

# Sexual Activity After Acute Coronary Syndrome

## A Qualitative Approach to Patient and Partner Experiences

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**Background:** Little is known about how best to support both patients and their partners in the reengagement of sexual activity (SA) after acute coronary syndrome (ACS), with sparse direct data from the partner on their needs and concerns in the area of SA support. **Objectives:** We undertook a qualitative study to address this gap in the literature through 3 objectives from a patient and partner perspective: (1) to characterize the experience of reengaging in SA post ACS, (2) to identify needs and priorities in the area of SA support post ACS, and (3) to determine whether cardiac rehabilitation (CR) could be an acceptable point of intervention for SA support. **Methods:** Semistructured qualitative interviews were conducted with 6 male patients who were post ACS and their partners (age range, 47–81 years). Patients were criterion sampled from the Alberta Provincial Project for Outcome Assessment in Coronary Heart Disease database. Inductive thematic data analysis was conducted. **Results:** Four themes were identified: “importance,” “support received,” “on their own,” and “wanting support.” Couples reaffirmed the importance of SA pre and post ACS, reported SA support as currently insufficient but articulated ways it could be improved, and reported CR as a current source of SA support but thought there could be room for improvement on the content and delivery of such information. **Conclusions:** This study illustrates the potential value of promoting SA support for both patients who are post ACS and their partners and reports that SA support provided at CR would be viewed as important, needed, and acceptable.

**KEY WORDS:** acute coronary syndrome, cardiac rehabilitation, qualitative research, sexual behavior

Sexual activity (SA) in the context of an intimate relationship can be an important aspect of cardiovascular disease recovery both emotionally and indirectly, physically.<sup>1,2</sup> Having an intimate partner can lead to better emotional support and support for health behavior changes such as smoking cessation and engaging in regular exercise.<sup>2</sup> Previous qualitative research has denoted the importance of SA to patients after acute

coronary syndrome (ACS), stating that SA allowed them to feel close and connected to their partner.<sup>1,3</sup> However, it is also well recognized that ACS can negatively impact SA and that sexual problems and concerns are prevalent in patients and partners after ACS.<sup>4–11</sup> Overall, the experience of ACS can be disruptive to a couple's life, especially with regard to SA.

Survival after ACS has significantly improved for the past several decades in Canada, with overall age- and sex-standardized mortality rates from myocardial

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infarction having dropped by 38% from 1994 to 2004.<sup>12</sup> Most individuals who experience ACS survive the event, and as a result, there has been an increasing focus placed on optimizing recovery and overall quality of life after the event.

Current American and European clinical practice guidelines recommend that some form of SA support be provided to couples after ACS.<sup>13,14</sup> Sexual activity has been found to be safe for patients with ACS, with comparable disturbances to heart rhythm as other daily activities.<sup>15</sup> This SA support should usually be provided before hospital discharge or within a cardiac rehabilitation (CR) program. Many patients, however, are either not receiving SA support or not receiving adequate information.<sup>16,17</sup>

There is evidence that CR has a positive effect on clinical,<sup>18,19</sup> physical,<sup>20,21</sup> psychosocial,<sup>22,23</sup> and other lifestyle<sup>20-24</sup> aspects of a recovering cardiovascular patient. It also provides a location for both patients and partners to receive information regarding exercise, nutrition, risk factor reduction, and psychosocial support. It is posited that the existing infrastructure of CR could provide a promising framework for SA support for both patients and partners.

Sexual activity is an important aspect of quality of life and is important to recovery after a major heart event like ACS.<sup>1</sup> Unfortunately, we know little about how best to support both patients and their partners in the reengagement of SA post ACS, and we have little information provided by the partners of patients who are post ACS on their individual needs regarding SA support. There is also little research including both the patient and partner perspectives on the potential for CR to be a point of intervention for SA support. We undertook a qualitative study to address this gap in the literature through 3 objectives from a patient and partner perspective: (1) to characterize the experience of reengaging in SA post ACS, (2) to identify needs and priorities in the area of SA support post ACS, and (3) to determine whether CR could be an acceptable point of intervention for SA support.

## Methods

The Consolidated Criteria for Reporting Qualitative Research reporting standards were followed.<sup>25</sup> The Joint Health Research Ethics Board at the University of Calgary approved this research (REB17-1905\_MOD2).

The Patient Engagement Framework, developed by the Canadian Institute for Health Research, was used as the methodological approach for this study.<sup>26</sup> This framework focuses on creating meaningful and active collaboration with patients to improve health outcomes and shape the healthcare system.<sup>26</sup> Patients from the Libin Cardiovascular Institute of Alberta Patient to Population advisory group who had lived experience advised on the content and delivery of all interview

materials. One male and one female cardiovascular patient were consulted to ensure all content was comprehensible and appropriate and had strong face validity.

## Participants

Criterion sampling was used to recruit patients who were post ACS and their partners from the Alberta Provincial Project for Outcome Assessment in Coronary Heart Disease database. This database is a provincial registry that contains data on all patients that have had either a cardiac catheterization or a hospital admission to a cardiac care unit since 1995 in the province of Alberta.<sup>27</sup> All registrants are sent a follow-up survey at 1 week post catheterization asking whether they consent to be contacted for future research studies. All persons contacted during the course of this study had provided such consent. Participants were identified as eligible based on the criteria that they were 18 years or older, had a formal diagnosis of ACS, and were located in Calgary, Alberta.

To optimize recruitment, several recruitment strategies were used in this study. Potential participants were first emailed, and those who were interested were screened for eligibility. Participants who were not interested were given the option to declare reasons for nonparticipation. Potential participants were then mailed an invitation letter where they could return a recontact card if they were interested or return a nonparticipation card if they were not. Finally, a media campaign strategy was used (eg, social media and television news media) to recruit potentially eligible participants from the community, because of low recruitment from the provincial registry database sampling method.

Eligible participants were considered if they were male or female, were 18 years or older, had a formal diagnosis of ACS within the past 2 years (ie, unstable angina, ST-elevated myocardial infarction, non-ST-elevated myocardial infarction), were legally married or in a common-law relationship (defined as not legally married but have lived together for a minimum of 3 years) for a minimum duration of 5 years, and had a partner willing to participate. No incentives were offered to the study participants.

## Interview Procedure

Open-ended semistructured qualitative interviews were conducted with both the patient and their partner present, after receiving informed consent from both parties. A single female interviewer (C.A.B.) conducted all participant interviews for her Master of Science thesis project. Interviews were held in a small meeting room at the University of Calgary Foothills Campus.

Interviews were both audio and video recorded where interview criteria followed Rice and Ezzy's<sup>28</sup> recommendation that interview questions be developed from a themed list to follow a semistructured template. Because of the fact that there was 1 interviewer and 2 interviewees,

the video recordings were used to ensure no nonverbal cues were missed and, ultimately, to ensure rigor. There was no relationship established between the researcher and the participants before study commencement, and participants only knew the research was being conducted as a master's level project. Questions covered 4 topic areas: importance of SA before and after the ACS event, barriers and/or challenges faced in regard to reengaging in SA, any support received from the broader healthcare system or specifically from CR regarding reengaging in SA, and what future SA support by the broader healthcare system or specifically from CR should or should not be provided.

After the interview was completed, both patient and partner completed a demographics questionnaire and were debriefed. Field notes were made during the interviews, and summary notes and thoughts were made after the interviews. Interviews were conducted until data saturation was reached. Saturation was defined as when "all major categories were fully developed, showed variation, and were integrated."<sup>29</sup>

### Data Analysis

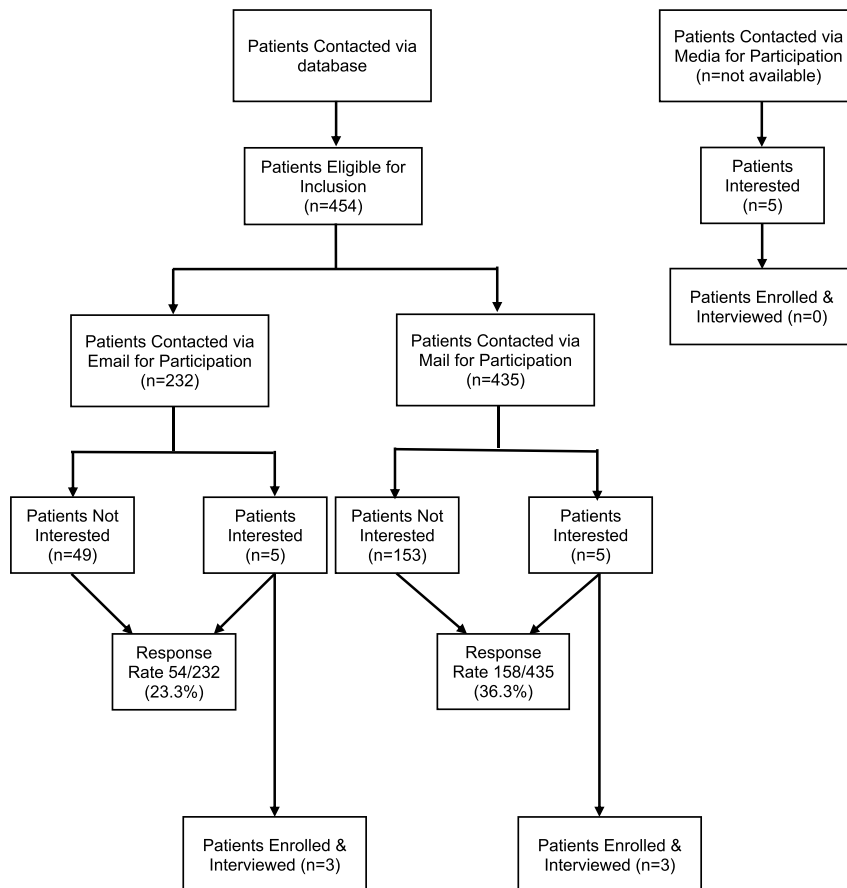
Quantitative demographic data were analyzed using Microsoft Excel, version 16.11.1. Qualitative interview

data were analyzed using NVivo qualitative data analysis software (QSR International Pty Ltd, version 11.4.3).

Results were interpreted with a stakeholder lens such that the multidisciplinary healthcare team that cares for patients who are post ACS and their partners were kept in the foreground as those who would benefit most from this research. Interviews were analyzed using an inductive thematic approach in which themes were obtained gradually from the data. The framework used was based on the semistructured style of the interview guide such that themes were drawn from the 4 main topics of conversation.

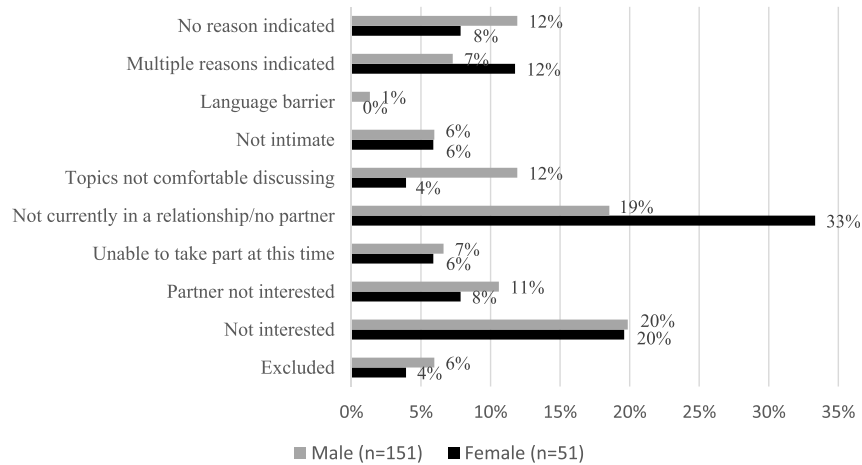
### Results

A total of 454 potential patients were eligible for inclusion in the study from the Alberta Provincial Project for Outcome Assessment in Coronary Heart Disease database (Figure 1). With 2 methods of contact, 232 patients were contacted via email and 435 patients were contacted via mail (213 patients were contacted via both strategies). There was a total response rate of 31.8%. A total of 202 patients responded with reasons for nonparticipation, with the most common reason for



Note. 213 potential participants were contacted via both email and mail

**FIGURE 1.** Qualitative interview enrollment flowchart.



**FIGURE 2.** Participant reasons for nonparticipation.

women being “not currently in a relationship/do not have a partner” and for men being “not interested” (Figure 2). Five potential patients expressed interest in participating in the study via the community media recruitment strategy but either were deemed ineligible or were recontacted with no response.

Demographic and interview characteristics for patients and partners are presented in Table. Interviews were conducted with 6 male patients who were post ACS and their associated 6 female partners ( $n = 12$ ). The median age of all participants was 62.5 years (range, 47–81 years), with 10 participants identifying as White and 2 participants identifying as South Asian. Three patients experienced unstable angina, and 3 experienced at least 1 myocardial infarction in the past 2 to 5 years. Five of 6 patients had received a referral to CR. The video analysis showed that couples were concordant in both verbal and nonverbal expressions of the interview content.

Inductive thematic analysis identified the 4 overarching themes discussed hereinafter (Figure 3):

### Importance

Most couples responded stating that SA was important before ACS diagnosis. One patient stated: “I think really important, always has been” (M5), and 1 patient quantified it by stating, “Well, on a scale of 10, I’d say an eight” (M1). Most partners agreed as exemplified by partner M3, who stated: “Clearly, we have four children, we only meant to have two....” There were, however, 2 partners who stated that they had different answers than the patients in terms of SA importance. One partner stated: “We have different answers...it’s not [important], ... I mean if I could avoid it I would” (partner M4) and “Yeah, I am perfectly happy without” (partner M6).

In terms of importance of SA post ACS episode, most couples agreed that it was just as important before as after. One patient stated: “I’d say equally as important but I think it’s been, it’s certainly been affected” (M2). One

other patient and one other partner agreed by stating that SA importance post ACS was “The same. Nothing’s changed” (M5) and “It’s the same thing” (partner M6).

Change around SA post ACS was found to be minimal by most patients. M3, M4, M5, and M6 reported limited change in regard to their SA and/or desire for SA. Interestingly, partners M5 and M6 were more

**TABLE** Participant Demographic and Interview Characteristics ( $n = 12$ )

Characteristic	
Age, median (range), y	62.5 (47–81)
Sex	
Male	6/12
Female	6/12
Gender	
Male	6/12
Female	6/12
Ethnicity	
White	10/12
South Asian	2/12
Cardiac event (patients)	
Myocardial infarction	3/6
Unstable angina	3/6
Marriage duration, median (range), y	40 (27–52)
No. children, median (range)	2.5 (1–4)
Highest level of education	
No degree, certificate, diploma	1/12
High school diploma	2/12
College or nonuniversity	2/12
Bachelor degree	4/12
Master’s degree	3/12
Employment status	
Full-time	3/12
Retired	7/12
Homemaker	1/12
Cardiac rehabilitation referred (patients)	5/6
Cardiac rehabilitation attended (patients)	
Yes, attended 100% of program	4/6
Yes, attended 50% of program	1/6
No, did not attend program at all	1/6
Interview length, mean (SD), min	46.38 (10.68)

apprehensive and stated: “I think it's changed” and “Yes. A little bit [of change],” respectively.

### **Support Received**

There were multiple healthcare system locations that patients and partners reported as providing some SA support post ACS.

### **Pamphlet at Discharge**

Two couples were provided with a pamphlet at discharge (M3 and M6). Partner M3 stated, “So she [nurse] handed us that little pamphlet and then said, oh, you can look at that on your own,” and M6 stated, “You read in a brochure but nobody counselling us.” M3 mentioned that the pamphlet stated: “...You are healthy enough to re-engage in sexual activity when you can climb two sets of stairs without any chest pain.”

### **Cardiologist**

M2 and M4 received some information from their cardiologist, where partner M2 brought the conversation up and M4's cardiologist mentioned when it was safe to reengage in SA. M2 stated that the cardiologist's response was “...Something to the effect of whenever you feel you are ready,” and M4 stated that the cardiologist's response was “...You're free to engage in sex about one month after the heart attack...feel free to, in case you are worried about it, feel free to partake and participate....”

### **Cardiac Rehabilitation**

M1 and M2 stated that SA was mentioned during a presentation to a group at CR where “...there was a lecture and there was a little chat around—it was not a lot” (M2). M2 also stated that there was a brief discussion where “...you could ask questions if you wanted I mean, I would not say great forum for us to ask questions but....” M2 stated that CR did provide a “chapter [on SA support] in their book that they got there,” and M1 stated they too received support from the “cardiac rehab binder.” Partners M1–M3 reported attending CR with

the patients and reiterated the importance of “supporting your partner” during their recovery.

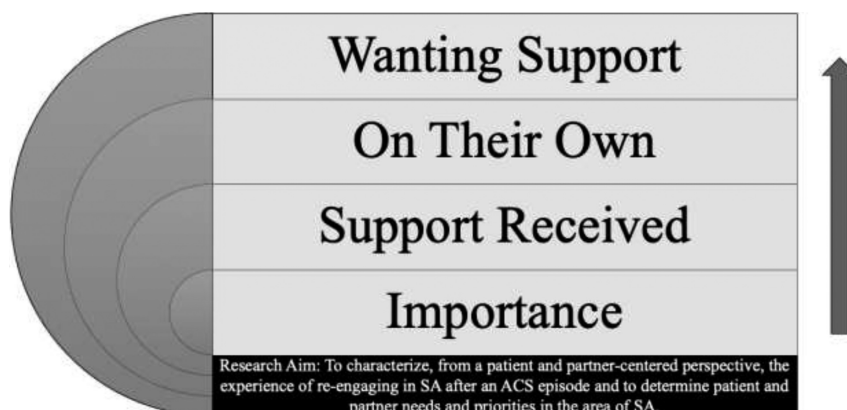
### **Other Points of Intervention**

One couple stated that their family physician was the point of contact for SA support. The topic was brought up with partner M5 (not the patient) and was out of the context of M5's ACS episode. Moreover, 2 couples (M2 and M4) mentioned there was a conversation with a pharmacist around potential sex-related side effects of some of the drugs the patients were prescribed.

### **On Their Own**

The third major theme outlines the degree to which couples thought they were “on their own” in regard to SA support post ACS. A majority of couples (M1, M2, M4, M5, and M6) thought they were provided with very little SA support post ACS. M2 stated: “...Well to me I mean the whole system is lacking in the sexual activity.” Specifically, M1, M2, M4, and M5 found there was “nothing” or “limited support” upon discharge from the hospital, and M1, M3, and M4 found CR also provided limited SA support. At CR, the information received around reengaging in SA was “...More like, do not worry be happy” (M1) and “It was good, but they did not talk about sex, nobody talked about sex once” (partner M3). Many couples thought they were on their own in terms of accessing resources around SA and knowing when it would be safe to reengage. Partner M2 stated: “Oh. I found out from this experience that you absolutely have to be your own advocate.”

M1 and M3 did state, however, that they received adequate information around SA support, which could be due to the less severe ACS episode that was experienced by both patients. M3 stated: “I am, yeah [satisfied with support received], I thought it was addressed as well as it possibly could be.” Although M3 and his partner stated positive satisfaction with the healthcare system providing SA support, it would seem that they made the decision on their own to resume SA and



**FIGURE 3.** Qualitative overarching themes.

“did not feel hard done by” the lack of SA support provided as “by then, we were having sex again.”

### **Trial and Error**

A few couples mentioned that they used a “trial-and-error” approach to reengaging in SA. M2 mentioned that “after you did not drop over the first time, okay, and we both said well okay, did not kill us, told you.” This alludes to the fact that patients and partners had to take matters into their own hands when it came to reengaging in SA and were under the impression that “if it still works...okay...here we go” (partner M4).

### **Paralleling to Physical Activity**

A few patients mentioned that they drew a parallel between their physical activity abilities and their reengagement in SA. M1 stated that, once he could walk up a hill that he could do before his ACS episode, he used that as “my measure about where my heart was at” and, therefore, when it would be safe to resume SA. Similarly, M3 went for “walks around the mall” and M4 mentioned his ability to “bike and go for a walk” to ensure they would be physically able to reengage in SA.

### **Partner Follows Lead**

Partners played a crucial role in when SA would resume for the couple. Most partners would follow the lead of the patient to decide when it would be safe to reengage in SA. Partner M2 stated: “Well I would say at the end of the day, it was like kind of when [M2] thought comfortable....” Partner M5 even adjusted her expectations: “Not to expect [M5] to perform like you know one, two, three, go....”

### **Barriers and Challenges**

Some couples thought there were physical and psychological barriers and challenges experienced during reengagement of SA, and some couples disagreed. Those who experienced less severe heart events (M1, M3, and M5) reported less challenges such that M1 mentioned: “I did not experience any kind of pain or pressure when we had sexual activity before my heart procedure...and of course we did not have any after” and “I did not really feel any anxiety either....” However, those who had more severe heart events (M2, M4, and M6) did report some challenges related to “physical capabilities” such as an inability to hold an erection (M6). A common theme by most couples, especially partners, was “fear and anxiety” of reinfarction during SA and around when it would be safe to resume SA (M2, and partners M2, M3, M4, M5, and M6). These barriers and challenges seemed to be heightened when little SA support was received as couples were left on their own when it came to making decisions around SA. Partner M1 stated that “...which we did not know [how or when M1 would be treated] and that adds some anxiety too for me.” Furthermore, partner M2 reported some anxiety around reengaging in SA stating,

“Well I was worried about it...,” and thus initiated the topic with M2's cardiologist herself rather than wait for other SA support. M2 also reported frustration with the lack of information provided around physical activity and SA stating, “...If everybody's so afraid of physical activity, to me that only lends to the fear around sexual activity.”

### **Wanting Support**

Finally, the fourth major theme outlined the want for SA support and specifically where, by whom, what, and how this information should be provided. All couples stated that more support would be welcomed in regard to SA. Partner M2 stated, “...I still would have thought it would have been helpful to understand kind of what's the process around re-engaging [in SA],” and partner M3 stated, “...It should have been I think a little more forthright....”

### **Where**

Couples M1, M2, M4, M5, and M6 stated that at hospital discharge would be an appropriate place to be provided with some sort of SA support. M1 cited: “...So probably when you get discharged from the hospital but there is a lot going on when you are in the hospital.” M2, M3, M5, and M6 also mentioned that CR would be the ideal place to bring up a conversation surrounding SA. Partner M3 stated that “...I will say that [CR] was the time to be talking about sex...” and that “...Seven minutes or five minutes even, and you could have conveyed almost all the information you had to convey....”

### **Who**

Partners M2 and M6 stated that the cardiologist would “make sense as a good spot to talk about it” (partner M2). M1 even mentioned: “...Yeah in the big scheme of things I would probably prefer to get it from my family doctor because that will be an environment where things have levelled out some, there is not as many other pressures and distractions.” M6 showed support for the team at CR to provide SA support by stating, “Or the rehab people, the rehab would be probably better.”

### **What**

M5 and partner M2 specifically stated that a “checklist” of dos and don'ts could provide “kind of indicators when you are kind of ready or is there risk...” (partner M2). It seems patients are looking for a “metric” or list of limitations when it comes to reengaging in SA. M2 mentioned that receiving SA support makes sense to be paired with physical activity support, which he recognized to be “the basis of everything” and “work hand in hand [with SA].” Most couples also stated that receiving written literature in the form of a pamphlet (M1, M2, M4, M5, and M6) or attending an informational session (M4 and M5) would be beneficial. Couple M3 did receive a pamphlet upon discharge and stated:

“...That went as far as it really needed to, and probably further than it needed to for us.” Couple M6 mentioned that any SA support should be a holistic conversation in that other aspects such as intimacy and affection should also be included (ie, not only physical penetration).

### How

It seems that couples are worried about potential distractions and a feeling of being rushed when receiving SA support. In turn, some couples mentioned that SA support should be multidisciplinary in that they could receive information at different times and locations along the recovery process. M1 stated: “...I think it's got to be more than just a conversation...you need to hear the things more than once.” M5 even stated the importance of bringing SA support up at hospital discharge and then again at CR because “it's all part of the fact that you have exercise and stress management and put [it in] the whole package.” Moreover, partner M1, partner M3, and M6 mentioned the idea of having one-on-one support as an important aspect to receiving SA information.

The importance of delivery of content was brought up by every couple. M4 stated that the information should be provided in a way that everyone “can read to understand it.” Partner M1, partner M4, and M6 denoted that the comfort levels of the couples should be considered before SA support is provided such that “I think for people that aren't as comfortable as this that they may need that piece of paper or brochures sent along just so they have that information” (partner M1). Some couples mentioned that the healthcare provider should gauge the comfort level or interest before providing SA support (partners M4 and M6) or even provide information so that “it is there if they want it” (M4, partner M4, and M6). Even gauging the appropriateness of information for couples of different ages (M6 and partner M6), different ethnicities and cultures (partners M4 and M6), and/or different severity of events was also brought up (M1–M6). Partners M4 and M6 also denoted that SA support discharge packages could be catered to these different contexts such that they can be “specific to what they need or want” (partner M4) and that it would up to the couple to pursue further support if they required it (partner M6).

## Discussion

This research is the first, to our knowledge, to gain perspectives simultaneously from both patients and partners on CR as a potential point of intervention for SA support. Previous qualitative studies on this topic have interviewed women only,<sup>1,3,11</sup> patients only,<sup>10,30,31</sup> or healthcare workers only<sup>17,32</sup> but lack in both patient and partner perspectives. Partners play a key role as a caregiver in the recovery process post ACS<sup>13</sup> and are

integral to the intimate relationship as a whole. Other qualitative research has denoted that spouses of patients who have undergone cardiac surgery experience extensive stress and often feel their needs have been pushed aside.<sup>33</sup> This study fills this gap in knowledge by providing insights from partners on the plausibility of receiving SA support within CR.

This study provides affirmation that SA is indeed important to most patients and partners post ACS. Couples are concerned about SA and report it to be an important component of a healthy lifestyle post ACS. Couples thought that the support provided for SA post ACS was insufficient, but they articulated several ways that education of SA after ACS could be improved. Many couples were left to their own judgment of when it was safe to reengage in SA and had little support from the healthcare system. It was acknowledged that discharge was a hectic process and, as such, SA support should be addressed at multiple times through the recovery process, potentially upon discharge from hospital and once again at CR. Moreover, CR was identified as a current source of SA support, but couples thought there was room for improvement on the content and delivery of such SA information.

This research adds to the literature by reaffirming that, despite the fact that current guidelines recommend that SA support be provided to both patient and partner post ACS,<sup>13</sup> couples are not receiving enough information and are often left to their own judgments without formal clinical advice. Perhaps even more unfortunate is that there is evidence to suggest that there is a significant disconnect between what healthcare teams believe they are providing in the way of SA support and what patients actually receive.<sup>30</sup> In this study, couples made decisions on when to reengage in SA based on subjective metrics such as their usual physical abilities as an extension of sexual abilities and partners gauging energy levels and symptoms of the patient. Although these metrics are similar to current recommendations on when to resume SA, there was limited formal conversation or resources provided to the couples by a healthcare professional, and many couples reported that it would have been welcomed.

Couples reported that they were eager to receive some sort of SA support, preferably in a multidisciplinary way. The importance of content and delivery of SA support was also brought up and showcases the diversity of those receiving this information. Couples reported that the information could be tailored to those who actually wanted SA support information, followed by information that was easy to understand, evidence based, and appropriate for their age, ethnicity, and severity of ACS.

Many couples framed how they wanted future SA support to be provided by expressing their concerns for how future couples may differ from them. Couple M2 expressed their support for SA information to be

### What's New and Important

- Sexual activity was important to participants before and after ACS, but there was insufficient SA support provided post ACS.
- Cardiac rehabilitation would be an acceptable point of intervention for SA support.
- This research enhances the potential value of promoting SA support and could have strong implications for future SA support initiatives for both patients who are post ACS and their partners.

provided at CR but also mentioned that “not everybody goes.” Moreover, M5 (who experienced a less severe ACS event) reported that the healthcare system should provide SA for people in general, despite the information he received being adequate. This concern for whether others would receive SA support reinforces that couples believed this information to be important and that a greater effort should be made to deliver such support.

### Strengths and Limitations

This study has limitations. There is risk of sampling bias because there may be fundamental differences between the couples who came forward to participate in the interviews and those who did not, which may limit generalizability to those who are comfortable discussing the topic of SA. The homogenous demographics of this sample limits generalizability to couples of different ethnicities, cultures, and sexual orientations (eg, lesbian, gay, transgender). One of the main limitations of this study was the fact that no female patients with ACS and their partners were successfully recruited. The reluctance of women to participate in this study was an unexpected but important finding. It is also noteworthy that, whereas all male patients in this study viewed SA as important, 2 female partners were indifferent about SA (partners M4 and M6). It therefore cannot be said with certainty whether perspectives between men and women would be similar, and thus, female patients who are post ACS and their partners should be interviewed in future research in this area.

One of the main strengths of this study was that nonparticipation proportions and reasons for nonparticipation were assessed for both men and women who were contacted as eligible participants (post ACS but declined participation). Fifty-one women who were post ACS gave reasons for nonparticipation, and the most common response was that they were “not currently in a relationship” or “did not currently have a partner.” It has been found that, in all regions of the world, ACS occurs nearly a decade later in women compared with men.<sup>34</sup> It is plausible that women were perhaps not participating because of eligibility criteria (ie, women outliving their partners and therefore did not have a partner with whom to participate) rather than hesitation. Future iterations

of this research could perhaps interview women alone who have had a long-term partner in the past but are currently widowed or single.

### Conclusion

In conclusion, this study characterized patient and partner experiences reengaging in SA post ACS and found that there was importance placed on SA before and after ACS. In addition, it was found that there was insufficient SA support provided and that CR would be an acceptable point of intervention for SA support because it currently does provide some support but is lacking in content and delivery. This research enhances the potential value of promoting SA support and could have strong implications for future SA support initiatives for both patients who are post ACS and their partners.

### REFERENCES

1. Sundler AJ, Dahlberg K, Ekenstam C. The meaning of close relationships and sexuality: women's well-being following a myocardial infarction. *Qual Health Res*. 2009;19(3):375–387.
2. Rankin-Esquer LA, Deeter AK, Froeliche E, Taylor CB. Coronary heart disease: intervention for intimate relationship issues. *Cogn Behav Pract*. 2000;7(2):212–220.
3. Söderberg LH, Johansen PP, Herning M, Berg SK. Women's experiences of sexual health after first-time myocardial infarction. *J Clin Nurs*. 2013;22(23–24):3532–3540.
4. Dalteg T, Benzein E, Fridlund B, Malm D. Cardiac disease and its consequences on the partner relationship: a systematic review. *Eur J Cardiovasc Nurs*. 2011;10(3):140–149.
5. DeBusk R, Drory Y, Goldstein I, et al. Management of sexual dysfunction in patients with cardiovascular disease: recommendations of the Princeton Consensus Panel. *Am J Cardiol*. 2000;86(2):62–68.
6. Meston CM, Gorzalka BB, Wright JM. Inhibition of subjective and physiological sexual arousal in women by clonidine. *Psychosom Med*. 1997;59(4):399–407.
7. Rerkpattanapipat P, Stanek MS, Kotler MN. Sex and the heart: what is the role of the cardiologist? *Eur Heart J*. 2001;22(3):201–208.
8. Akdolun N, Terakye G. Sexual problems before and after myocardial infarction: patients' needs for information. *Rehabil Nurs*. 2001;26(4):152–158.
9. Kriston L, Günzler C, Agyemang A, Bengel J, Berner MM. Effect of sexual function on health-related quality of life mediated by depressive symptoms in cardiac rehabilitation. findings of the SPARK project in 493 patients. *J Sex Med*. 2010;7(6):2044–2055.
10. Mosack V, Steinke EE. Trends in sexual concerns after myocardial infarction. *J Cardiovasc Nurs*. 2009;24(2):162–170.
11. Abramssohn EM, Decker C, Garavalia B, et al. "I'm not just a heart, I'm a whole person here": a qualitative study to improve sexual outcomes in women with myocardial infarction. *J Am Heart Assoc*. 2013;2(4):e000199.
12. Tu JV, Nardi L, Fang J, Liu J, Khalid L, Johansen H. National trends in rates of death and hospital admissions related to acute myocardial infarction, heart failure and stroke, 1994–2004. *CMAJ*. 2009;180(13):E118–E125.
13. Steinke EE, Jaarsma T, Barnason SA, et al. Sexual counselling for individuals with cardiovascular disease and their partners: a consensus document from the American Heart Association and the ESC Council on Cardiovascular Nursing and Allied Professions (CCNAP). *Eur Heart J*. 2013;34(41):3217–3235.



14. Steinke EE, Jaarsma T. Sexual counseling and cardiovascular disease: practical approaches. *Asian J Androl.* 2015;17(1):32–39.
15. Drory Y, Fisman EZ, Shapira Y, Pines A. Ventricular arrhythmias during sexual activity in patients with coronary artery disease. *Chest.* 1996;109(4):922–924.
16. Bedell SE, Duperval M, Goldberg R. Cardiologists' discussions about sexuality with patients with chronic coronary artery disease. *Am Heart J.* 2002;144(2):239–242.
17. Steinke EE, Patterson-Midgley P. Sexual counseling of MI patients: nurses' comfort, responsibility, and practice. *Dimens Crit Care Nurs.* 1996;15(4):216–223.
18. Martin BJ, Hauer T, Arena R, et al. Cardiac rehabilitation attendance and outcomes in coronary artery disease patients. *Circulation.* 2012;126(6):677–687.
19. Alter DA, Oh PI, Chong A. Relationship between cardiac rehabilitation and survival after acute cardiac hospitalization within a universal health care system. *Eur J Cardiovasc Prev Rehabil.* 2009;16(1):102–113.
20. Lidell E, Fridlund B. Long-term effects of a comprehensive rehabilitation programme after myocardial infarction. *Scand J Caring Sci.* 1996;10(2):67–74.
21. Roviato S, Holmes DS, Holmsten RD. Influence of a cardiac rehabilitation program on the cardiovascular, psychological, and social functioning of cardiac patients. *J Behav Med.* 1984;7(1):61–81.
22. Engblom E, Hämäläinen H, Lind J, et al. Quality of life during rehabilitation after coronary artery bypass surgery. *Qual Life Res.* 1992;1(3):167–175.
23. Ross AB, Brodie EE, Carroll D, Niven CA, Hotchkiss R. The psychosocial and physical impact of exercise rehabilitation following coronary artery bypass surgery. *Coronary Health Care.* 2000;4(2):63–70.
24. Bertie J, King A, Reed N, Marshall AJ, Ricketts C. Benefits and weaknesses of a cardiac rehabilitation programme. *J R Coll Physicians Lond.* 1992;26(2):147–151.
25. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care.* 2007;19(6):349–357.
26. Canadian Institute of Health Research. Strategy for Patient-Oriented Research (SPOR) patient engagement framework. 2014. <http://www.cihr-irsc.gc.ca/e/48413.html>.
27. Ghali WA, Knudston ML. Overview of the Alberta provincial project for outcome assessment in coronary heart disease. on behalf of the APPROACH investigators. *Can J Cardiol.* 2000;16(10):1225–1230.
28. Rice PL, Ezzy D. *Qualitative Research Methods: A Health Focus.* Melbourne, Australia: Oxford University Press; 1999.
29. Corbin J, Strauss A. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory.* Thousand Oaks, CA: SAGE Publications Inc; 2015.
30. D'Eath M, Byrne M, Doherty S, McGee H, Murphy AW. The cardiac health and assessment of relationship management and sexuality study: a qualitative inquiry of patient, general practitioner, and cardiac rehabilitation staff views on sexual assessment and counseling for cardiac patients. *J Cardiovasc Nurs.* 2013;28(2):E1–E13.
31. López-Medina IM, Gil-García E, Sánchez-Criado V, Pancorbo-Hidalgo PL. Patients' experiences of sexual activity following myocardial ischemia. *Clin Nurs Res.* 2016;25(1):45–66.
32. Vassiliadou A, Stamatopoulou E, Triantafyllou G, Gerodimou E, Toulia G, Pistolas D. The role of nurses in the sexual counseling of patients after myocardial infarction. *Health Sci J.* 2008;2(1):111–119.
33. Agren S, Frisman GH, Berg S, Svedjeholm R, Strömberg A. Addressing spouses' unique needs after cardiac surgery when recovery is complicated by heart failure. *Heart Lung.* 2009;38(4):284–291.
34. Yusuf S, Hawken S, Ôunpuu S, et al. Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study. *The Lancet.* 2004;364(9438):937–952.