African American Patients' Lived Experience Through Cardiac Event/Surgery, and Recovery

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Abstract

Introduction: Although Cardiac Rehabilitation is a Class I treatment for cardiovascular disease, only a third of eligible patients participate and rates are even lower among racial/ethnic minorities. Studies on the unique experience and recovery needs of African American patients following cardiac events and/or surgeries are limited.

Methods: African American adult patients (n=7) two months post-discharge from a Southeastern medical center were interviewed regarding their cardiac recovery experience. Semi-structured interviews were audio-recorded, transcribed, and then coded according to Coliazzi's (1978) phenomenological analysis method.

Results: Six themes were identified salient to these African American patients' lived experience: (a) Participants valued medical providers' involvement during treatment and recovery; (b) Social support and participants' need for it changed post-event/surgery; (c) Participants' pre- and post-event/surgery experiences affected health outcomes; (d) Participants' sense of agency affected their life perspectives and health behaviors; (e) Participants experienced inconsistent referral to and utilization of Cardiac Rehabilitation; and (f) Participants' investment in faith was intensified or maintained.

Discussion: This study highlighted the importance of medical provider and social support, the need for consistency and clarity in Cardiac Rehabilitation referrals and recommendations, and the role of participants' agency and spirituality as sources of strength during African American patients' recovery from cardiac events and/or surgeries.

Introduction

From prevention and intervention to mortality rates, African Americans have experienced significant cardiovascular health disparities. From 2006 to 2016, African Americans had a higher age-adjusted death rate from coronary heart disease than Non-Hispanic Whites (146.5 per 100,000 population for African American males and 85.4 for African American females, compared with 132.3 and 67.3 per 100,000 population for Non-Hispanic White male and females, respectively).[1] As a population, African Americans also had a higher rate of hypertension (40.3% among African Americans compared to 27.8% among Non-Hispanic Whites), but were less likely to have their hypertension controlled.[2]

Cardiac Rehabilitation (CR) is an American College of Cardiology and American Heart Association recommended program designed to treat multiple cardiovascular conditions and assist in the recovery from cardiac events/surgeries (i.e., myocardial infarction [MI], coronary artery bypass grafting [CABG], stable angina, heart valve repair or replacement, percutaneous transluminal coronary angioplasty or coronary stenting, heart/heart-lung transplant, congestive heart failure, coronary artery disease, diabetes, and peripheral artery disease).[3] CR consists of three phases, all or some of which a patient with cardiovascular disease (CVD) may participate in depending on his or her disease presentation and availability of programs: (a) Phase I—acute, inpatient treatment (one to 14 days), (b) Phase II—medically supervised outpatient treatment lasting three to six months, and (c) Phase III—minimally supervised or unsupervised maintenance.[4]

As a Class I secondary treatment and prevention program, CR has been demonstrated to improve health outcomes for patients with CVD.[3-7] However, only one third of eligible patients are referred to or participate in CR.[8-10] These rates are even lower for racial minorities and for African Americans, in particular.[10-13] Researchers studying referral rates for cardiovascular procedures and rehabilitation programs have found a relationship between race and the type of procedures and programs recommended for or received by patients.[13-18] For example, African Americans are less likely to be recommended for and receive revascularization procedures.[14-17] Researchers have also demonstrated that cardiac patients who do not receive these procedures are, in turn, less likely to be referred for CR.[10] In relation to this indicator, other researchers have shown that being scheduled for a follow-up appointment with a cardiologist or cardiac surgeon is positively associated with a CR referral.[19]

Researchers have identified a number of factors moderating poorer cardiovascular health and decreased likelihood of adopting heart healthy behaviors (e.g., recommended diet and exercise changes) among African American patients with CVD. These factors include depressive symptoms[20,21], lower socioeconomic status[22], and lower levels of social support[23-25]. Some researchers have also argued that religious fatalism is a commonly held spiritual belief in the African American community, which can reinforce a passive approach to self-care and fatalistic beliefs about cardiovascular risk factors and health.[20,26,27]

Although these differences and disparities are well documented, research on the development of interventions to address them is limited. Researchers have identified a need for interventions tailored to racial minority patients with CVD and have called for studies that measure factors specific to these groups to assist in intervention development.[9,28-30] In their systematic review of the literature, Hildebrandt, Koehler, Hodgson, Dodor, Knight, and Rappleyea found that, compared with Non-Hispanic White patients, African American patients with CVD not only had a lower likelihood of CR referral, but also had a higher likelihood of enrolling in CR with more cardiovascular risk factors, and a lower likelihood of CR participation and completion due to factors related to low socioeconomic status (e.g., lack of insurance, work conflicts, lower level of education).[12,13,31-36] In total, only seven studies addressed this topic.

Few studies have been conducted on factors impacting African American patients' CR referral and participation, and the ways in which African American patients can be best supported in their recovery from cardiac events and surgeries.[31] For this reason, a phenomenological study was conducted to explore the following research question[37]: "What is the lived experience of African American patients recovering from cardiac events and/or surgeries?"

Methods

Participants

A purposive sampling strategy was used to enroll participants from two different locations; either from (a) a Southeastern academic medical center serving a population of nearly one and a half million people and (b) a nearby, affiliated CR facility. Potential participants were identified from each facility's electronic and paper record systems. Inclusion criteria were: (a) English-speaking; (b) African American; (c) aged 18 years and older; (d) approximately two months post-discharge from a cardiac event or surgery for which CR was indicated; and (e) a resident of a city or town in the county where the academic medical center was located.

The researchers recruited five eligible patients from the academic medical center and two patients directly from the CR facility. After consenting to participate in the study prior to their discharge from the hospital, the five participants recruited from the academic medical center were contacted by telephone six to seven weeks post-discharge to set up interviews. This timeframe was chosen because, at this point, participants were anticipated to have had at least one follow-up appointment with a primary care provider, cardiologist, or cardiac surgeon per the academic medical center protocol and had the opportunity to receive a referral to CR or to discuss recovery alternatives with their medical provider(s). The two patients recruited directly from the CR facility were contacted either by telephone or when a research assistant approached them directly at the CR facility at approximately two months post-discharge. This time point was selected to ensure that individuals recruited from the initial pool of potential participants (contacted at six to seven weeks post-discharge) would be in the same stage of recovery as those recruited directly from the facility. If patients were contacted by telephone, a time was arranged for them to complete the informed consent face-to-face at the CR facility. Once consent was obtained, interviews were scheduled.

Participants were recruited and semi-structured interviews were conducted until saturation of themes was reached. Saturation occurs when the analysis of additional data (in this case, participant interviews) yields no new themes.[38] Although the number of interviews needed to reach saturation could not be predicted[39], content analysis of qualitative studies provided some guidelines. A review of 57 phenomenology studies found that the average number of interviews associated with a phenomenology was 25, while the median number was 20, and range was seven to 89.[39] Due to the high specificity of the topic, anticipated homogeneity of the purposively selected sample, and the inclusion criteria for this phenomenological study, it was estimated that saturation would be reached within eight to ten interviews. The lead researcher planned to conduct one additional interview past the point of saturation to test comprehensiveness of themes.[40] Out of 15 eligible patients identified during the study recruitment window, seven patients participated in the study. Eight were unable to be contacted to obtain consent. Participants received an incentive ($25 gas card) mailed to them following interview completion.

Procedures

Approval for this study was obtained from a University Institutional Review Board (IRB) and privacy office. Potential participants were contacted at six to seven weeks post-discharge to set up interviews. After obtaining informed consent, the lead researcher used an interview guide (Table 1) to facilitate an audio-recorded, in-depth telephone interview with each participant.

Table 1. Interview Guide

Grand Tour Question
How would you describe your experience recovering from your cardiac event or surgery after being discharged from the hospital?
Probing Questions
• What has having a heart problem meant to you?
• What are some challenges you have faced in your recovery process? o Have you experienced any physical challenges? o Have you experienced any emotional challenges? o Have you experienced any social challenges? o Have you experienced any spiritual/religious challenges?
• What successes have you experienced?
• How have you experienced the follow-up appointments with your cardiologist or primary care provider after being discharged from the hospital? o How would you describe how you have been treated? o How were your questions/concerns addressed? o What concerns do you continue to have?
• What is your understanding about how you can best recover from your heart problem? o What messages or information have you gotten from your health care provider? o What messages or information have you gotten from others? o What messages or information have you gotten about diet? o What messages or information have you gotten about exercise?
• Did any of your health care providers discuss cardiac rehabilitation (CR) with you? Follow up probes: Which health care provider? When was it? o What do you think is the importance of CR to your recovery? o What were your intentions about participating in CR? o Did you have any concerns about CR? o Did you think about/engage in any alternatives to CR?
• What home remedies (non-medical strategies), if any, have been a part of your recovery process?
• How have you been helped or supported by others in your process of recovering? o How have health care providers, like doctors and nurses, supported you? o How have other health people supported you? o How have family members supported you? o How have friends supported you? o How has your community supported you? o How has your church/faith community supported you?
• What services (or assistance) have you needed but have not received to help you with recovery? o What could health professionals, like doctors and nurses, have offered after discharge to help you with your recovery?
• What else you would like to share?

Data Analysis

Colaizzi's phenomenological analysis method was used for this study.[41] The lead researcher transcribed all interviews verbatim and coded the transcripts successively as interviews were conducted. A triangulated researcher coded 25% of each transcript and, if the coding was not in 90% agreement with the lead researcher's coding, the triangulated researcher coded the full transcript, as well. When agreement regarding coding differences could not be reached (occurred 10% of the time), a peer debriefer assisted with reaching consensus. The peer debriefer also reviewed each step of the analysis process to ensure that it accurately reflected Colaizzi's method and was grounded in the data.[41] Researchers recorded their biases and engaged in reflexivity prior to and throughout the analysis process.[42,43] Upon completion of analysis, study findings were verified by participants using member checking which took the form of the lead researcher calling participants and requesting verbal feedback on the exhaustive description of the study's findings.[38,44] The five study participants that the lead researcher was able to reach by phone confirmed that the exhaustive description reflected their lived experiences.

Results

Seven participants were recruited and interviewed for this study: four men and three women who ranged in age from 37 to 64 years and who had experienced MI, stent placement, CABG, or a combination thereof (see Table 2 for participant demographics). Analysis of transcripts from the seven participant interviews yielded 535 significant statements, 69 formulated meaning statements, 20 thematic clusters (TC), and six emergent themes relevant to the essence of African American patients' lived experience through cardiac event/surgery and recovery (see Table 3 for emergent themes and TC). The following section explores each emergent theme, as well as the TC categorized under it (see Table 4 for selected examples).

Table 2. Participant Demographics

Participant	Gender	Age	Event/Surgery	CR Status
1	Male	60	Stents	No referral, not enrolled
2	Male	60	MI	Referred, enrollment pending medical action
3	Male	37	MI, Stents	Referred, enrollment pending medical action
4	Female	64	Stents	Referred, enrolled, attending
5	Female	41	MI, CABG	Late referral, enrolled, attending, nearly completed
6	Male	60	MI, stents	No referral, not enrolled
7	Female	54	MI	Referred, enrolled, continued attendance pending medical action

Emergent Theme (EM) 1: Participants Valued Medical Providers' Involvement during Treatment & Recovery

All seven participants stated that medical providers' interventions impacted cardiac outcomes (TC 1a, Table 3). When participants experienced medical crises prior to cardiac events/surgeries, medical providers were the source of vital information and interventions, often revealing for participants the cause of their symptoms. Three participants noted that medical providers were often conservative in their interventions in that they observed patients first and considered less invasive treatments before proceeding to more invasive ones. There were also times when medical providers' interventions presented participants with unique challenges, for example when participants did not understand their medication regimens post-discharge.

All participants also recalled medical providers guiding them on making healthy lifestyle changes after their cardiac event or surgery (TC 1b). Guidance took the form of general messages (i.e., being encouraged to "just walk"), whereas other times guidance was specific and hands-on (i.e., medical providers referenced exercises from the same pamphlet given to the participant during hospitalization).

In addition to guidance for healthy lifestyle changes, six out of seven participants perceived that medical providers offered a combination of functional and emotional support (TC 1c). Functional support included adjusting medications, checking participants' vital signs and tolerance of treatment, putting in appropriate referrals, providing explanations of the treatment process to participants, and offering or arranging home visits. Providers' emotional support entailed offering encouragement to participants and positive feedback regarding participants' cardiac event or surgical outcome and progress during recovery. For three participants, positive feedback motivated them to adhere to treatment recommendations, whereas two others read positive feedback as meaning that they did not need additional resources such as CR, but were instead equipped to facilitate their own rehabilitation process. All participants expressed their appreciation for medical providers' level of "dedication" to participants and their health (TC 1d). Specifically, participants appreciated when medical providers seemed to invest personally in their needs. Participants frequently spoke about medical providers "really caring" for them. Connected to participants' sense of medical providers' care was the feeling that they were a part of a collaborative team with providers in which positive health outcomes were a shared goal. Participants appreciated that medical providers involved them in conversations about their care, would "sit and listen to what [the participant] got to say" and explained to them what to do and expect medically. Although participants primarily spoke about the ways in which their medical providers had been exceptionally helpful, two participants also pointed out where they would have liked additional support (TC 1e). Requests for additional support mainly centered on post-event/surgery needs. These participants stated that it would have been helpful to have had more information about home-based recovery. For example, a 41-year-old woman who had CABG following an MI wished her provider would have recommended alternatives for sleeping comfortably the first few weeks following discharge. She suggested that renting a recliner may help patients who had difficulty sleeping vertically for the first couple of weeks.

EM 2: Social Support & Participants' Need for It Changed Post-Event/Surgery

Following cardiac events/surgeries, all participants experienced their social networks rallying to support them (TC 2a). Functional support included assistance with activities of daily living (e.g., bathing, preparing meals), financial help when/if participants were unable to work for a significant amount of time, assistance with household chores and yard maintenance, and provision of home-based accommodations for recovery and gradual transitions back into normal routines. Emotional support included check-in telephone calls or visits, words of encouragement, and advice from others who had had similar cardiac experiences.

According to five participants, a sense of isolation was often caused or compounded by lifestyle changes made post-event/surgery and participants' physical limitations during their recovery process (TC 2b). A 60-year-old man who had had an MI found that upon following his medical providers' recommendations to stop smoking and drinking, he lost contact with the friends with whom he used to engage in these activities. Although this participant recognized that these were the "wrong kind of friends" to support him in adopting a healthier lifestyle, he still expressed disappointment that they did not visit him in the hospital or post-discharge. Regarding the impact of physical limitations, one participant stated not being able to move around at social gatherings as she normally would have done left her feeling like she was "watching life go by" (41-year-old woman, MI/CABG). In contrast to feelings of isolation, five participants also reported the presence of social support that was in some way challenging for the participant (TC 2c). These participants reported that support that was "pitying", conflictual, or "humbling", was challenging to them. A 54-year-old woman who had an MI stated that she felt pitied when her family and friends looked at her "different" and spoke to her in a condescending tone. This participant stated that she made a point of "acting joyful" when she felt pitied by others. Another participant stated that needing help with activities of daily living was "humbling", especially when her husband had to help her with toileting (41-year-old woman, MI/CABG). However, she reported she did not always disclose her authentic feelings regarding her recovery experience to others. Support was conflictual when participants and supporters disagreed on treatment recommendations (e.g., amount of exercise).

EM 3: Pre- & Post-Event/Surgery Experiences Affected Health Outcomes

Four participants noted how pre-event/surgery related health problems prevented them from being able to live like they wanted to live (e.g., be more physically active) and even compounded their heart problems (e.g., obesity, musculoskeletal issues, pulmonary problems) (TC 3a). Pre-event/surgery health problems endorsed by participants included prior cardiac events, atrial fibrillation, undiagnosed cardiac problems, high blood pressure, diabetes, obesity, knee problems, prior injuries, fibromyalgia, and depression. A 37-year-old man who had an MI and stents placed stated that his obesity and knee problems made it difficult, and then impossible, to work at the physically strenuous job he had held. A 54-year-old woman who had an MI stated that injuries from a car accident (approximately 10 years prior) and fibromyalgia "kinda, like put a dent in my exercise". Six out of seven participants experienced post-event/surgery health improvements that included successful recoveries from cardiac events/surgeries, needing fewer medications/interventions to manage health problems, and increased self-care (TC 3b). These changes led them to achieve overall improved health status.

Four participants emphasized that, following their events/surgeries, it was necessary to make adjustments to their home environments and routines to accommodate temporary and permanent limitations (TC 3c). For these participants, adjustments included different sleeping accommodations (i.e., lower beds or recliners that were easier to get in and out of for the first few weeks post-discharge), use of a walker, riding in vehicles that were easier to get in and out of (i.e., larger versus compact vehicles), and help with carrying items over

10 pounds. These participants expressed a pervasive shift in how they moved through their days and noted that social support contributed to their adaptability and resilience in not only making these accommodations but also accepting them.

Five participants reported that some post-event/surgery treatments were ineffective, inaccessible, or unaffordable and consequently not adopted by them (TC 3d). Thus, these participants experienced ongoing physical or psychological limitations. One participant reported the medications he was taking post-discharge "was messin' with me bad" (e.g., stomach aches and feeling like he was "floating") and said he felt much better after he became well enough to taper these down (60-year-old man, stents). Others described the repercussions of financial limitations, for example the sense of despair upon discovering a prescribed heart medication was unaffordable and the sense of helplessness when insurance companies denied potentially therapeutic interventions such as weight loss surgery year after year.

EM 4: Sense of Agency Affected Life Perspectives & Health Behaviors

All participants reported feeling distressed when they were faced with the unpredictability of their treatments and health outcomes (TC 4a). Their distress included anxiety about having limited control over and knowledge of their cardiac events/surgeries and outcomes; fear that engaging in exercise would trigger another cardiac event; frustration when physical limitations precluded being able to exercise as instructed by medical providers; being unsure of medications' physical and psychological effects; and feeling depressed as a result of unforeseen health-related hardships. Words participants used to describe their anxiety about limited control regarding their cardiac events/surgeries and outcomes included "scary", "frightful", "overwhelmed", and "hard to accept".

Participants also had different levels of proactivity about health and the recovery process (TC 4b). Whereas three participants stated that they researched and implemented recommended diet and lifestyle changes both pre- and post-intervention, three others stated that they passively chose not to implement these changes even though they knew that they "should" (the last participant did not comment on this theme). One participant (60-year-old man, MI/stents) stated that he opted out of certain aspects of care, such as home health care and CR, because his recovery was so successful and he had a high comfort level with exercise.

All participants reported that their cardiac events/surgeries led them to actively make some lifestyle changes (TC 4c). These changes involved shifts in both perception and behavior and included feeling inspired to get more serious about health following the wake-up calls of cardiac events/surgeries; perceiving weight changes as connected to greater health and wellbeing and engaging in behavioral modifications to manage weight; having a new appreciation for peace and quiet; and accepting and making peace with health-related limitations.

Finally, two participants stated that they not only gleaned knowledge from the experiences of their cardiac events/surgeries, they also shared this new knowledge with others (TC 4d). In particular, one of these participants (41-year-old woman, MI/CABG) gave health advice to her children regarding her children's and future grandchildren's health-related behaviors. She reported that it was very important to her that her two teenage sons internalize healthy lifestyle behaviors so they would not be faced with the same challenges she had experienced.

EM 5: Participants Experienced Inconsistent Referral to & Utilization of Cardiac Rehabilitation

Out of the seven participants, four reported receiving a referral to CR, two reported having no referral, and one reported a late referral that was made by the participant's medical provider after she directly requested a referral to CR (see Table 2). Three of the four participants who were referred to and participated in CR spoke about positive experiences with health-related successes (e.g., "get[ting] stronger," "gainin' energy back") and support from CR nurses and staff (TC 5a). One of these participants appreciated the program so much that she stated, "I would like that the program could last, you know, forever!" (64-year-old woman, stents). Functional and emotional support from CR nurses and staff was an important component of participants' positive experiences. Another participant reported that it helped motivate her "being around the people that, you know, watchin' you and pushin' you and encouragin' you" (54-year-old woman, MI). Four participants also experienced some barriers to CR participation which included perceived lack of communication from medical providers with participants about CR, perceived lack of referrals of participants to a CR program, participants not understanding what CR was, or participants waiting on medical providers for action or clearance to begin or continue the program (TC 5b). For example, one participant was aware that one of his medical providers had submitted a CR referral for him, but he had a difficult time articulating exactly what CR was: "He [medical provider] had wanted me to do somethin'. Uh, some, uh…oh, man, I can't explain it…What is it?" (60-year-old man, MI).

One participant stated that she happened to learn about CR from a woman who had recently had cardiac surgery and attended CR. As a result of this chance conversation, this participant sought a referral from her medical providers using her online patient portal, and having been given a referral, she successfully enrolled in and completed CR. Although the participant stated that she was grateful to have learned about CR in one way or another, she also reported being disappointed that her medical providers had told her "nothing" about this resource. She stated that "they *should* let the people know. Especially right before [discharge] at the hospital would be *great*" (41-year-old woman, MI/CABG). While participants spoke positively about the support received from CR nurses and staff, two participants spoke negatively about the presence of other CR patients. A 54-year-old woman (MI) stated that the other patients were less motivated and/or less able to exercise than her and this contributed to a "gloomy" feeling. A 37-year-old man (MI/stents) reported that when he had his initial assessment at CR, he was one of the youngest patients present and this was particularly upsetting to him.

EM 6: Participants' Investment in Faith was Intensified or Maintained

All participants stated that they maintained or intensified involvement in their faith and faith communities throughout their recoveries (TC 6a). Three participants reported that their faith community members came into the hospital to visit and pray with them following cardiac events/surgeries and continued to support them after discharge.

Six out of seven participants also reported that, following their cardiac events/surgeries, involvement with their faith intensified. This included more frequent considerations about faith-based questions and seeking spiritual guidance and counsel from others. A 60-year old man (stents) reported that, during his recovery, he experienced spiritual "frustration" related to his faith in God and his worries for himself and other people. He met periodically with his pastor, and through these spiritual conversations, stated that he was able to put his worries for self and others in faith and achieve better health overall.

All participants cited faith as a source of strength and gratitude during their recovery (TC 6b). Six participants stated that they gave their troubles to God. Phrases describing this process included "God got it", and "Put it in the hands of the Lord". One participant stated faith helped her to "calm back out" following her MI and trust "He [God] was gonna take care of me" (64-year-old woman, stents).

Two participants also explicitly stated that they offered praise and gratitude to God for giving them life. One of these participants emphasized the gratitude he had for God in giving him the opportunity to see his children grow up. He stated he "thanked God every day I wake up" (37-year-old man, MI/stents). God and participants' faith in God were not only described as the primary source of participants' strength, these were also described as the very power by which their hearts were still beating.

Table 3. Emergent Themes (1-6) and Thematic Clusters (1a-6b)

1. Participants valued medical providers' involvement during treatment and recovery
1a. Medical providers' interventions impacted cardiac outcomes 1b. Medical providers offered guidance on healthy lifestyle changes 1c. Participants perceived support (functional and emotional) offered by medical providers 1d. Participants appreciated medical providers 1e. Participants needed additional support from medical providers
2. Social support and participants' need for it changed post-event/surgery
2a. Social support was increased during recovery process 2b. Participants experienced sense of social isolation/limited support during recovery 2c. Participants experienced challenges with social interactions and type of social support offered during recovery
3. Participants' pre- and post-event/surgery experiences affected health outcomes
3a. Participants had pre-event/surgery health problems 3b. Participants experienced post-event/surgery health improvements 3c. Participants' post-event/surgery limitations called for lifestyle adjustments 3d. Participants experienced some interventions as ineffective or inaccessible post-event/surgery
4. Participants' sense of agency affected their life perspectives and health behaviors
4a. Unpredictability of health challenges and outcomes affected distress level 4b. Participants had different levels of proactivity about health and recovery process 4c. Cardiac events/surgeries led to lifestyle changes 4d. Passing on new knowledge was a part of participants' recovery process
5. Participants experienced inconsistent referral to and utilization of Cardiac Rehabilitation
5a. Participants experienced health-related successes with CR 5b. Participants experienced barriers to CR participation
6. Participants' investment in faith was intensified or maintained
6a. Participants and families were involved in their faith and faith communities 6b. Participants experienced faith as a source of strength and gratitude

Discussion

The themes revealed in this phenomenological study offer important clinical considerations regarding the recovery process of African American patients who have experienced a cardiac event and/or surgery. These findings reinforced those from previous researchers who highlighted the importance of medical providers building rapport and bringing culturally-sensitive health understandings to their communication with African American patients.[45-47] However, participants took these previous findings a step further in emphasizing the importance of medical providers demonstrating a personal investment in patients' wellbeing and including patients in conversations about their recovery. The following clinical recommendations are made in consideration of previous and current study findings.

Implications for Policy & Practice

Medical providers can support patients in their recovery by:

- Using provider-patient dialogue to assess patients' social support, spiritual resources, and other psychosocial factors (e.g., insurance coverage for CR, transportation).
- Reinforcing treatment recommendations in a way that is understandable to patients and opens up discussion regarding potential barriers to implementation.
- Discussing options with patients for meeting recovery goals (e.g., exercising at home vs. exercising at CR), and involving patients in the decision-making process about their treatment and recovery.

Limitations

There are several limitations of this study. First, the sample size of this study is very small. Although sample sizes are typically smaller for qualitative studies (when compared to quantitative studies), this study's sample size is admittedly on the small end even for a qualitative phenomenological study.[39] Therefore, although the experiences of the individuals in this study may hold true for other individuals recovering from cardiac events and/or surgeries, generalization of findings is not possible, particularly across demographic lines. Participants in this study were not only racially but also regionally homogenous. Second, all the participants in this study expressed a strong affiliation with their faith. It is possible that these findings, then, are reflective of African American patients living in the Southeastern United States who self-identify as religious or spiritual and may not apply to African American patients recovering from cardiac events/surgeries who do not identify in this way. Third, the mean age of participants in this study was 53.7 years old, which is notably younger than the average age of first MI in the United States (64.7 and 72.2 for men and women, respectively)[48], which again may mean that the findings are specific to a group of people who experienced cardiac events and/or surgeries at a younger age. Fourth, in terms of cardiac event or surgery type, the group was very heterogeneous which also may have affected the themes gleaned through this study.

Finally, it is a recommended practice to conduct an additional interview past the point of saturation to confirm that all themes have been identified.[40] This confirmatory interview was unable to be secured due to availability of eligible patients for recruitment. While a triangulated researcher and peer debriefer strongly believed that saturation was achieved, it is possible that apparent saturation was reached before themes were exhausted and an additional interview would have confirmed this.

Conclusion

This qualitative study investigated the lived experience of African American patients recovering from cardiac events and/or surgeries in the context of a primarily rural and lower-income county in the Southeast. Findings from this small qualitative study underscored the importance of medical provider and social network support, the need for greater consistency and clarity in CR referrals and recommendations, and the role of participants' sense of agency and spirituality as sources of strength during recovery. In providing care for African American patients recovering from cardiac events and/or surgeries, medical providers and social network members should capitalize on patients' agency, faith, and former resilience to health challenges in order to restore—and, hopefully, improve—health and wellbeing.

Table 4. Selected Examples of Narratives and Emergent Theme Formation

Significant Statements	Formulated Meanings	Thematic Clusters	Emergent Themes
"When I went in, um, they tried to do a stent but ended up having have heart surgery [CABG] because I had, um, three blockage that were severe." –P5	Medical providers attempted smaller interventions before proceeding to larger (surgical) interventions.	Medical providers' interventions impacted cardiac outcomes	1. Participants valued medical providers' involvement during treatment and recovery
"The [physical] therapist come in. He helped me walk. I walked down the street. I did everything he asked me to do, and he said I done well with it… I had to do arm exercise, leg exercise, and then I walked down the street a block." –P4	Participants received specific, "helpful" instruction and hands-on guidance from medical providers (including doctors, nurses, and physical/occupational therapists) regarding exercises.	Medical providers offered guidance on healthy lifestyle changes	
"They, um, been thoroughly with, you know, the examination and medication and makin' sure that, you know, that, uh, that they handle the, um, monitor my symptoms and, and reactions from the medicine. I mean, they've been a help for that, you know, consider how my body is: very sensitive to things. So, they, they've been kinda supportive." –P7	Medical providers (including doctors, nurses, and physical/occupational therapists) helped participants by giving them functional support in their recovery.	Participants perceived support (functional and emotional) offered by medical providers	
"I could tell the doctors really cared. They wanted me to get well…they kept telling me, um, you gotta do this, you gotta take your medicine. You can tell when someone actually care about you." –P3	Participants' medical providers set themselves apart from other medical providers by personally investing in their needs.	Participants appreciated medical providers	
"Lettin' the family know, 'You might want to try to look into rentin' a recliner for the next couple weeks'… or something like that. You know, um, just things that they know patients will kinda struggle with for the first couple weeks." –P5	Participants wished medical providers had advised participants and family members on accommodating recovery at home.	Participants needed additional support from medical providers	
"You can't lift over 10 pounds, so, um, they would go with me… either my sons or my husband… Go to school with me and take my books into class and bring 'em outta class…." –P5	Family members increased emotional and functional support to participants through intervention and during recovery.	Social support was increased during recovery process	2. Social support and participants' need for it changed post-event/surgery
"The day after I had the heart attack…they [friends] don't come see me or nothing." – P2	Health and lifestyle changes caused participants to lose certain friends and feel more isolated.	Participants experienced sense of social isolation/limited support during recovery	
"It's like I'm being watched more, or, you know, [they say], 'How you feelin'? You feelin' alright?' [and I say], 'Yeah, I'm fine!'" –P7	Participants report others did not provide the type of support participants wanted during recovery process.	Participants experienced challenges with social interactions and type of social support offered during recovery	
"I was having so much problems breathing sometimes that if I get excited, my chest would start hurting, so I can't breathe like I wanted to because my blood pressure going up and down, up and down, I get tired quick, couldn't-couldn't hardly do nothing I wanted to." –P1	Participants experienced multiple health problems (cardiac and other) and related distress and limitations before cardiac events/surgeries.	Participants had pre-event/surgery health problems	3. Participants' pre- and post-event/surgery experiences affected health outcomes
"By my body adjustin' to certain things and gettin' stronger and stuff, I was able to get, you know them pills, off, off all the pills." –P1	As participants' conditions improved post-intervention, fewer medications, interventions, and medical providers were needed to manage their health.	Participants experienced post-event/surgery health improvements	
"When you have a recovery you have to really take your time, get around slow and stuff like that, and make sure that you got proper rest." –P6	Participants experienced a gradual recovery process during which they adjusted to temporary and permanent accommodations in home environment and routines.	Participants' post-event/surgery limitations called for lifestyle adjustments	

Significant Statements	Formulated Meanings	Thematic Clusters	Emergent Themes
"They was tellin' me in the hospital it [the medication] was like $100. They gave me a free month the first time, and then the nurse gave me like a $50 co-pay card. So, I was thinking, I got $50 from my, one of my family members and he took me up there to get the medicine, and told me $290 and my heart just dropped. I like, 'No way I can afford this.'" –P3	The combination of participants' health-related limitations, weight, medical expenses, and health insurance access have burdened participants' finances and compromised their medical compliance.	Participants experienced some interventions as ineffective or inaccessible post-event/surgery	
I thought about, you know, 'Is this gonna happen again?' That, that stays in my mind a lot [CHUCKLING], you know. Yeah, I'm, I'm concerned about it happenin' again, or, I mean, I'm anticipating – it's like every time I feel a little pain, I'm anticipatin' that, 'Okay, this may be happenin'. And um, so that's, that's the challenge that I'm facin' now as, as far as that.' –P7	Participants felt anxiety about having limited control over and knowledge of their cardiac event, intervention, and outcome.	Unpredictability of health challenges and outcomes affected distress level	4. Participants' sense of agency affected their life perspectives and health behaviors
"I know what I should be doing: get up and walk around more often." –P2	Participants did not follow through with medically-indicated recommendations pre- and post-intervention.	Participants had different levels of proactivity about health and recovery process	
"I really wouldn't have, you know, probably would've die young…This might have been a wake-up call." –P2	Participants' cardiac diagnoses/events/surgeries were wake-up calls that inspired participants to get more serious about their health and turn their lives around.	Cardiac events/surgeries led to lifestyle changes	
"You gotta kinda retrain your tastebuds, in a sense, so it ain't always, 'Okay, I want sugar, sugar, sugar.' I said [to sons], 'cause, um, 'You see people out here who don't have fingers, toes, hands, arms, legs, and they lost it to diabetes.'" –P5	Participants helped – or expressed a desire to help – others using the medical/health knowledge and life lessons they learned from their diagnoses, event/surgery, and recovery.	Passing on new knowledge was a part of participants' recovery process	
"I think it's [CR] very important to help you get, get stronger and back to, not just your own life that you had before heart surgery, but a better life." –P5	Participants received CR information and referral from medical providers, attended CR, and had a positive experience.	Participants experienced health-related successes with CR	5. Participants experienced inconsistent referral to and utilization of Cardiac Rehabilitation
"When I started the rehab thing, um, no disrespect, but when I ain't seen nothing but older people in there, like grandmoms and granddaddys, and I look at my age, I'm saying to myself, 'I shouldn't be in here.'" – P3	Participants felt that working out with others who were older, less physically able, and/or less motivated to be active than themselves threatened to negatively impact their exercise experience.	Participants experienced barriers to CR participation	
"Don't have to do, deal with too many pills, don't have to deal with a whole lotta people, and their problems and stuff. I've just been doing a whole lot, lot better… I ain't supposed to worry about nobody else's problems. All you have to do is just pray about it and just leave it alone." –P1	Participants had existing spiritual challenges that intensified and resolved post-medical intervention.	Participants and families were involved in their faith and faith communities	6. Participants' investment in faith was intensified or maintained
"Every time, you know, stuff'd go wrong, I'd think about my spiritual relationship with God, and, um, and, um, the prayer, and, uh, it's just, like, I, I had no, no fear in believing that I would be alright, you know?... I had no fear that everything would be alright." –P6	Surrendering troubles to God gave participants the strength to move forward through their recovery.	Participants experienced faith as a source of strength and gratitude	

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References

1. American Heart Association. Heart and Stroke Statistics. Retrieved from https://www.heart.org/en/about-us/heart-and-stroke-association-statistics Accessed June 6, 2019.
2. Fryar CD, Ostchega Y, Hales CM, Zhang G, and Kruszon-Moran D. Hypertension Prevalence & Control Among Adults: United States, 2015–2016. NCHS Data Brief. 2017 Oct;(289): 1–8. Jafri, I. (2004). Cardiac Rehabilitation. In S. Cuccurullo (Ed.), Physical Medicine and Rehabilitation Board Review (pp. 670-692). New York, N.Y.: Demos Medical Publishing.
3. American Association of Cardiovascular and Pulmonary Rehabilitation. About Cardiovascular and Pulmonary Rehabilitation. 2014. Retrieved from https://www.aacvpr.org/about/aboutcardiacpulmonaryrehab/tabid/560/default.aspx
4. Jafri I. Cardiac Rehabilitation. In S. Cuccurullo (Ed.), Physical Medicine and Rehabilitation Board Review (pp. 670-692). New York, NY: Demos Medical Publishing; 2004.
5. Brown J, Clark A, Dalal H, Welch K, Taylor R. Patient education in the management of coronary heart disease. Cochrane Database of Systematic Reviews. 2011;6:CD008895.
6. Heran BS, Chen JM, Ebrahim S, et al. Exercise-based cardiac rehabilitation for coronary heart disease. Cochrane Database Syst Rev. 2011;7:CD001800
7. Kwan G, Balady GJ. Circulation topic review: Cardiac rehabilitation 2012. Circulation. 2012;125:e369–e373.
8. Ayala C, Xie J, McGruder HF, Valderrama AL. Receipt of outpatient cardiac rehabilitation among heart attack survivors—United States, 2005. MMWR Morb Mortal Wkly Rep. 2008;57(4):89–94
9. Cortés O, Arthur HM. Determinants of referral to cardiac rehabilitation programs in patients with coronary artery disease: a systematic review . Am Heart J. 2006;151(2):249–256.
10. Suaya JA, Shepard DS, Normand ST, Ades PA, Prottas J, Stason WB. Use of cardiac rehabilitation by Medicare beneficiaries after myocardial infarction or coronary bypass surgery. Circulation. 2007;116(15):1653–1662.
11. Beswick AD, Rees K, Griebsch I, et al. Provision, uptake and cost of cardiac rehabilitation programmes: improving services to under-represented groups. Health Technol Assess. 2004;8(41): iii-iv, ix-x, 1–152 .
12. Evenson KR, Johnson A, Aytur SA. Five-year changes in North Carolina outpatient cardiac rehabilitation. J Cardiopulm Rehabil. 2006;26(6):366–376.
13. Gregory PC, LaVeist TA, Simpson C. Racial disparities in access to cardiac rehabilitation. Am J Phys Med Rehabil. 2006;85(9):705–710.
14. Hannan EL, van Ryn M., Burke J, et al. Access to coronary artery bypass surgery by race/ethnicity and gender among patients who are appropriate for surgery. Med Care. 1999;37:68–77.
15. Ibrahim SA, Whittle J, Bean-Mayberry B, et al. Racial/ethnic variations in physician recommendations for cardiac revascularization. A J Public Health. 2003;93:1689–1693.
16. Peterson ED, Shaw LK, DeLong ER, et al. Racial variation in the use of coronary-revascularization procedures—Are the differences real? Do they matter? N Engl J Med. 1997;336:480–486.
17. Schneider EC, Leape LL, Weissman JS, et al. Racial differences in cardiac revascularization rates: Does 'overuse' explain higher rates among white patients? Ann Intern Med. 2001;135, 328–337.
18. van Ryn M., Burgess D, Malat, J, et al. Physicians' perceptions of patients' social and behavioral characteristics and race disparities in treatment recommendations for men with coronary artery disease. A J Public Health. 2006;96:351–357.
19. Barber K, Stommel M, Kroll J, Holmes-Rovner M., et al (2001). Cardiac rehabilitation for community-based patients with myocardial infarction: Factors predicting discharge recommendation and participation. J Clin Epidemiol. 2001;54:1025–1030.
20. Dickson VV, McCarthy MM, Howe A, et al. Sociocultural influences on heart failure self-care among an ethnic minority black population. J Cardiovasc Nurs. 2013;28(2):111–118.
21. Dickson VV, McCarthy MM, Katz SM. How do depressive symptoms influence self-care among an ethnic minority population with heart failure? Ethn Dis. 2013;23(1), 22–28.
22. Blustein J, Valentine M, Mead H, et al. Race/ethnicity and patient confidence to self-manage cardiovascular disease. Med Care. 2008;46:924–929.
23. Grewen KM, Anderson BJ, Girdler SS, et al. Warm partner contact is related to lower cardiovascular reactivity. Behav Med. 2003;29(3):123–130.
24. Liu L, Newschaffer CJ. Impact of social connections on risk of heart disease, cancer, and all-cause mortality among elderly Americans: Findings from the Second Longitudinal Study of Aging (LSOA II). Arch Gerontol Geriat. 2011;53(2):168–173.
25. Tkatch R, Artinian NT, Abrams J, et al. (2011). Social network and health outcomes among African American cardiac rehabilitation patients. Heart Lung. 2011;40:193–200.
26. Johnson KS, Elbert-Avila KI, Tulsky JA. The influence of spiritual beliefs and practices on the treatment preferences of African Americans: A review of the literature. J Am Geriatr Soc. 2005;53, 711–719.
27. Polzer RL, Miles MS. (2007). Spirituality in African Americans with diabetes: Self-management through a relationship with God. Qual Health Res. 2007;17(2): 176–188.
28. Davis AM, Vinci LM, Okwuosa TM, Chase AR, Huang ES. Cardiovascular health disparities: A systematic review of health care interventions. Med Care Res Rev. 2007;64(Suppl. 5):29S–100S.
29. Sanderson BK, Mirza S, Fry R, Allison JJ, Bittner V. Secondary prevention outcomes among black and white cardiac rehabilitation patients. Am Heart J. 2007;153:980–986.
30. Schneiderman N, Saab PG, Catellier DJ, et al. Psychosocial treatment within sex by ethnicity subgroups in the Enhancing Recovery in Coronary Heart Disease clinical trial. Psychosom Med. 2004;66:475–483.
31. Hildebrandt Koehler AN, Hodgson JL, Dodor BA, Knight SM, Rappleyea DL. Biopsychosocial-spiritual factors impacting African American patients' cardiac rehabilitation referral and participation: A systematic review. J Cardiopulm Rehabil Prev. 2016;36:320–330.
32. Allen JK, Scott LB , Stewart KJ , Young DR . Disparities in women's referral to and enrollment in outpatient cardiac rehabilitation. J Gen Intern Med. 2004;19(7):747–753.
33. Bittner V, Sanderson B, Breland J, Green D. Referral patterns to a university-based cardiac rehabilitation program. Am J Cardiol. 1999;83(2):252–255 .
34. Cannistra LB, O'Malley CJ, Balady GJ. Comparison of outcome of cardiac rehabilitation in black women and white women. Am J Cardiol. 1995;75(14):890–893.
35. Rankin SH. Women recovering from acute myocardial infarction: psychosocial and physical functioning outcomes for 12 months after acute myocardial infarction. Heart Lung. 2002;31(6):399–410 .

36. Young RF, Waller JB Jr, Kahana E. Racial and socioeconomic aspects of myocardial infarction recovery: studying confounds. Am J Prev Med. 1991;7(6):438–444 .
37. Husserl E. The crisis of European sciences and transcendental phenomenology. Evanston, IL: Northwestern University Press; 1970.
38. Creswell JW. Research design: qualitative, quantitative, and mixed methods approaches (3rd ed.). Thousand Oaks, CA: SAGE Publications, Inc; 2009.
39. Mason M. Sample size and saturation in PhD studies using qualitative interviews. Forum Qual Soc Res. 2010:11(3). Retrieved from http://www.qualitative-research.net/index.php/fqs/article/view/1428/3027
40. Morse JM, Barrett M, Mayan M, et al. Verification strategies for establishing reliability and validity in qualitative research. Int J Qual Methods. 2002:1(2):13–22.
41. Colaizzi P. Psychological research as the phenomenologist views it. In Vaile R, King M, eds. Existential phenomenological alternatives for psychology (pp. 48–71). New York, NY: Oxford University Press; 1978.
42. Bernard HR, Ryan GW. Analyzing qualitative data: Systematic approaches. Washington, DC: SAGE Publications, Inc; 2010.
43. Hennink M, Hutter I, Bailey A. Qualitative Research Methods. Washington, DC: SAGE Publications, Inc; 2011.
44. Lincoln Y, Guba E. Naturalistic inquiry. New York, NY: SAGE Publications, Inc; 1985.
45. Collins TC, Clark JA , Petersen LA, Kressin NR. Racial differences in how patients perceive physician communication regarding cardiac testing. Med Care. 2002;40(Suppl 1):I27-I34
46. Lutfiyya MN, Cumba MT, McCullough JE, Barlow EL, Lipsky MS. (2008). Disparities in adult African American women's knowledge of heart attack and stroke symptomatology: An analysis of 2003–2005 behavioral risk factor surveillance survey data. J Women's Health. 2008;17:805–813.
47. Shaw SJ, Armin J, Torres CH, Orzech KM, Vivian J. Chronic disease self-management and health literacy in four ethnic groups. J Health Commun. 2012;17(Suppl. 3),67–81.
48. American Heart Association. Statistical Fact Sheet, 2013 Update: Older Americans & Cardiovascular Disease. 2013. Retrieved from https://www.heart.org/idc/groups/heart-public/@wcm/@sop/@smd documents/downloadable/ucm_319574.pdf