Important Personal Values of Veterans Enrolled in Home-Based Cardiac Rehabilitation

EMILY C. GATHRIGHT, PhD; LORI A. J. SCOTT-SHELDON, PhD; JEANNIE URSILLO, MSN, APRN-BC; ELIZABETH MEDBURY, BSN, RN; WEN-CHIH WU, MD, MPH

ABSTRACT

BACKGROUND: Home-based cardiac rehabilitation (CR) heavily relies on patients’ personal motivation to engage in behavior change. Patients’ core values (e.g., health, family) may serve as motivational factors to strengthen program engagement. This study sought to identify personal values of veterans participating in home-based CR.

METHOD: Veterans enrolled in a home-based CR program at the Providence VA Medical Center completed a self-report questionnaire assessing core values at intake and completion. Descriptive statistics and non-parametric tests (e.g., Friedman, Wilcoxon sign rank comparisons) were used to assess differences in core value ratings between intake and completion.

RESULTS: Sixty-six patients (72±7 years, 86% white, 97% male) completed the questionnaire. Patients most often rated independence (86%), family (70%), and health (67%) as important values. Value ratings did not change from intake to discharge (p values >.20).

CONCLUSIONS: Future research should evaluate whether incorporating values-based activities in home-based CR can improve patient adherence to treatment and outcomes.

KEYWORDS: cardiac rehabilitation, motivation, veterans

INTRODUCTION

Home-based cardiac rehabilitation (CR) is a supervised exercise and cardiac risk factor modification educational approach offered in the home or other nonclinical settings to eligible patients who have limited or no access to center-based CR. Home-based CR in the Veterans Health Administration represents an important accomplishment to increase service delivery capacity and offer greater logistical flexibility for veterans who otherwise would not attend center-based sessions due to transportation or employment-related timing constraints. In the VA system, patients receive the major components of center-based CR, including an exercise prescription and education on nutrition, stress management, and risk factor modification through weekly telephone or video contact with a CR provider over 12 weeks. Home-based CR most notably differs from center-based CR in that exercise supervision and behavior change coaching is provided partially or entirely remotely and therefore more heavily relies on patients’ personal motivation to engage in behavior change in light of less face-to-face provider and peer support. Patients’ core values (e.g., health, family), or guiding principles that individuals identify as personally important, may serve as motivational factors that shape adherence to cardiac risk factor modification recommendations as affirming one’s values can increase individual health behavior change. Prior research in a center-based cardiac and pulmonary rehabilitation (CPR) program revealed a wide variety of values that motivated program participation with only 50% of CPR attendees citing “health” as an important value driving their program engagement. As home-based CR represents a behavior change opportunity largely focused on improving CVD-relevant health, it may be beneficial to understand whether improving one’s health is typically identified as a personally important to the attendees. However, to our knowledge, no prior research has examined the personal core values endorsed by patients in home-based CR, which may differ from CPR participants. In addition, it is unknown whether patient-reported core values change over the course of home-based CR. For example, Ellis and colleagues reported that nearly half of their sample of CPR patients described evolving values over the course of program participation. Some patients initially prioritized health improvement or prevention of health decline; however, values were interpreted to become more variable and personalized over time. Others have also described values change in response to aging and life transitions. Greater understanding of whether patient-reported values may change following completion of home-based CR may provide additional insight into patient motivational factors that might enhance patient engagement. Therefore, we sought to (1) identify personal core values in veterans participating in home-based CR and (2) examine whether personal core values change over participation in home-based CR.

METHOD

Sample

Participants were veterans enrolled in a home-based CR program between January 2019 and June 2020 at the Providence Veteran’s Affairs Medical Center (VAMC; Providence, RI).
Measures
Demographic and clinical characteristics of the patients were collected by home-based CR staff as part of routine clinical care. Participants also completed a self-report questionnaire of their personal core values as part of clinical intake and discharge assessments. The adapted Chronic Pain Values Inventory (CPVI) measured values across eight value domains including family, friends, health, independence, hobbies/activities/work, spirituality, growth/learning, and intimate relations (e.g., “Being the kind of partner you want to be…”) on a 5-point scale ranging from “not at all important” (0) to “extremely important” (5).

Procedure
Patients were referred to home-based CR following hospitalizations with relevant diagnoses, procedures, and/or events (e.g., heart failure, myocardial infarction, coronary artery bypass grafting [CABG]) or through their outpatient cardiology provider. Upon enrollment, patients attended an in-person intake assessment with a nurse practitioner or registered nurse. At the in-person intake visit, the home-based CR staff member also provided the patient with a patient education workbook, hand peddler, pedometer, and resistance band, and provided instructions for a home-based exercise prescription. Following the initial meeting, patients received 12 weekly telephone calls from the home-based CR staff to assess their weekly behaviors related to home exercise, diet, smoking when applicable, weight, and medications. Patients are also provided with education on these topics as indicated. Phone calls lasted approximately 20–30 minutes. Patients returned to the clinic for the discharge assessment at 12 weeks. The study was approved by the Providence VAMC Institutional Review Board.

Analytic Plan
Summary statistics [e.g., means, medians, percentages] were used to describe the sample. The Friedman test was used to test differences in importance ratings across value domains. Pairwise comparisons via Wilcoxon signed rank tests with a Bonferroni correction were used to further evaluate significant Friedman tests. Analyses were conducted in Stata/SE version 14.2.

RESULTS
The demographic and clinical characteristics of the sample are provided in Table 1. Sixty-six patients [mean age 72±7 years, 86% white, 97% male] completed the adapted CPVI at intake and program discharge. Most participants were admitted to the program due to heart failure [63%]. All participants completed the 12 weekly telephone calls during the home-based CR program.

| Table 1. Sample characteristics at home-based CR intake (n = 66). |
|-----------------------------|-----------------------------|
|                               | Mean (SD) or n (%)           |
| Age                          | 72.06 (7.03)                |
| Male                         | 64 (96.70)                  |
| Race/ethnicity (n = 64)      |                             |
| Non-Hispanic White           | 55 (85.94)                  |
| Non-Hispanic Black           | 1 (1.56)                    |
| Asian                        | 0 (0)                       |
| Non-Hispanic Other/Unknown   | 7 (10.94)                   |
| Hispanic                     | 1 (1.56)                    |
| Diabetes (n = 64)            | 27 (42.19)                  |
| Hypertension (n = 64)        | 57 (89.06)                  |
| Admission Diagnosis (n = 64) |                             |
| Heart failure                | 40 (62.50)                  |
| Coronary artery bypass grafting | 7 (10.94)            |
| Percutaneous coronary intervention | 7 (10.94)  |
| Stable angina                | 4 (6.25)                    |
| Valve replacement/repair     | 3 (4.69)                    |
| Myocardial infarction        | 2 (3.13)                    |
| Peripheral vascular disease  | 1 (1.56)                    |

Abbreviations. SD, standard deviation; n, number of participants

Importance of Core Values at Home-Based CR Intake
At program intake, patients reported independence [n = 57; 86%], family [n = 46; 70%], and health [n = 44; 67%] as their most important values (i.e., rated as “very” or “extremely” important) [Figure 1]. Spirituality was rated as least important, with 35% rating spirituality as “very” or “extremely” important [n = 23]. Friedman tests examining the importance ratings indicated that the ratings were significantly different across the value domains, $\chi^2(7) = 219.12, p < .001$. Post-hoc comparisons with a Bonferroni correction indicated that...
No significant change in the importance of each core value was found from intake to discharge (\(z = 5.26, p < .001\)). This research, however, also showed being active, defined by the authors as “regular active engagement in physical, social, and mental tasks, hobbies, etc.” (pg. 311) was the most frequently identified value and was endorsed by approximately 70% of participants. Similarly, a national study of veterans found that “activity” was frequently included in veterans’ perceptions of successful physical, emotional, and cognitive aging. However, unlike these prior two studies, our response options were not open-ended and perhaps did not fully capture how remaining active physically, cognitively, and emotionally may be important to veterans or may be infused throughout home-based CR attendees’ other core values. Veterans in home-based CR may prioritize being active in self-defined ways that do not necessarily clearly map on to a specific hobby, occupation, or volunteer opportunity. Alternatively, uncaptured differences in health status may contribute to the lower importance placed on hobbies, work, and activities in our sample. In addition, our finding that spirituality was the value least often identified as important is inconsistent with prior research showing that religion is an important value for older adults. This finding may have been influenced by sample, geographic, cultural, or site-specific factors.

No changes in the value importance ratings were detected from home-based CR intake to discharge. It is possible that age-related value shifts identified in prior work were not observed due to the short duration of the home-based CR program. Additionally, although cardiac events and interventions preceding CR referral likely represent significant health events, and transitions for some, values shifts may have occurred prior to CR enrollment at another point during the illness course. Alternatively, veterans may enter CR with distinct prior life experiences that have cemented their values, or uniquely alter the impact that CR may have on their life priorities. Additional research is needed to clarify how veteran status or cardiac history of the sampled patients may have contributed to the observed results.

### DISCUSSION

Home-based CR patients most often rated independence, family, and health as highly important values. These findings corroborate and extend prior research with center-based CPR patients showing multiform personal values identified by patients. This research, however, also showed being active defined by the authors as “regular active engagement in physical, social, and mental tasks, hobbies, etc.” (pg. 311) was the most frequently identified value and was endorsed by approximately 70% of participants. Similarly, a national study of veterans found that “activity” was frequently included in veterans’ perceptions of successful physical, emotional, and cognitive aging. However, unlike these prior two studies, our response options were not open-ended and perhaps did not fully capture how remaining active physically, cognitively, and emotionally may be important to veterans or may be infused throughout home-based CR attendees’ other core values. Veterans in home-based CR may prioritize being active in self-defined ways that do not necessarily clearly map on to a specific hobby, occupation, or volunteer opportunity. Alternatively, uncaptured differences in health status may contribute to the lower importance placed on hobbies, work, and activities in our sample. In addition, our finding that spirituality was the value least often identified as important is inconsistent with prior research showing that religion is an important value for older adults. This finding may have been influenced by sample, geographic, cultural, or site-specific factors.

No changes in the value importance ratings were detected from home-based CR intake to discharge. It is possible that age-related value shifts identified in prior work were not observed due to the short duration of the home-based CR program. Additionally, although cardiac events and interventions preceding CR referral likely represent significant health events, and transitions for some, values shifts may have occurred prior to CR enrollment at another point during the illness course. Alternatively, veterans may enter CR with distinct prior life experiences that have cemented or stabilized their values, or uniquely alter the impact that CR may have on their life priorities. Additional research is needed to clarify how veteran status or cardiac history of the sampled patients may have contributed to the observed results.

### Clinical Considerations

Values information may be useful to clinicians to engender patient-centered care. Patients may describe themselves as motivated to engage in health behavior change for the purposes of improving their health but improving health may not be the most important value for all patients. Affirming other important values, such as independence, may also promote openness to behavior change, buffer against stress, and increase personal relevance of cardiac risk factor...
recommendations. However, additional research is needed to clarify whether values identification may create distress when patients are confronted with values for which they are not currently engaging in values-consistent behavior.

Values-based approaches are increasingly incorporated into psychotherapeutic and behavioral health settings and may offer an opportunity to further motivate behavior change through supporting patients in the identification of individualized, values-based goals. For example, Acceptance and Commitment Therapy and Behavioral Activation emphasize the importance of values-guided behavior change. Future research exploring whether and how such principles may be incorporated into the home-based CR protocol is warranted.

Limitations

Our results should be interpreted within the context of the study’s limitations. First, our sample size was small, and the results need replication in a larger sample with greater representation of persons of color and women. Second, our results may not generalize to non-veteran samples and center-based CR patients. Third, our self-report survey included limited response options of value domains. Other values not captured by this tool may also be relevant. Future research should examine whether different values or value patterns are associated with CR outcomes. If so, values assessment may assist clinicians in identifying patients at risk of submaximal benefit in the context of competing life priorities.

CONCLUSIONS

Independence, family, and health are important values for veterans enrolled in home-based CR. Future research is warranted to better clarify how identifying individualized core values can assist home-based CR clinicians in delivering patient-centered care and supporting values-driven goal setting as part of cardiac risk factor modification recommendations for veterans.

References

9. Stata Statistical Software [computer program]. College Station, TX: StataCorp LP; 2015.

Authors

Emily C. Gathright, PhD, Center for Behavioral and Preventive Medicine, The Miriam Hospital, Providence, RI, Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University, Providence, RI.

Lori A. J. Scott-Sheldon, PhD, Center for Behavioral and Preventive Medicine, The Miriam Hospital, Providence, RI, Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University, Providence, RI, Department of Behavioral and Social Sciences, Brown University School of Public Health, Providence, RI.

Jeannie Ursillo, MSN, APRN-BC, Providence Veterans Affairs Medical Center, Providence, RI.

Elizabeth Medbury, BSN, RN, Providence Veterans Affairs Medical Center, Providence, RI.

Wen-Chih Wu, MD, MPH, Providence Veterans Affairs Medical Center, Providence, RI, Center for Cardiac Fitness, The Miriam Hospital, Providence, RI, Department of Medicine, Alpert Medical School of Brown University, Providence, RI.

Disclosures

Funding: Emily C. Gathright, PhD, was supported by K23AG061214-01A1 from the National Institute on Aging. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. Wen-Chih Wu, MD, MPH, was supported by the VA HSRD grant 1S101HCR081800-005. The views expressed in this publication represent those of the authors and not of the Department of Veterans Affairs.

Conflicts: The authors declare no conflicts of interest.

Correspondence

Emily C. Gathright, PhD
The Miriam Hospital
Center for Behavioral and Preventive Medicine
CORO West, Suite 309
164 Summit Avenue, Providence, RI, USA 02906
emily_gathright@brown.edu