SYSTEMATIC REVIEW

A Systematic Review of the Literature on Health and Wellness Coaching: Defining a Key Behavioral Intervention in Healthcare

医疗与健康辅导文献的系统性审查：界定医疗护理领域中的主要行为干预

Revisión sistemática de la literatura médica sobre la formación de salud y bienestar: definiendo una intervención conductual clave en la atención sanitaria

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Citation
Global Adv Health Med. 2013;2(4)38-57. DOI: 10.7453/gahmj.2013.042

Key Words
Systematic review, health, wellness, coaching, behavioral intervention, behavior change

Disclosures
The authors completed the ICMJE Form for Potential Conflicts of Interest and declared no relevant conflicts.

ABSTRACT

Primary Objective: Review the operational definitions of health and wellness coaching as published in the peer-reviewed medical literature.

Background: As global rates of preventable chronic diseases have reached epidemic proportions, there has been an increased focus on strategies to improve health behaviors and associated outcomes. One such strategy, health and wellness coaching, has been inconsistently defined and shown mixed results.

Methods: A Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)–guided systematic review of the medical literature on health and wellness coaching allowed for compilation of data on specific features of the coaching interventions and background and training of coaches.

Results: Eight hundred abstracts were initially identified through PubMed, with 284 full-text articles ultimately included. The majority (76%) were empirical articles. The literature operationalized health and wellness coaching as a process that is fully or partially patient-centered (86% of articles), included patient-determined goals (71%), incorporated self-discovery and active learning processes (63%) (vs more passive receipt of advice), encouraged accountability for behaviors (86%), and provided some type of education to patients along with using coaching processes (91%). Additionally, 78% of articles indicated that the coaching occurs in the context of a consistent, ongoing relationship with a human coach who is trained in specific behavior change, communication, and motivational skills.

Conclusions: Despite disparities in how health and wellness coaching have been operationalized previously, this systematic review observes an emerging consensus in what is referred to as health and wellness coaching; namely, a patient-centered process that is based upon behavior change theory and is delivered by health professionals with diverse backgrounds. The actual coaching process entails goal-setting determined by the patient, encourages self-discovery in addition to content education, and incorporates mechanisms for developing accountability in health behaviors. With a clear definition for health and wellness coaching, robust research can more accurately assess the effectiveness of the approach in bringing about changes in health behaviors, health outcomes and associated costs that are targeted to reduce the global burden of chronic disease.

摘要

主要目标： 审查同行评审的医疗文献中所发布医疗和健康辅导的操作性定义。

方法： 在系统性审查和 Meta 分析首选报告项目 (PRIMSA) 指导下进行的医疗与健康辅导医学文献的系统性审查，可编辑与辅导干预指定功能和教练背景和培训有关的数据。

成效： 通过 PubMed 初步识别出八百篇摘要，并最终纳入 284 篇全文文章，其中 多数 (76%) 为实证性文章。 文献指实施医疗和健康辅导为完全或部分以患者为中心 (86% 的文章)、包含患者决定的目标 (71%)、合并自我发现和积极学习流程(63%)(与较为被动地接受建议相比)、鼓励对行为负责 (86%)、 并配合辅导流程向患者提供某种类型的教育 (91%)。此外，78% 的文章指出，辅导是在与接受过特定行为改变、 沟通和激励性技能培训的教练建立了一贯、持久的关系的情况下提供 结论：尽管先前在如何实施医疗与健康辅导方面存在分歧，但通过本系统性审查，发现在医疗与健康辅导的定义方面达成一种共识；即，医疗与健康辅导是一个由拥有不同背景的医疗专业人员交付的、以行为改变理论为基础、以患者为中心的流程。该实际的辅导流程促致患者决定目标设定，鼓励除内容教育以外的自我发现，并且将多种机制整合在一起，用以发展健康行为的问责制。有了明确的医疗与健康辅导定义，人们便可开展大量研究，更为准确地评估该等方法在健康行为、健康结果和相关费用方面所带来变化的有效性，从而减轻全球的慢性疾病负担。

SINOPSIS

Objetivo Principal: revisar las definiciones operativas de la formación de salud y bienestar según las publicaciones en la literatura

médica revisada por pares.
Fundamentación: Dado que que las tasas mundiales de enfermedades crónicas evitables han alcanzado proporciones epidémicas, se ha hecho cada vez más hincapié en las estrategias para mejorar las conductas sanitarias y los resultados asociados. Una de estas estrategias, la formación de salud y bienestar, se ha definido de forma inconsistente y ha mostrado resultados mixtos.
Métodos: Una revisión sistemática, guiada por los elementos de información preferidos para las revisiones sistemáticas y el metanálisis (PRIMSA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses), de la literatura médica sobre la formación de salud y bienestar permitió la recopilación de datos sobre las características específicas de las intervenciones de formación, y sobre la procedencia y la formación de los formadores.
Resultados: se identificaron inicialmente ochocientos resúmenes a través de PubMed y, en última instancia, se incluyeron 284 artículos con texto completo. La mayoría (76 %) eran artículos empíricos. La literatura aportó una definición operativa de la formación de salud y bienestar como un proceso que está total o parcialmente centrado en el paciente (86 % de los artículos), que incluye metas determinadas por los pacientes (71 %), incorpora procesos de aprendizaje activo y descubrimiento personal (63 %) —en comparación con una recepción más pasiva de asesoramiento—, alienta la responsabilidad por las conductas (86 %) e imparte algún tipo de educación a pacientes junto con el uso de procesos de formación (91 %). Además, el 78 % de los artículos indicó que la formación se presenta en el contexto de una relación continua y coherente con un formador humano que está capacitado en aptitudes motivacionales, comunicativas y de cambios conductuales específicos.
Conclusiones: A pesar de las divergencias en la forma en que la formación de salud y bienestar se ha puesto en marcha con anterioridad, esta revisión sistemática señala un consenso emergente en lo que se refiere a la formación de salud y bienestar, es decir, un proceso centrado en el paciente que se basa en la teoría del cambio conductual y que se administra por parte de profesionales sanitarios con diversas experiencias en el pasado. El proceso real de formación implica el establecimiento de objetivos determinado por el paciente, estimula el descubrimiento personal, además de la formación en contenidos, e incorpora mecanismos para desarrollar la responsabilidad en las conductas de salud. Con una definición clara de la formación de salud y bienestar, la investigación sólida puede evaluar de una forma más precisa la eficacia de la estrategia en la consecución de los cambios en las conductas de salud, los resultados sanitarios y los costos asociados dirigidos a reducir la carga mundial de la enfermedad crónica.

INTRODUCTION

The global prevalence of preventable chronic diseases associated with unhealthy behaviors has reached epidemic proportions and negatively affects healthcare systems and economies worldwide.[1-3] Given the strain of chronic illness, public health, disease management, clinical practice, and employee wellness models are evolving to help individuals change their health behaviors to prevent and better manage chronic disease.[4-7] One rapidly emerging strategy to help individuals successfully change their health behaviors is health or wellness coaching. Health and wellness coaching has been defined in varying ways over the past decade. In 2003, Palmer et al defined health coaching as

> *the practice of health education and health promotion within a coaching context, to enhance the well-being of individuals and to facilitate the achievement of their health-related goals.*[8]

In 2006, Butterworth, Linden, McClay, and Leo defined health coaching as

> *a service in which providers facilitate participants in changing lifestyle-related behaviors for improved health and quality of life, or establishing and attaining health promoting goals.*[9,10]

More recently, the National Consortium for Credentialing Health and Wellness Coaches (NCCHWC) proposed the following definition of health and wellness coaches, which delineates core elements of the practice of coaching:

> *Health and wellness coaches are professionals from diverse backgrounds and education who work with individuals and groups in a client-centered process to facilitate and empower the client to achieve self-determined goals related to health and wellness. Successful coaching takes place when coaches apply clearly defined knowledge and skills so that clients mobilize internal strengths and external resources for sustainable change.*[11]

Although these definitions share some similar components, there is no agreement on what exactly health coaching entails (eg, practices, strategies, delivery methods), what the role of the coach actually is (eg, educator, navigator, facilitator, partner),[9,12] and what background and training enable the coach to provide health coaching competently.

As use of the terms *health coaching* and *wellness coaching* proliferate without a clear and consistent definition of this intervention, additionally concerning is the increasing rate at which peer-reviewed journals are

publishing research results that claim to evaluate "health coaching," but use widely varying definitions,[12] thereby confusing the value of coaching results. Indeed, numerous studies have used the term *health coaching* to address chronic disease care in various settings and with mixed results. For example, Wennberg et al found that a targeted care-management program with telephonic health coaching for individuals insured by a large health plan reduced medical costs and hospitalizations.[13] Similarly, studies of health coaching for patients with diabetes,[14-17] obesity,[18,19] cancer,[20] and risk of[21] or diagnosed cardiovascular disease[22,23] demonstrate a positive effect on health behaviors or health outcomes. However, review of the literature reveals other evaluations of coaching that find non-significant benefits for health outcomes.[24-27]

Likely, one major reason for the variability in findings on the effectiveness of health coaching is that highly disparate interventions are being investigated under the umbrella term of *health or wellness coaching*. When we consider the interventions carefully, we find a broad range in the following: (1) the techniques used during the coaching process; (2) the theoretical underpinnings of the approach; (3) the frequency and duration of the coaching process; (4) the extent of human contact provided; (5) the degree to which content education is included in the intervention; and (6) the professional background and training of the coaches. At one end of the continuum are well-described and theoretically based interventions delivered through one-on-one relationships that develop over months or years with a highly trained professional who employs well-developed and articulated processes and strategies to help individuals initiate and sustain behavior changes over time.[9,17,19,28]At the other end of the continuum are interventions that require no human contact,[29-31] that appear to be purely content education rather than skills-based training,[32,33] and/or have no stated theoretical backing. This lack of standardization in both the definition and the operationalization of health coaching makes it difficult, if not impossible, to determine whether health coaching is indeed an effective approach to improving health behaviors and reducing the global burden of chronic disease.

The purpose of the present study was to establish a consensus definition of health and wellness coaching through a systematic review of the related literature. The intention is threefold. First, we intend to answer repeated calls in the literature for evidence-based identification of conceptual and interventional components of health and wellness coaching.[28,34,35] Second, with a standardized definition, components of this approach can be used as targets to clarify the professional skills needed to appropriately train health and wellness coaches.[12,34,36] Finally, with a standardized definition, we can more rigorously evaluate both the efficacy and the effectiveness of health and wellness coaching.[12] To these ends, we conducted a comprehensive, systematic review of the peer-reviewed medical literature to determine how health and wellness coaching is operationalized. Using an adapted population, intervention, comparison, outcome (PICO) format, our primary research question was, "How are interventions described as health or wellness coaching defined and operationalized in the peer-reviewed medical literature?" This review will serve as the foundation for future effectiveness research and identification of best practices in health and wellness coaching that may be widely disseminated to mitigate the negative consequences of the global chronic disease epidemic.

METHODS

We conducted a systematic review of the peer-reviewed literature on health and wellness coaching using the international guidelines established by PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses).[37,38] The PRISMA standards were published in 2009 to update the Quality of Reporting of Meta-Analyses (QUOROM) statement based on conceptual advances in the science of systematic reviews. According to the definitions established by the Cochrane Collaboration, a systematic review addresses "a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise relevant research, and to collect and analyze data from the studies that are included in the review."[39]

Research Questions

Our primary aim was to answer the question, "How are interventions that are described as health or wellness coaching defined and operationalized in the peer-reviewed medical literature?" Explicitly, we sought to determine the following.

1. What type of literature has been published on health and wellness coaching? Given this early stage of clarifying the definition of "health and wellness coaching," we chose to describe all peer-reviewed medical literature rather than only empirical trials. We surmised that articles written by clinicians describing ongoing practices were as useful as randomized controlled trials for understanding key concepts emerging in the field. Once a standardized definition has emerged, review of empirical data will be essential to ascertain the effectiveness of health and wellness coaching and to establish standards for practice guidelines. In answering question 1, we categorized articles as one of four types:

1. a research study wherein data were systematically collected;
2. a protocol description for an intended (and often funded) study where there is a plan to systematically collect data;
3. description of an existing practice or process, labeled as health or wellness coaching, that has already been operationalized and implemented—this category included those practices that

had retrospectively culled and reviewed data that were not prospectively and systematically collected; and
4. a conceptual piece that describes ideas about health and wellness coaching in research or clinical practice but presented no associated data.

As can be seen in the tables, we separated the results by article type in order to assess potential publication bias. We were concerned that the conceptual elements that did not resemble fully operationalized practices might reflect ideas that had not been tried.

2. What approaches, practices, strategies, and methodologies constitute health coaching as described? After initial full-text review of 66 articles, five investigators (DD, EB, LAS, MES, RQW) developed a consensus on which specific practices were repeatedly mentioned and thus should be quantified to describe the evolving practice of health and wellness coaching. Categorical questions were answered with Yes, No, Partially, Not described, and Not applicable. These included the following:

2.1 Was the coaching patient-centered? To determine the answer, we drew from the definition as put forth by the Institute of Medicine.[40] Specifically, was the coaching respectful of and responsive to individual patient preferences, needs and values? Did it appear to ensure that patient values guided all clinical decisions? Was it based on effective communication, shared information, and shared decision-making between clinician and patient? In practice, coding "yes" for 2.1 indicated that the coaching practice was tailored to the individual and allowed some autonomy on the part of the patient.

2.2 Were the patients' goals self-determined vs recommended by a provider or the coach? Following along the lines of coaching as a patient-centered process and consistent with several definitions of health and wellness coaching, we evaluated the degree to which articles described a practice wherein patients were able to set their own goals, or whether the goals were predetermined by the intervention, coach, or medical provider(s). If patients were able to set their own goals, this was coded "yes." If patients had preset goals, this was coded "no." Interventions that described a procedure where there was a predetermined primary goal (eg, blood pressure control, weight loss) but the patient was able to develop some personal goals that might facilitate the primary goal were coded as "partially."

2.3 Was a self-discovery process used to find solutions vs advice-giving? We assessed each article to evaluate whether or not an active learning process was encouraged for the participant through self-exploration and problem solving vs being advised or instructed by the coach. In practice, if the patient appeared to have any involvement in finding or generating solutions for themselves, we coded "Yes." This was in contrast to an approach that was strictly content education or simply telling the patient what s/he needs to do, which was coded as "No."

2.4 Did the coaching process encourage patient accountability in behavior toward the stated goal? Accountability is encouraged when the patient has some way to self-monitor in order to observe their progress (or lack of it) toward their goal. This involves supporting patients in regular data collection on goal-related behaviors and outcomes. The role of the coaching program is to support and/or facilitate this data collection and teach patients how to use it in self-regulation of behaviors.

2.5 Was content education provided as part of the defined "coaching" intervention? In some articles, content education was provided in the service of developing patients' abilities to better solve problems for themselves. In others, it was provided in the context of instructing or advising.

2.6 What was the typical coaching "dose" (length of a coaching session, the frequency of sessions, and the duration of the coaching process)?

2.7 Did the patient develop a relationship with the same coach over time? Some interventions describe an approach where a patient may talk to a different coach depending on when s/he accesses the intervention, while others describe an intervention wherein the patient interacts with the same coach during the entire intervention. We wanted to assess the degree to which patients had a consistent coach, as this may be an important variable when later assessing effectiveness.

3. Who delivers the service that is referred to as "health or wellness coaching?" To better understand the delivery of health and wellness coaching, we asked further background questions regarding the "coach." Specifically, we asked the following:

3.1 Are these individuals professionally trained?

3.2 If so, what type of professionals were the coaches? Specifically, were they health professionals or not? If so, what type?

3.3. In addition, what type of training have they received, if any, in the specifics of the coaching process and the content of the coaching they are delivering? We synthesized any details provided about their backgrounds, including how many hours of training they received for their coaching roles and the content of that training.

Identification, Screening and Eligibility of the Literature

A professional librarian ran a search on PubMed, which encompassed MEDLINE, life science journals, and online books from the fields of biomedicine and health covering portions of the life sciences, behavioral sciences, chemical sciences, and bioengineering. The librarian used no start date and included all articles with MeSH term "human," written in English or Spanish, which had been loaded through January 2013. Search index terms included all forms of the words *health* or *wellness* and *coach*. The search included other potential subterms for coach such as *educator*, *mentor*, *navigator* and *teacher* as well as subterms for "coaching" such as *training*, *feedback*, and *mentoring*. For the full search index list, see Table 1.

Table 1 Specific Search Terms

((health[tiab] OR wellness[Title/Abstract]) AND (coach[tiab] OR coach/educator[tiab] OR coach/mentor[tiab] OR coach/navigator[tiab] OR coach/teacher[tiab] OR coach'[tiab] OR coach's[tiab] OR coachability[tiab] OR coachable[tiab] OR coachdelivered[tiab] OR coached[tiab] OR coached/trained[tiab] OR coached'[tiab] OR coachee[tiab] OR coaches[tiab] OR coaches/case[tiab] OR coaches/facilitators[tiab] OR coaches/instructors[tiab] OR coaches/trainers[tiab] OR coaches'[tiab] OR coaching[tiab] OR coaching/control[tiab] OR coaching/facilitating[tiab] OR coaching/feedback[tiab] OR coaching/mentoring[tiab] OR coaching/training[tiab] OR coaching'[tiab] OR coaching's[tiab] OR coachwork[tiab])) AND ("humans"[MeSH Terms] AND (English[lang] OR Spanish[lang]))

Eight hundred abstracts were initially identified through the literature search. An additional 55 articles were added through two separate means. First, articles previously collected by the authors that did not appear in the literature search were contributed for review. Second, three review articles obtained through the PubMed search[28,34,35] were combed for additional references. To be eligible for inclusion in the review, articles had to be published in a peer-reviewed journal, written in English or Spanish, and discuss coaching in the context of improving patient health and/or wellness. Articles on coaching for the purpose of professional development (eg, supporting a physician or nurse to improve their skills) and coaching in athletics were excluded. One investigator (RQW) reviewed each title and abstract to ensure general relevance. A second researcher (EB) reviewed abstracts for which the first investigator was unclear about its relevance to the current review. As illustrated in Figure 1, the 800 abstracts were reduced to 349 full-text articles for review. Full-text reviews then resulted in an additional 65 exclusions; specific reasons for exclusion are displayed in Figure 1. As noted above, no exclusions were made based on type of article (eg, research report, protocol description, operating clinical practice, conceptual piece). We also noted when a single study was described by multiple articles (eg, at varying time points or on varying measures) or when a group of investigators or clinicians produced multiple articles on the same approach. Following a series of team discussions, however, we decided to include all such articles for this systematic review (vs one representative paper from a single study or group of investigators or clinicians) so we could report on the "emerging thinking" in both the clinical and research literature. For future reviews that evaluate the quality of the evidence and outcomes, multiple articles on a single study may be counted only once. We are well aware of the potential for descriptive or conceptual pieces (eg, commentaries) to influence the literature—and thus practice—even when they do not include descriptions of operating clinical practices or data. Hence, we also summarize pertinent sections of the literature (such as the descriptions of the actual coaching processes) without these concept articles and assess for potential bias.

Pairs of investigators from our team of 10 were assigned full-text articles to independently review and enter pertinent data on a standardized grid. For all full-text articles, the following data were evaluated and abstracted if available:

1. type of article (empirical, protocol waiting for data collection, existing practice, conceptual);
2. characteristics of the reported coaching process, including techniques used, degree of patient-centeredness, patient role in goal-setting and self-discovery processes, use of accountability strategies to encourage self-monitoring, provision of content education, frequency and duration of the coaching, and use of the same coach or different coaches over time; and
3. characteristics of the coaches themselves, including type of professional, background, and breadth and scope of reported training obtained to serve in the coaching role.

A third reviewer resolved any disagreements between the two assigned reviewers on the abstracted data. Third reviews were required for 96 articles, and a fourth review was required for three. Four investigators (DD, MK, GS, and RQW) summarized data by compiling answers to each sub-question above and calculating summary statistics (proportions and ranges) for each question. Five investigators independently confirmed the compilations (MES, JV, EB, LAS, MAK) and together resolved any discrepancies.

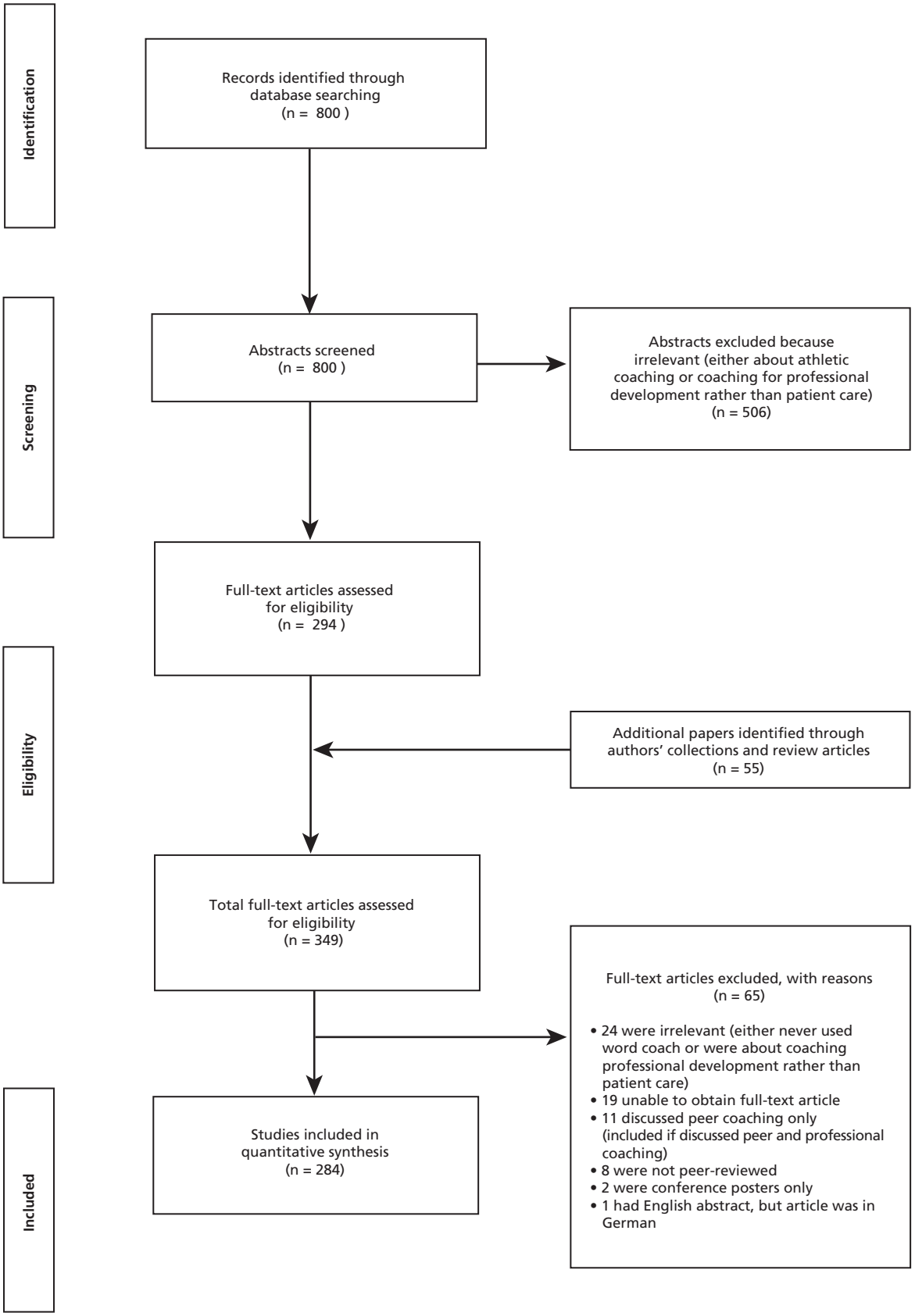

Figure 1 PRISMA flow diagram.

From: Moher D, Liberati A, Tetzlaff J, Altman DG; The PRISMA Group. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA statement. PLoS Med. 2009;6(6):e1000097. doi:10.1371/journal.pmed.1000097.[37] For more information, visit www.prisma-statement.org.

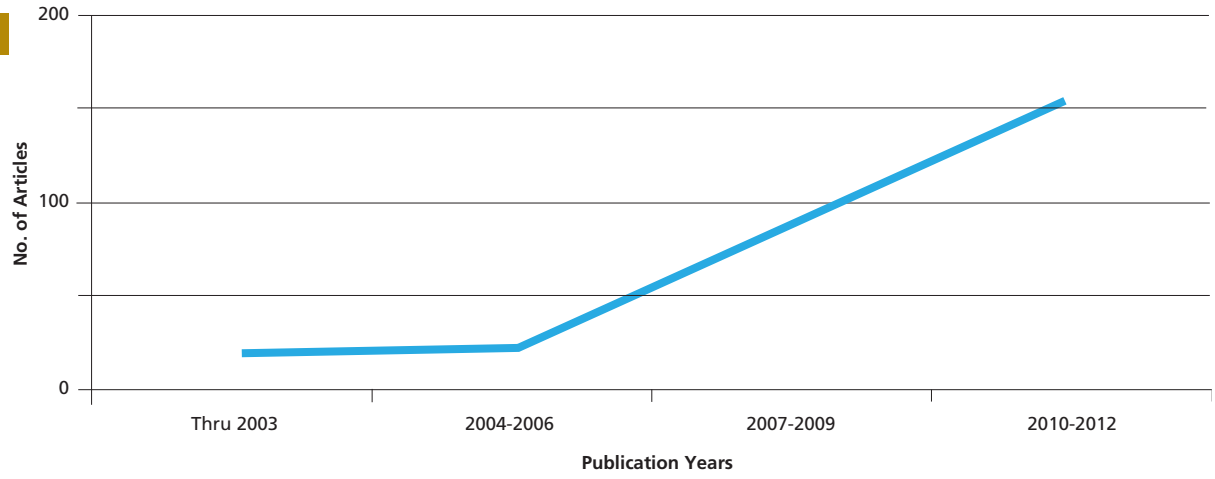

Figure 2 Frequency of peer-reviewed articles published on health and wellness coaching across time.

RESULTS

1. What Kind of Peer-reviewed Articles Are Describing Health (or Wellness) Coaching?

The bulk of peer-reviewed articles have been empirical trials. For the 284 full-text articles included, 185 (65.1%) were empirical studies wherein data were systematically collected; 31 (10.9%) were protocol descriptions for which data collection was planned but not yet reported; 37 (13.0%) were accounts of existing practices labeled as health or wellness coaching that have reportedly been operationalized and conducted but not formally evaluated; and 31 (10.9%) were concept articles that presented no data.

As seen in Figure 2, the rapidly increasing slope of peer-reviewed publications is noteworthy. For example, whereas 22 articles were published on health or wellness coaching before 2003, in 2010 through 2012 alone, 152 articles on the topic were published.

2. What Approaches, Practices, Strategies and Methodologies Constitute Health Coaching as Described?

Depending on the specific feature, between 11% and 23% of the articles did not report adequate details to code the processes used in their coaching interventions. Of those that did, a clear majority of articles operationalized health or wellness coaching as a process that was fully or partially patient-centered (86%), included patient-determined goals (71%), incorporated self-discovery and active learning processes (63%) (vs more passive receipt of advice), encouraged accountability for behaviors (86%), and provided some type of education to patients along with using coaching processes (91%). Details on these components are described below.

2.1 Patient-centeredness. Was the coaching patient-centered, ie, were coaching strategies and processes tailored to the individual's specific needs, concerns, circumstances, or readiness to change, or was the coaching instead applied uniformly without regard to individual differences? Twenty percent of articles did not provide sufficient detail to judge whether the coaching was patient-centered. Of those articles which gave sufficient detail to allow judgment, 61% described a coaching process that was patient-centered and an additional 25% described a coaching process that was partially patient-centered (Table 2). For example, Hendren et al (2010) tested a coaching intervention that appeared to be fully patient-centered, tailored in both intensity and content to patients' assessed barriers to obtaining care.[41] Others used partially patient-centered processes, including some strategies that were individualized in combination with some standardized processes. Aoun et al (2009), for example, used the patient-centered approach of motivational interviewing in combination with standardized guidelines for weight loss and physical activity.[42]

Table 2 Was the Coaching Patient-centered?

	All Articles (n = 228)	Research and Existing Practice Articles (n = 207)	Conceptual Articles (n = 21)
Yes	138 (60.5%)	119 (57.0%)	19 (90.0%)
Partially	58 (25.4%)	57 (27.5%)	1 (5.0%)
No	32 (14.0%)	31 (15.5%)	1 (5.0%)

Fewer than one out of six articles (14%) described a process that was classified as not at all patient-centered as evidenced by every participant receiving the same intervention without any tailoring or interventions that involved non-individualized instruction or prompting. For example, in one wellness program, coaching for weight loss was provided via highly scripted responses to patient statements.[43] In another intervention, the coaching content involved instructions from pharmacists in the correct use of medications without apparent variation according to the individual's situation.[44]

2.2 Patient-determined goals. Did patients choose their own change goals as a target of the coaching, or were their goals preset or created by a professional? Twenty-four percent of articles did not provide sufficient detail to judge whether goals were set by the coaching patients themselves or by others. Of those articles that did allow us to judge, 45% described coaching processes in which patients determined their own goals and 26% reported that patients partially determined their coaching goals (Table 3). Examples of interventions with patient-determined goals include Hanks et al's (1995) study of weekly coaching sessions to support patients' capabilities as new mothers. In this intervention, coaches explored and clarified patients' values, provided information as needed, and encouraged design and commitment to achievable goals while constructing a plan sheet.[45] Examples of programs in which patients partially determined their coaching goals include a primary care-based intervention designed to help older adults adhere to medication for hypertension. Although the overall objective was medication adherence, coaches helped participants choose the barriers and habits they wished to change, set their own specific goals around them, and defined action steps to achieve them.[46] Similarly, a program that had the overall intention of improving participants' exercise persistence supported participants in setting individualized exercise plans.[27]

Almost 30% of the literature described a coaching process in which goals were set externally without input from the patients. In Elbers et al's (2011) study of personal injury victims, health coaches executed a physician-driven care plan.[47] Likewise, in Allen et al (2008), all patients were given the goal of preparing for their physician visit. While the intervention was patient-centered, the goals themselves were not self-determined.[48]

2.3 Use of self-discovery process. Was there a process of discovery, or active learning, included in the coaching process, or was the coaching instead instructional? Thirty-four percent of articles did not provide sufficient detail to judge whether or not self-discovery was involved in the coaching. Of those that did, 42% of the articles reviewed described a self-discovery process, and an additional 21% described a process that was mixed, ie, partly self-discovery and partly instructional or advice-giving (Table 4). Saleh et al's (2010) study of a rural workplace wellness program engaged patients as active learners through goal setting, action planning, self-monitoring, review of results, and conclusions about persisting with the action plan.[49] Another example is Ottaviano et al's (2010) proposed intervention to promote self-efficacy in patients with coronary heart disease. Here the coach continuously helps the patient assess their readiness to make lifestyle changes.[50]

Thirty-seven percent of the articles did not include self-discovery processes as part of the definition of coaching. Examples where study participants did not engage in self-discovery or active

Table 3 Were the Goals of the Coaching Determined by the Patient?

	All Articles (n = 217)	Research and Existing Practice Articles (n = 197)	Conceptual Articles (n = 20)
Yes	97 (44.7%)	84 (42.6%)	14 (70.0%)
Partially	56 (25.8%)	52 (26.4%)	4 (20.0%)
No	64 (29.5%)	62 (31.5%)	2 (10.0%)

Table 4 Was There a Self-discovery Process Involved?

	All Articles (n = 188)	Research and Existing Practice Articles (n = 172)	Conceptual Articles (n = 16)
Yes	79 (42.0%)	68 (39.5%)	11 (68.8%)
Partially	40 (21.3%)	38 (22.1%)	2 (12.5%)
No	69 (36.7%)	66 (38.4%)	3 (18.8%)

learning include Margolius et al's (2012) study of coaching for hypertension control in a low-income sample.[51] In this program, patients were instructed in the importance of blood pressure control and medication adherence without the opportunity to learn about themselves by exploring the relationship of their hypertension to their own overall health, well-being, or key values and drawing conclusions. Similarly, Ovbiosa et al (2012) described a workplace wellness program for weight reduction where participants received instructions on how to increase their physical activity to a preset target, including general educational handouts and calorie-counting books.[43]

2.4 Accountability. Coaching that involves patient accountability is coaching in which it is possible for patients to self-monitor in order to observe their progress (or lack of it) toward their goal using some type of data *and* that encourages reflection on progress. Thirty-one percent of articles did not provide sufficient detail to judge whether the coaching being evaluated encouraged patient accountability. Of those that did, the vast majority of articles (81%) described a coaching process in which accountability of some form was built in, as shown in Table 5. In these programs, patients actively monitored their efforts, observed results, either reported them or discussed them with their coach, and drew conclusions. Data collection formats ranged from qualitative self-report using coaching preparation forms[17,52] to sophisticated web- programs[31,52] and innovative mobile apps.[31] For example, in a study reported by Debar et al (2006), adolescent girls' recordings of their diet and exercise goals and achievements were regularly shared with their peer group and their coach.[53] In another study reported by Wennberg et al (2010), participants in a telephone-based care management intervention signed a behavioral contract with their wellness coaches, and had access to a computer program that tracked progress toward goals through the intervention.[54] An additional 5% of articles described coaching in which accountability was partially built in.

Conversely, 14% of articles described a coaching process where there was no opportunity for patients to be accountable to either themselves (eg, through self-monitoring or observation of change against target) or to their coach (eg, through regularly providing information on progress toward goals and getting feedback). Coaching approaches where the coach and patient met once fell into this category since there is no opportunity for support of behavior change over time. For example, Brook et al (2003, 2005) reported on a program in which pharmacists instructed new users of anti-depressant medication about potential side effects in a one-time visit.[44,55]

2.5 Content education. Content education refers to providing expert information to the patient to facilitate knowledge and understanding of a specific health condition for which behavior change is desirable (eg, disease information, standardized guidelines for clinical markers, consensus recommendations for behavior change, professional opinions on target goals). Eighteen percent (51 of 284) of articles did not provide sufficient information to determine whether or not content education was provided to coaching participants. Of those that did, 91% documented provision of content education. In terms of the type of education provided to participants, 40% of the interventions provided disease-specific information, while 22% more generically defined their content education as lifestyle or health education or specified teaching about nutrition (19%) or physical activity (18%). Only 8% provided the participants with content education on behavior change processes, such as goal setting and the importance of self-monitoring (Table 6).

The depth of content and mode of delivery varied substantially. Common delivery modes for content education included provision of written material (eg, notebooks, pamphlets), static and interactive websites, and in-person visits and classes. Many programs used multiple tactics. For example, one disease management program described mailing quarterly newsletters and disease-specific educational pamphlets to participants with diabetes who were also involved in coaching.[56]

2.6 Coaching "Dose." In the majority of articles reviewed, it was not possible to calculate the "dose" of coaching that was being evaluated in terms of length of individual coaching sessions, number of coaching sessions, or duration of the coaching intervention. Overall, 75% (212 of 284) of the peer-reviewed articles did not specify the length of each individual coaching session, 52% (148 of 284) did

Table 5 Was Accountability for Results Built Into the Coaching Process?

	All Articles (n = 196)	Research and Existing Practice Articles (n = 184)	Conceptual Articles (n = 12)
Yes	159 (81.1%)	150 (81.5%)	9 (75.0%)
Partially	9 (4.6%)	8 (4.3%)	1 (8.3%)
No	28 (14.3%)	26 (14.1%)	2 (16.7%)

Table 6 Frequency (Percentage) of Given Article Types Providing Content Education to Participants

Was content education provided?	All Articles (n = 233)	Research and Existing Practice Articles (n = 219)	Conceptual Articles (n = 14)
Yes	212 (91.0%)	200 (91.3%)	12 (85.7%)
No	21 (9.0%)	19 (8.7%)	2 (14.3%)
If so, which content areas?	**All Articles (n = 212)**	**Research and Existing Practice Articles (n = 200)**	**Conceptual Articles (n = 12)**
Disease or condition-based information	85 (40.1%)	82 (41.0%)	3 (25.0%)
Behavior change processes	16 (7.5%)	16 (8.0%)	0 (0.0%)
Physical activity or exercise	39 (18.4%)	37 (18.5%)	2 (16.7%)
Nutrition	40 (18.9%)	38 (19.0%)	2 (16.7%)
General lifestyle and health education[a]	46 (21.7%)	44 (22.0%)	2 (16.7%)
Communication with care team	22 (10.4%)	19 (9.5%)	3 (25.0%)
Smoking and tobacco-related	11 (5.2%)	10 (5.0%)	1 (8.3%)
Other	4 (1.9%)	4 (2.0%)	0 (0.0%)
No description of content area	39 (18.4%)	35 (17.5%)	4 (33.3%)

[a] If the article specifically mentioned nutrition or exercise, it was not counted under "general lifestyle."

not specify the total number of coaching sessions used, and 64% (181 of 284) did not specify the duration of the coaching process. Of those that did specify the session length, sessions lasted for an average of 35.8 minutes, ranging from 5 minutes[57,58] to 2.5 hours.[59] Of those that specified the number of coaching sessions, the average reported was 10.1 sessions, ranging from 1 to 90,[60] median = 6. For those articles that reported the length and number of coaching sessions (n = 68), the average contact hours with a coach was 6.2, ranging from 15 minutes[61] to 135 hours,[60] median = 3 hours.

A wide range was also observed in the duration of the entire coaching intervention. As depicted in Table 7, coaching ranged from a single session to 6 years. For interventions that had a consistent coaching schedule, frequency of coaching ranged from biannual sessions to access to a coach twice per week, with the majority reporting weekly sessions. Coaching frequency appeared to be related to length of the intervention, with shorter programs employing more weekly coaching whereas longer interventions were more likely to use monthly coaching.

2.7 Was there a consistent coaching relationship? Just over half of the articles (154 of 284, or 54%) provided adequate information to assess whether the participant had an ongoing relationship with the same coach over time. Of these articles, 60% (92 of 154 articles) overtly stated that participants were matched with the same coach over multiple sessions, and another 18% (28 of 154) implied a consistent relationship. In contrast to the 78% that thus indicated a consistent relationship was formed, only 21% (32 of 154) of the programs

Table 7 Frequency (Percentage) of Given Articles Reporting Various Durations of Coaching

Duration	All Articles (n = 184)	Research and Existing Practice Articles (n = 181)	Conceptual Articles (n = 3)
1 session to 1 mo	22 (12.0%)	22 (12.2%)	0 (0.0%)
5 wk to 3 mo	43 (23.4%)	42 (23.2%)	1 (33.33%)
3.5 mo to 6 mo	46 (25.0%)	45 (24.9%)	1 (33.33%)
6.5 mo to 9 mo	9 (4.9%)	9 (5.0%)	0 (0.0%)
10 mo to 12.5 mo	41 (22.3%)	40 (22.1%)	1 (33.33%)
15 mo to 2 y	19 (10.3%)	19 (10.5%)	0 (0.0%)
3 y to 6 y	4 (2.2%)	4 (2.2%)	0 (0.0%)

Table 8 Frequency (Percentage) of Articles With Given Coach Background

General Category	Specific Background	All Articles (n = 234)	Research and Existing Practice Articles (n = 212)	Conceptual Articles (n = 22)
Medical Professionals	Physicians	14 (6.0%)	11 (5.2%)	3 (13.6%)
	Nurses	98 (41.9%)	85 (40.1%)	13 (59.1%)
	Pharmacists	10 (4.3%)	9 (4.2%)	1 (4.6%)
	Physician assistants	1 (0.4%)	0 (0.0%)	1 (4.6%)
	Medical staff	1 (0.4%)	1 (0.5%)	0 (0.0%)
Allied Health Professionals	Dieticians or nutritionists	26 (11.1%)	25 (11.8%)	1 (4.6%)
	Psychologists (doctorate level)	25 (10.7%)	20 (9.4%)	5 (22.7%)
	Social workers, psychotherapists, counselors (master's level)	23 (9.8%)	19 (9.0%)	4 (18.2%)
	All mental health providers	48 (20.5%)	39 (18.4%)	9 (40.9%)
	Physio- and physical therapists	10 (4.3%)	10 (4.7%)	0 (0.0%)
	Medical assistants	8 (3.4%)	7 (3.3%)	1 (4.6%)
	Occupational therapists	3 (1.3%)	2 (0.9%)	1 (4.6%)
	Exercise physiologists and exercise specialists	15 (6.4%)	15 (7.1%)	0 (0.0%)
	Unspecified or other allied health professionals	10 (4.3%)	9 (4.2%)	1 (4.6%)
Other Health Professionals	Unspecified health professionals	18 (7.7%)	14 (6.6%)	4 (18.2%)
	Health educators/promotion	19 (8.1%)	17 (8.0%)	2 (9.1%)
	Research assistants	5 (2.1%)	5 (2.4%)	0 (0.0%)
	Medical or nursing students	5 (2.1%)	5 (2.4%)	0 (0.0%)
	Allied health students	12 (5.1%)	12 (5.7%)	0 (0.0%)
	Other students	1 (0.4%)	1 (0.5%)	0 (0.0%)
Professional Coaches	Health/wellness	15 (6.4%)	13 (6.1%)	2 (9.1%)
	Life/lifestyle	2 (0.9%)	1 (0.5%)	1 (4.6%)
	Personal vitality	2 (0.9%)	2 (0.9%)	0 (0.0%)
	Professional coach	4 (1.7%)	4 (1.9%)	0 (0.0%)

clearly did not pair the same coach with the same participant over time. Of those programs that did not rely on a consistent coaching relationship, a third of the programs only offered a single coaching session, precluding development of a relationship, and the rest either used interchangeable coaches or automated contacts that were algorithm driven.

3. Who Delivers the Coaching?

3.1 Are they professionals? In 13% (38 of 284) of the studies, there was not enough information provided to determine the coaches' professional background. Of the remaining articles, 95% (234 of 246) of the studies/practices employed human coaches, while the remaining 5% (12 of 246) employed technology-based coaching only. Of those that employed human coaches, 93% (217 of 234) used professionals while only 7% (17 of 234) used lay individuals.

3.2 What kind of professionals? Of coaches with professional training, coaches were overwhelmingly medical (53%) and allied health (51%) professionals (Table 8).* Nurses comprised the clear majority of these professionals (42%). Mental health providers were the

*Since we could find no consensus among professional organizations about which professions constitute "medical" or "allied health" professions, we chose a common view to classify professionals as indicated on Wikipedia. We thus categorized the professional background of the coaches into six groups: (1) medical professionals (eg, physicians, nurses, pharmacists), (2) allied health professionals (eg, dieticians, psychologists, social workers, physiotherapists, medical assistants, occupational therapists, and exercise physiologists), (3) other health professionals (eg, health educators, medical or allied health students), (4) professional coaches (eg, health, wellness, life), (5) various providers noted in same article but not quantified (eg, used two or more coaches from two or more professional backgrounds), and (6) no information provided. Fourteen articles discussed peer coaching, although 11 of them were excluded because they covered only peer coaching rather than also including coaching provided by professionals.

Table 9 Frequency (Percentages) of Given Article Type That Describes Amount of Coaches' Training

	Described Coach's Training (n = 57)	No Information Provided (n = 218)
Empirical research	40 (22.3%)	139 (77.7%)
Protocols	7 (24.1%)	22 (75.9%)
Existing clinical practices	4 (10.8%)	33 (89.2%)
Conceptual articles	6 (20.0%)	24 (80.0%)

Table 10 Frequency of Articles Describing the Training Provided to Coaches

Amount of Training	No. of articles
Described	57
Not sufficiently described	218
When described, intensity of training	
1–5 h	4
6–15 h	9
16–23 h	10
24–40 h	9
41–79 h	3
80–120 h	6
4–6 wk, full-time	5
Greater than 6 wk (eg, 1 y experience plus CDE training, 600 h, ICF certification required)	5
Variable (ie, articles on multiple coaching programs that noted "variable" amounts)	5
Total	57

Abbreviations: ICF, International Coaching Federation; CDE, Certified Diabetes Educator.

second most common (21%: divided between 11% psychologists [doctorate level] and 10% social workers and other master's-level psychotherapists). Dieticians were the third most common professionals to provide coaching (11%), with health educators/health promotion experts (8%), unspecified health professionals (8%) and exercise physiologists/specialists (6%) also well-represented.

3.3 Training received by the coaches. We considered both intensity of training and content of training given to coaches for the specific coaching under investigation. As can be seen in Tables 9 and 10, only 22% (59 of 272) of the articles using human coaches provided information on the amount of training obtained by those performing the coaching (Figure 3a). Of these, there was a large range in intensity of coaching-specific training, from less than 2 hours to close to 2 years, median between 6 and 40 hours. At the least intensive end, only 1.5 hours of training were provided to content experts in weight loss and consisted of the rationale for health coaching[62] or 2 hours of coaching-specific training were provided to MD, PharmD, or RN student health coaches to support uninsured patients with hypertension.[63] At the most intensive end, a 9-month curriculum was provided to medical assistants to coach patients with chronic health issues,[64] and an estimated 600 hours of training were provided to non-medical professionals to help newly diagnosed cancer patients navigate the healthcare system and their treatment. [41]

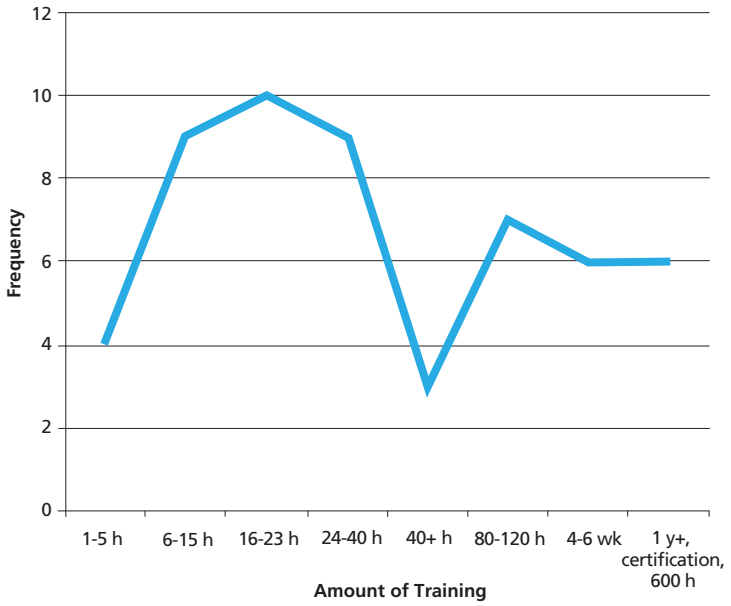

Figure 3a Frequency of articles reporting various amounts of coach training.

In terms of the specific content of the training received by the coaches, only half (50.4% or 143 of 284) of the articles included descriptive information. Of these, three broad types of training could be identified: (1) behavior change skills, (2) health information briefing (content education), and (3) job training.

3.3.1 Behavior change skills include training in specific behavioral theories and skills used to facilitate behavior change. Table 11 presents these data. Sixty-one percent (87 of 143) of articles in which training content was described reported training coaches in behavior change methods (eg, goal setting, action planning, problem solving, navigating obstacles/barriers to goals, finding resources, self-monitoring, and building self-efficacy) based on multiple theories, including the following: Health Beliefs Model,[65] Social Cognitive Theory,[66,67] Theory of Planned Behavior,[68,69] the Transtheoretical Model,[70-72] Self-Determination Theory,[73-75] Self-Perception Theory,[76] and Motivational Enhancement.[77-79] Sixty-seven percent of articles reported training coaches in communication skills specifically for developing rapport, expressing empathy, and/or providing emotional support. Sixty-three percent of articles reported training coaches in other communication skills that would enhance the change process: these included the use of powerful questions, assertiveness training, negotiation skills, providing feedback, and various types of reflections including those that emphasize possibilities, underline the positive side of an issue, or high-

Table 11 Frequency (Percentage) of Articles Describing Content of Training to Professionals and Non-professionals Who Delivered the Coaching

Content of Training (when described)	All literature (n = 143)[a]	When coaches were professionals (n = 116)[a]	When coaches were non-professionals (n = 19)[a]	When unclear or N/A (n = 8)
Skills Training				
Behavior change (including training in health behavior models and methods)	87 (60.8%)	69 (59.5%)	14 (73.7%)	4 (50.0%)
Communication skills to develop rapport, express empathy, and provide emotional support	96 (67.1%)	78 (67.2%)	12 (63.2%)	6 (75.0%)
Other communication skills (eg, powerful questions, various types of reflection, negotiation skills, assertiveness, providing feedback)	90 (62.9%)	74 (63.8%)	11 (57.9%)	5 (62.5%)
Motivational interviewing	60 (42.0%)	50 (43.1%)	5 (26.3%)	5 (62.5%)
Other motivational approaches (eg, other aspects of motivation enhancement therapy, patient activation, visioning, values exploration)	20 (14.0%)	16 (13.8%)	3 (15.8%)	1 (12.5%)
Whole person	6 (4.2%)	6 (5.2%)	0 (0.0%)	0 (0.0%)
Cognitive-behavioral skills, including reframing, cognitive restructuring, and self-management	18 (12.6%)	16 (13.8%)	2 (10.5%)	0 (0.0%)
Content Education				
Exercise or physical activity guidelines, information	12 (8.4%)	12 (10.3%)	0 (0.0%)	0 (0.0%)
Nutrition	13 (9.1%)	13 (11.2%)	0 (0.0%)	0 (0.0%)
Disease- or condition-based information	52 (36.4%)	39 (33.6%)	11 (57.9%)	2 (25.0%)
Job Training				
Protocol-specific training	39 (27.3%)	32 (27.6%)	6 (31.6%)	1 (12.5%)
Navigating the health system	13 (9.1%)	10 (8.6%)	3 (15.8%)	0 (0.0%)

[a] The five articles that reported using both professional and lay staff as coaches were counted in both relevant columns. Hence, the total number of articles was considered to be 143 to avoid inflating the percentages.

light the gap between where a patient wants to be and where he or she is now. Note that 42% of articles that documented the content of the coaches' training specifically referred to training in "a communication method" called motivational interviewing (MI).[7,8-80] Training in MI typically includes education in five key skill sets that reflect the "four guiding principles" of MI: expressing empathy, developing discrepancy, rolling with resistance, and supporting self-efficacy. The five key skill sets include (1) use of open-ended questions, (2) affirmations, (3) reflections, (4) summaries that highlight both sides of ambivalence, and (5) reinforcement of the patients use of "change talk." (For a greater understanding, see the article by Simmons and Wolever in this issue.[80]) Because MI covers both types of communication strategies coded in our study, we also credited articles that explicitly reported MI training with both types of communication training. In addition to the 42% that reported training in MI, training in other motivational approaches was mentioned by 14% of the articles and an additional 4% specifically noted the use of whole-person approaches. Other motivational techniques included additional aspects of Motivation Enhancement Therapy, patient activation, visioning, and exploration of personal values. Finally, 13% reported training coaches in cognitive behavioral skills (CBT) for working with patients' specific health conditions, including reframing, cognitive restructuring, and CBT-based self-management skills.

3.3.2 Health information briefing includes content education regarding healthy lifestyles (eg, physical activity guidelines, nutrition information) and/or information specific to the disease or health condition under investigation (eg, pathophysiology, onset and course of the illness or condition, treatments). Of those articles that described training content, 36% described briefing coaches with disease- or health condition–specific information (eg, regarding diabetes, heart disease risk, etc). Nine percent described providing coaches with information on nutrition, and 8% of articles described providing coaches with information on physical activity/exercise.

3.3.3 Job training includes training related to the coach's job role (eg, training on clinic flow) or study-specific training (eg, review of protocol). Twenty-seven percent of the articles that described the coach training described protocol-specific training, whereas 9% of articles provided coaches with education on navigating the health system.

POTENTIAL SOURCES OF BIAS

While we evaluated our questions of interest using all the obtained medical literature, we also compared the literature on empirical studies and existing, operationalized practices to the literature that was conceptual only to assess potential sources of bias. Several differences emerged that merit mention. First, as can be seen in Tables 2 through 4, a considerably higher percentage of conceptual articles fully support a definition of coaching as a patient-centric process that uses patient-determined goals and self-discovery processes. Second, compared to research and existing practice articles, a somewhat lower percentage of conceptual articles discusses the inclusion of accountability mechanisms (Table 5) and proposes content education as part of the coaching intervention (Table 6). Third, the conceptual articles, taken together, posit a more intense training trajectory than do the articles on empirical work and existing practices (Figure 3b). Finally, the conceptual articles cite greater use of nurses and mental health providers.

SUMMARY AND DISCUSSION

Early reviews of the effectiveness of health coaching have called for conceptual and operational clarification of health and wellness coaching.[34] Indeed, as the trajectory of peer-reviewed articles on this approach rapidly increases, continued variability in definitions of health coaching precludes the ability to perform rigorous reviews or meta-analyses. This variability also ensures continued confusion over the coaching approach and confounds the skills needed by the rapidly growing number of professionals providing health and wellness coaching. To move the field forward, we must first clarify what the intervention is. With an evidence-based, consensus definition, stronger efficacy and effectiveness studies can ensue, and professional training can be improved. Eventually, we will be able to consistently replicate and widely disseminate the intervention while also assessing the cost:benefit ratio of using health coaching to address the myriad behavior changes needed to prevent and manage chronic disease.

Defining Health and Wellness Coaching

Our analysis used a comprehensive, systematic review to evaluate well over 200 peer-reviewed empirical articles and close to 70 expert opinions available in the peer-reviewed medical literature to form the foundation of a definition for health and wellness coaching that can be broadly accepted and adopted for future use. Despite the evident variability in use of the terms *health coaching* and *wellness coaching*, our systematic study of the state of academic knowledge on health and wellness coaching reveals areas of consensus emerging in the literature, as well as areas that need clarification for the field to move forward. In sum, the emerging consensus defines the conceptual and interventional components of health and wellness coaching as

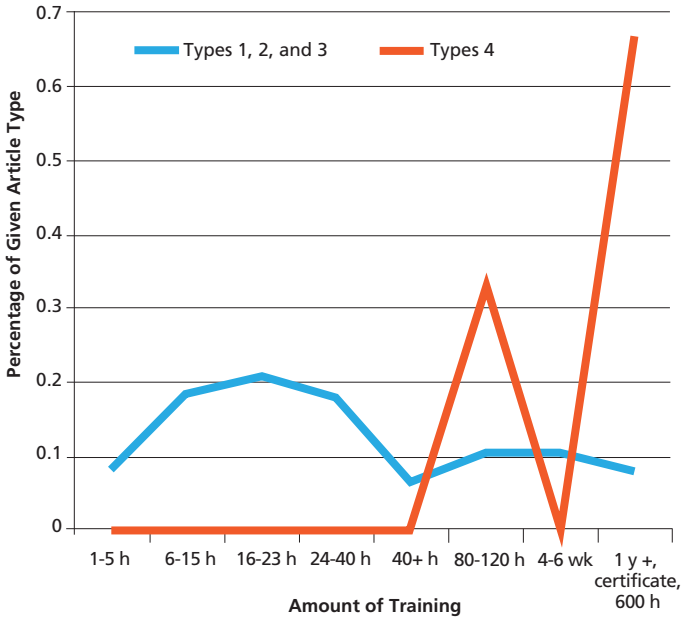

Figure 3b Percentage of research and existing practice articles vs conceptual articles reporting various amounts of coach training.

a patient-centered approach wherein patients at least partially determine their goals, use self-discovery or active learning processes together with content education to work toward their goals, and self-monitor behaviors to increase accountability, all within the context of an interpersonal relationship with a coach. The coach is a healthcare professional trained in behavior change theory, motivational strategies, and communication techniques, which are used to assist patients to develop intrinsic motivation and obtain skills to create sustainable change for improved health and well-being.

Specifically, 86% of the articles describe health and wellness coaching as a process that is patient-centered. Seventy-one percent describe coaching as an intervention that supports patients' pursuit of self-identified goals (rather than goals prescribed by the provider). Sixty-three percent define coaching as a process in which the patient is an active learner whose own self-discovery process is supported to resolve problems, overcome challenges, and negotiate barriers to goals. Eighty-six percent of articles describe specific mechanisms to support patient accountability for behavior change through various self-monitoring techniques and reporting back to their coach. Seventy-eight percent of articles describe coaching that occurs in the context of a consistent ongoing relationship with a human coach designated to play a defined role.

The definition of health coaching emerging from the peer-reviewed literature is consistent with the evolving science of human motivation and the psychosocial underpinnings of sustainable behavioral change. There is evidence that behavior change and learning occur most reliably when there is a helping relationship that (1) acknowledges the individual, (2) is collaborative, and (3) encourages active learning. (See Dill and Gumpert for review.[81]) Reaching back to the theoretical roots of Adler,[82,83] Jung,[84,85] and Rogers,[86] health and wellness coaching conceptualizes patients as lifelong learners whose individual personal values and innate internal resources can be cultivated in the context of a supportive relationship to guide them toward their own desired vision of health.[87,88]

This systematic review takes the field an important step forward, yet we need to further upgrade the science to better evaluate health and wellness coaching. It is concerning that up to a third of the articles did not describe the actual coaching methods used, making it impossible to fully evaluate or replicate specific processes. Further, only a small minority of articles provided information that allows for calculation of a coaching "dose" (25% reported length of each individual coaching session, 48% reported the number of coaching sessions delivered, 36% reported the duration of the coaching process, and very few reported all three.) Going forward and until there is a well-accepted international standard to determine competency in health and wellness coaching, it is imperative that publications report the theories on which interventions are based and fully describe the processes, techniques, and intensity of the intervention being investigated. To move the field ahead, empirical articles must describe the approaches they are evaluating in a way that allows replication. With a consensus definition of health and wellness coaching in place, we will be able to understand what components of coaching are essential to affect health outcomes and health behavior change in general. For example, it will be of great interest to revisit the issue of whether health coaching will be consistently effective at promoting health change *if* health coaching is defined, as by this consensus, as

patient-centered and incorporating patient-determined goals, self-discovery processes, accountability mechanisms, and content information, in the context of an ongoing helping relationship.

We also will be able to understand what components, at what "dose," can be adapted in what way, to affect health outcomes and health behavior change for specific patient populations and specific illnesses or conditions. We have statistical capability to evaluate the impact of individual components of heterogeneous interventions. For example, Michie (2009) found strong evidence for the efficacy of the following specific interventions in the behavioral change literature on dietary intake and physical activity: self-monitoring of behavior, prompting intention formation, prompting specific goal setting, providing feedback on performance, and prompting participants to review behavioral goals.[8,9] Also, Olsen and Nesbitt (2010) found evidence that four specific interventions were the effective components of health coaching programs: (1) goal setting, (2) selected components of motivational interviewing, (3) collaborations with healthcare providers, and (4) program durations of 6 to 12 months.[34] In the near future, we look forward to being able to define best practices in health and wellness coaching applied to specific populations and specific targets for health outcomes and health behavior change.

Who Delivers Health Coaching?

While the specific professional background of health and wellness coaches is diverse, there is an emerging consensus in the literature that coaching be provided by health professionals (currently a diverse range is represented) who, further, have specific training in coaching processes and not only expertise in the knowledge base of their profession. Coaches' training, when described, fell in the general categories of behavior change skills, health information briefing, and job training. However, it is of significant concern that only half of the articles provided descriptions of the content of coaches' training for the specific study, and only 22% of articles reported on the extent of training received by the coaches. As previously stated, if we are to move the field of health coaching forward, empirical articles must describe the approaches they are evaluating in a way that allows replication; this includes concrete descriptions of content and intensity of training provided and/or evidence by replicable standards that coaches had achieved a level of competence relevant for the coaching they delivered. However, if we refer to the emerging consensus definition of what health and wellness coaching *is*, we can extrapolate coaches' necessary core competencies with the caveat that their effect on health outcomes remains to be determined.

First, coaches must have training in a model of change that is *patient-centered*, and based on facilitating the patient's personal change process, rather than dictating it. Coaches must also have the interpersonal skills to understand the unique values, motivations, resources, and obstacles that the patient brings to the change process and the ability to express their understanding effectively. Second, and along similar lines, the coach must be able to help patients identify their *own goals for change* that are personally important and achievable. Third, coaches must be trained in the use of a *self-discovery process* that facilitates patients working toward their goals through exploration and an active learning process rather than by dictating what should be done. Fourth, coaches must understand how to *help patients be accountable* to themselves and monitor their progress. Finally, coaches must have the relevant *content knowledge* to help their patients with the above four processes in the arena of change. Coaches also must have the interpersonal skill to integrate the content information into the patient's change process rather than dictating it. These competencies require not only use of multiple communication skills and empowerment strategies, but also require a consistent stance on the part of the coach to simultaneously hold the patient's agenda, convey that the patient is resourceful and a lifelong learner, and guide them toward sound health decisions without advising, all the while respecting patients as the best experts on what may work best in their individual lives.

It is critical to note that this paradigm is distinct from that of conventional medicine.[8,7] As well-explicated in Linden, Butterworth, and Prochaska (2010), typical disease management interventions often employ healthcare professionals who do not necessarily value patient empowerment, who may not have exposure to or adequate training in the science of behavioral change, and who may not have the complex interpersonal skills to facilitate behavior change effectively.[90] This leaves those trained in the conventional medical model vulnerable to using approaches that are expert-driven, authoritarian, and advice-giving as opposed to taking stances that are supported by the latest research in behavior change models.[87,91,92] Thus, we conclude that specific training in these core competencies and credentialing will be necessary if coaches are to deliver health and wellness coaching as described in this consensus definition.

Areas for Further Investigation

Next steps. The most recent prior review of the effectiveness of health coaching reviewed only 15 articles and concluded that the body of literature as a whole was inconclusive due to theoretical and methodological issues.[34] It will be of great interest to revisit the issue of whether health coaching will be consistently effective at promoting health change now that we have a much larger body of work to review (284 articles), and if health coaching is defined, as by this consensus, as patient-centered, incorporating patient-determined goals, self-discovery processes, accountability, and content information, in the context of an ongoing helping relationship. This unified assessment will be fundamental to establishing the merit of this approach to helping people

achieve good health outcomes and change their health behaviors. We also will be able to understand what components of health and wellness coaching, at what "doses," can be adapted in what way to best promote health outcomes and health behavior change for specific patient populations and specific illnesses or conditions. Several other areas within health and wellness coaching merit more rigorous study, including the role of the coach, individualized vs protocol-driven coaching, and the integration of technology into coaching.

Role of the coach. One issue for future investigation is the role of the coach and specifically whether one coach can play multiple roles effectively. Of the literature that provided sufficient information to determine the presence of content education for participants, 91% included content education as a key addition to the coaching process. It was not uncommon to see coaching provided as an adjunct to educational modules, as well as to observe education components provided to a primarily coaching intervention. As multiple authors have distinguished between educating and coaching,[28,87,91] it is undoubtedly important to differentiate the processes. When the health coach is providing information within the context of coaching, plainly defined processes need to be outlined. For example, one component of motivational interviewing, an approach that can be used within the coaching process,[89] emphasizes the importance of obtaining permission to present information.[78] Indeed, asking permission has also been found empirically to benefit the coaching process and serves to empower the patient.[92]

A second option identified as a way to provide education in the context of coaching is that of presenting information as tentative and for consideration of possibilities rather than as directive knowledge.[92] This distinction highlights the import of training coaches in skills designed to incorporate educational information so that the process remains patient-centered. Relatedly, there is a stark lack of clarity in the literature regarding the role of health coaches as educators and whether the same person can effectively serve in both roles simultaneously while still ensuring the coaching process is patient-centered. For example, if a healthcare provider is both coaching and educating, a patient may defer to this person's expertise and assume that the education provided is what "should" be done, even if it conflicts with the individual's values, readiness, or desires around the behavior. This raises the need for a clear division of roles with commensurate professional training. Whether the psychological (eg, building self-efficacy) and behavioral (eg, setting goals that are consistent with values) strategies used in health coaching complement or conflict with simultaneous delivery of content information is an intriguing question. It seems that both can be used to the benefit of the patient, however, the best mechanism for delivering these strategies is yet to be determined. Assessing whether, and if so how, the health coach provides content information will be critical to defining health or wellness coaching best practices.

Similarly, in a setting where the provider is serving a dual role as clinician and coach, further investigation into what constitutes the coaching segment of a visit and how that looks different from the clinical care component of the visit will be essential to understanding how such a brief encounter might work. At least 13 articles alluded to the role of the coach as someone to help patients navigate some aspect of the health system. This role presents yet another potential conflict for patient-centered guidance wherein the coach supports, but does not "do for" the patient. Each of these approaches will look different, emphasize different skills, and needs to be carefully considered to ensure that coaches receive the appropriate training to differentiate roles and protect patients. Moreover, there likely will need to be a patient-education component of this approach, where patients learn how coaching is being integrated into a clinical visit, what their "job" or "role" is in this encounter, and how that looks different from when they are receiving information about their health.

Individualized vs protocol-driven coaching. Another area for further investigation is the delicate balance between conducting patient-centric, highly individualized approaches and using more standardized, protocol-based approaches to health and wellness coaching. Of the articles that provided descriptions of the actual coaching processes, a number of them included a more generalized approach with set protocols and prompts that were disease-specific in some cases but not based on the individual needs or values of the participant. Some might argue that such a standardized approach is easier to describe, disseminate, measure, and ultimately compare. However, our review indicates that there are examples of individualized *processes* that can be standardized with the same effect. For example, although only emerging in the past decade, one brand of integrative health coaching has been well described, standardized within a framework that allows for individual tailoring,[87,88] and shown to be effective.[17,21,93,94] Perhaps the best example of standardization of individually tailored processes is seen in motivational interviewing; the MI processes have been well described, standardized within a framework, widely disseminated, and demonstrated to be effective in many settings.[9,78,79,90,95-97] Moreover, motivational interviewing has the advantage of several psychometrically sound program evaluation measures (eg, Motivational Interviewing Skills Code,[98] Motivational Interviewing Treatment Integrity[99]) that can be used to ensure intervention integrity and assess intervention outcomes for common threats to validity.[9] While motivational interviewing uses only a subset of skills needed in health or wellness coaching,[80] it serves as an excellent example of how general processes that are used in highly individualized ways can be thoroughly described and well-validated.

Integrating technology into coaching. Some articles used the term *coaching* to describe interventions in which there are actually no human providers. Instead, technology (eg, computer programs, algorithm-driven text messages) was used to drive the behavior change process. While there is no doubt that technology provides myriad potential advantages, close to four in five articles posit coaching as a relationship-based approach. We propose that technology has a definite role in supporting individuals in the process of behavior change, particularly in facilitating the process of self-monitoring, the most strongly supported behavior change technique studied at least for eating and physical activity.[89] Many practices described the use of technology including text-based messaging, mobile applications, websites, and even sensor technology (eg, ear buds, wristbands) to facilitate accumulation and tracking of data on behaviors of interest. For example, in the Davis et al study, a TriFit machine was the primary means for tracking data.[100] Despite the important contribution of technology to self-monitoring, three-quarters of the articles stated or implied (78%) that participants were matched with the same coach over multiple sessions whereas a consistent relationship was not developed with a coach about a fifth of the time. Though multiple theorists describe the health and wellness coaching process as building on the critical foundation of a human relationship, further research is needed to determine the degree to which the relationship itself is seminal in facilitating personal learning. The value of human connection to facilitate deep learning is well-described in other evidence bases.[101] In the health and wellness coaching literature, qualitative studies have noted the power of interpersonal support in building courage to try new behaviors,[102] in strengthening a sense of accountability toward the other person (coach),[103,104] and in developing a sense of empowerment.[92] Additionally, interpersonal interactions may be necessary for participants to move from cognitive understanding of ambivalence, motivators, and barriers to change to a deeper, "felt sense" understanding more likely to sustain behavior.[81,101] The potential role of relationship in this emerging approach remains an important area for further exploration.

CONCLUSIONS

This study is not without its limitations. Indeed, for each of the domains for which we abstracted data, there were data missing because the authors did not provide the information in their report. First, we included all studies of health coaching, even when there were multiple reports of the same intervention. This may have inflated certain counts of the various domains of coaching reported. Second, although two to three investigators reviewed each study, there were many instances in which the team made judgment calls regarding a particular domain of the coaching based on limited descriptions in the articles that may or may not have been what was actually implemented. Thus, our review may have mischaracterized some of the coaching interventions in the literature. Third, and relatedly, for several of the review questions for which we abstracted data, anywhere from 11% to 78% of articles did not describe the pertinent domain in sufficient detail to allow us to code them. Finally, our methods included only articles in the PubMed database. Though we expect the vast majority of health and wellness coaching articles to be indexed within PubMed, we are aware that some relevant articles may exist outside this database. Thus, the picture presented here likely does not fully reflect all of the coaching models in the literature. Similarly, health coach training paradigms and programs that are not reflected in PubMed are also not reflected in this systematic review.

Despite these limitations, our systematic review of health and wellness coaching is the first in the literature to characterize this growing field in healthcare. Variation in approaches and practices that have been defined and operationalized as health or wellness coaching makes it difficult to compare approaches and identify those that are most effective for chronic disease prevention and management. Indeed, our findings point to the critical need for future systematic investigations of the effectiveness of various health and wellness coaching approaches in order to identify the best practices in the field, further refine the definition, and iteratively operationalize health or wellness coaching in research and practice. These "best practices" should include both the coach's minimum necessary skills and the coaching processes that facilitate a patient-centric approach to behavioral change. Moreover, future reports of coaching interventions should aim to describe in as much detail as possible the coaching intervention, including a thorough description of the individuals providing coaching with professional background and coaching-specific training, and the breadth and depth of the skills and processes used. These detailed descriptions will enable robust comparison of approaches across disease states and populations, so that a compendium of coaching models that have proven most effective can be generated and disseminated. These efforts will help to ensure that health and wellness coaching is an evidence-based practice that can make a demonstrable difference in the prevention and management of chronic disease in healthcare systems worldwide.

Acknowledgments
We wish to acknowledge the support of Kathy Buarotti in tracking and securing articles and Anita Bhat for her early participation in brainstorming about this review.

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