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QUERI

# The Effectiveness of Health Coaching

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# PREFACE

The VA Evidence-based Synthesis Program (ESP) was established in 2007 to provide timely and accurate syntheses of targeted healthcare topics of particular importance to clinicians, managers, and policymakers as they work to improve the health and healthcare of Veterans. QUERI provides funding for four ESP Centers, and each Center has an active University affiliation. Center Directors are recognized leaders in the field of evidence synthesis with close ties to the AHRQ Evidence-based Practice Centers. The ESP is governed by a Steering Committee comprised of participants from VHA Policy, Program, and Operations Offices, VISN leadership, field-based investigators, and others as designated appropriate by QUERI/HSR&D.

The ESP Centers generate evidence syntheses on important clinical practice topics. These reports help:

- Develop clinical policies informed by evidence;
- Implement effective services to improve patient outcomes and to support VA clinical practice guidelines and performance measures; and
- Set the direction for future research to address gaps in clinical knowledge.

The ESP disseminates these reports throughout VA and in the published literature; some evidence syntheses have informed the clinical guidelines of large professional organizations.

The ESP Coordinating Center (ESP CC), located in Portland, Oregon, was created in 2009 to expand the capacity of QUERI/HSR&D and is charged with oversight of national ESP program operations, program development and evaluation, and dissemination efforts. The ESP CC establishes standard operating procedures for the production of evidence synthesis reports; facilitates a national topic nomination, prioritization, and selection process; manages the research portfolio of each Center; facilitates editorial review processes; ensures methodological consistency and quality of products; produces “rapid response evidence briefs” at the request of VHA senior leadership; collaborates with HSR&D Center for Information Dissemination and Education Resources (CIDER) to develop a national dissemination strategy for all ESP products; and interfaces with stakeholders to effectively engage the program.

Comments on this evidence report are welcome and can be sent to Nicole Floyd, ESP CC Program Manager, at Nicole.Floyd@va.gov.

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# ABSTRACT

**Background:** Chronic medical conditions are common among VA healthcare system users, with nearly 75% of VA users having 2 or more chronic conditions. Optimizing beneficial patient health behaviors can help improve outcomes associated with chronic medical conditions. Yet making any kind of healthy changes can be a daunting task for many patients, especially those with multiple chronic conditions. Health coaching is an emerging collaborative and patient-centered approach to health promotion that may be an effective tool to facilitate uptake of health behaviors among people with one or more chronic medical conditions.

This systematic review evaluated the effects of self-identified health coaching interventions among adults with chronic medical conditions on clinical, behavioral, and self-efficacy outcomes. We also explored if the intervention effects varied by program elements such as patient chronic disease status, intervention dose (*ie*, the number of coaching sessions), mode of coaching delivery, and individuals conducting health coaching (*eg*, healthcare providers, peers, health coaches). In collaboration with key stakeholders, we also explored if effects varied by concordance of health coaching intervention with an *a priori* list of key elements (*ie*, patient-centeredness, patient-determined goals, self-discovery process).

**Methods:** We conducted searches of MEDLINE (via PubMed), Embase, CINAHL, and PsycINFO for peer-reviewed, English-language, randomized controlled trials among adults (≥18 years of age) of interventions self-identified as health coaching. Because health coaching is a relatively new intervention approach, we limited the search to the year 2000 forward. We conducted article inclusion screening, data abstraction, and quality assessment based on predetermined criteria and through a duplicate process, with discussion to resolve discrepancies. We evaluated trial quality as low, unclear, or high risk of bias. Strength of evidence was summarized as high, moderate, low, or insufficient on two outcomes—HbA1c and weight as measured by change in BMI—that were judged to be the most important outcomes by VA stakeholder partners.

When meta-analysis was feasible, we computed summary effect estimates via standardized mean differences or mean differences in random-effects models with Knapp-Hartung confidence interval correction. Heterogeneity was measured with $I^2$. We grouped analysis based on active (*eg*, counseling) or inactive (*eg*, usual care, waitlist) comparator. When meta-analysis was not feasible, we synthesized qualitatively.

**Results:** We identified 2627 unique citations; 41 trials met eligibility criteria. Women comprised 65% of the population. Median age was 59.2 years. Of the 18 trials reporting race, the median was 58% white. Most studies recruited populations with type 2 diabetes (n=18). The remaining studies recruited patients with mixed diagnoses of diabetes and heart disease or renal disease (n=4), obesity (n=7), or heart disease only (n=4). Other trials addressed cancer (n=2), rheumatoid arthritis (n=2), systemic lupus erythematosus (n=1), multiple sclerosis (n=1), metabolic syndrome (n=1), or chronic medical conditions in general (n=1). The median trial size was 201 (range 32 to 1835 per trial). Most trials were conducted in the United States (61%). The overwhelming majority of included trials used inactive comparators (n=31). Only one trial was conducted in a VA setting with VA users. Study quality was not high. Over 50% of trials (n=21) received a grade of unclear risk of bias, while 34% of trials (n=14) received a grade of high risk of bias.

Compared with inactive comparators, health coaching had a statistically significant effect on HbA1c (MD -0.30; 95% CI -0.50 to -0.10); physical activity change (SMD 0.29; 0.15 to 0.43); weight as measured by BMI (MD -0.52; -0.91 to -0.14); dietary fat reduction (SMD -0.21; -0.31 to -0.10); and self-efficacy (SMD 0.41; 0.21 to 0.62). For the outcome of achieving or exceeding physical activity thresholds, health coaching showed a positive trend when compared with inactive controls, but it was not statistically significant (n=5 trials; SMD 0.33; 95% CI -0.54 to 1.19). Similarly, the effect of health coaching on diet adherence also was not significant when compared with an inactive comparator (SMD 0.05; 95% CI -0.08 to 0.19). Only change in physical activity (*eg*, step counts, minutes of activity) had sufficient studies to compare effects against trials with active comparators. When compared with active controls, physical activity change was not significant (SMD 0.17; -0.32 to 0.67). Many pooled estimates exhibited moderate to high statistical heterogeneity ($I^2 \geq 50\%$). In qualitative syntheses, results were mixed or inconclusive for effects of health coaching on functional status, smoking cessation, and medication adherence. However, limited qualitative evidence in 2 identified trials suggests that coaching has a positive effect on total calorie reduction.

We rated the strength of evidence for the 2 key outcomes as follows. We found moderate strength of evidence for small decreases in HbA1c (MD -0.30; 95% CI -0.50 to -0.10) and small decreases in BMI (MD -0.52; 95% CI -0.91 to -0.14) when health coaching interventions were compared with inactive controls. We found insufficient strength of evidence for the impact of health coaching on HbA1c and BMI when compared with active control conditions.

We also explored potential sources of variability in treatment effects, including population characteristics, intervention dose, intervention delivery mode, type of individual conducting health coaching, and concordance with key elements of health coaching. None of these factors were robust predictors of variability in treatment effects.

**Conclusions:** These results suggest that health coaching interventions have the potential to produce small, positive, statistically significant effects on HbA1c decreases, BMI reductions, physical activity increases, dietary fat reductions, and self-efficacy improvements when compared with inactive controls. This trend did not extend to studies with more active comparators. Our results suggest that health coaching may be an effective self-management approach. Our results should be interpreted with caution. The relatively large number of studies with high or unclear risk of bias and moderate to high heterogeneity in pooled estimates limit certainty about the interpretation of our findings. Also, none of the moderators were strong drivers of variability in treatment effects, suggesting that moderate to high heterogeneity in pooled estimates may be driven by various intervention characteristics. We allowed studies to self-identify as health coaching interventions as opposed to applying a standard set of criteria and only including studies that met those criteria. Thus, variability in what the study authors considered health coaching may contribute to the overall variability in treatment effects.

While health coaching is a promising intervention modality, additional research is warranted on the impact of health coaching, especially in areas with limited identified literature (*eg*, medication adherence, smoking, physical function), and when compared with active comparators. Also, it is unclear whether health coaching offers additional advantages over other behavioral intervention modalities. Future research should employ innovative and rigorous study designs to explore the central elements that distinguish health coaching from other behavioral counseling and self-management approaches and how these unique elements have an impact on clinical and behavioral outcomes.