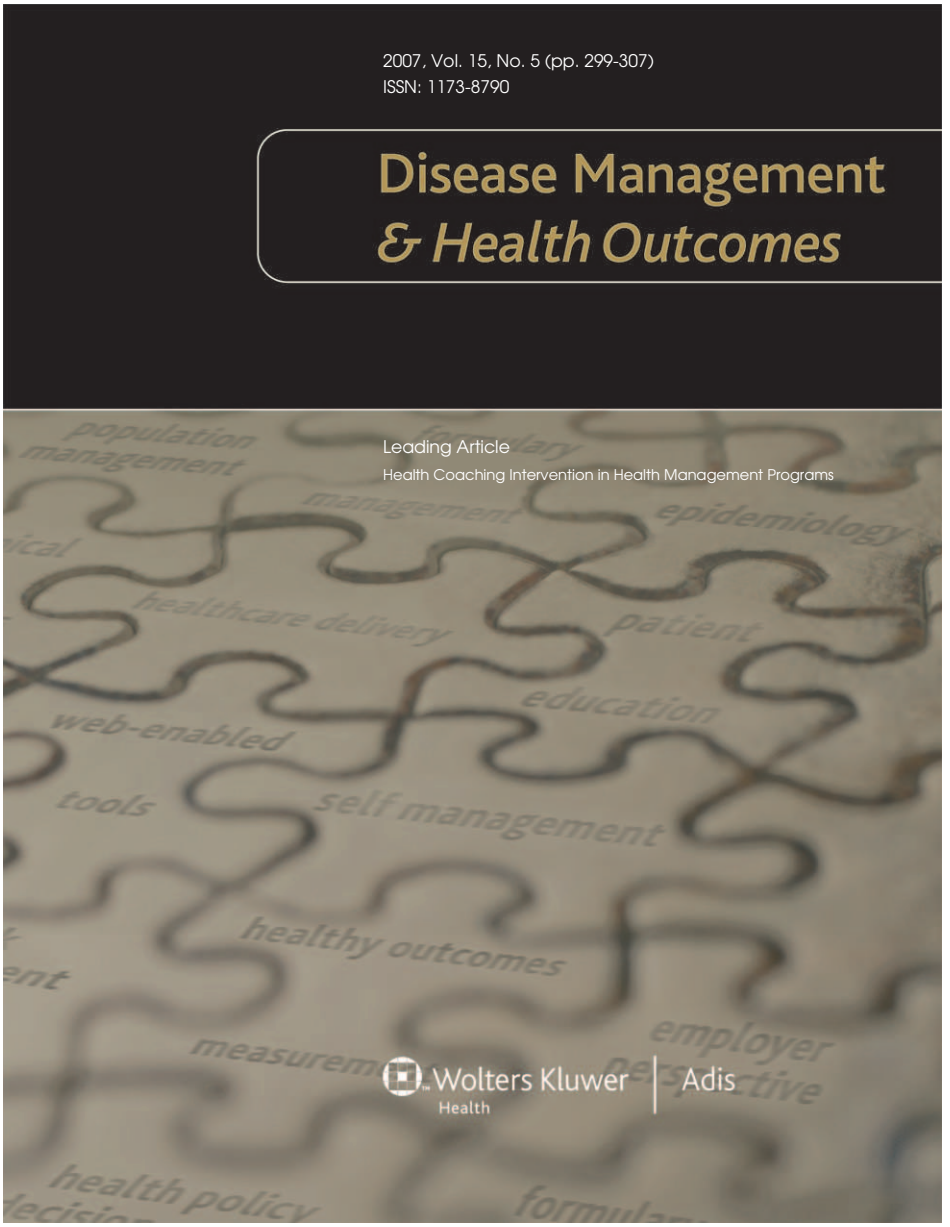

LEADING ARTICLE

Dis Manage Health Outcomes 2007; 15 (5): 299-307
1173-8790/07/0005-0299/$44.95/0

Health Coaching as an Intervention in Health Management Programs

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Abstract

Healthy lifestyle behaviors can prevent the onset of chronic illness and help manage existing conditions. Health coaching interventions are increasingly being incorporated into health management programs, which are implemented in a variety of settings, from physician practices to the broader population level (e.g. throughout health plans, employer groups). To date, motivational interviewing-based health coaching is the only technique to have been fully described and consistently demonstrated as causally and independently associated with positive behavioral outcomes. In order for a health coaching intervention to be effective (i) individuals at risk must be correctly identified; (ii) recruitment efforts must be maximized; (iii) a valid coaching technique should be chosen; (iv) the delivery mechanism must ensure adequate participant engagement; and (v) the program evaluation must be sufficiently robust to mitigate threats to validity, and demonstrate a causal association between the intervention and outcomes. Given the rapid expansion in the field of health coaching within the larger context of health management programs, more studies employing rigorous evaluation designs are needed to advance the science and application of the concept.

Unhealthy lifestyle choices, such as a lack of physical activity, deficient dietary patterns, tobacco use, and substance abuse, are among the leading indicators of morbidity and mortality in the US.[1] Conversely, it is clear that healthy behavioral practices can prevent chronic illness and improve management of prevalent conditions.[2]

Behavior change theories and models have evolved over the last 4 decades, moving behavioral health interventions away from the traditional information- and scare-based models[3] to approaches that embrace and address the complex interaction of motivations,[4] cues to action,[5,6] perception of benefits and consequences,[6] expectancies,[6] environmental and cultural influences,[7] self-efficacy,[8] state of readiness to change,[9] ambivalence,[4] and implementation intentions.[10] Concurrently, the development and implementation of interventions that improve or modify health behaviors through health and disease management programs has become a widely advocated and effective means to reduce health risks, improve self-management of chronic illness, reduce medical costs, increase productivity, and improve quality of life.[2,11-15] Such programs are typically implemented in workplace, commercial, or community health settings.

Effective programs employ sophisticated marketing and recruitment strategies that (i) include appropriate and attractive incentives for participation; (ii) integrate multiple components with evidence-based interventions delivered by competent and credentialed staff; and (iii) evaluate their effectiveness based on valid outcomes such as risk reduction and cost savings.[16-19] While interventions vary across settings, most programs typically include several of the following components: health risk assessments, educational mailings, presentations and workshops, online programs, biometric screening, case management, and increasingly, health coaching.[19]

The objective of this paper is to describe the evolution of 'health coaching' from a disparate use of nomenclature and unproven intervention modalities to the current more uniform terminology and evidence-based intervention techniques.

1. Health Coaching

'Coaching' is a very familiar term that refers to "teaching and supervising [someone]."[20] The nursing literature from the late 1990s refers to 'nurse coaching' as "… a practice framework that complements patient teaching and supportive therapy as a method

for enhancing self-care and self-management behavior for people with [chronic disease] and their family members."[21] One of the earliest definitions of 'health coaching' limited the practice to health promotion efforts: "Health coaching is the practice of health education and health promotion within a coaching context, to enhance the wellbeing of individuals and to facilitate the achievement of their health-related goals."[22]

There are no current standards for being a health coach, thus people calling themselves a 'health coach' range from credentialed health professionals to untrained individuals espousing the benefits of their own health and lifestyle philosophies on personal web sites.[23] In the context of this article, health coaching is defined as 'a behavioral health intervention that facilitates participants in establishing and attaining health-promoting goals in order to change lifestyle-related behaviors, with the intent of reducing health risks, improving self-management of chronic conditions, and increasing health-related quality of life.'[24] It is important to note that this type of intervention differs from the nurse case management intervention that originated in traditional disease management efforts, where telephone or personal contacts were based on structured assessments and treatment adherence plans.[25]

Health coaching is an outgrowth of health education and health counseling activities, which became popular in the 1950s, providing education (information and advice) in order to change behaviors and reduce health risks, thereby improving overall health status.[26] Formal lifestyle management programs evolved from these earlier efforts, with smoking cessation,[27] diabetes mellitus education,[28] and cardiac rehabilitation[29] programs emerging as strong models. Physicians, nurses, and other healthcare providers continue to be actively involved in the role of health educator in conjunction with more formal health management efforts, and function in the health coach role as well.

Health coaching has recently gained popularity because of its ability to address multiple behaviors, health risks, and self-management of illness in a cost-effective manner. A review[30] of health-related outcomes included in worksite health management concluded that programs that include the opportunity for individualized, risk-reduction counseling targeted to high-risk employees are more likely to result in decreased health risks.

2. Published Studies in Health Coaching

While there is a plethora of studies with interventions that include health education and/or health counseling activities, published outcome studies using the keywords 'health coaching' are scarce. The addition of search terms such as 'behavior (or 'behaviour') change + intervention', 'nurse coaching', 'health counseling (or 'counselling'), 'nurse counseling (or 'counselling')', 'telephone counseling (or 'counselling')', 'telephone counselor', and 'telephone-based intervention' are needed to elicit additional studies using a health coach-like intervention. However, the majority of these additional studies (i) rely on the more traditional health education models; (ii) utilize interventions that are non-interactive internet- or print-based; (iii) employ triage or advice telephone services; and/or (iv) present multi-component interventions that do not isolate the effects of the health coaching intervention.

Examples of studies utilizing a health coaching model (as described above) and demonstrating substantial outcomes attributed to the coaching intervention are reviewed below. The strongest evidence for the effectiveness of coaching is in smoking cessation. There have also been numerous studies that have demonstrated positive changes in a multitude of other health behaviors using a specific health coaching model based on motivational interviewing. In addition, there have been studies that have demonstrated efficacy in various health areas using less-defined coaching methods. Across all studies, there is evidence in support of group-based, in-person, and telephone-based interventions, or a combination thereof, with the majority of recent literature focusing on telephonic methods of delivery. Likewise, the literature includes interventions conducted across various settings (community, primary care, worksite) and populations (adolescents, women only, seniors, employees).

2.1 Evidence for Health Coaching in Smoking Cessation

Strategies and interventions for smoking cessation have received intense scrutiny and review, and have included evidence regarding the value of the counseling or coaching component. In a 2005 Cochrane review,[31] the authors identified 21 trials with >7000 participants where individual counseling for smoking cessation was included. Individual counseling was found to be effective. Moreover, they did not detect a greater effect of intensive counseling compared with brief counseling, thus supporting a more cost-effective, brief intervention model.

Likewise, pooled results from 48 studies limited to telephone counseling in a 2006 Cochrane review[32] supported the use of proactive telephonic-based coaching for smokers compared with a minimal intervention, such as providing standard self-help materials and brief advice, or compared with pharmacotherapy alone. There was clearer evidence of a benefit in the subgroup of trials that recruited smokers who were motivated to quit. There was also evidence of a 'dose response', with one or two brief calls being less likely to provide a measurable benefit than three or more calls.

2.2 Evidence for Motivational Interviewing-Based Health Coaching

The motivational interviewing approach (see section 3.3) has been incorporated across diverse populations, settings, and health topics. Its efficacy was first demonstrated in the treatment of addictions, such as illegal drugs and alcoholism.[33] Continued research and two recent meta-analyses with rigorous methodology have reinforced the evidence for this client-centered approach.[34,35]

Motivational interviewing has since been shown to be effective in improving general health status or well-being,[36,37] promoting physical activity,[38-42] improving nutritional habits,[37,43-46] encouraging medication adherence,[47-49] and managing chronic conditions such as hypertension,[50,51] hypercholesterolemia,[43] obesity,[51-54] and diabetes.[55-59] Promising results have also been shown in the application of motivational interviewing to the treatment of mental health issues in conjunction with substance abuse,[60,61] as well as in patients with mental health issues alone.[62-66] Surprisingly, the literature on motivational interviewing-based interventions does not have as strong a base of support in smoking cessation efforts, with mixed results indicating the need for further study in this area.[67-78]

2.3 Evidence for Other Health Coaching Modalities

Likewise, there is support across populations, settings, and topics for other health coaching modalities. These techniques are not as well described or studied as the motivational interviewing-based approach, but typically embrace a client-centered or stage-based model and address the psychosocial issues inherent in lifestyle management.

Several studies have emphasized the use of health coaching in a small group setting to address sedentary lifestyle as a risk factor for chronic disease, including studies of individualized goal setting to facilitate behavior change in women with multiple sclerosis,[79] exercise maintenance in the year following a cardiac rehabilitation program,[80] and increased physical activity for obese women[81] and young African-American girls.[82] Other studies have used the small-group setting and demonstrated improved health risk indicators and weight loss in obese women,[83] and successful reduction of cardiac events through addressing multiple risk factors (smoking, diet, exercise, and stress) simultaneously in a cardiac rehabilitation program.[84]

Favorable outcomes with in-person coaching (and some telephone follow-up) were demonstrated for diabetes management,[85] HIV treatment adherence,[86] condom use,[87] general health promoting,[88] and better nutrition.[89]

Similar to that seen in the smoking cessation domain, there has been an increasing number of studies employing telephone-based health coaching to address other lifestyle issues. The most popular health topics targeted have been adherence to treatment guidelines,[90-92] exercise,[93-95] and nutrition.[96,97] Other areas where telephone-based health coaching has demonstrated favorable outcomes include cardiac risk factors,[98] mental health,[98,99] and functional status/quality of life.[100]

2.4 Health Coaching in a Disease Management or Health Management Setting

Currently, there are few published studies in which health coaching has been incorporated into a formal health or disease management setting.

Yen et al.[101] examined changes in 13 selected health risks among health risk assessments that were linked to program participation records. In this large 2-year study, 12 984 employees self-selected into the study, and no control group was used for comparison. The nationwide worksite program included the health risk assessment and a toll-free nurse line. A pilot program, implemented in two cities, added biometric screenings, health coaching, and vouchers for medical office visits. The health coaching approach was not well described nor was a measure of fidelity included. The effects of the health coaching intervention were not isolated. Changes in overall health risks were measured as program outcomes in three ways: one-directional, net, and risk status changes. Given that there was no control group, the study findings of a significant increase in low-risk status in both nationwide and pilot study participants must be viewed with caution, since it is likely that these results were an effect of regression to the mean.

A pilot study by the authors of the present review[36] explored the impact of motivational interviewing-based health coaching as part of a comprehensive health management program on the physical and mental health status of employees at a large worksite. In this study, 276 employees at a medical center self-selected to either participate in a 3-month health coaching intervention or to be part of a control group. The treatment group showed significant improvements in both physical ($p = 0.035$) and mental ($p < 0.0001$) health status compared with individuals in the control group. Healthcare professionals with varying backgrounds were well trained in the motivational interviewing-based health coaching technique, which was well described, and the Motivational Interviewing Skills Code rating tool[102] was used to the ensure motivational interviewing proficiency of the practitioners at baseline. However, one drawback of the study was that the randomly recorded sessions were not similarly coded in order to assess the continued fidelity to motivational interviewing. Other limitations

included the relatively small sample size and potential self-selection bias, although a matched case-control analysis performed to address this concern elicited similar findings to the original analysis. The findings of this pilot study suggest that motivational interviewing-based health coaching is effective in improving both physical and mental health status in a worksite setting.

Gold et al.[103] examined the effectiveness of a telephone-based health promotion program that targeted high-risk, ready-to-change individuals (n = 607). Self-selected participants were compared with risk-eligible non-participants, who also were invited to participate but chose not to do so. Coaching was performed by trained health educators, and a facilitative counseling approach was used to move participants through the stages of change. This approach was not well described and no method of assessing fidelity to the treatment approach was reported. A quasi-experimental design with between and within comparisons of lifestyle-related health risks was used to measure effectiveness. Overall, participants significantly reduced their number of risk factors, whereas non-participants significantly increased their risk (difference of 0.85 risks). Although the results appear impressive, there are several limitations. The two groups significantly different baseline characteristics and length of time until follow-up, and participants were limited to individuals who were already motivated to change. Measurement bias was introduced by collapsing the outcome variable into a dichotomous variable, and subgroup analyses had insufficient sample sizes. These factors all served to limit the ability to draw conclusions from the results.[104] Nonetheless, this study still suggests that targeted interventions using stage-based protocols delivered via the telephone can have a significant and long-term impact on health risks for a more motivated population.

While these outcomes look promising, more studies are needed in which rigorously designed evaluations are employed, before a definitive statement on the cost effectiveness and value of health coaching as an intervention in a health or disease management setting can be made. However, there are guidelines for implementing a health coaching program that will enhance the likelihood of positive outcomes.

3. Health Coaching as an Intervention in Health Management

The implementation of a health coaching intervention in a health management program should be based on the following considerations: (i) target population (threshold of risk to be eligible); (ii) recruitment of participants (proactive outbound and inbound contact methods); (iii) coaching mode; (iv) delivery mechanism of coaching (online, telephonic, in-person); and (v) program evaluation.

3.1 Target Population

Health coaching should be enacted so that it is appropriate for any member across the stages of change,[9] and ideally all members of a population would have access to the service. However, the intensive nature of this intervention combined with limited resources usually requires that health coaching be reserved for members who are at risk of developing, or who already have, a lifestyle-related health condition. A case could be made to allow members to self-refer for coaching, because individuals who do so are generally well motivated to take action and it has been shown in at least one study[36] that employees who self-select into a health coaching intervention are at higher risk than the overall population (i.e. they had significantly lower mental health status and function scores at baseline).

To facilitate proactive enrolment of high-risk members, health and disease management providers should systematically identify and stratify members at risk of lifestyle-related disease using tools, such as a health risk assessment, that can predict future acute health services utilization or costs.[105] Generally, stratification is accomplished by first creating tiers, or categories, of risk. These trials should be based on the aggregate report of the health risk assessment or a burden of disease analysis of the population, and the scope of the program (resources available, referral networks, expertise of coaching staff). After the health risk assessment is administered to the population, data are collected, and high-risk participants are identified and stratified into these risk tiers.

3.2 Participant Recruitment

Once high-risk members have been identified, the program should incorporate a recruitment strategy that includes outreach to the highest risk members to enroll them into the health coaching service. Standard enrolment rates of the eligible at-risk members into health coaching by health management organizations are only 20–30%; however, these rates can be substantially improved to 50–70% by incorporating recruitment and marketing efforts that utilize best practices in behavior change theory.[106]

Recruitment and marketing efforts should include a variety of communication modalities (e.g. postcards, e-mails, e-letters, phone calls), customized to the population being targeted. Tailored messaging should be carefully crafted and designed to appeal to/recruit members across the stages of change, i.e. those who are thinking about change; those who are interested in achieving a health goal; those who want support in ongoing efforts; and those who are not ready to change immediately. One successful message used in a smoking cessation campaign by Prochaska et al.[107] was "Wherever you're at, we can work with that." It is suggested that the phrase 'health coaching' be used versus 'health counseling', as

people who are averse to behavioral health counseling seem to be familiar with the concept of 'coaching' and will have a greater comfort level with the term.[36]

Incentives are helpful in increasing participation in all health management recruitment and intervention activities.[105] According to RJ Donatelle (personal communication), incentives that have perceived value, and are concrete, immediate, and escalating, are the most attractive. They should be chosen based on the practicality and availability of the rewards, and the demographics and culture for the target population. Examples of popular incentives include gift certificates, cash, premium discounts, contributions to health savings plans, and prize or cash draws.[105]

3.3 Health Coaching Model: Motivational Interviewing

Various approaches have been described and incorporated into health coaching. These include a motivational interviewing-based approach, whole person, shared decision-making, and facilitative counseling approaches, stage-based motivational counseling, and the perceived health model. However, motivational interviewing-based health coaching is the only technique to be fully described and consistently demonstrated as being causally and independently associated with positive behavioral outcomes.[34,35]

Another factor that is unique to motivational interviewing amongst the health coaching models is the existence of several validated coding tools to ensure fidelity of the technique, assist in staff development, and provide consistency in intervention delivery: these include the Motivational Interviewing Skill Code,[102] the Motivational Interviewing Treatment Integrity,[108] and, for a brief intervention adaptation of motivational interviewing, the Behavior Change Counseling Index.[109]

Motivational interviewing was originally developed for addictions counseling in the 1980s and has been described as a "directive [goal-oriented], client-centered counseling style for eliciting behavior change by helping clients to explore and resolve ambivalence."[4] As described above, motivational interviewing has been shown to be effective in addressing typical risk factors and lifestyle management issues that are of great interest in health/disease management efforts.

The motivational interviewing-based health coaching approach differs greatly from the traditional health education model used frequently in disease management interventions, and, generally, from other health coaching approaches (table I). Motivational interviewing is not based on the information model, does not rely on information-sharing, advice-giving, or scare tactics (e.g. threatening the participant that they will die if they don't change), and is not confrontational, forceful, guilt-ridden, or authoritarian. Rather, it is shaped by an understanding of what triggers change.[4] In fact, a systematic review of the literature demonstrated that motivational interviewing outperforms traditional advice-giving in the treatment of a broad range of behavioral problems and diseases.[35]

During a typical health coaching session, the proficient practitioner or coach emphasizes the three underlying assumptions of motivational interviewing – collaboration, evocation, and autonomy – in order to establish rapport, reduce resistance, and elicit 'change talk' (one's own reasons and arguments for change).[4,34] The intended outcome of these motivational interviewing sessions is for clients to resolve ambivalence (a central goal), move through the stages of change,[9] and follow through with desirable lifestyle change, which would ideally result in improved health outcomes through the methods discussed in section 3.5.

3.4 Delivery Mechanism

Health coaching can be delivered either in person or remotely via telephone, e-mail, or internet (via threaded discussion or 'chat' functions). Generally, the in-person or telephonic formats are favored because they are more compatible with the interactive, non-scripted motivational interviewing-based approach.[34] Initial sessions range from 30 minutes to 1 hour in duration, depending on the complexity and severity of the participant's needs and their readiness to change, with follow-up sessions lasting 10–30 minutes. This technique was developed as a brief intervention, and there is evidence that only a few sessions are needed to effect change. Delivered as an adjunct to a standard treatment or an educational program, a single session can be effective, with the typical protocol including three to five sessions.[34]

3.5 Program Evaluation

The two primary categories of study designs relevant to health coaching research and evaluation are 'experimental' (better known as the randomized controlled trial [RCT]), and 'quasi-experimental' (which is generally referred to as an observational study).[112-114]

The RCT is considered the gold-standard research and program evaluation design.[115,116] Randomization reduces selection bias by giving each member of the population an equal opportunity to be chosen for inclusion in each of the treatment groups and thus distributes variability (observed and unobserved) equally among the groups being studied. The addition of an equivalent control group ensures that study outcomes are causally associated with the intervention and not a function of bias and/or competing extraneous confounding factors that may offer plausible alternative explanations for any change from baseline.[117] As desirable as the RCT design may be, unless the study is being conducted in a tightly

Table I. Comparison of traditional health education approach and the ideal health coaching approach

Aspect	Traditional health education approach in disease management	Ideal health coaching approach to address lifestyle management
Orientation	Task-oriented	Client-centered
Most common techniques used	Advice-giving, information-sharing, personal testimonies, sometimes confrontational or scare tactics	Expressing empathy, rolling with resistance, supporting self-efficacy, developing discrepancy
Rating tool used to assure fidelity of technique by coach/provider	None	Motivational Interviewing Skill Code,[102] Motivational Interviewing Treatment Integrity Manual,[108] Behavior Change Counseling Index[109]
Approach to disease management	Manages the disease and its complications	Whole-person approach, where behaviors are prioritized for maximum impact on overall health
Behavior change model(s) used	Infrequently used; however, stages of change are most often reported	Health Belief Model,[5,6] Self-Perception Theory,[110] Social Cognitive Theory,[7] Value Theory,[111] Transtheoretical Model[9] (stages of change), Implementations Intentions Model[10]
Influence on stages of change[a] or state of readiness to change	Can be effective for those in contemplation, preparation, action, and maintenance phases if the participant wants advice or guidance. Generally raises resistance in those in precontemplation and contemplation phases	Can be effective for individuals in any of the stages of change, regardless of their knowledge level or interest in receiving advice. Intervention is structured to avoid or roll with resistance
Evidence-based example that works across stages of change to change behavior	None	Motivational Interviewing-based health coaching
Decision-making process about which behaviors to change/adopt	Provider or healthcare professional decides what is best for the participant using evidence-based practice guidelines	Collaborative effort between coach and participant; however, coaches are directive in guiding participants towards exploring risk reduction and facilitating movement through stages of change. Coaches use the Elicit-Provide-Elicit[b] method to ensure participant is well informed
Treatment plan	Provider advises participant to adhere to prescribed treatment guidelines	A fully developed plan of action based on the participant's intentions is developed and monitored

a From Prochaska's Transtheoretical Model.[9]

b From Miller and Rollnick's Motivational Interviewing technique.[4]

controlled environment, this model is not suited for many research endeavors.[104]

Most commercial health coaching programs do not randomly assign eligible individuals to treatment or control groups, but instead invite those individuals who meet certain health risk criteria or are referred by their healthcare provider to participate. As a result, program outcomes are particularly susceptible to threats to validity, such as selection bias and regression to the mean.[116,118] Fortunately, there are several observational study designs available to mitigate the impact of these biases. In fact, the basic operational model of a well designed health coaching program allows for tremendous flexibility in the choice of evaluation techniques such as regression discontinuity,[119] matched pairs,[120] instrumental variables,[121] and survival analysis,[122] among others.

There are several categories of outcomes that should be considered in measuring the effectiveness of a health coaching intervention as a component of a health management program: (i) health-related behaviors; (ii) health status, (iii) productivity; and (iv) healthcare utilization. While a comprehensive discussion of these measures is beyond the scope of this review, the underlying principle that should be adhered to when choosing an outcome is that a causal link between the intervention and the outcome must be reasonably established, which depends to a large degree upon the strength of the study design. An important factor to consider in determining the effectiveness of any intervention is the fidelity to the coaching approach used. When a motivational interviewing-based approach is employed, the Motivational Interviewing Skill Code,[102] Motivational Interviewing Treatment Integrity,[107] and Behavior Change Counseling Index[108] can be used for this purpose.

Finally, results of rigorous investigations into the efficacy of health coaching should be submitted to the peer-review process as a means of advancing the science and application of the concept.

4. Conclusion

Health coaching is a promising intervention in health management programs intended to address individuals with lifestyle-related risk factors. In order to achieve favorable outcomes, current behavior change theories/models must be integrated into a systematic, evidence-based technique, such as motivational interviewing. Given the limited availability of robust research in this area, further studies are needed to demonstrate the efficacy and cost effectiveness of health coaching compared with other intervention modalities.

Acknowledgments

No funding was provided to assist in the preparation of this review. All authors are employed by Oregon Health and Science University, which owns and operates a health coaching and wellness program entitled Health Management Services and have no other conflicts of interest that are directly relevant to the contents on this review.

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