient Education and Counseling

HIGHLIGHTS

- Three types of invitation to ask questions (IAQ) were identified in this study – overt (e.g. 'do you have any questions?'), borderline (e.g. 'was there anything else?') and covert (e.g. 'okay?').
- When IAQs were offered, they almost always occurred in the closing stages of the consultation.
- Most consultations did not include an overt IAQ.
- When patients were offered an overt or borderline IAQ they always recalled this opportunity after the consultation.
- When patients were offered a covert IAQ less than half of them recalled this opportunity after the consultation.

OBJECTIVE: To explore use of 'Invitations to Ask Questions' (IAQs) by plastic surgeons in outpatient consultations, and consider how type of IAQ impacts on patients' responses to, and recollection of, IAQs.

METHODS: Descriptive study: 63 patients were audio recorded in consultation with 5 plastic surgeons, and completed a brief questionnaire immediately after the consultation. Consultation transcripts were analyzed using inductive qualitative methods of Discourse Analysis and compared with questionnaire findings.

RESULTS: A taxonomy of IAQs was developed, including three types of IAQ (Overt, Covert, and Borderline). Overt IAQs were rarely identified, and almost all IAQs occurred in the closing stages of the consultation. However, when an overt IAQ was used, patients always recollected being asked if they had any questions after the consultation.

CONCLUSIONS: Patients are rarely explicitly offered the opportunity to ask questions. When this does occur, it is often in the closing stages of the consultation. Clinicians should openly encourage patients to ask questions frequently throughout the consultation, and be mindful that subtle differences in construction of these utterances may impact upon interpretation.

PRACTICE IMPLICATIONS: Clear communication, of message and intention, is essential in clinical encounters to minimize misunderstanding, misinterpretation, or missed opportunities for patients to raise concerns.

Brandes K, Linn AJ, Smit EG, van Weert JCM (2015).

Patients' reports of barriers to expressing concerns during cancer consultations, Patient Education and Counseling

HIGHLIGHTS

- Composite scores of perceived barriers and perceived occurrence of barriers in consultations.
- Barriers were related to providers' behavior (e.g., lack of empathy, not eliciting concerns).
- Barriers were also related to the environment of the consultation (e.g., lack of time).
- Legitimacy barriers did not seem to withhold patients from expressing concerns.
- Results can be used to develop strategies to reduce barriers to expressing concerns.

OBJECTIVE: To identify cancer patients' most influential barriers to expressing concerns during cancer consultations in a new manner by examining patients' reports of perceived barriers and perceived occurrence of barriers in consultations.

METHODS: Two online focus groups (N = 16) and an online survey (N = 236) were conducted among cancer patients and cancer survivors. The online focus groups and survey were used to examine two elements of patients' barriers, i.e., patients' reports of perceived barriers and perceived occurrence of barriers in consultations. Composite scores of these two elements were calculated to determine influential barriers.

RESULTS: Results showed that the most influential barriers were related to providers' behavior (e.g., providers do not explicitly invite patients to express concerns) and the environment where the consultation takes place (e.g., perceived lack of time).

CONCLUSION: The results of this study indicate that influential barriers to expressing concerns are barriers that patients cannot overcome themselves (i.e., they are related to providers' behavior or the environment of the consultation). A collaborative approach between researchers, providers and policy makers is needed to overcome these barriers.

PRACTICE IMPLICATIONS: The results of this study can be used to develop strategies to overcome barriers to patients expressing concerns.

Brown JB, Weston WW, & Stewart M. (2nd ed.) (2003).

Patient-centered medicine: Transforming the clinical method.

This book describes and explains the patient-centered model of medicine. The book covers the six interactive components of the method, and learning and teaching the method. It examines and evaluates qualitative and quantitative research on the patient-centered clinical method, including reviews and recent studies.

Buchbinder M, Wilbur R, Zuskov D, McLean S, Sleath B (2014).

Teachable moments and missed opportunities for smoking cessation counseling in a hospital emergency department: A mixed-methods study of patient-provider communication.

BACKGROUND: While primary care medical clinics have been the most common setting for the delivery of advice about smoking cessation, the hospital emergency department (ED) is a valuable context for counseling medically underserved tobacco users. We conducted a secondary analysis based on a larger audio-recorded study of patient-provider communication about pain and analgesics in the ED. Within a sample of ED patients with back pain, the purpose of this mixed-methods study was to examine how physicians and nurse practitioners capitalize on "teachable moments" for health education to offer spontaneous smoking cessation counseling in the ED.

METHODS: Patients presenting to an academic ED with a primary complaint of back pain were invited to participate in a study of patient-provider communication. Audio-recorded encounters were transcribed verbatim. Two coders reviewed each transcript to determine whether smoking was discussed and to build a corpus of smoking-related discussions. We then developed inductively generated coding categories to characterize how providers responded when patients endorsed smoking behavior. Categories were refined iteratively to accommodate discrepancies.

RESULTS: Of 52 patient-provider encounters during which smoking was discussed, two-thirds of the patients indicated that they were smokers. Providers missed opportunities for smoking cessation counseling 70% of the time. Eleven encounters contained teachable moments for smoking cessation. We identified four primary strategies for creating teachable moments: 1) positive reinforcement, 2) encouragement, 3) assessing readiness, and 4) offering concrete motivating reasons.

CONCLUSIONS: Most providers missed opportunities to offer teachable moments for smoking cessation. In encounters that contained teachable moments, providers employed multiple strategies, combining general advice with motivation tailored to the patient's particular circumstances. Creating motivational links to enhance smoking cessation efforts may be possible with a minimal investment of ED resources.

Burke LE, & Fair J. (2003).

Promoting prevention: Skill sets & attributes of health care providers who deliver behavioral interventions.

ABSTRACT: Preventive therapies have been shown to reduce morbidity and mortality from cardiovascular disease. However, health care providers are not addressing prevention and not treating patients according to evidence-based guidelines. Reasons frequently cited for not delivering health promotion/disease prevention oriented care is lack of training or skills to provide counseling, and a lack of confidence in health care provider skills. This article outlines the skills and attributes considered essential for a health care provider to promote behavioral change and risk reduction. The skills and attributes of the health care provider, such as expertise and knowledge, skills for assessing readiness for behavior change, relationship building skills, and skill in considering the patient's attitudes and beliefs about the disease or treatment are discussed. Principles of communication to guide the patient-provider encounter, key behavioral change strategies, and use of technology are reviewed and resources available to support prevention goals are presented.

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Cameron KA. (2009).

A practitioner's guide to persuasion: An overview of 15 selected persuasion theories, models and frameworks.

OBJECTIVE: To provide a brief overview of 15 selected persuasion theories and models, and to present examples of their use in health communication research.

RESULTS: The theories are categorized as message effects models, attitude-behavior approaches, cognitive processing theories and models, consistency theories, inoculation theory, and functional approaches.

CONCLUSIONS: As it is often the intent of a practitioner to shape, reinforce, or change a patient's behavior, familiarity with theories of persuasion may lead to the development of novel communication approaches with existing patients.

PRACTICE IMPLICATIONS: This article serves as an introductory primer to theories of persuasion with applications to health communication research. Understanding key constructs and general formulations of persuasive theories may allow practitioners to employ useful theoretical frameworks when interacting with patient

Carpenter DM, Tudor G, Sayner R, Muir KW, Robin AL, Blalock SJ, Hartnett ME, Giangiacomo AL, Sleath BL (2015).

Exploring the influence of patient-provider communication on intraocular pressure in glaucoma patients.

HIGHLIGHTS:

- Including patient input in the treatment plan significantly decreased IOP.

- Adherence education from providers was associated with decreased IOP.
- Greater adherence self-efficacy was associated with better medication adherence.
- Positive reinforcement from providers was related to better medication adherence.

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- Medication-taking behaviors did not mediate the effect of communication on IOP.

OBJECTIVE: We examined whether six patient-provider communication behaviors directly affected the intraocular pressure (IOP) of glaucoma patients or whether patient medication adherence and eye drop technique mediated the relationship between self-efficacy, communication, and IOP.

METHODS: During an 8-month, longitudinal study of 279 glaucoma patients and 15 providers, two office visits were videotape-recorded, transcribed, and coded for six patient-provider communication behaviors. Medication adherence was measured electronically and IOP was extracted from medical records. We ran generalized estimating equations to examine the direct effects of communication on IOP and used bootstrapping to test whether medication adherence and eye drop technique mediated the effect of communication on IOP.

RESULTS: Provider education about medication adherence ($B = -0.50, p < 0.05$) and inclusion of patient input into the treatment plan ($B = -0.35, p < 0.05$) predicted improved IOP. There was no evidence of significant mediation.

CONCLUSION: The positive effects of provider education and provider inclusion of patient input in the treatment plan were not mediated by adherence and eye drop technique.

PRACTICE IMPLICATIONS: Providers should educate glaucoma patients about the importance of medication adherence and include patient input into their treatment plans.

Coulter A. (2012).

Patient engagement—What works? Journal of Ambulatory Care Management

The recent focus on patient engagement acknowledges that patients have an important role to play in their own health care. This includes reading, understanding and acting on health information (health literacy), working together with clinicians to select appropriate treatments or management options (shared decision making), and providing feedback on health care processes and outcomes (quality improvement). Various interventions designed to help patients play an effective role have been evaluated in trials and systematic reviews. This article outlines the evidence in support of the most promising interventions.

**De Ruddere L, Goubert L, Prkachin KM, Stevens MAL, Van Ryckeghem DML, Crombez G. (2011).
When you dislike patients, pain is taken less seriously.**

ABSTRACT: This study examined the influence of patients' likability on pain estimations made by observers. Patients' likability was manipulated by means of an evaluative conditioning procedure: pictures of patients were combined with either positive, neutral, or negative personal traits. Next, videos of the patients were presented to 40 observers who rated the pain. Patients were expressing

no, mild-, or high-intensity pain. Results indicated lower pain estimations as well as lower perceptual sensitivity toward pain (i.e., lower ability to discriminate between varying levels of pain expression) with regard to patients who were associated with negative personal traits. The effect on pain estimations was only found with regard to patients expressing high-intensity pain. There was no effect on response bias (i.e., the overall tendency to indicate pain). These findings suggest that we take the pain of patients we do not like less seriously than the pain of patients we like.

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Deen D, Lu WH, Rothstein D, Santana L, & Gold MR. (2011).

Asking questions: The effect of a brief intervention in community health centers on patient activation.

OBJECTIVE: To evaluate the impact of a patient activation intervention (PAI) focused on building question formulation skills that were delivered to patients in community health centers prior to their physician visit.

METHODS: Level of patient activation and patient preferred role were examined using the patient activation measure (PAM) and the patient preference for control (PPC) measure.

RESULTS: More of the 252 patients evaluated were at lower levels of activation (PAM levels 1 or 2) than U.S. population norms before the intervention. Paired-samples t-test revealed a statistically significant increase from pre-intervention to post-visit PAM scores. One-third of participants moved from lower levels of activation to higher levels (PAM levels 3 or 4) post-intervention. Patients preferring a more passive role had lower initial PAM scores and greater increases in their post-intervention PAM scores than did those who preferred a more active role.

CONCLUSION: Patients exposed to the PAI demonstrated significant improvement on a measure of activation. The PAI may be useful in helping patients prepare for more effective encounters with their physicians.

PRACTICE IMPLICATIONS: The PAI was feasible to deliver in the health center setting and may be a useful method for activating low-income, racial/ethnic minority patient populations.

Del Re, A. C., Flückiger, C., Horvath, A. O., Symonds, D., & Wampold, B. E. (2012).

Therapist effects in the therapeutic alliance–outcome relationship: A restricted-maximum likelihood meta-analysis. *Clinical Psychology Review*, 32(7), 642-649.

The purpose of this present meta-analysis was to (1) test for therapist effects in the alliance–outcome correlation and (2) extend the findings of previous research by examining several potential confounds/covariates of this relationship. Results corroborate previous research, therapist variability in the alliance appears to be more important than patient variability for improved patient outcomes. This relationship remains significant even when simultaneously controlling for several potential covariates of this relationship.

Diggins, K. (2014).

Family nurse practitioner/pharmacist collaborative medication counseling in patients with diabetes.

HIGHLIGHTS

- Family nurse practitioners working together with pharmacists are essential to improving critical indicators in chronic disease, such as A1C.
- Pharmaceutical counseling with pharmacists was provided in a clinic setting. FNPs worked with pharmacists to individualize medication regimens of diabetic patients.

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- Pre- and post-intervention A1C was measured.
- A paired samples t test was conducted on these data to test the null hypothesis that there was no change in A1C level. The mean change in A1C of -1.04 was found to be highly significant ($P < .001$).

ABSTRACT: Medication adherence is an ongoing challenge in patients with diabetes on multidrug regimens. With multiple prescription medications, adherence to the individualized drug regimen can become a problem, and diabetes management worsens. It is pivotal for patients and nurse practitioners to have the opportunity to work with a pharmacist in the outpatient setting to review individualized medication regimens. In this study, the medication regimens of diabetic patients were reviewed with a pharmacist, and suggested changes to the regimen were implemented by the nurse practitioner. Follow-up A1Cs were reviewed 6 months after implementation, and there was a statistically significant improvement in the A1C levels

DiMatteo MR, Sherbourne CD, Hays RD, Ordway L, Kravitz RL, McGlynn EA, Kaplan S, & Rogers WH. (1993).

Physicians' characteristics influence patients' adherence to medical treatment: Results from the medical outcomes study. Health Psychology, 12(2): 93-102.

OBJECTIVE: To examine the role of physicians' personal and practice characteristics as predictors of their patients' adherence

SETTING: Cross-sectional two-year longitudinal study Data is from the Medical Outcomes Study in three systems of care (HMOs, large multispecialty groups and solo practices) in three cities (Boston, Chicago, and Los Angeles)

SUBJECTS: Patients visiting providers in 5 medical specialties internal medicine, family practice, endocrinology, diabetology and cardiology. The study involved 186 nonpsychiatric physicians and 2,546 patients

INTERVENTIONS: None

MEASURES: Patients in the longitudinal panel completed several self-report questionnaires and a telephone interview. Adherence items included baseline and 24-month patient assessment surveys. Three specific adherence subscales were derived to measure the frequency with which

patients took all recommended medication, exercised regularly, and followed special diets--or all three. Provider demographics, style of practice, practice characteristics, and professional job satisfaction were assessed.

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RESULTS: Patients' average general adherence improved slightly over the two years of the study. Exercise adherence did not change, and medication and diet adherence declined significantly over the two years. The only practice characteristic that was significant was the number of patients a physician saw in office practice per week. Patients of physicians who made definite future appointments for follow-up achieved better medication adherence. Physicians on average felt that responsibility for decision making lay somewhat more with the patient than the physician. They also tended to answer many rather than few of their patients' questions. Physicians who spent more hours per week seeing patients noted less job satisfaction than those who spent fewer hours in outpatient practice. Physicians who were likely to place responsibility for decision-making on the physician were more likely to make follow-up appointments or arrange phone consultations. Physician specialty also affected patient adherence

CONCLUSIONS: Practice characteristics and practice style affected patient adherence. Medication adherence was better among patients of physicians who saw more patients per week (they may have tended to meet more often with patients to follow-up). Patient medication adherence was higher among physicians who made definite follow-up appointments. Physicians' self-reported willingness to answer all patients' questions had a positive effect on patient exercise adherence. Physician global job satisfaction has a positive effect on patients' general adherence.

Edmonds BT, McKenzie F, Panoch J, Wocial L, Barnato A, Frankel R.(2015).

"Doctor, what would you do?": Physicians' responses to patient inquiries about periviable delivery,

HIGHLIGHTS

- Most physicians avoided providing a personal disclosure or recommendation when asked for advice.
- Physicians often deflected the question by restating or offering additional medical information.
- Physicians stated that the decision depended on the patient's values but failed to elicit values.

OBJECTIVE: To qualitatively assess obstetricians' and neonatologists' responses to standardized patients (SPs) asking "What would you do?" during periviable counseling encounters.

METHODS: An exploratory single-center simulation study. SPs, portraying a pregnant woman presenting with ruptured membranes at 23 weeks, were instructed to ask, "What would you do?" if presented options regarding delivery management or resuscitation. Responses were independently reviewed and classified.

RESULTS: We identified five response patterns: 'Disclose' (9/28), 'Don't Know' (11/28), 'Deflect' (23/28), 'Decline' (2/28), and 'Ignore' (2/28). Most physicians utilized more than one response pattern (22/28). Physicians 'deflected' the question by: restating or offering additional medical information; answering

with a question; evoking a hypothetical patient; or redirecting the SP to other sources of support. When compared with neonatologists, obstetricians (40% vs. 15%) made personal or professional disclosures more often. Though both specialties readily acknowledged the importance of values in making a decision, only one physician attempted to elicit the patient's values.

CONCLUSION: "What would you do?" represented a missed opportunity for values elicitation. Interventions are needed to facilitate values elicitation and shared decision-making in periviable care.

PRACTICE IMPLICATIONS: If physicians fail to address patients' values and goals, they lack the information needed to develop patient-centered plans of care.

Flickinger TE, Saha S, Roter D, Korhuis PT, Sharp V, Cohn J, Moore RD, Ingersoll KS, Beach MC. (2015).

Respecting patients is associated with more patient-centered communication behaviors in clinical encounters.

HIGHLIGHTS

- We studied links between clinicians' respect for patients and communication behaviors.
- We analyzed visits between 413 HIV-infected patients and 45 primary HIV care providers.
- When clinicians had higher respect for a patient, they used more positive behaviors.
- Visits with clinicians with higher respect for patients were more patient-centered.

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- Fostering respect for patients may improve patient-clinician communication quality.

OBJECTIVE: Attitudes towards patients may influence how clinicians interact. We investigated whether respect for patients was associated with communication behaviors during HIV care encounters.

METHODS: We analyzed audio-recordings of visits between 413 adult HIV-infected patients and 45 primary HIV care providers. The independent variable was clinician-reported respect for the patient and outcomes were clinician and patient communication behaviors assessed by the Roter Interaction Analysis System (RIAS). We performed negative binomial regressions for counts outcomes and linear regressions for global outcomes.

RESULTS: When clinicians had higher respect for a patient, they engaged in more rapport-building, social chitchat, and positive talk. Patients of clinicians with higher respect for them engaged in more rapport-building, social chitchat, positive talk, and gave more psychosocial information. Encounters between patients and clinicians with higher respect for them had more positive clinician emotional tone [regression coefficient 2.97 (1.92–4.59)], more positive patient emotional tone [2.71 (1.75–4.21)], less clinician verbal dominance [0.81 (0.68–0.96)] and more patient-centeredness [1.28 (1.09–1.51)].

CONCLUSIONS: Respect is associated with positive and patient-centered communication behaviors during encounters.

PRACTICE IMPLICATIONS: Clinicians should be mindful of their respectful attitudes and work to foster positive regard for patients. Educators should consider methods to enhance trainees' respect in communication skills training.

Forbes. (2012).

The blockbuster drug of the century: An engaged patient.

Leonard Kish, a health IT strategy consultant declares that patient engagement is the "blockbuster drug of the century". He compares the statins blockbuster with the patient engagement "blockbuster" and reviews the benefits of engaging patients in their care on health outcomes and healthcare costs.

Frates EP, Moore MA, Lopez CN, & McMahon GT. (2011).

Coaching for behavior change in psychiatry.

Behavior modification is vital to the prevention or amelioration of lifestyle-related disease. Health and wellness coaching is emerging as a powerful intervention to help patients initiate and maintain sustainable change that can be critical to psychiatry practice. The coach approach delivers a patient-centered collaborative partnership to create an engaging and realistic individualized plan. The coaching process builds the psychologic skills needed to support lasting change, including mindfulness, self-awareness, self-motivation, resilience, optimism, and self- efficacy. Preliminary studies indicate that health and wellness coaching is a useful and potentially important adjunct to usual care for managing hyperlipidemia, diabetes, cancer pain, cancer survival, asthma, weight loss, and increasing physical activity. Psychiatrists can benefit from the insights of coaching to promote effective collaboration, negotiation, and motivation to encourage patients to take responsibility for their recovery and their future wellness by adopting healthy lifestyles.

Haskard KB, Williams SL, DiMatteo R, Rosenthal R, Kemp White M, & Goldstein MG. (2008).

Physician and patient communication training in primary care: Effects on participation and satisfaction.

NOTE: The Institute for Healthcare Communication's Choices and Changes: Patient Action and Clinician Influence workshop was included as part of this RC T study. See also Bonvicini, et al. (2009).

OBJECTIVE: To assess the effects of a communication skills training program for physicians and patients.

DESIGN: A randomized experiment to improve physician communication skills was assessed 1 and 6 months after a training intervention; patient training to be active participants was assessed after 1 month. Across three primary medical care settings, 156 physicians treating 2,196 patients were randomly assigned to control group or one of three conditions (physician, patient, or both trained).

MAIN OUTCOME MEASURES: Patient satisfaction and perceptions of choice, decision-making, information, and lifestyle counseling; physicians' satisfaction and stress; and global ratings of the communication process.

RESULTS: The following significant ($p .05$) effects emerged: physician training improved patients' satisfaction with information and overall care; increased willingness to recommend the physician; increased physicians' counseling (as reported by patients) about weight loss, exercise, and quitting smoking and alcohol; increased physician satisfaction with physical exam detail; increased independent ratings of physicians' sensitive, connected communication with their patients, and decreased physician satisfaction with interpersonal aspects of professional life. Patient training improved physicians' satisfaction with data collection; if only physician or patient was trained, physician stress increased and physician satisfaction decreased.

CONCLUSION: Implications for improving physician-patient relationship outcomes through communication skills training are discussed.

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Heisler M, Cole I, Weir D, Kerr EA, & Hayward RA. (2007).

Does physician communication influence older patients' diabetes self-management and glycemic control? Results from the health and retirement study (HRS).

BACKGROUND: Effective chronic disease self-management among older adults is crucial for improved clinical outcomes. We assessed the relative importance of two dimensions of physician communication—provision of information (PCOM) and participatory decision-making (PDM)—for older patients' diabetes self-management and glycemic control.

METHODS: We conducted a national cross-sectional survey among 1588 older community-dwelling adults with diabetes (response rate: 81%). Independent associations were examined between patients' ratings of their physician's PCOM and PDM with patients' reported diabetes self-management (medication adherence, diet, exercise, blood glucose monitoring, and foot care), adjusting for patient sociodemographics, illness severity, and comorbidities. Among respondents for whom hemoglobin A1c (HbA1c) values were available ($n = 1233$), the relationship was assessed between patient self-management and HbA1c values.

RESULTS: In separate multivariate regressions, PCOM and PDM were each associated with overall diabetes self-management ($p < .001$) and with all self-management domains ($p < .001$ in all models), with the exception of PDM not being associated with medication adherence. In models with both PCOM and PDM, PCOM alone predicted medication adherence ($p = .001$) and foot care ($p = .002$). PDM alone was associated with exercise and blood glucose monitoring (both $p < .001$) and was a stronger independent predictor than PCOM of diet. Better patient ratings of their diabetes self-management were associated with lower HbA1c values ($B = -.10, p = .005$).

CONCLUSION: Among these older adults, both their diabetes providers' provision of information and efforts to actively involve them in treatment decision-making were associated with better overall diabetes self-management. Involving older patients in setting chronic disease goals and decision-making, however, appears to be especially important for self-care areas that demand more behaviorally complex lifestyle adjustments such as exercise, diet, and blood glucose monitoring.

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Hyde MK & White KM. (2009).

Communication prompts donation: Exploring the beliefs underlying registration and discussion of the organ donation decision.

OBJECTIVES: To use a theory of planned behavior (TPB) framework to explore the beliefs underlying communication of the donation decision for people who had not previously registered their consent on a donor register or discussed their decision with significant others.

DESIGN: Initially, a focus group study elicited the common TPB (behavioral, normative, and control) beliefs about registering and discussing the organ donation decision. The main study assessed the important TPB belief predictors of intentions to register and discuss the donation decision.

METHOD: University students and community members from Queensland, Australia (N = 123) completed items assessing their intentions and the TPB behavioral, normative, and control beliefs for registering and discussing their donation decision.

RESULTS: Structural equation modeling (SEM) analyses revealed significant paths between people's intentions to register their donation decisions and underlying behavioral (e.g. enabling efficient donation procedures), normative (e.g. friends, doctors/medical professionals), and control (e.g. lack of motivation, knowing details about transplant recipients) beliefs ($R^2 = .30$). There were also significant paths between people's intentions to discuss their donation decision and underlying behavioral (e.g. feeling uncomfortable talking about death related topics) and normative (e.g. partner/spouse, family members) beliefs, but not control beliefs ($R^2 = .33$). There was a significant path between intentions to register and intentions to discuss one's donation decision.

CONCLUSIONS: Results highlight the importance of focusing on behavioral and normative beliefs about communicating the donation decision, specifically for people who have not previously communicated their decision, and suggest potential targets for interventions designed to promote decision communication.

Janis IL, & Mann L. (1977). D

ecision-making: A psychological analysis of conflict, choice, and commitment.

CONCEPT OF PROBLEM DEVELOPMENT: Internal conflicts are likely to arise whenever an important decision (whether it be marriage, business, or health) has to be made. These decisional conflicts usually serve as sources of psychological stress.

CONCEPT OF CHANGE: There are five stages involved in arriving at a stable decision: (1) appraising the challenge; (2) surveying alternatives; (3) weighing alternatives; (4) deliberating about commitment, and (5) adhering despite negative feedback. The first stage involves confronting the problem. It asks "are the risks serious if I don't change?" The second stage involves being aware that there are alternatives and searching for them. The question to ask in this stage is "Is this (salient) alternative an acceptable means for dealing with the challenge? Have I sufficiently surveyed the available alternatives?" The third stage of decision-making involves being cognitive about the pros and cons of the alternatives so that subjective utility can be used to determine decision. "Which alternative is best? Could the best alternative meet the essential requirement?" The fourth stage asks, "shall I implement the best alternative and allow others to know?" Lastly, the fifth stage is concerned with "are the risks serious if I don't change? Are the risks serious if I do change?" A Conflict Model of Decision Making initially describes behaviors and decisions that

occur in emergency situations. The model assumes that there are five basic coping patterns that affect the quality of decision-making: (1) unconflicted adherence--when one judges the magnitude of the threat to be negligible, he or she will most likely continue with the behavior; (2) unconflicted change--even when the threat is perceived as minimal, the individual may want to change due to a myriad of reasons; (3) defensive avoidance--when the individual perceived the risks to take a particular action is potentially serious, he/she may feel the need to find a better escape; (4) hyper vigilance--feeling of panic when there is the perception that entrapment will follow and time is limited, and (5) vigilance.

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INTERVENTION: The use of a balance sheet is one technique for facilitating cognitive and motivational aspects of decision-making and planning for future actions. This technique should be used to supplement the Conflict Model of Decision-Making. Unfortunately, there is no dependable way to objectively assess the success of a decision. However, to best determine the quality of decision-making, one should examine the quality of the procedures used by the decision maker in selecting a course of action. Seven criteria are given for the decision maker which will help in directing decision making to the desired outcome: (1) consider a wide range of alternative courses of action; (2) survey the full range of objectives to be fulfilled and the values implicated by the choice; (3) carefully weigh the cost and risks of consequences; (4) search for new information regarding alternatives; (5) consider new information or expert judgment; (6) re-examine the pros and cons of all alternatives, and (7) make detailed provisions for implementing or executing the chosen course of action.

Johansson, H., & Jansson, J. (2009).

Therapeutic alliance and outcome in routine psychiatric outpatient treatment: Patient factors and outcome. *Psychology and Psychotherapy: Theory, Research and Practice*, 193-206.

This study investigated the importance of the therapeutic alliance in a routine psychiatric outpatient unit regarding treatment outcome and the influence of patient factors. The results showed that the therapeutic alliance is an important variable for treatment outcome in routine psychiatric treatment, and improving the therapeutic alliance may be one of the most important factors for increasing the total effectiveness of a treatment unit.

Kaplan SH, Greenfield S, & Ware JE Jr. (1989).

Assessing the effects of physician-patient interactions on the outcomes of chronic disease.

OBJECTIVE: To present evidence that specific aspects of physician-patient communication can affect health outcomes and to report on the results of studies where attempts were made to change physician and patient behavior by training patients to take a more active role in their own care.

DESIGN: Three randomized controlled trials among patients with chronic diseases (ulcer disease, hypertension and diabetes) and a fourth nonequivalent controlled trial of breast cancer patients in which physician-patient conversations were taped.

SETTING: Patients in these studies were from four very different settings and had considerable variation in sociodemographic characteristics. The settings range from a free clinic to private office practices; from VA Hospital to a University teaching hospital.

SUBJECTS: The participants are as varied as their locations.

INTERVENTIONS: Intervention: In the first three studies, patients were given individualized medical care information in the form of their medical records, formulas describing disease management and how to interpret the information, and coaching in strategies to increase participation in their own care during office visits. This involved learning techniques to improve question asking, negotiating skills, and methods to decrease barriers to communication with their physicians. In control interventions patients were provided with more general information on their conditions and the importance of self-monitoring and self-care.

MEASURES: Audiotapes of patient office visits before and after the interventions were analyzed. Codes were grouped into 3 categories: control, communication, or emotion. Then several indicators of the style of communication that combined these codes within the speaker were devised. The researchers then compared data from the analyzed tapes with patient functional status and with self-reported evaluations of health obtained from questionnaires. Eight to 12 weeks after the second visit, patients were mailed a questionnaire.

RESULTS: Patients who were more controlling (asked more questions, made more attempts to direct the conversation) during the baseline visit reported fewer functional limitations and health problems. Patients whose physicians had more control in the baseline visits had poorer reported health. Patients in the experimental group exerted more control during the visit. They were more effective in obtaining information from their physicians after the intervention than the controls. The results of the breast cancer patients were similar. There was a relationship between the number of health problems reported and indicators of physician patient communication. More patient and less physician control, more affect (particularly negative affect expressed by both patient and physician) and more information provided by the physician in response to effective questioning and information seeking were related to better patient clinical health status.

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CONCLUSIONS: The studies emphasize the importance of the physician patient relationship for patient health outcomes. Physicians may influence outcomes for patients through the medical care process and by shaping how patients feel about the disease and the patients' ability to contain its impact on their lives. This study parallels other studies that show that an increase in emotion, especially negative emotion, is related to improvement in health status. This bond may be a form of social support as well as clinical support.

Kivelä K, Elo S, Kyngäs H & Kääriäinen. (2014).

The effects of health coaching on adult patients with chronic diseases: A systematic review.

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HIGHLIGHTS

- The review describes the effects of health coaching on patients with chronic diseases.
- Health coaching produces positive effects on chronically ill patient's lives.
- Health coaching motivates changes in chronically ill patients' lifestyle behavior.

- Health coaching improves a patient's physical and mental health status.
- Health coaching supports the management of chronic diseases.

OBJECTIVE: The aim of this systematic review was to describe the effects of health coaching on adult patients with chronic diseases.

METHODS: The reviewers searched electronic databases and performed a manual search for studies published from 2009 to 2013. The inclusion criteria covered health coaching for adults with chronic diseases by health care professionals. The studies were original, randomized controlled trials or quasi-experimental designs.

RESULTS: Thirteen studies were selected using the inclusion criteria. The results indicate that health coaching produces positive effects on patients' physiological, behavioral and psychological conditions and on their social life. In particular, statistically significant results revealed better weight management, increased physical activity and improved physical and mental health status.

CONCLUSION: Health coaching improves the management of chronic diseases. Further research into the cost- effectiveness of health coaching and its long-term effectiveness for chronic diseases is needed.

PRACTICE IMPLICATIONS: Health care professionals play key roles in promoting healthy behavior and motivating good care for adults with chronic diseases. Health coaching is an effective patient education method that can be used to motivate and take advantage of a patient's willingness to change their life style and to support the patient's home-based self-care.

Krichbaum K, Aarestad V, & Buethe M. (2003).

Exploring the connection between self-efficacy and effective diabetes self-management.

PURPOSE: The purpose of this study was to review the existing empirical evidence about factors that contribute to effective diabetes self-management as indicated by healthy outcomes in persons with the disease, with a specific focus on self-efficacy, to determine the link between learned self-efficacy and effective diabetes self- management in adults.

METHODS: A systematic review was conducted of the extant literature from 1985-2001 that described factors related to effective self-management of diabetes. The review included theoretical and empirical articles. The search engines included CINAHL, MEDLINE, PUBMED, and COCHRANE.

RESULTS: Empirical evidence supports the following factors to improve the education outcomes for adults with diabetes: involve people with diabetes in their own care, guide them in actively learning about the disease, explore their feelings about having the disease, and teach them the skills necessary to adjust their behavior to control their own health outcomes. Thus, the goal for educating people with diabetes is to improve their individual self-efficacy and, accordingly, their self-management ability.

CONCLUSIONS: Education sessions need to involve fewer lectures and more practical, interactive exercises that focus on developing specific skills. Follow-up contact is a valuable method for helping people make a healthy adjustment to living with diabetes.

Kushnir T, Kushnir J, Sarel A, & Cohen AH. (2011).

Exploring physician perceptions of the impact of emotions on behavior during interactions with patients.

BACKGROUND: There is relatively little research on affective influences on physician behavior, especially on prescribing and referrals. Affects include transitory moods and lasting emotions.

OBJECTIVES: We explored physician perceptions of the impact of four mood states on perceived rates of five behaviors: talking with patients, prescribing medications and referrals for laboratory tests, diagnostic tests and specialists. We also examined whether burnout modified the impact of moods on behavior.

METHODS: A total of 188 family physicians responded anonymously to a self-reporting questionnaire that assessed the perceived rate of behaviors when in a positive, negative, tired and nervous mood and burnout level.

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RESULTS: Five analyses of variance with repeated measures on mood states and contrast analyses computed the effects of mood and burnout on the behaviors. The mood factor was found significant for each of the behaviors, in all $P < 0.001$. The respondents reported that on good mood compared with negative mood days, they talked more, prescribed less and referred less. The burnout factor was also significant: high compared with low burnout physicians had higher perceived rates of all referral behaviors. Significant mood burnout interactions indicated that the effects of mood were stronger among high compared with low burnout physicians.

CONCLUSIONS: The physicians perceived that their moods had different effects on different behaviors: the negative mood decreased talking and increased prescribing and referral behaviors and vice versa for the positive mood. Burnout intensified the effects of moods. The incremental effects of negative moods and burnout may impair quality of health care and may be costly to health services.

Lang F, et al. (2002).

Sequenced questioning to elicit the patient's perspective on illness: Effects of information disclosure, patient satisfaction, and time expenditure.

BACKGROUND: During the medical interview, clinicians frequently overlook the patient's perspective on illness (PPI), i.e., the patient's explanations and concerns about the presenting symptoms and expectations for the encounter. Without special efforts, the PPI surfaces spontaneously in only about one fourth of medical interviews. We determined whether asking the patient a series of sequenced questions would elicit the PPI and what effect such questioning would have on patient and physician satisfaction and on the length of the clinical encounter. Methods: Fifty-five interviews in a family practice clinic setting were studied by videotape and post-interview debriefings. On a random basis, 29 patients were asked sequenced questions at the end of the history, while 26 experienced usual medical interviews. Measures of patient and physician satisfaction were compared by descriptive statistics and the Mann-Whitney test for ordinal data. Results: In response to sequenced questioning, 44% of patients revealed specific, significant concerns that had not been otherwise disclosed. Among patients without prior contact with their provider, satisfaction with the encounter was significantly higher when the sequenced

questions were used than when they were not; perception of time spent in discussion with the physician was also higher. Paradoxically, resident physicians expressed lower confidence that they had helped the patient when the sequenced questions were used to elicit the PPI. Conclusions: Use of sequenced questions to elicit the PPI results in significant sharing of new information and increased patient satisfaction and requires only a modest investment of time.

Lawson PJ, & Flocke SA. (2009).

Teachable moments for health behavior change: A concept analysis.

OBJECTIVE: "Teachable moments" have been proposed as events or circumstances, which can lead individuals to positive behavior change. However, the essential elements of teachable moments have not been elucidated. Therefore, we undertook a comprehensive review of the literature to uncover common definitions and key elements of this phenomenon.

METHODS: Using databases spanning social science and medical disciplines, all records containing the search term "teachable moment" were collected. Identified literature was then systematically reviewed and patterns were derived.

RESULTS: Across disciplines, 'teachable moment' has been poorly developed both conceptually and operationally. Usage of the term falls into three categories: (1) "teachable moment" is synonymous with "opportunity" (81%); (2) a context that leads to a higher than expected behavior change is retrospectively labeled a 'teachable moment' (17%); (3) a phenomenon that involves a cueing event that prompts specific cognitive and emotional responses (2%).

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CONCLUSION: The findings suggest that the teachable moment is not necessarily unpredictable or simply a convergence of situational factors that prompt behavior change but suggest the possible creation of a teachable moment through clinician-patient interaction.

PRACTICE IMPLICATIONS: Clinician-patient interaction may be central to the creation of teachable moments for health behavior change.

Légaré F, Labrecque M, Cauchon M, Castel J, Turcotte S, & Grimshaw J. (2012).

Training family physicians in shared decision-making to reduce the overuse of antibiotics in acute respiratory infections: A cluster randomized trial.

BACKGROUND: Few interventions have proven effective in reducing the overuse of antibiotics for acute respiratory infections. We evaluated the effect of DECISION+2, a shared decision-making training program, on the percentage of patients who decided to take antibiotics after consultation with a physician or resident.

METHODS: We performed a randomized trial, clustered at the level of family practice teaching unit, with 2 study arms: DECISION+2 and control. The DECISION+2 training program included a 2-hour online tutorial followed by a 2-hour interactive seminar about shared decision-making. The primary outcome was the proportion of patients who decided to use antibiotics immediately after consultation. We also recorded patients' perception that shared decision-making had occurred. Two weeks after the initial consultation, we assessed patients' adherence to the decision, repeat consultation, decisional regret and quality of life.

RESULTS: We compared outcomes among 181 patients who consulted 77 physicians in 5 family practice teaching units in the DECISION+2 group, and 178 patients who consulted 72 physicians in 4 family practice teaching units in the control group. The percentage of patients who decided to use antibiotics after consultation was 52.2% in the control group and 27.2% in the DECISION+2 group (absolute difference 25.0%, adjusted relative risk 0.48, 95% confidence interval 0.34–0.68). DECISION+2 was associated with patients taking a more active role in decision-making ($Z = 3.9$, $p < 0.001$). Patient outcomes 2 weeks after consultation were similar in both groups.

INTERPRETATION: The shared decision-making program DECISION+2 enhanced patient participation in decision-making and led to fewer patients deciding to use antibiotics for acute respiratory infections. This reduction did not have a negative effect on patient outcomes 2 weeks after consultation.

Levinson W, Kao A, Kuby A, & Thisted RA. (2005).

Not all patients want to participate in decision-making: A national study of public preferences.

BACKGROUND: The Institute of Medicine calls for physicians to engage patients in making clinical decisions, but not every patient may want the same level of participation.

OBJECTIVES: 1) To assess public preferences for participation in decision making in a representative sample of the U.S. population. 2) To understand how demographic variables and health status influence people's preferences for participation in decision-making.

DESIGN AND PARTICIPANTS: A population-based survey of a fully representative sample of English-speaking adults was conducted in concert with the 2002 General Social Survey ($N = 2,765$). Respondents expressed preferences ranging from patient-directed to physician-directed styles on each of 3 aspects of decision making (seeking information, discussing options, making the final decision). Logistic regression was used to assess the relationships of demographic variables and health status to preferences.

MAIN RESULTS: Nearly all respondents (96%) preferred to be offered choices and to be asked their opinions. In contrast, half of the respondents (52%) preferred to leave final decisions to their physicians and 44% preferred to rely on physicians for medical knowledge rather than seeking out information themselves. Women, more educated, and healthier people were more likely to prefer an active role in decision making. African-American and Hispanic respondents were more likely to prefer that physicians make the decisions. Preferences for an active role increased with age up to 45 years, but then declined.

CONCLUSION: This population-based study demonstrates that people vary substantially in their preferences for participation in decision-making. Physicians and health care organizations should not assume that patients wish to participate in clinical decision-making, but must assess individual patient preferences and tailor care accordingly.

Levinson W, Gorawara-Bhat R, & Lamb J. (2000).

A study of patient clues and physician responses in primary care and surgical settings.

OBJECTIVE: To explore the nature and frequency of patient clues during medical encounter and physician response among primary care physicians and surgeons.

DESIGN: Descriptive study of audiotaped office visits (data set was part of a larger research project that examined the relationship between physician-patient communication and medical malpractice).

SETTING: Community-based practices of primary care physicians and surgeons in Oregon and Colorado.

SUBJECTS: 116 randomly selected routine office visits to 54 primary care physicians and 62 surgeons (94% male, 91% Caucasian, 67% group practice). Ten patients per physician were selected sequentially from the waiting rooms (54% female, 88% Caucasian, 71% married, average age=54). /

INTERVENTION: None.

MEASURES: Audio-taped interactions and transcripts were reviewed to identify and describe segments of the interview in which there were clues about patients' emotional or social concerns. Clues that were initiated by the patient were coded for type and timing and nature of physician response. In addition, physician questions that encouraged patient to discuss a personal topic were also coded as physician-initiated clues. Length of visit was also recorded.

RESULTS: Clues occurred in 52% of the primary care visits (mean number of clues =2.6) and in 53% of the surgical visits (mean number of clues = 1.9). Patients initiated approximately 70% of those clues and physicians initiated approximately 30%. Of the patient led clues in primary care visits, 76% were emotional and 60% in the surgical setting. Physicians missed the opportunity to respond to patient led clues 79% of the time in primary care and 62% in the surgical setting. In 50% of those interviews where the physician missed the opportunity to respond to the patient-led clue, the patient brought up the same issue (clue) a second or third time. In addition, in primary care, visits were longer when there was a missed opportunity to respond by the physician compared with visits where the physician responded with a positive response (mean time, 20.1 min vs. 17.6 min).

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CONCLUSIONS/RECOMMENDATIONS: Patients offer clues to physicians that provide rich opportunities for empathy and a greater understanding of patients' lives. In primary care and surgery settings, physicians tend to miss these clues and thus overlooking opportunities to strengthen the doctor-patient relationship. Two aspects of the medical encounter uncovered in this study - patient clues and physician responses, should be recognized as being interdependent and necessary in building a trusting relationship between physician and patients and impacting health outcome.

Lewis, Cara C., Matheson, Deborah H., Brimacombe, Elizabeth (2011):

Factors Influencing Patient Disclosure to Physicians in Birth Control Clinics: An Application of the Communication Privacy Management Theory, Health Communication, 26:6, 502-511

The focus of the current study is to determine why female patients change their personal histories when discussing sensitive subject matter with their physician in birth control clinics. About one-half of the women surveyed (46%) reported altering their personal information. Patients with a highly permeable privacy orientation, as evidenced by a history of open communication regarding sexual issues, were those who reported fully disclosing to their physicians. Of the physician characteristics considered to map onto patient privacy rules, the physician's gender, hurriedness, friendliness, use of a first-name introduction, and open-ended questions were significantly related to patients' reported ease in fully disclosing personal information ($p < .05$).

London F. (2009).

No time to teach: The essence of patient and family education for health care providers.

WHAT THIS BOOK IS NOT: A collection of preachy how-to's, recycled theories about learning, and generic advice on how to teach. **What this book IS:** A no-nonsense, realistic approach to helping health care professionals make the most of their time with patients. It shows you how you can incorporate teaching into every single contact that you have with a patient and how to document it and communicate it to other care providers. It even explores modern technology and how that impacts our relationships and communications with patients. Fran's approaches are sensitive to diversity among the patients that you serve, and she gets you thinking about how and why you need to individualize the education you give. There's a strong underlying theme of trust and respect in the patient-caregiver relationship. You can dispense the greatest education in the world, but if it's not done in a way that your patient will understand, or if the patient is not ready to hear it, or if the patient simply don't trust you - it's just a waste of your time.

Mason P & Butler C. (2nd ed.) (2010).

Health behavior change.

The second edition of Health Behavior Change presents an exciting method which can be used to help patients change their behavior in both hospital and community settings. The method is applicable to any behavior, such as overeating, physical inactivity and smoking or with patients struggling with the consequences of chronic conditions like diabetes and heart disease. Using brief, structured consultations with the client, the practitioner encourages the patient to take charge of decision-making concerning their health. It relies upon partnership between professional and patient rather than dominance of one over the other and is carried out in a spirit of negotiation rather than confrontation.

The text clearly outlines the fundamental principles behind the method while applying it to practice. Problems of resistance and lack of motivation are explored and practical strategies to manage them are suggested. The patient is at the center throughout. Short case examples and dilemmas from clinical settings ground the method in the reality of practice.

Mauksch LB, Dugdale DC, Dodson S & Epstein R. (2008).

Relationship, communication, and efficiency in the medical encounter creating a clinical model from a literature review.

BACKGROUND: While there is consensus about the value of communication skills, many physicians complain that there is not enough time to use these skills. Little is known about how to combine effective relationship development and communication skills with time management to maximize efficiency. Our objective was to examine what physician-patient relationship and communication skills enhance efficiency.

DATA SOURCES: We conducted searches of PubMed, EMBASE, and PsychINFO for the date range January 1973 to October 2006. We reviewed the reference lists of identified publications and the bibliographies of experts in physician-patient communication for additional publications.

STUDY SELECTION: From our initial group of citations (n=1146), we included only studies written in English that reported original data on the use of communication or relationship skills and their effect on time use or visit length. Study inclusion was determined by independent review by 2 authors (L.B.M. and D.C.D.). This yielded 9 publications for our analysis.

DATA EXTRACTION: The 2 reviewers independently read and classified the 9 publications and cataloged them by type of study, results, and limitations. Differences were resolved by consensus.

RESULTS: Three domains emerged that may enhance communication efficiency: rapport building, up-front agenda setting, and acknowledging social or emotional clues

CONCLUSIONS: Building on these findings, we offer a model blending the quality enhancing and time management features of selected communication and relationship skills. There is a need for additional research about communication skills that enhance quality and efficiency.

Mazzi MA, Rimondini M, Boerma GW, Zimmermann C, Bensing JM (2015).

How patients would like to improve medical consultations: Insights from a multicenter European study.

HIGHLIGHTS

- The sequential mixed-methods ensure validity and trustworthiness of findings.
- Patients desire to be listened to, taken seriously and treated as person, with no time pressure.
- Patients consider their own responsibility to speak openly and adhere to treatment plan
- Patients emphasize the doctor–patient collaboration for an effective consultation.
- Patients consider doctors the main responsible for encouraging active patient participation.

OBJECTIVE: In a previous qualitative study (GULiVer-I), a series of lay-people derived recommendations ('tips') was listed for doctor and patient on 'How to make medical consultation more effective from the patient's perspective'. This work (GULiVer-II) aims to find evidence whether these tips can be generally applied, by using a quantitative approach, which is grounded in the previous qualitative study.

METHODS: The study design is based on a sequential mixed method approach. 798 patients, representing United Kingdom, Italy, Belgium and the Netherlands, were invited to assess on four point Likert scales the importance of the GULiVer-I tips listed in the 'Patient Consultation Values questionnaire'.

RESULTS: All tips for the doctor and the patient were considered as (very) important by the majority of the participants. Doctors' and patients' contributions to communicate honestly, treatment and time management were considered as equally important (65, 71 and 58% respectively); whereas the contribution of doctors to the course and content of the consultation was seen as more important than that of patients.

CONCLUSIONS: The relevance of GULiVer-I tips is confirmed, but tips for doctors were assessed as more important than those for patients.

PRACTICE IMPLICATIONS: Doctors and patients should pay attention to these "tips" in order to have an effective medical consultation.

McDaniel SH, Beckman HB, Morse DS, Silberman J, Seaburn DB, & Epstein RM. (2007).

Physician self-disclosure in primary care visits enough about you, what about me?

BACKGROUND: The value of physician self-disclosure (MD-SD) in creating successful patient-physician partnerships has not been demonstrated.

METHODS: To describe antecedents, delivery, and effects of MD-SD in primary care visits, we conducted a descriptive study using sequence analysis of transcripts of 113 unannounced, undetected, standardized patient visits to primary care physicians. Our main outcome measures were the number of MD-SDs per visit; number of visits with MD-SDs; word count; antecedents, timing, and effect of MD-SD on subsequent physician and patient communication; content and focus of MD-SD.

RESULTS: The MD-SDs included discussion of personal emotions and experiences, families and/or relationships, professional descriptions, and personal experiences with the patient's diagnosis. Seventy-three MD-SDs were identified in 38 (34%) of 113 visits. Ten MD-SDs (14%) were a response to a patient question. Forty-four (60%) followed patient symptoms, family, or feelings; 29 (40%) were unrelated. Only 29 encounters (21%) returned to the patient topic preceding the disclosure. Most MD-SDs (n = 62; 85%) were not considered useful to the patient by the research team. Eight MD-SDs (11%) were coded as disruptive.

CONCLUSIONS: Practicing primary care physicians disclosed information about themselves or their families in 34% of new visits with unannounced, undetected, standardized patients. There was no evidence of positive effect of MD-SDs; some appeared disruptive. Primary care physicians should consider when self-disclosing whether other behaviors such as empathy might accomplish their goals more effectively. Effective physician-patient communication appears to improve health outcomes, 1 - 4 but the empirical evidence regarding how best to create healing relationships is largely lacking.⁵ In particular, physician self-disclosure (MD-SD), when the physician shares personal information and/or experiences, has generated controversy. Despite seeming to be a way to strengthen the patient-physician relationship, 6 recent evidence has called this into question. In the only systematic study of MD-SD to our knowledge, Beach et al^{7 - 8} found that MD-SD was common. They noted that MD-SDs in surgical visits were associated with greater patient satisfaction and reports of warmth, friendliness, comfort, and reassurance. In contrast, in primary care visits, MD-SDs were associated with lower ratings on all of those scales. These findings highlight unanswered questions about the content, antecedents, and consequences of MD-SD, and when and how physicians should use self-disclosure during medical visits.

Mulder B, van Belzen M, Lokhorst AM, van Woerkum CMJ. (2015).

Quality assessment of practice nurse communication with type 2 diabetes patients.

HIGHLIGHTS

- We evaluate to what extent practice nurses apply self-management support elements
- Quality criteria are used to assess how self-management support is delivered.

- Practice nurses do not apply several key elements of self-management support.
- Specific recommendations for training practice nurses in counseling are discussed.

OBJECTIVE: Nurse self-management support for type 2 diabetes patients may benefit from applying theory-based behavior change counseling. The 5As model was used to assess if, and how, nurses applied the five key elements of self-management support in standard care.

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METHODS: Seven practice nurses audio-recorded consultations with 66 patients. An existing instrument for assessing counseling quality was used to determine if the 5As were applied. Applied As were compared with quality criteria, to provide an in-depth assessment.

RESULTS: In almost every consultation, nurses assessed health behaviors, and arranged a follow-up meeting. However, nurses advised behavior change in less than half of the consultations, while setting goals and assisting patients to overcome barriers were used even less. Comparing applied As with quality criteria revealed several issues that could be improved.

CONCLUSION: Nurses consistently discussed health behaviors with patients, but important elements of self-management support were not applied.

PRACTICE IMPLICATIONS: Self-management support may benefit from training nurses in performing assessments that form the base for specific advice, setting goals, and addressing barriers to behavior change. Nurses also have to learn how to combine being medical expert and behavioral counselor. Clarifying both roles to patients may facilitate communication and establishing a collaborative relationship.

Nightingale R, Friedl S, Swallow V (2015).

Parents' learning needs and preferences when sharing management of their child's long-term/chronic condition: A systematic review.

HIGHLIGHTS

- Parents of children with chronic conditions learn to share care with professionals.
- Learning needs and preferences of parents should be acknowledged.
- Health professionals could ask parents directly about their learning needs.
- This information could be used to support individual parents' learning.
- This could optimize delivery of care, contributing to improved clinical outcomes.

OBJECTIVE: This review aimed to (1) identify parents' learning needs and preferences when sharing the management of their child's long-term/chronic (long-term) condition and (2) inform healthcare professional support provided to parents across the trajectory.

METHODS: We conducted a literature search in seven health databases from 1990 to 2013. The quality of included studies was assessed using a critical appraisal tool developed for reviewing the strengths and weaknesses of qualitative, quantitative and mixed methods studies.

RESULTS: Twenty-three studies met our criteria and were included in the review. Three themes emerged from synthesis of the included studies: (1) parents' learning needs and preferences (2) facilitators to parents' learning, and (3) barriers to parents' learning.

CONCLUSION: Asking parents directly about their learning needs and preferences may be the most reliable way for healthcare professionals to ascertain how to support and promote individual parents' learning when sharing management of their child's long-term condition.

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PRACTICE IMPLICATIONS: With the current emphasis on parent-healthcare professional shared management of childhood long-term conditions, it is recommended that professionals base their assessment of parents' learning needs and preferences on identified barriers and facilitators to parental learning. This should optimize delivery of home-based care, thereby contributing to improved clinical outcomes for the child.

Robertson K. (2005).

Active Listening: More than just paying attention.

Communication skills courses are an essential component of undergraduate and postgraduate training and effective communication skills are actively promoted by medical defense organizations as a means of decreasing litigation. This article discusses active listening, a difficult discipline for anyone to practice, and examines why this is particularly so for doctors. It draws together themes from key literature in the field of communication skills, and examines how these theories apply in general practice.

Roter D, & Kinmonth AL. (2002).

What is the evidence that increasing participation of individuals in self- management improves the processes and outcomes of care?

DESCRIPTION OF CONTEXT: This chapter reviews the evidence linking levels of patient engagement in medical visit communication and self-management to diabetes-related outcomes.

CONCLUSIONS/RECOMMENDATIONS: It defines the principles emerging from this evidence, to inform better clinical practice. The authors conclude that "the balance of evidence from the studies reviewed suggests that when the physician is patient-centered (and non-controlling), when patients are verbally active overall, and especially in information-seeking, and when the patient is empowered to make treatment decisions, self- reported health and functional status, and metabolic control are improved." The authors offer 5 principles for improving self-management through improved clinician-patient communication: 1) hear the patient's perspective; 2) provide information that is useful and relevant; 3) negotiate a plan and anticipate problems; 4) offer ongoing monitoring of compliance and compliance difficulties; 5) find problems and re-negotiating solutions; and 6) provide emotional support to the patient.

Rowland-Morin PA, Carroll JG. (1990).

Verbal communication skills and patient satisfaction: A study of doctor- patient interviews.

This research attempted to quantify specific behaviors in the physician's initial interviewing style and relate them to patients' perception of satisfaction. Five physicians were tape recorded during their initial interviews with 52 adult patients. The patients were asked to complete the Medical Interview Satisfaction Scale, a 29-item instrument with a 7-point response scale. These interviews were transcribed, timed, coded, and analyzed with the use of the Computerized Language Analysis System. Selected variables of the language dimensions were entered as the predictor variables in a multiple regression, along with satisfaction scores as the dependent variables. Twenty-seven percent of the variance (p less than .01) in the satisfaction scores of initial interviews were explained by three aspects of a physician's language style: (a) use of silence or reaction time latency between speakers in an interview, (b) whether there was language reciprocity as determined through the reciprocal use of word-lists, and (c) the reflective use of interruptions within an interview. Considering the complexity of human communication, the fact that three variables were identified, which accounted for 27% of the variance in patients' satisfaction, is considered a substantial finding.

Shaw SM. (2007).

Responding appropriately to patients with chronic illnesses.

A significant proportion of the population lives with chronic illness and nurses are likely to come into contact with these patients on a regular basis. However, health professionals do not always recognize or respond supportively to such patients. This article explores some of the negative responses that occur and suggests more appropriate ways to work with this group of patients

Sibley A, Latter S, Richard C, Lussier MT, Roberge D, Skinner TC, Cradock S, & Zinken KM. (2011).

Medication discussion between nurse prescribers and people with diabetes: An analysis of content and participation using MEDICODE.

AIM: This paper is a report of a study to identify the content of, and participation in, medicine discussion between nurse prescribers and people with diabetes in England.

BACKGROUND: Diabetes affects 246 million people worldwide and effective management of medicines is an essential component of successful disease control. There are now over 20,000 nurse independent prescribers in the UK, many of whom frequently prescribe for people with diabetes. With this responsibility comes a challenge to effectively communicate with patients about medicines. National guidelines on medicines communication have recently been issued, but the extent to which nurse prescribers are facilitating effective medicine taking in diabetes remains unknown.

METHODS: A purposive sample of 20 nurse prescribers working with diabetes patients audio-recorded 59 of their routine consultations and a descriptive analysis was conducted using a validated coding tool: MEDICODE. Recordings were collected between January and July 2008. The unit of analysis was the medicine.

RESULTS: A total of 260 instances of medicine discussion identified in the audio-recordings were analyzed. The most frequently raised themes were 'medication named' (raised in 88.8% of medicines), 'usage of medication' (65.4%) and 'instructions for taking medication' (48.5%). 'Reasons for medication' (8.5%) and 'concerns about medication' were infrequently discussed (2.7%). Measures of consultation participation suggest largely dyadic medicine discussion initiated by nurse prescribers.

CONCLUSION: MEDICODE discussion themes linked to principles of recent guidelines for effective medicine- taking were infrequently raised. Medicine discussion was characterized by a one statement-one response style of communication led by nurses. Professional development is required to support theoretically informed approaches to effective medicines management.

**Sleath B, Carpenter DM, Slota C, Williams D, Tudor G, Yeatts K, Davis S, & Ayala GX. (2012).
Communication during pediatric asthma visits and self-reported asthma medication adherence.**

OBJECTIVE: Our objectives were to examine how certain aspects of provider-patient communication recommended by national asthma guidelines (i.e., provider asking for child and caregiver input into the asthma treatment plan) were associated with child asthma medication adherence 1 month after an audio-taped medical visit.

METHODS: Children ages 8 through 16 with mild, moderate, or severe persistent asthma and their caregivers were recruited at 5 pediatric practices in nonurban areas of North Carolina. All medical visits were audio-tape recorded. Children were interviewed 1 month after their medical visits, and both children and caregivers reported the child's control medication adherence. Generalized estimating equations were used to determine if communication during the medical visit was associated with medication adherence 1 month later.

RESULTS: Children (n = 259) completed a home visit interview ~1 month after their audio-taped visit, and 216 of these children were taking an asthma control medication at the time of the home visit. Children reported an average control medication adherence for the past week of 72%, whereas caregivers reported the child's average control medication adherence for the past week was 85%. Child asthma management self-efficacy was significantly associated with both child- and caregiver-reported control medication adherence. When providers asked for caregiver input into the asthma treatment plan, caregivers reported significantly higher child medication adherence 1 month later.

CONCLUSIONS: Providers should ask for caregiver input into their child's asthma treatment plan because it may lead to better control medication adherence.

**Stiggebout AM, Pieterse AH, De Haes JCJM (2015).
Shared decision-making: Concepts, evidence, and practice.**

HIGHLIGHTS

- Shared decision making (SDM) became much debated in the last decades of the 20th century.
- Four steps can be distinguished and our paper provides suggestions how to perform these.
- The steps have been found not be widely implemented in clinical practice.
- For implementation various strategies are needed, targeting both professionals and patients.

OBJECTIVE: Shared decision-making (SDM) is advocated as the model for decision-making in preference-sensitive decisions. In this paper we sketch the history of the concept of SDM, evidence on the occurrence of the steps in daily practice, and provide a clinical audience with

communication strategies to support the steps involved. Finally, we discuss ways to improve the implementation of SDM.

RESULTS: The plea for SDM originated almost simultaneously in medical ethics and health services research. Four steps can be distinguished: (1) the professional informs the patient that a decision is to be made and that the patient's opinion is important; (2) the professional explains the options and their pros and cons; (3) the professional and the patient discuss the patient's preferences and the professional supports the patient in deliberation; (4) the professional and patient discuss the patient's wish to make the decision, they make or defer the decision, and discuss follow-up. In practice these steps are seen to occur to a limited extent.

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DISCUSSION: Knowledge and awareness among both professionals and patients as well as tools and skills training are needed for SDM to become widely implemented.

PRACTICE IMPLICATIONS: Professionals may use the steps and accompanying communication strategies to implement SDM.

Substance Abuse and Mental Health Services Administration, Results from the 2010 National Survey on Drug Use and Health: Summary of National Findings, NSDUH Series H-41, HHS Publication No. (SMA) 11-4658. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2011.

Tamblyn R, Abrahamowicz M, Dauphinee D, Wenghofer E, Jacques A, Klass D, Smees S, Egale T, Winslade N, Girard N, Bartman I, Buckeridge D, & Hanley JA. (2010).

Influence of physicians' management and communication ability on patients' persistence with antihypertensive medication.

BACKGROUND: Less than 75% of people prescribed antihypertensive medication are still using treatment after 6 months. Physicians determine treatment, educate patients, manage side effects, and influence patient knowledge and motivation. Although physician communication ability likely influences persistence, little is known about the importance of medical management skills, even though these abilities can be enhanced through educational and practice interventions. The purpose of this study was to determine whether a physician's medical management and communication ability influence persistence with antihypertensive treatment.

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METHODS: This was a population-based study of 13 205 hypertensive patients who started antihypertensive medication prescribed by a cohort of 645 physicians entering practice in Quebec, Canada, between 1993 and 2007. Medical Council of Canada licensing examination scores were used to assess medical management and communication ability. Population-based prescription and medical services databases were used to assess starting therapy, treatment changes, comorbidity, and persistence with antihypertensive treatment in the first 6 months.

RESULTS: Within 6 months after starting treatment, 2926 patients (22.2%) had discontinued all antihypertensive medication. The risk of nonpersistence was reduced for patients who were treated by physicians with better medical management (odds ratio per 2-SD increase in score,

0.74; 95% confidence interval, 0.63-0.87) and communication (0.88; 0.78-1.00) ability and with early therapy changes (odds ratio, 0.45; 95% confidence interval, 0.37-0.54), more follow-up visits, and nondiuretics as the initial choice of therapy. Medical management ability was responsible for preventing 15.8% (95% confidence interval, 7.5%-23.3%) of nonpersistence.

CONCLUSION: Better clinical decision-making and data collection skills and early modifications in therapy improve persistence with antihypertensive therapy.

White R, Eden S, Wallston K, Kripalani S, Barto S, Shintani A, Rothman R, (2015).

Health communication, self-care, and treatment satisfaction among low-income diabetes patients in a public health setting.

HIGHLIGHTS

- Poor health communication (HC) may influence diabetes care for patients with limited resources.
- We examined the association of HC with select diabetes factors for patients in a safety-net system in TN.
- Predictors included self-reports of provider communication using validated measures.
- Better communication was associated with lower medication non-adherence and higher treatment satisfaction.
- Communication quality may be an important modifiable strategy for improving diabetes care for vulnerable populations.

OBJECTIVE: Diabetes patients with limited resources often experience suboptimal care. Less is known about the role of effective health communication (HC) in caring for low income diabetes patients.

METHODS: Ten health department clinics in TN participated in a trial evaluating a literacy-sensitive communication intervention. We assessed the quality of baseline HC and measured associations with diabetes outcomes. Assessments included: demographics, measures of HC, health literacy, self-care behaviors, self-efficacy, medication non-adherence, treatment satisfaction, and A1C. Unadjusted and adjusted multivariable regression models were used to test associations.

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RESULTS: Participants (N = 411) were 49.7 ± 9.5 years, 61% female, uninsured (96%), with A1C 9.6 ± 2.1. In unadjusted analyses, better communication, was associated with lower medication non-adherence (OR 0.40–0.68, all p < 0.05), higher treatment satisfaction (OR 1.76–1.96, all p < 0.01), portion size reduction (OR 1.43, p < 0.05), diabetes self-efficacy (OR 1.41, p < 0.05), and lower A1C (β = -0.06, p < 0.01). In adjusted analyses, communication quality remained associated with lower medication non-adherence (AOR 0.39–0.68, all p < 0.05), and higher treatment satisfaction (AOR 1.90–2.21, all p < 0.001).

CONCLUSIONS: Better communication between low-income patients and providers was independently associated with lower medication non-adherence and higher treatment satisfaction.

PRACTICE IMPLICATIONS: Communication quality may be an important modifiable approach to improving diabetes care for vulnerable populations.

Category 5: MI and Race/Ethnicity

Adams A, Realpe A, Vail L, Buckingham CD, Erby LH, Roter D. (2015)

How doctors' communication style and race concordance influence African–Caribbean patients when disclosing depression.

HIGHLIGHTS

- Doctor–patient race concordance was not important for African Caribbeans.
 - A patient-centered communication style made African–Caribbeans more comfortable.
 - African–Caribbeans rated doctors with a HPC versus LPC style more positively.
 - African–Caribbeans' treatment preferences were sensitive to communication styles.
- Objective: To determine the impact of doctors' communication style and doctor–patient race concordance on UK African–Caribbeans' comfort in disclosing depression.

METHODS: 160 African–Caribbean and 160 white British subjects, stratified by gender and history of depression, participated in simulated depression consultations with video-recorded doctors. Doctors were stratified by black or white race, gender and a high (HPC) or low patient-centered (LPC) communication style, giving a full $2 \times 2 \times 2$ factorial design. Afterwards, participants rated aspects of doctors' communication style, their comfort in disclosing depression and treatment preferences

RESULTS: Race concordance had no impact on African–Caribbeans' comfort in disclosing depression. However a HPC versus LPC communication style made them significantly more positive about their interactions with doctors ($p = 0.000$), their overall comfort ($p = 0.003$), their comfort in disclosing their emotional state ($p = 0.001$), and about considering talking therapy ($p = 0.01$); but less positive about considering antidepressant medication ($p = 0.01$).

CONCLUSION: Doctors' communication style was shown to be more important than patient race or race concordance in influencing African Caribbeans' depression consultation experiences. Changing doctors' communication style may help reduce disparities in depression care.

PRACTICE IMPLICATIONS: Practitioners should cultivate a HPC style to make African–Caribbeans more comfortable when disclosing depression, so that it is less likely to be missed.

Aggarwal NK, Pieh MC, Dixon L, Guarnaccia P, Alegría M, Lewis-Fernández R. (2015).

Clinician descriptions of communication strategies to improve treatment engagement by racial/ethnic minorities in mental health services: A systematic review. DOI: <http://dx.doi.org/10.1016/j.pec.2015.09.002>.

HIGHLIGHTS

- Communication affects mental health treatment retention for minority patients
- Communication can be divided into cultural content and interpersonal context.
- Cultural content is important for minorities starting and maintaining treatment.

- Interpersonal context is important for minorities participating in treatment.
- Clinicians can improve content and context communication skills.

OBJECTIVE: To describe studies on clinician communication and the engagement of racial/ethnic minority patients in mental health treatment.

METHODS: Authors conducted electronic searches of published and grey literature databases from inception to November 2014, forward citation analyses, and backward bibliographic sampling of included articles. Included studies reported original data on clinician communication strategies to improve minority treatment engagement, defined as initiating, participating, and continuing services.

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RESULTS: Twenty-three studies met inclusion criteria. Low treatment initiation and high treatment discontinuation were related to patient views that the mental health system did not address their understandings of illness, care or stigma. Treatment participation was based more on clinician language use, communication style, and discussions of patient-clinician differences.

CONCLUSION: Clinicians may improve treatment initiation and continuation by incorporating patient views of illness into treatment and targeting stigma. Clinicians may improve treatment participation by using simple language, tailoring communication to patient preferences, discussing differences, and demonstrating positive affect.

PRACTICE IMPLICATIONS: Lack of knowledge about the mental health system and somatic symptoms may delay treatment initiation. Discussions of clinician backgrounds, power, and communication style may improve treatment participation. Treatment continuation may improve if clinicians tailor communication and treatment plans congruent with patient expectations.

Benne GG, Foley P, Levine E, et al. (2013).

Behavioral treatment for weight gain prevention among black women in primary care practice: A randomized clinical trial.

IMPORTANCE: Few weight loss treatments produce clinically meaningful weight loss outcomes among black women, particularly in the primary care setting. New weight management strategies are necessary for this population. Weight gain prevention might be an effective treatment option, with particular benefits for overweight and class 1 obese black women.

OBJECTIVE: To compare changes in weight and cardiometabolic risk during a 12-month period among black women randomized to a primary care-based behavioral weight gain prevention intervention, relative to usual care.

DESIGN, SETTING, AND PARTICIPANTS: Two-arm randomized clinical trial (the Shape Program). We recruited patients from a 6-site community health center system. We randomized 194 overweight and class 1 obese (body mass index [calculated as weight in kilograms divided by height in meters squared], 25-34.9) premenopausal black women aged 25 to 44 years. Enrollment began on December 7, 2009; 12- and 18-month assessments were completed in February and October 2, 2012.

INTERVENTIONS: The medium-intensity intervention included tailored behavior change goals, weekly self-monitoring via interactive voice response, monthly counseling calls, tailored skills training materials, and a gym membership.

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MAIN OUTCOMES AND MEASURES: 12-month change in weight and body mass index and maintenance of change at 18 months.

RESULTS: Participants had a mean age of 35.4 years, a mean weight of 81.1 kg, and a mean body mass index of 30.2 at baseline. Most were socioeconomically disadvantaged (79.7% with educational level less than a college degree; 74.3% reporting annual income <\$30,000). The 12-month weight change was larger among intervention participants (mean [SD], -1.0 [0.5] kg), relative to usual care (0.5 [0.5] kg; mean difference, -1.4 kg [95% CI, -2.8 to -0.1 kg]; $P=04$). At month 12, 62% of intervention participants were at or below their baseline weights compared with 45% of usual-care participants ($P=?03$). By 18 months, intervention participants maintained significantly larger changes in weight (mean difference, -1.7 kg; 95% CI, -3.3 to -0.2 kg).

CONCLUSIONS AND RELEVANCE: A medium-intensity primary care-based behavioral intervention demonstrated efficacy for weight gain prevention among socioeconomically disadvantaged black women. A "maintain, don't gain" approach might be a useful alternative treatment for reducing obesity-associated disease risk among some premenopausal black women.

Fortmann AL, Gallo LC, & Philis-Tsimikas A. (2011).

Glycemic control among Latinos with type 2 diabetes: The role of social-environmental support resources.

OBJECTIVE: Although active diabetes self-management is required to achieve glycemic control, adherence is poor among ethnic minorities, especially Latinos. Research shows that individuals who report greater social- environmental support resources for disease management manage their diabetes more effectively than those with fewer support resources.

METHODS: Path analysis was conducted to investigate the value of a multiple-mediator model in explaining how support resources for disease management influence hemoglobin A1c (HbA1c) levels in a sample of 208 Latinos with Type 2 diabetes recruited from low-income serving community clinics in San Diego County. We hypothesized that the relationship between support resources for disease-management and HbA1c would be mediated by diabetes self-management and/or depression.

RESULTS: Participants who perceived greater support resources for disease-management reported better diabetes self-management ($\beta = .40$, $p < .001$) and less depression ($\beta = -.19$, $p < .01$). In turn, better diabetes self-management and less depression were associated with tighter glycemic control (HbA1c; $\beta = -.17$, $p < .05$ and $\beta = .15$, $p < .05$, respectively). Once the indirect effects via diabetes self-management (95% CI [-.25; -.03]) and depression (95% CI [-.14; -.01]) were statistically controlled, the direct pathway from support resources to HbA1c was markedly reduced ($p = .57$).

CONCLUSIONS: These findings demonstrate the important connection that support resources for disease management can have with diabetes self-management, emotional well being, and glycemic control among

Latinos. Thus, programs targeting diabetes self-management and glycemic control in this population should consider culturally relevant, multilevel influences on health outcomes.

Fryar CD, Hirsch R, Eberhardt MS, Yoon SS, & Wright JD. (2010)

Hypertension, high serum total cholesterol, and diabetes: Racial and ethnic prevalence differences in U.S. adults, 1999-2006.

Nearly half of all adults in the US have one chronic condition associated with an increased risk of cardiovascular disease, according to data from the National Health and Nutrition Examination Survey (NHANES). The report, from the Centers for Disease Control and Prevention, showed that 45% of individuals 20 years of age and older have hypercholesterolemia, hypertension, or diabetes. Of these, 3% of adults had all three conditions and 13% had two conditions. Hypertension and hypercholesterolemia were present in 9% of adults, and 3% of adults had high blood pressure and diabetes. "These findings indicate that a high percentage of the population have a condition associated with heart disease, the leading cause of death in the United States," according to Cheryl Fryar (Centers for Disease Control and Prevention, Hyattsville, MD) and colleagues in an April 2010 data brief from the National Center for Health Statistics. The prevalence of diagnosed or undiagnosed high blood pressure, elevated cholesterol levels, or diabetes varied by ethnicity, with non-Hispanic black individuals more likely than non-Hispanic white and Mexican American individuals to have at least one of these three conditions. Compared with Mexican Americans, non-Hispanic white individuals were more likely to have only one of these chronic conditions, while non-Hispanic black people were more likely than white individuals and Mexican American individuals, 16.4% vs. 12.8% and 12.7%, respectively, to have two comorbid conditions. In total, 4.6% of non-Hispanic black people have hypertension, hypercholesterolemia, and diabetes. "These results emphasize the need for research to identify the reasons for the race/ethnicity differences and to identify factors that could be modified to mitigate the race/ethnicity differences," according to the researchers. The data also showed that approximately 8% of adults have undiagnosed hypertension, 3% have undiagnosed diabetes, and another 8% have undiagnosed hypercholesterolemia. In more than 15% of all US adults, one or more of these conditions is undiagnosed. The proportion of undiagnosed hypertension, elevated cholesterol levels, and diabetes was similar across racial/ethnic groups.

Horevitz, E., Organista, K., Arian, P.,

Depression Treatment Uptake in Integrated Primary Care: How a "Warm Handoff" and Other Factors Affect Decision Making by Latinos

Integrated behavioral health care has an ability to provide higher accessibility to mental health treatment among low-income and minority populations. This study aimed to recognize predictors of Latino patients' decision to follow through with referrals to depression treatment in an integrated primary care setting. Warm handoffs are considered effective components of engagement, but this study suggests that the effectiveness of warm handoffs may vary depending on the patient's primary language. The following factors seem important to engaging Latinos into care: patient-provider relationship, quality of the referral process, addressing expectations about depression care, and reducing communication barriers, including health literacy and linguistic barriers.

Johnson VB, Lorig K. (2011).

The internet diabetes self-management workshop for American Indians and Alaska Natives.

ABSTRACT: Type 2 diabetes disproportionately affects American Indians and Alaska Natives (AI/ANs). In the larger population, patient self-management has become an increasing focus of the health care system to help reduce the impact of diabetes. However, little is known about patient self-management programs designed for AI/ANs. This study reports on the feasibility of implementing the Stanford Internet Diabetes Self-Management Workshop within the AI/AN population using a participatory research approach. This is a continuation of self-management studies to assist in meeting the needs of both patients and the health care system for health services that are effective (evidence based), efficient, and culturally appropriate. To our knowledge, this is the first study examining the effectiveness of an Internet-based diabetes patient self-management program among AI/ANs. This article reports on a pilot for a larger randomized study that is ongoing.

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Levinson W, Kao A, Kuby A, & Thisted RA. (2005).

Not all patients want to participate in decision-making: A national study of public preferences.

BACKGROUND: The Institute of Medicine calls for physicians to engage patients in making clinical decisions, but not every patient may want the same level of participation.

OBJECTIVES: 1) To assess public preferences for participation in decision making in a representative sample of the U.S. population. 2) To understand how demographic variables and health status influence people's preferences for participation in decision-making.

DESIGN AND PARTICIPANTS: A population-based survey of a fully representative sample of English-speaking adults was conducted in concert with the 2002 General Social Survey (N= 2,765). Respondents expressed preferences ranging from patient-directed to physician-directed styles on each of 3 aspects of decision making (seeking information, discussing options, making the final decision). Logistic regression was used to assess the relationships of demographic variables and health status to preferences.

MAIN RESULTS: Nearly all respondents (96%) preferred to be offered choices and to be asked their opinions. In contrast, half of the respondents (52%) preferred to leave final decisions to their physicians and 44% preferred to rely on physicians for medical knowledge rather than seeking out information themselves. Women, more educated, and healthier people were more likely to prefer an active role in decision making. African-American and Hispanic respondents were more likely to prefer that physicians make the decisions. Preferences for an active role increased with age up to 45 years, but then declined.

CONCLUSION: This population-based study demonstrates that people vary substantially in their preferences for participation in decision-making. Physicians and health care organizations should not assume that patients wish to participate in clinical decision-making, but must assess individual patient preferences and tailor care accordingly.

Lin M, Mahmooth Z, Dedhia N, Frutchey R, Mercado CE, Epstein DH, Preston KL, Gibbons MC, Bowie JV, Labrique AB, Cheskin LJ (2015).

Tailored, interactive text messages for enhancing weight-loss among African-Americans adults.

BACKGROUND: Helping patients control obesity remains a clinical challenge for internists, and African Americans experience obesity rates higher than other racial/ethnic groups.

PURPOSE: To investigate whether a behavioral theory-based mobile health intervention would enhance weight loss when added to standard care among overweight/obese African American adults.

METHODS: A randomized controlled trial of 124 adults recruited from Baltimore-area African American churches. Participant follow-up ended March 2013. Participants were randomized to standard care (included one-on-one counseling sessions with a dietitian and a physician) or standard care plus daily tailored text messages for 6 months. Text messages were delivered in phases: preparation, reinforcement of participant-selected diet and exercise goals, reflection, goal integration, weight loss methods, and maintenance. There were follow-up visits at 3, 6, and 12 months. Primary outcome was weight change from baseline to end-intervention at 6 months. Secondary outcomes included weight change at 3 months, engagement, and satisfaction with the intervention.

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RESULTS: Sixty-three participants were randomized to the mobile health intervention and 61 to standard-care control. Weights were collected in-window for 45 (36.3%) at 3 months and 51 (41.1%) at 6 months. Mean weight loss at 3 months was 2.5 kg greater in the intervention group compared with standard care (95% confidence interval [CI], -4.3 to -0.6; $P < .001$), and 3.4 kg greater (95% CI, -5.2 to -1.7; $P = .001$) at 6 months. Degree of engagement with messages was correlated with weight loss.

CONCLUSIONS: While attrition was high, this study supports a tailored, interactive text-message intervention to enhance weight loss among obese African-American adults.

Lin MY, Kressin NR (2015).

Race/ethnicity and Americans' experiences with treatment decision-making.

HIGHLIGHTS

- Americans' experiences with treatment decision making slightly differ by race/ethnicity.
- Racial/ethnic minorities received less information about treatment recommendation, on some but not all dimensions assessed.
- Physicians should make efforts to ensure they convey similar messages to all patients

OBJECTIVE: Despite widespread documentation of racial/ethnic disparities in medical care, population-wide variation in Americans' experiences with care are not well understood. We examined whether race/ethnicity is associated with information received from physicians regarding treatment recommendations.

METHODS: We conducted a secondary analysis of cross-sectional survey data from a nationally representative sample (N = 1238). We assessed patients' personal experiences of receiving information about the rationale for treatment recommendations from their physicians.

RESULTS: Overall, respondents of minority race/ethnicity received less information from their doctors about the rationale for treatment recommendations. After adjustment for possible confounders, doctors talked less often with patients of 'other' race/ethnicity about reasons for treatment recommendations. Both Blacks' and Hispanics' doctors less often cited their own experiences, or scientific research as a reason for treatment recommendations.

CONCLUSION: Americans' experiences with information communicated by physicians regarding treatment rationale varies significantly on some dimensions by race/ethnicity, suggesting that differences in key elements of shared decision making are evident in the care of racial/ethnic minorities.

PRACTICE IMPLICATIONS: Physicians should evaluate the extent to which their communication with patients varies by patient race/ethnicity, and make efforts to ensure that they share equally with all patients regarding the rationale for treatment recommendations.

Lutfey KE, & Ketcham JD. (2005).

Patient and provider assessments of adherence and the sources of disparities: Evidence from diabetes care.

OBJECTIVE: To (1) compare diabetes patients' self-assessments of adherence with their providers' assessments; (2) determine whether there are systematic differences between the two for certain types of patients; and (3) consider how the cognitive processing that providers use to assess adherence might explain these differences.

DATA SOURCES/STUDY SETTING: Primary survey data were collected in 1998 from 156 patient provider pairs in two subspecialty endocrinology clinics in a large Midwestern city.

STUDY DESIGN: Data were collected in a cross-sectional survey study design. Providers were surveyed immediately after seeing each diabetes patient, and patients were surveyed via telephone within 1 week of clinic visits.

DATA COLLECTION/EXTRACTION METHODS: Bivariate descriptive results and multivariate regression analyses are used to examine how patient characteristics relate to four measures of overall adherence assessments: (1) patients' self-assessments; (2) providers' assessments of patient adherence; (3) differences between those assessments; and (4) absolute values of those differences.

PRINCIPLE FINDINGS: Patient self-assessments are almost entirely independent of observable characteristics such as sex, race, and age. Provider assessments vary with observable characteristics such as patient race and age but not with less readily observable factors such as education and income. For black patients, we observe that relative to white patients, providers' assessments are significantly farther away from-although not systematically farther above or below-patients' self-assessments.

CONCLUSIONS: Providers appear to rely on observable cues, particularly age and race, to make inferences about an individual patient's adherence. These findings point to a need for further research of various types of provider cognitive processing, particularly in terms of distinguishing between prejudice and uncertainty. If disparities in assessment stem more from information and communication problems than from provider prejudice, policy interventions should facilitate providers' systematic acquisition and processing of information, particularly for some types of patients.

Ramachandran A, Snehalatha C, Ram J, Selvam S, Simon M, Nanditha A, Samith Shey A, Godsland IF, Chaturvedi N, Majeed A, Oliver N, Toumazou C, Alberti KG & Johnston DG. (2013). Effectiveness of mobile phone messaging in prevention of type 2 diabetes by lifestyle modification in men in India: a prospective, parallel-group, randomized controlled trial.

BACKGROUND: Type 2 diabetes can often be prevented by lifestyle modification; however, successful lifestyle intervention programmes are labor intensive. Mobile phone messaging is an inexpensive alternative way to deliver educational and motivational advice about lifestyle modification. We aimed to assess whether mobile phone messaging that encouraged lifestyle change could reduce incident type 2 diabetes in Indian Asian men with impaired glucose tolerance.

METHODS: We did a prospective, parallel-group, randomized controlled trial between Aug 10, 2009, and Nov 30, 2012, at ten sites in southeast India. Working Indian men (aged 35–55 years) with impaired glucose tolerance were randomly assigned (1:1) with a computer-generated randomization sequence to a mobile phone messaging intervention or standard care (control group). Participants in the intervention group received frequent mobile phone messages compared with controls who received standard lifestyle modification advice at baseline only. Field staff and participants were, by necessity, not masked to study group assignment, but allocation was concealed from laboratory personnel as well as principal and co-investigators. The primary outcome was incidence of type 2 diabetes, analyzed by intention to treat. This trial is registered with ClinicalTrials.gov, number NCT00819455.

RESULTS: We assessed 8741 participants for eligibility. 537 patients were randomly assigned to either the mobile phone messaging intervention (n=271) or standard care (n=266). The cumulative incidence of type 2 diabetes was lower in those who received mobile phone messages than in controls: 50 (18%) participants in the intervention group developed type 2 diabetes compared with 73 (27%) in the control group (hazard ratio 0.64, 95% CI 0.45–0.92; p=0.015). The number needed to treat to prevent one case of type 2 diabetes was 11 (95% CI 6–55). One patient in the control group died suddenly at the end of the first year. We recorded no other serious adverse events.

Resnicow K, Davis R, Zhang N, Tolsma D, Alexander G, Wiese C, Cross WE Jr, Anderson JP, Calvi J, & Strecher V. (2009).

Tailoring a fruit and vegetable intervention on ethnic identity: Results of a randomized study.

OBJECTIVE: Many targeted interventions have been developed and tested with African Americans (AA); however, AAs are a highly heterogeneous group. One characteristic that varies across AAs is Ethnic Identity (EI). Little research has been conducted on how to incorporate EI into the design of health messages and programs.

DESIGN: We tested whether tailoring a print-based fruit and vegetable (F & V) intervention on EI would enhance program impact. AA adults were recruited from two integrated healthcare delivery systems and then randomized to receive three newsletters focused on F & V behavior change over three months. One set of newsletters was tailored only on demographic and social cognitive variables (control condition), whereas the other (experimental condition) was additionally tailored on EI.

MAIN OUTCOME MEASURES: The primary outcome for the study was F & V intake, assessed at baseline and three months later using the composite of two brief self-report frequency measures.

RESULTS: A total of 560 eligible participants were enrolled, of which 468 provided complete 3-month follow-up data. The experimental group increased their daily mean F & V intake by 1.1 servings compared to .8 servings in the control group ($p = .13$). Afrocentric experimental group participants showed a 1.4 increase in F & V servings per day compared to a .43 servings per day increase among Afrocentric controls ($p < .05$).

CONCLUSIONS: Although the overall between-group effects were not significant, tailoring dietary messages on ethnic identity may improve intervention impact for some AA subgroups.

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Smith West D, DiLillo V, Bursac Z, Gore SA, & Greene PG. (2007).

Motivational interviewing improves weight loss in women with type 2 diabetes.

OBJECTIVE: We sought to determine whether adding motivational interviewing to a behavioral weight control program improves weight loss outcomes and glycemic control for overweight women with type 2 diabetes.

RESEARCH DESIGN AND METHODS: We conducted a randomized, controlled, clinical trial in which participants all received an 18-month, group-based behavioral obesity treatment and were randomized to individual sessions of motivational interviewing or attention control (total of five sessions) as an adjunct to the weight control program. Overweight women with type 2 diabetes treated by oral medications who could walk for exercise were eligible. Primary outcomes were weight and A1C, assessed at 0, 6, 12, and 18 months.

RESULTS: A total of 217 overweight women (38% African American) were randomized (93% retention rate). Women in motivational interviewing lost significantly more weight at 6 months ($P = 0.01$) and 18 months ($P = 0.04$). Increased weight losses with motivational interviewing were mediated by enhanced adherence to the behavioral weight control program. African-American women lost less weight than white women overall and appeared to have a diminished benefit from the addition of motivational interviewing. Significantly greater A1C reductions were observed in those undergoing motivational interviewing at 6 months ($P = 0.02$) but not at 18 months.

CONCLUSIONS: Motivational interviewing can be a beneficial adjunct to behavioral obesity treatment for women with type 2 diabetes, although the benefits may not be sustained among African-American women.

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Swerissen H, Belfrage J, Weeks A, Jordan L, Walker C, Furler J, McAvoy B, Carter M, & Peterson C. (2006).

A randomized control trial of a self-management program for people with a chronic illness from Vietnamese, Chinese, Italian and Greek backgrounds.

OBJECTIVE: This study investigated the effectiveness of the Chronic Disease Self-management Program (CDSMP) when delivered to for people from Vietnamese, Chinese, Italian and Greek backgrounds living in Victoria, Australia.

METHOD: The CDSMP was administered to 320 people with chronic illness (es) in selected low-income areas in the State of Victoria, Australia. At 6 months, they were compared with randomized wait-list control subjects (n=154) using analyses of covariance.

RESULTS: Participants in the intervention group had significantly better outcomes on energy, exercise, symptom management, self-efficacy, general health, pain, fatigue and health distress. There were no significant effects for health services utilization. Interactions across language groups were observed with the Vietnamese and Chinese speaking participants gaining greater benefit.

CONCLUSION: Self-management programs can be successfully implemented with culturally and linguistically diverse populations in Australia. Further research is needed to evaluate long-term outcomes; explore effects on service utilization; and to determine whether the benefits obtained from participating in a self-management program can be maintained.

PRACTICE IMPLICATIONS: Self-management programs should be considered for people from culturally and linguistically diverse backgrounds. Care also needs to be taken in designing recruitment strategies to minimize withdrawal rates and to ensure harder to reach people are served effectively.

Category 6: MI and Technology

Baranowski T, Baranowski J, Cullen KW, et al. (2003).

Squire's Quest! Dietary outcome evaluation of a multimedia game.

BACKGROUND: Fruit, juice, and vegetable (FJV) consumption among children is low. Innovative programs are needed to enable children to increase FJV intake. Psychoeducational multimedia permits the delivery of interventions as designed and capitalizes on known behavior change principles.

DESIGN: Elementary school was the unit of recruitment, assignment, and analysis. Twenty-six elementary schools were pair matched on size and percentage of free or reduced-price lunch, and randomly assigned to treatment or control groups. Data were collected just before and just after the program.

SETTING/PARTICIPANTS: All fourth-grade students in participating elementary schools were invited to participate. Data were collected on 1578 students.

MAIN OUTCOME: Servings of fruit, 100% juice, and vegetables consumed.

INTERVENTION: Squire's Quest! is a ten-session, psychoeducational, multimedia game delivered over 5 weeks, with each session lasting about 25 minutes. Based on social cognitive theory, educational activities attempted to increase preferences for FJV through multiple exposures and associating fun with their consumption, increase asking behaviors for FJV at home and while eating out, and increase skills in FJV preparation through making virtual recipes.

MEASURES: Four days of dietary intake were assessed before and after the intervention. Assessment was made by the Food Intake Recording Software System (FIRSSt), which conducts a multiple pass, 24-hour dietary intake interview directly with the children.

RESULTS: Children participating in Squire's Quest! Increased their FJV consumption by 1.0 servings more than the children not receiving the program.

CONCLUSIONS: Psychoeducational multimedia games have the potential to substantially change dietary behavior. More research is warranted.

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Biddiss E, & Irwin J. (2010).

Active video games to promote physical activity in children and youth: A systematic review.

OBJECTIVES: To systematically review levels of metabolic expenditure and changes in activity patterns associated with active video game (AVG) play in children and to provide directions for future research efforts.

DATA SOURCES: A review of the English-language literature (January 1, 1998, to January 1, 2010) via ISI Webof Knowledge, PubMed, and Scholars Portal using the following keywords: video game, exergame, physical activity, fitness, exercise, energy metabolism, energy expenditure, heart rate, disability, injury, musculoskeletal, enjoyment, adherence, and motivation.

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STUDY SELECTION: Only studies involving youth (21 years) and reporting measures of energy expenditure, activity patterns, physiological risks and benefits, and enjoyment and motivation associated with mainstream AVGs were included. Eighteen studies met the inclusion criteria. Articles were reviewed and data were extracted and synthesized by 2 independent reviewers.

MAIN OUTCOME EXPOSURES: Energy expenditure during AVG play compared with rest (12 studies) and activity associated with AVG exposure (6 studies).

MAIN OUTCOME MEASURES: Percentage increase in energy expenditure and heart rate (from rest).

RESULTS: Activity levels during AVG play were highly variable, with mean (SD) percentage increases of 222% (100%) in energy expenditure and 64% (20%) in heart rate. Energy expenditure was significantly lower for games played primarily through upper body movements compared with those that engaged the lower body (difference, -148%; 95% confidence interval, -231% to -66%; P=. 001).

CONCLUSIONS: The AVGs enable light to moderate physical activity. Limited evidence is available to draw conclusions on the long-term efficacy of AVGs for physical activity promotion.

Eakin E, Reeves M, Winkler E, Lawler S, & Owen N. (2010).

Maintenance of physical activity and dietary change following a telephone-delivered intervention.

OBJECTIVE: To examine the maintenance of behavioral changes 6 months following a telephone-delivered physical activity and diet intervention.

DESIGN: Patients (n = 434) with Type 2 diabetes or hypertension were recruited from 10 primary care practices in a disadvantaged community; practices were randomized to a telephone-counseling intervention (TC; 5 practices, n = 228) or usual care (UC; 5 practices, n = 206).

MAIN OUTCOME MEASURES: Validated, self-report measures of physical activity and diet were taken at baseline, 12 months (end-of-intervention), and 18 months (6 months post intervention completion).

RESULTS: For physical activity, the significant ($p < .001$) within-groups improvements from baseline observed at 12 months remained at 18 months, in both the TC (62.2±14.2 minutes/week; 2.2 ± 0.3 sessions/week) and UC (74.7±14.9 minutes/week; 2.1 ± 0.4 sessions/week) groups. For all dietary outcomes, significant ($p < .05$) between-groups maintenance effects, similar to end-of-intervention outcomes, remained [TC-UC changes from baseline to 18 months (95% CI)]: total fat [-1.33 (-2.16, -0.50)% energy/day], saturated fat [-1.06 (-1.70, -0.43)% energy/day], fiber intake [1.90 (0.72, 3.15) grams/day], and fruit [0.22 (0.05, 0.40) servings/day], except vegetables [0.59 (-0.01, 1.17) servings/day; $p = .05$]. Intervention effects across all health behavior outcomes were stronger for the subgroup (n = 145) adhering to the study protocol.

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CONCLUSION: Telephone-delivered interventions can promote maintenance of health behavior change. Studies with longer-term follow-up are needed, particularly to determine how intervention duration and intensity might further enhance maintenance.

Free C, Knight R, Robertson S, Whittaker R, Edwards P, Zhou W, Rodgers A, Cairns J, Kenward MG, & Roberts I. (2011).

Smoking cessation support delivered via mobile phone text messaging (txt2stop):

BACKGROUND: Smoking cessation programmes delivered via mobile phone text messaging show increases in self-reported quitting in the short term. We assessed the effect of an automated smoking cessation programme delivered via mobile phone text messaging on continuous abstinence, which was biochemically verified at 6 months.

METHODS: In this single-blind, randomized trial, undertaken in the UK, smokers willing to make a quit attempt were randomly allocated, using an independent telephone randomization system, to a mobile phone text messaging smoking cessation programme (txt2stop), comprising motivational messages and behavioral- change support, or to a control group that received text messages unrelated to quitting. The system automatically generated intervention or control group texts according to the allocation. Outcome assessors were masked to treatment allocation. The primary outcome was self-reported continuous smoking abstinence, biochemically verified at 6 months. All analyses were by intention to treat. This study is registered, number ISRCTN 80978588.

FINDINGS: We assessed 11 914 participants for eligibility. 5800 participants were randomized, of whom 2915 smokers were allocated to the txt2stop intervention and 2885 were allocated to the control group; eight were excluded because they were randomized more than once. Primary outcome data were available for 5524 (95%) participants. Biochemically verified continuous abstinence at 6 months was significantly increased in the txt2stop group (10.7% txt2stop vs. 4.9% control, relative risk [IRR] 2.20, 95% CI 1.80–2.68; $p < 0.0001$). Similar results were obtained when participants that were lost to follow-up were treated as smokers (268 [9%] of 2911 txt2stop vs. 124 [4%] of 2881 control [IRR 2.14, 95% CI 1.74–2.63; $p < 0.0001$]), and when they were excluded (268 [10%] of 2735 txt2stop vs. 124 [4%] of 2789 control [2.20, 1.79–2.71; $p < 0.0001$]). No significant heterogeneity was shown in any of the prespecified subgroups.

INTERPRETATION: The txt2stop smoking cessation programme significantly improved smoking cessation rates at 6 months and should be considered for inclusion in smoking cessation services.

FUNDING: UK Medical Research Council, Primary Care Research Networks.

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Galloway GP, Coyle JR, Guillén JE, Flower K, & Mendelson JE. (2011).

A simple, novel method for assessing medication adherence: Capsule photographs taken with cellular telephones.

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OBJECTIVES: Medication non-adherence is an important factor in clinical practice and research methodology. Although many methods of measuring adherence have been investigated, there

is as yet no "gold standard." We compared the usefulness and accuracy of a novel measure of adherence, photographs taken by cellular telephones with 2 incumbents: capsule count and the Medication Event Monitoring System (MEMS).

METHOD: Twenty subjects participated in a clinical trial of the efficacy of modafinil for the treatment of methamphetamine dependence. Subjects were issued cell phones and medication in MEMS Cap equipped bottles and were instructed to take 1 capsule a day for 8 weeks, recording adherence with both systems. Pill counts were recorded at weekly inpatient visits. Subjects were paid for participation and for each capsule photograph and the returned medication bottle with MEMS Cap.

RESULTS: Capsule count-indicated adherence (proportion of prescribed medication taken) was 94.9%. When compared with capsule count, the novel method was found to underestimate adherence, whereas MEMS overestimated adherence. By using the dosing time data collected, we determined that subjects who dosed at a consistent time daily were more likely to adhere to the prescribed regimen. We also detected discrepancies in the timestamps recorded by MEMS.

CONCLUSIONS: Capsule photographs are a useful measure of adherence, allowing more accurate time measures and more frequent adherence assessment than MEMS or capsule count. Given the ubiquity of cellular telephone use, and the relative ease of this adherence measurement method, we believe it is a useful and cost-effective approach.

Heilferty CM. (2009).

Toward a theory of online communication in illness: Concept analysis of illness blogs.

AIM: This paper is a report of a concept analysis of illness blogs and their relevance to nursing research on communication during illness.

BACKGROUND: Blogs are being used by patients and family members to describe the experience of illness, but very little is known about this phenomenon.

DATA SOURCES: Seventeen English language databases and one Internet search engine were searched from 1990 to 2007 using the truncated term 'blog*'. Specific illness terms together with 'blog*', for example, blog* and diabetes; and blog* and cancer, were used to expand the search.

REVIEW METHODS: Reports were included if they were of qualitative or quantitative research that included a definition of blogs or blogging and some identification or description of blog uses pertinent to the discipline. Specific emphasis was placed on blog use by individuals coping with illness experiences. 'Meta' writings by authors about their own blogging intentions and experiences were excluded.

RESULTS: An illness blog is the online expression of the narrative of illness. Theoretical and operational definitions, defining attributes, uses, antecedents and consequences were developed. The literature search returned 45 works from 17 disciplines referring to the definition and uses of blogging. Support is offered from the review of literature and analysis of the concept for the development of a theory of online communication during illness.

CONCLUSION: Reading and incorporating illness blogs into care will enhance patient-provider relationships. Analysis of the narratives being created online about the illness experience will contribute significantly to nursing's body of knowledge.

Heron KE, & Smyth JM. (2010).

Ecological momentary interventions: Incorporating mobile technology into psychosocial and health behavior treatments.

PURPOSE: Psychosocial and health behavior treatments and therapies can be extended beyond traditional research or clinical settings by using mobile technology to deliver interventions to individuals as they go about their daily lives. These ecological momentary interventions (EMIs) are treatments that are provided to people during their everyday lives (i.e. in real time) and in natural settings (i.e. real world). The goal of the present review is to synthesize and critique mobile technology-based EMI aimed at improving health behaviors and psychological and physical symptoms.

METHODS: Twenty-seven interventions using palmtop computers or mobile phones to deliver ambulatory treatment for smoking cessation, weight loss, anxiety, diabetes management, eating disorders, alcohol use, and healthy eating and physical activity were identified.

RESULTS: There is evidence that EMI can be successfully delivered, are accepted by patients, and are efficacious for treating a variety of health behaviors and physical and psychological symptoms. Limitations of the existing literature were identified and recommendations and considerations for research design, sample characteristics, measurement, statistical analyses, and clinical implementation are discussed.

CONCLUSIONS: Mobile technology-based EMI can be effectively implemented as interventions for a variety of health behaviors and psychological and physical symptoms. Future research should integrate the assessment and intervention capabilities of mobile technology to create dynamically and individually tailored EMI that are ecologically sensitive.

Johnson VB, Lorig K. (2011).

The internet diabetes self-management workshop for American Indians and Alaska Natives.

ABSTRACT: Type 2 diabetes disproportionately affects American Indians and Alaska Natives (AI/ANs). In the larger population, patient self-management has become an increasing focus of the health care system to help reduce the impact of diabetes. However, little is known about patient self-management programs designed for AI/ANs. This study reports on the feasibility of implementing the Stanford Internet Diabetes Self-Management Workshop within the AI/AN population using a participatory research approach. This is a continuation of self-management studies to assist in meeting the needs of both patients and the health care system for health services that are effective (evidence based), efficient, and culturally appropriate. To our knowledge, this is the first study examining the effectiveness of an Internet-based diabetes patient self-management program among AI/ANs. This article reports on a pilot for a larger randomized study that is ongoing.

KatoPM, ColeSW, BradlynAS, & PollockBH. (2008).

A video game improves behavioral outcomes adolescents and young adults with cancer: A randomized trial.

OBJECTIVE: Suboptimal adherence to self-administered medications is a common problem. The purpose of this study was to determine the effectiveness of a video-game intervention for improving adherence and other behavioral outcomes for adolescents and young adults with malignancies including acute leukemia, lymphoma, and soft-tissue sarcoma.

METHODS: A randomized trial with baseline and 1- and 3-month assessments was conducted from 2004 to 2005 at 34 medical centers in the United States, Canada, and Australia. A total of 375 male and female patients who were 13 to 29 years old, had an initial or relapse diagnosis of a malignancy, and currently undergoing treatment and expected to continue treatment for at least 4 months from baseline assessment were randomly assigned to the intervention or control group. The intervention was a video game that addressed issues of cancer treatment and care for teenagers and young adults. Outcome measures included adherence, self-efficacy, knowledge, control, stress, and quality of life. For patients who were prescribed prophylactic antibiotics, adherence to trimethoprim-sulfamethoxazole was tracked by electronic pill-monitoring devices (n = 200). Adherence to 6-mercaptopurine was assessed through serum metabolite assays (n = 54).

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RESULTS: Adherence to trimethoprim-sulfamethoxazole and 6-mercaptopurine was greater in the intervention group. Self-efficacy and knowledge also increased in the intervention group compared with the control group. The intervention did not affect self-report measures of adherence, stress, control, or quality of life.

CONCLUSIONS: The video-game intervention significantly improved treatment adherence and indicators of cancer-related self-efficacy and knowledge in adolescents and young adults who were undergoing cancer therapy. The findings support current efforts to develop effective video-game interventions for education and training in health care.

Kofinas JD, Varrey A, Sapra KJ, Kanj RV, Chervenak FA, Asfaw T. (2014).

Adjunctive social media for more effective contraceptive counseling: a randomized controlled trial.

OBJECTIVE: To determine whether social media, specifically Facebook, is an effective tool for improving contraceptive knowledge.

METHODS: English-speaking women aged 18–45 years receiving care at an urban academic center obstetrics and gynecology clinic were included and randomized to a trial of standard contraceptive education and pamphlet (n=74) compared with standard contraceptive education and Facebook (n=69) information for contraception counseling. Contraceptive knowledge was evaluated pre-intervention and post-intervention by the Contraceptive Knowledge Inventory. We evaluated the effect of the intervention by raw score and percent increase in Contraceptive Knowledge Inventory score, participant satisfaction with counseling method, and contraceptive preference post-intervention. All analyses were stratified by age group.

RESULTS: The median raw post-intervention Contraceptive Knowledge Inventory score was significantly higher in the Facebook compared with the pamphlet group (15 compared with 12, P<.001) as was percentage increase in the Contraceptive Knowledge Inventory score (36% compared

with 12%, $P < .001$). Participant satisfaction with counseling method was significantly higher in the Facebook group (median 10 compared with 6, $P < .001$). Participant contraceptive preference for long-acting reversible contraceptives (LARCs; intrauterine device or implant) post-intervention was significantly greater in the Facebook compared with the pamphlet group (57% compared with 35%, $P = .01$). Among women currently using none or barrier contraception, contraceptive preference for implants was significantly greater in the Facebook compared with the pamphlet group (26% compared with 5%, $P = .02$), although, when analysis was extended to include implant or intrauterine device, LARCs were not significantly higher in the Facebook compared with the pamphlet group (48% compared with 33%, $P = .19$).

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CONCLUSION: Social media as an adjunct to traditional in-office counseling improves patient contraceptive knowledge and increases patient preference for LARCs.

Kolt GS, Schofield GM, Kerse N, Garrett N, & Oliver M. (2007).

Effect of telephone counseling on physical activity for low-active older people in primary care: A randomized, controlled trial.

OBJECTIVES: To assess the long-term effectiveness of a telephone counseling intervention on physical activity and health-related quality of life in low-active older adults recruited through their primary care physician.

DESIGN: Randomized, controlled trial.

SETTING: Three primary care practices from different socioeconomic regions of Auckland, New Zealand.

PARTICIPANTS: One hundred and eighty-six low-active adults (aged 65) recruited from their primary care physicians' patient databases.

INTERVENTION: Eight telephone counseling sessions over 12 weeks based on increasing physical activity. Control patients received usual care.

MEASUREMENTS: Change in physical activity (as measured using the Auckland Heart Study Physical Activity Questionnaire) and quality of life (as measured using the Short Form-36 Health Survey (SF-36)) over a 12-month period.

RESULTS: Moderate leisure physical activity increased by 86.8 min/wk more in the intervention group than in the control group ($P = .007$). More participants in the intervention group reached 2.5 hours of moderate or vigorous leisure physical activity per week after 12 months (42% vs. 23%, odds ratio=2.9, 95% confidence interval=1.33–6.32, $P = .007$). No differences on SF-36 measures were observed between the groups at 12 months.

CONCLUSION: Telephone-based physical activity counseling is effective at increasing physical activity over 12 months in previously low-active older adults.

Lin M, Mahmooth Z, Dedhia N, Frutchey R, Mercado CE, Epstein DH, Preston KL, Gibbons MC, Bowie JV, Labrique AB, Cheskin LJ (2015).

Tailored, interactive text messages for enhancing weight-loss among African-Americans adults.

BACKGROUND: Helping patients control obesity remains a clinical challenge for internists, and African Americans experience obesity rates higher than other racial/ethnic groups.

PURPOSE: To investigate whether a behavioral theory-based mobile health intervention would enhance weight loss when added to standard care among overweight/obese African American adults.

METHODS: A randomized controlled trial of 124 adults recruited from Baltimore-area African American churches. Participant follow-up ended March 2013. Participants were randomized to standard care (included one-on-one counseling sessions with a dietitian and a physician) or standard care plus daily tailored text messages for 6 months. Text messages were delivered in phases: preparation, reinforcement of participant-selected diet and exercise goals, reflection, goal integration, weight loss methods, and maintenance. There were follow-up visits at 3, 6, and 12 months. Primary outcome was weight change from baseline to end-intervention at 6 months. Secondary outcomes included weight change at 3 months, engagement, and satisfaction with the intervention.

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RESULTS: Sixty-three participants were randomized to the mobile health intervention and 61 to standard-care control. Weights were collected in-window for 45 (36.3%) at 3 months and 51 (41.1%) at 6 months. Mean weight loss at 3 months was 2.5 kg greater in the intervention group compared with standard care (95% confidence interval [CI], -4.3 to -0.6; $P < .001$), and 3.4 kg greater (95% CI, -5.2 to -1.7; $P = .001$) at 6 months. Degree of engagement with messages was correlated with weight loss.

CONCLUSIONS: While attrition was high, this study supports a tailored, interactive text-message intervention to enhance weight loss among obese African-American adults.

Lorig KR, Ritter PL, Laurent DD, Plant K. (2006).

Internet-based chronic disease self-management: A randomized trial.

BACKGROUND: The small-group Chronic Disease Self-Management Program (CDSMP) has proven effective in changing health-related behaviors and improving health statuses. An Internet-based CDSMP was developed to reach additional chronic-disease patients.

OBJECTIVES: We sought to determine the efficacy of the Internet-based CDSMP. Design: We compared randomized intervention participants with usual-care controls at 1 year. We compared intervention participants with the small-group CDSMP at 1 year.

SUBJECTS: Nine hundred fifty-eight patients with chronic diseases (heart, lung, or type 2 diabetes) and Internet and e-mail access were randomized to intervention (457) or usual care control (501).

MEASURES: Measures included 7 health status variables (pain, shortness of breath, fatigue, illness intrusiveness, health distress, disability, and self-reported global health), 4 health behaviors (aerobic exercise, stretching and strengthening exercise, practice of stress management, and communication with physicians), 3 utilization variables (physician visits, emergency room visits, and nights in hospital), and self-efficacy.

RESULTS: At 1 year, the intervention group had significant improvements in health statuses compared with usual care control patients. The intervention group had similar results to the small-group CDSMP participants. Change in self-efficacy at 6 months was found to be associated with better health status outcomes at 1 year.

CONCLUSIONS: The Internet-based CDSMP proved effective in improving health statuses by 1 year and is a viable alternative to the small-group Chronic Disease Self-Management Program.

Lorig KR, Ritter PL, Dost A, Plant K, Laurent DD, & McNeil I. (2008).

The expert patients programme online, a 1- year study of an Internet-based self-management programme for people with long-term conditions.

OBJECTIVES: Evaluate the effectiveness of an online self-management programme (EPP Online) for England residents with long-term conditions.

METHODS: A prospective longitudinal study. Data were collected online at baseline, 6 and 12 months. The intervention was an asynchronous 6-week chronic-disease self-management programme offered online. We measured seven health status measures (health distress, self-rated health, illness intrusiveness, disability, fatigue, pain and shortness of breath), four behaviors (aerobic exercise, stretching exercise, stress management and communications with physician), and five utilization measures (GP visits, pharmacy visits, PT/OT visits, emergency visits and hospitalizations). We also measured self-efficacy and satisfaction with the health care system.

RESULTS: A total of 568 completed baseline data: 546 (81%) completed 6 months and 443 (78%) completed 1 year. Significant improvements ($p < 0.01$) were found at 6 months for all variables except self-rated health, disability, stretching, hospitalizations and nights in hospital. At 12 months only decrease in disability, nights in hospital and hospitalizations were not significant with reduction in visits to emergency departments being marginally significant ($p = 0.012$). Both self-efficacy and satisfaction with the health care system improved significantly.

DISCUSSION: The peer-led online programme conditions appears to decrease symptoms, improve health behaviors, self-efficacy and satisfaction with the health care system and reducing health care utilization up to 1 year.

Lorig KR, Ritter PL, Laurent DD, & Plant K. (2008).

The internet-based arthritis self-management program: A one- year randomized trial for patients with arthritis or fibromyalgia.

OBJECTIVE: To determine the efficacy of an Internet-based Arthritis Self-Management Program (ASMP) as a resource for arthritis patients unable or unwilling to attend small-group ASMPs, which have proven effective in changing health-related behaviors and improving health status measures.

METHODS: Randomized intervention participants were compared with usual care controls at 6 months and 1 year using repeated-measures analyses of variance. Patients with rheumatoid arthritis, osteoarthritis, or fibromyalgia and Internet and e-mail access ($n = 855$) were randomized to an intervention ($n = 433$) or usual care control ($n = 422$) group. Measures included 6 health status variables (pain, fatigue, activity limitation, health distress, disability, and self-reported global health), 4 health

behaviors (aerobic exercise, stretching and strengthening exercise, practice of stress management, and communication with physicians), 5 utilization variables (physician visits, emergency room visits, chiropractic visits, physical therapist visits, and nights in hospital), and self-efficacy.

RESULTS: At 1 year, the intervention group significantly improved in 4 of 6 health status measures and self-efficacy. No significant differences in health behaviors or health care utilization were found.

CONCLUSION: The Internet-based ASMP proved effective in improving health status measures at 1 year and is a viable alternative to the small-group ASMP.

Lorig K, Ritter PL, Villa F, & Piette JD. (2008).

Spanish diabetes self-management with and without automated telephone reinforcement: Two randomized trials.

OBJECTIVE: To determine 1) whether participants in the Spanish Diabetes Self-Management Program (SDSMP), when compared at 6 months to randomized control subjects, would demonstrate improvements in health status, health behaviors, and self-efficacy; and 2) whether SDSMP participants receiving monthly automated telephone reinforcement would maintain improvements at 18 months better than those not receiving reinforcement.

RESEARCH DESIGN AND METHODS: A total of 567 Spanish-speaking adults with type 2 diabetes were randomized to a usual-care control group or 6-week community-based, peer-led SDSMP. SDSMP participants were re-randomized to receive 15 months of automated telephone messages or no reinforcement. A1C was measured at baseline and 6 and 18 months. All other data were collected by self-administered questionnaires.

RESULTS: At 6 months SDSMP participants compared with control subjects demonstrated improvements in A1C (-0.4%), health distress, symptoms of hypo- and hyperglycemia, and self-efficacy ($P < 0.05$). At 18 months all improvements persisted ($P < 0.05$). SDSMP participants also demonstrated improvements in self-rated health and communication with physicians, had fewer emergency room visits (-0.18 visits in 6 months, $P < 0.05$), and trended toward fewer visits to physicians. At 18 months the only difference between reinforced and non-reinforced participants was increased glucose monitoring for the reinforcement group.

CONCLUSIONS: The SDSMP demonstrated effectiveness in lowering A1C and improving health status. Reinforcement did not add to its effectiveness. Given the high needs of the Spanish-speaking population, the SDSMP deserves consideration for implementation.

Lorig K, Ritter PL, Laurent DD, Plant K, Green M, Jernigan VB, & Case S. (2010).

Online diabetes self-management program: A randomized study.

OBJECTIVES: We hypothesized that people with type 2 diabetes in an online diabetes self-management program, compared with usual-care control subjects, would 1) demonstrate reduced A1C at 6 and 18 months, 2) have fewer symptoms, 3) demonstrate increased exercise, and 4) have improved self-efficacy and patient activation. In addition, participants randomized to list serve reinforcement would have better 18-month outcomes than participants receiving no reinforcement.

RESEARCH DESIGN AND METHODS: A total of 761 participants were randomized to 1) the program, 2) the program with e-mail reinforcement, or 3) were usual-care control subjects (no treatment). This sample included 110 American Indians/Alaska Natives (AI/ANs). Analyses of covariance models were used at the 6- and 18- month follow-up to compare groups.

RESULTS: At 6 months, A1C, patient activation, and self-efficacy were improved for program participants compared with usual care control subjects ($P < 0.05$). There were no changes in other health or behavioral indicators. The AI/AN program participants demonstrated improvements in health distress and activity limitation compared with usual-care control subjects. The subgroup with initial A1C $>7\%$ demonstrated stronger improvement in A1C ($P = 0.01$). At 18 months, self-efficacy and patient activation were improved for program participants. A1C was not measured. Reinforcement showed no improvement.

CONCLUSIONS: An online diabetes self-management program is acceptable for people with type 2 diabetes. Although the results were mixed they suggest 1) that the program may have beneficial effects in reducing A1C, 2) AI/AN populations can be engaged in and benefit from online interventions, and 3) our follow-up reinforcement appeared to have no value. Lozano P, McPhillips HA, Hartzler B, Robertson AS, Runkle C, Scholz KA, Stout JW, & Kieckhefer GM. (2010).

Mulvaney SA, Rothman RL, Dietrich MS, Wallston KA, Grove E, Elasy TA, & Johnson KB. (2012). Using mobile phones to measure adolescent diabetes adherence.

OBJECTIVES: 1) describe and determine the feasibility of using cell-phone-based ecological momentary assessment (EMA) to measure blood glucose monitoring and insulin administration in adolescent Type 1 diabetes, 2) relate EMA to traditional self-report and glycemic control, and 3) identify patterns of adherence by time of day and over time using EMA.

METHOD: Adolescents with Type 1 diabetes ($n = 96$) completed baseline measures of cell phone use and adherence. Glycemic control (measured by levels of HbA1c) was obtained from medical records. A subgroup of adolescents ($n = 50$) completed 10 days of EMA to assess blood glucose monitoring frequency, timing of glucose monitoring, insulin administration, and insulin dosing. One third of adolescents were not allowed to use their cell phones for diabetes at school. Parental restrictions on cell phone use at home were not prevalent.

RESULTS: The EMA response rate (59%) remained stable over the 10-day calling period. Morning time was associated with worse monitoring and insulin administration, accounting for 59–74% of missed self-care tasks. EMA-reported missed glucose checks and missed insulin doses were correlated to traditional self-report data, but not to HbA1c levels. Trajectory analyses identified two subgroups: one with consistently adequate adherence, and one with more variable, and worse, adherence. The latter adherence style showed worse glycemic control.

CONCLUSION: Mobile phones provide a feasible method to measure glucose monitoring and insulin administration in adolescents, given limited assessment duration. The method provided novel insights regarding patterns of adherence and should be explored in clinical settings for targeting or tailoring interventions.

Park LG, Howie-Esquivel J & Dracup K. (2014)

A quantitative systematic review of the efficacy of mobile phone interventions to improve medication adherence.

AIMS: To evaluate the characteristics and efficacy of mobile phone interventions to improve medication adherence. Secondary aims are to explore participants' acceptability and satisfaction with mobile phone interventions and to evaluate the selected studies in terms of study rigour, impact, cost and resource feasibility, generalizability and implications for nursing practice and research.

BACKGROUND: Medication non-adherence is a major global challenge. Mobile phones are the most commonly used form of technology worldwide and have the potential to promote medication adherence.

DESIGN: Guidelines from the Centre for Reviews and Dissemination were followed for this systematic review.

DATA SOURCES: A comprehensive search of databases (PubMed, Web of Science, CINAHL, PsycInfo, Google Chrome and Cochrane) and bibliographies from related articles was performed from January 2002–January 2013 to identify the included studies.

REVIEW METHODS: A quantitative systematic review without meta-analysis was conducted and the selected studies were critically evaluated to extract and summarize pertinent characteristics and outcomes.

RESULTS: The literature search produced 29 quantitative research studies related to mobile phones and medication adherence. The studies were conducted for prevention purposes as well as management of acute and chronic illnesses. All of the studies used text messaging. Eighteen studies found significant improvement in medication adherence.

CONCLUSION: While the majority of investigators found improvement in medication adherence, long-term studies characterized by rigorous research methodologies, appropriate statistical and economic analyses and the test of theory-based interventions are needed to determine the efficacy of mobile phones to influence medication adherence.

Petrie KJ, Perry K, Broadbent E, & Weinman J. (2012).

A text message programme designed to modify patients' illness and treatment beliefs improves self-reported adherence to asthma preventer medication.

OBJECTIVE: While effective preventative medication is readily available for asthma, adherence is a major problem due to patients' beliefs about their illness and medication. We investigated whether a text message programme targeted at changing patients' illness and medication beliefs would improve adherence in young adult asthma patients.

METHODS: Two hundred and sixteen patients aged between 16 and 45 on asthma preventer medication were recruited from pamphlets dispensed with medication and e-mails sent to members of a targeted marketing website. Participants were randomized to receive individually tailored text messages based on their illness and medication beliefs over 18 weeks or no text messages. Illness and medication beliefs were assessed at baseline and at 18 weeks. Adherence rates were assessed by phone calls to participants at 6, 12, and 18 weeks and at 6 and 9 months.

RESULTS: At 18 weeks, the intervention group had increased their perceived necessity of preventer medication, increased their belief in the long-term nature of their asthma, and their perceived control over their asthma relative to control group (all p's < .05). The intervention group also significantly improved adherence over the follow-up period compared to the control group with a relative average increase in adherence over the follow-up period of 10% (p < .001). The percentage taking over 80% of prescribed inhaler doses was 23.9% in the control group compared to 37.7% in the intervention group (p < .05).

CONCLUSION: A targeted text message programme increases adherence to asthma preventer inhaler and may be useful for other illnesses where adherence is a major issue.

Pollak KI, Alexander SC, Bennett G, Lyna P, Coffman cJ, Bilheimer A, Farrell D, Bodner ME, Swamy GK, Østbye T (2014).

Weight-related SMS texts promoting appropriate pregnancy weight gain: A pilot study.

HIGHLIGHTS:

- Gestational weight gain has an impact on maternal and fetal health.
- Few effective and disseminable interventions have been successful at promoting healthful gestational weight gain.
- SMS texting might be an innovative way to promote healthful gestational weight gain.

OBJECTIVES: Excessive gestational weight gain (GWG) puts women and children at risk of obesity. We piloted an SMS-texting intervention to promote healthy GWG among overweight and obese women.

METHODS: We recruited 35 women and randomized them in a 2:1 fashion to: a tailored SMS-texting intervention (Preg CHAT) vs. a generic texting intervention (Txt4baby). Preg CHAT texts provided personalized feedback based on women's intake of sweetened beverages, fruits and vegetables, fast food, daily steps taken, and weight. We abstracted women's weights from charts and surveyed women at baseline and 32 weeks gestation.

RESULTS: Few women refused the study; many (30%) did not complete the study, however. Of those in the Preg CHAT arm, 86% responded to texts, and 80% said they would recommend this program to a friend. For women who completed the surveys (n = 23), those in the Preg CHAT arm had a mean gain of 6 less pounds than women in the Txt4Baby arm (95% CI -15.9, 4.0; p = 0.24).

CONCLUSIONS: This pilot study shows feasibility, acceptability, and potential efficacy of a low-intensity and disseminable intervention to help overweight and obese women reduce GWG.

PRACTICE IMPLICATIONS: An SMS texting program might help overweight women reduce excessive GWG.

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**Primack BA, Carroll MV, McNamara M, Klem ML, King B, Rich M, Chan CW & Nayak S. (2012).
Role of video games in improving health-related outcomes: A systematic review.**

CONTEXT: Video games represent a multibillion-dollar industry in the U.S. Although video gaming has been associated with many negative health consequences, it also may be useful for therapeutic purposes. The goal of this study was to determine whether video games may be useful in improving health outcomes.

EVIDENCE ACQUISITION: Literature searches were performed in February 2010 in six databases: the Center on Media and Child Health Database of Research, MEDLINE, CINAHL, PsycINFO, EMBASE, and the Cochrane Central Register of Controlled Trials. Reference lists were hand-searched to identify additional studies. Only RCTs that tested the effect of video games on a positive, clinically relevant health consequence were included. Study selection criteria were strictly defined and applied by two researchers working independently. Study background information (e.g., location, funding source); sample data (e.g., number of study participants, demographics); intervention and control details; outcomes data; and quality measures were abstracted independently by two researchers.

EVIDENCE SYNTHESIS: Of 1452 articles retrieved using the current search strategy, 38 met all criteria for inclusion. Eligible studies used video games to provide physical therapy, psychological therapy, improved disease self-management, health education, distraction from discomfort, increased physical activity, and skills training for clinicians. Among the 38 studies, a total of 195 health outcomes were examined. Video games improved 69% of psychological therapy outcomes, 59% of physical therapy outcomes, 50% of physical activity outcomes, 46% of clinician skills outcomes, 42% of health education outcomes, 42% of pain distraction outcomes, and 37% of disease self-management outcomes. Study quality was generally poor; for example, two thirds (66%) of studies had follow-up periods of <12 weeks, and only 11% of studies blinded researchers.

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CONCLUSIONS: There is potential promise for video games to improve health outcomes, particularly in the areas of psychological therapy and physical therapy. RCTs with appropriate rigor will help build evidence in this emerging area.

Ream E, Gargaro G, Barsevick A, Richardson A. (2015).

Management of cancer-related fatigue during chemotherapy through telephone motivational interviewing: Modeling and randomized exploratory trial.

HIGHLIGHTS

- Psychologically-based interventions for cancer-related fatigue can successfully be delivered by telephone.
- Similar outcomes can be generated when interventions are delivered by telephone as when they are delivered face-to-face.
- Motivational interviewing is seldom used when delivering interventions for supported self-management in people with cancer. This study suggests that it may enhance their uptake; opportunities should be sought to use this approach more often in clinical practice.

OBJECTIVE: Fatigue is a common cancer-related symptom and exacerbated by chemotherapy. Psychological interventions for fatigue show promise. One, Beating Fatigue, was adapted for delivery by telephone and evaluated in an exploratory trial.

METHODS: Eight patients and 12 professionals contributed to focus groups that guided adaptation of the intervention. The intervention, modified for delivery by telephone using motivational interviewing, was tested in an exploratory trial. Forty-four patients were recruited to the trial and randomized between the intervention (n = 23) and control (n = 21). Outcome data were collected on fatigue intensity, fatigue distress, fatigue self-efficacy, anxiety and depression at baseline and following completion of chemotherapy. These data were augmented by interviews conducted to inform understanding of the intervention's mechanism, feasibility and acceptability.

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RESULTS: The intervention was both feasible and acceptable to patients and most reduced fatigue distress (Effect Size ES = 0.62). It also reduced fatigue intensity (ES = 0.18), fatigue self-efficacy (ES = -0.34), and anxiety (ES = 0.31). It did not reduce depression.

CONCLUSION: These preliminary data are encouraging and support the delivery of interventions for cancer-related fatigue by telephone. Motivational interviewing appeared key to the intervention's success. A larger definitive RCT is indicated.

PRACTICE IMPLICATIONS: Opportunities should be sought to deliver psychologically-based interventions for fatigue by telephone.

Spring B, Duncan JM, Janke EA, Kozak AT, McFadden HG, DeMott A, Pictor A, Epstein LH, Siddique J, Pellegrini CA, Buscemi J, & Hedeker D. (2013).

Integrating technology into standard weight loss treatment: A randomized controlled trial.

BACKGROUND: A challenge in intensive obesity treatment is making care scalable. Little is known about whether the outcome of physician-directed weight loss treatment can be improved by adding mobile technology.

METHODS: We conducted a 2-arm, 12-month study (October 1, 2007, through September 31, 2010). Seventy adults (body mass index >25 and <=40 [calculated as weight in kilograms divided by height in meters squared]) were randomly assigned either to standard-of-care group treatment alone (standard group) or to the standard and connective mobile technology system (+mobile group). Participants attended biweekly weight loss groups held by the Veterans Affairs outpatient clinic. The +mobile group was provided personal digital assistants to self-monitor diet and physical activity; they also received biweekly coaching calls for 6 months. Weight was measured at baseline and at 3-, 6-, 9-, and 12-month follow-up.

RESULTS: Sixty-nine adults received intervention (mean age, 57.7 years; 85.5% were men). A longitudinal intent-to-treat analysis indicated that the +mobile group lost a mean of 3.9 kg more (representing 3.1% more weight loss relative to the control group; 95% CI, 2.2-5.5 kg) than the standard group at each post baseline time point. Compared with the standard group, the +mobile group had significantly greater odds of having lost 5% or more of their baseline weight at each post baseline time point (odds ratio, 6.5; 95% CI, 2.5-18.6).

CONCLUSIONS: The addition of a personal digital assistant and telephone coaching can enhance short-term weight loss in combination with an existing system of care. Mobile connective technology holds promise as a scalable mechanism for augmenting the effect of physician-directed weight loss treatment.

Ramachandran A, Snehalatha C, Ram J, Selvam S, Simon M, Nanditha A, Samith Shey A, Godslan IF, Chaturvedi N, Majeed A, Oliver N, Toumazou C, Alberti KG & Johnston DG. (2013). Effectiveness of mobile phone messaging in prevention of type 2 diabetes by lifestyle modification in men in India: a prospective, parallel-group, randomized controlled trial.

BACKGROUND: Type 2 diabetes can often be prevented by lifestyle modification; however, successful lifestyle intervention programmes are labour intensive. Mobile phone messaging is an inexpensive alternative way to deliver educational and motivational advice about lifestyle modification. We aimed to assess whether mobile phone messaging that encouraged lifestyle change could reduce incident type 2 diabetes in Indian Asian men with impaired glucose tolerance.

METHODS: We did a prospective, parallel-group, randomized controlled trial between Aug 10, 2009, and Nov 30, 2012, at ten sites in southeast India. Working Indian men (aged 35–55 years) with impaired glucose tolerance were randomly assigned (1:1) with a computer-generated randomization sequence to a mobile phone messaging intervention or standard care (control group). Participants in the intervention group received frequent mobile phone messages compared with controls who received standard lifestyle modification advice at baseline only. Field staff and participants were, by necessity, not masked to study group assignment, but allocation was concealed from laboratory personnel as well as principal and co-investigators. The primary outcome was incidence of type 2 diabetes, analyzed by intention to treat. This trial is registered with ClinicalTrials.gov, number NCT00819455.

RESULTS: We assessed 8741 participants for eligibility. 537 patients were randomly assigned to either the mobile phone messaging intervention (n=271) or standard care (n=266). The cumulative incidence of type 2 diabetes was lower in those who received mobile phone messages than in controls: 50 (18%) participants in the intervention group developed type 2 diabetes compared with 73 (27%) in the control group (hazard ratio 0.64, 95% CI 0.45–0.92; p=0.015). The number needed to treat to prevent one case of type 2 diabetes was 11 (95% CI 6–55). One patient in the control group died suddenly at the end of the first year. We recorded no other serious adverse events.

Schillinger D, Handley M, Wang F, & Hammer H. (2009). Effects of self-management support on structure, process, and outcomes among vulnerable patients with diabetes.

OBJECTIVE: Despite the importance of self-management support (SMS), few studies have compared SMS interventions, involved diverse populations, or entailed implementation in safety net settings. We examined the effects of two SMS strategies across outcomes corresponding to the Chronic Care Model.

RESEARCH DESIGN AND METHODS: A total of 339 outpatients with poorly controlled diabetes from county-run clinics were enrolled in a three-arm trial. Participants, more than half of whom spoke limited English, were uninsured, and/or had less than a high school education, were randomly assigned to usual care, interactive weekly automated telephone self-management support with

nurse follow-up (ATSM), or monthly group medical visits with physician and health educator facilitation (GMV). We measured 1-year changes in structure (Patient Assessment of Chronic Illness Care [PACIC]), communication processes (Interpersonal Processes of Care [IPC]), and outcomes (behavioral, functional, and metabolic).

RESULTS: Compared with the usual care group, the ATSM and GMV groups showed improvements in PACIC, with effect sizes of 0.48 and 0.50, respectively ($P < 0.01$). Only the ATSM group showed improvements in IPC (effect sizes 0.40 vs. usual care and 0.25 vs. GMV, $P < 0.05$). Both SMS arms showed improvements in self-management behavior versus the usual care arm ($P < 0.05$), with gains being greater for the ATSM group than for the GMV group (effect size 0.27, $P = 0.02$). The ATSM group had fewer bed days per month than the usual care group (-1.7 days, $P = 0.05$) and the GMV group (-2.3 days, $P < 0.01$) and less interference with daily activities than the usual care group (odds ratio 0.37, $P = 0.02$). We observed no differences in A1C change.

CONCLUSIONS: Patient-centered SMS improves certain aspects of diabetes care and positively influences self-management behavior. ATSM seems to be a more effective communication vehicle than GMV in improving behavior and quality of life.

Sirriyeh R, Lawton R, & Ward J. (2010).

Physical activity and adolescents: An exploratory randomized controlled trial investigating the influence of affective and instrumental text messages.

OBJECTIVE: The present study attempts to develop and pilot the feasibility and efficacy of a novel intervention using affective messages as a strategy to increase physical activity (PA) levels in adolescents.

DESIGN: An exploratory pilot randomized control trial was used to compare behavior change over 2 weeks. A modified form of the International Physical Activity Questionnaire was used to assess PA behaviour. A total of 120 adolescents (16–19 years) from 4 sixth forms in West Yorkshire completed the field-based study.

METHOD: Participants were randomly assigned to one of three experimental conditions, or the control condition ($N=28$). Participants in experimental conditions received 1 short messaging service (SMS) text message per day over the 2 weeks, which included manipulations of either affective beliefs (enjoyable/unenjoyable; $N=31$), instrumental beliefs (beneficial/harmful; $N=30$), or a combination of these ($N=31$). Control participants received one SMS text message per week. Outcomes were measured at baseline and at the end of the 2-week intervention.

RESULTS: PA levels increased by the equivalent of 31.5 minutes of moderate (four metabolic equivalent) activity per week during the study. Main effects of condition ($p=.049$), and current physical activity level ($p=.002$) were identified, along with a significant interaction between condition and current activity level ($p=.006$). However, when the sample was split at baseline into active and inactive participants, a main effect of condition remained for inactive participants only ($p=.001$). Post hoc analysis revealed that inactive participants who received messages targeting affective beliefs increased their activity levels significantly more than the instrumental ($p=.012$), combined ($p=.002$), and control groups ($p=.018$).

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CONCLUSION: Strategies based on affective associations may be more effective for increasing PA levels in inactive individuals.

Van Stralen MM, de Vries H, Mudde AN, Bolman C, & Lechner L. (2011).

The long-term efficacy of two computer- tailored physical activity interventions for older adults: Main effects and mediators.

OBJECTIVE: Low-cost (e.g., computer-tailored) interventions with sustained effects are needed to increase and maintain physical activity in older adults. This study examined the long-term efficacy of 2 computer-tailored physical activity interventions for older adults and its psychosocial and environmental mediators.

METHODS: A clustered randomized controlled trial (N = 1,971) was conducted that included 3 research arms: (a) basic computer-tailored print intervention, targeting psychosocial mediators; (b) environmentally computer- tailored print intervention, targeting psychosocial and environmental mediators; and (c) no-intervention control group. Interventions were developed using the intervention mapping approach and consisted of 3 computer- tailored letters delivered over 4 months. Questionnaires assessed the study outcomes (i.e., total weekly days and total weekly minutes of physical activity) at baseline and 12 months. Potential mediators (i.e., awareness, attitude, self-efficacy, intention, social influence, intrinsic motivation, self-regulation, and perceived environment) were assessed at baseline and at 3 or 6 months.

RESULTS: Multilevel regression analyses revealed that both interventions significantly changed total weekly days of physical activity compared with the control group, but only the environmentally computer-tailored print intervention significantly changed weekly minutes of physical activity. Multiple mediation models showed that the effects of both interventions on weekly days of physical activity were mediated by changes in awareness and intention.

CONCLUSIONS: Computer-tailored interventions were effective in inducing long-term behavioral changes in physical activity behavior of older adults. Awareness and intention were found to be important mediators of changing daily physical activity and should be included in future computer-tailored intervention studies.

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Vervloet M, Linn AJ, van Weert JCM, de Bakker DH, Bouvy ML, & van Dijk L. (2011).

The effectiveness of interventions using electronic reminders to improve adherence to chronic medication: A systematic review of the literature.

BACKGROUND: Many patients experience difficulties in adhering to long-term treatment. Although patients' reasons for not being adherent are diverse, one of the most commonly reported barriers is forgetfulness. Reminding patients to take their medication may provide a solution. Electronic reminders (automatically sent reminders without personal contact between the healthcare provider and patient) are now increasingly being used in the effort to improve adherence.

OBJECTIVE: To examine the effectiveness of interventions using electronic reminders in improving patients' adherence to chronic medication.

METHODS: A comprehensive literature search was conducted in PubMed, Embase, PsycINFO, CINAHL and Cochrane Central Register of Controlled Trials. Electronic searches were supplemented by manual searching of reference lists and reviews. Two reviewers independently screened all citations. Full text was obtained from selected citations and screened for final inclusion. The methodological quality of studies was assessed.

RESULTS: Thirteen studies met the inclusion criteria. Four studies evaluated short message service (SMS) reminders, seven audiovisual reminders from electronic reminder devices (ERD), and two pager messages. Best evidence synthesis revealed evidence for the effectiveness of electronic reminders, provided by eight (four high, four low quality) studies showing significant effects on patients' adherence, seven of which measured short-term effects (follow-up period <6 months). Improved adherence was found in all but one study using SMS reminders, four studies using ERD and one pager intervention. In addition, one high quality study using an ERD found subgroup effects.

CONCLUSION: This review provides evidence for the short-term effectiveness of electronic reminders, especially SMS reminders. However, long-term effects remain unclear.

