REVIEW ARTICLE

EXPLORING SOCIAL SUPPORT FOR WOMEN COPING WITH A CARDIAC REHABILITATION PROGRAMME AFTER ACUTE CORONARY SYNDROME: A SYSTEMATIC REVIEW OF QUALITATIVE STUDIES

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Objective: **Female sex is a major barrier to completing a programme of cardiac rehabilitation (CR) after acute coronary syndrome (ACS). Women require significant social support to promote compliance and the ability to cope with CR programme attendance. The aim of this systematic review of qualitative studies was to explore social support among women coping with CR programme attendance at phase II CRP is 3 months after their cardiac event.**

Methods: **Articles were searched through CINAHL (Cumulative Index and Allied Health Literature), Science Direct and PubMed databases using the following terms: "women", "acute coronary syndrome", "coping", "social support" and "cardiac rehabilitation".**

Results: **A total of 6 articles were selected based on eligibility criteria. Thematic analysis was used to analyse the data using line to line coding into descriptive themes, interpreting further to generate new insights. The 3 most common themes regarding social support for women attending the CR programme were: family support, female as the primary caregiver in the family, and peer support. For most women who perceived themselves as the primary caregiver in the family there was a negative impact on their ability to cope fully with CR programme attendance. On the other hand, encouraging support from family and peers positively improved their coping mechanism for attending the CR programme, leading to improved compliance.**

Conclusion: **Women with ACS consider that support from their family plays a vital role as a coping mechanism in their attendance at a CR programme. Healthcare providers should teach the importance of social support among women after discharge to help them cope with CR programme attendance.**

Key words: social support; women; cardiac rehabilitation; acute coronary syndrome.

LAY ABSTRACT

Women face a major obstacle to coping with a programme of cardiac rehabilitation (CR) after a cardiac event. In order to promote attendance at a CR programme, women often require significant social support to ensure compliance with the programme. This review evaluated the results of 6 studies that explored women's experiences and their coping process in attending an outpatient CR programme after a cardiac event. The review found that family support, being female as the primary caregiver in the family, and peer support are the main social supports for compliance with an outpatient CR programme. Women who were extensively involved as the primary caregiver in their families had difficulty complying with attendance at the outpatient CR programme. On the other hand, women with good support from family and peers had better compliance. Therefore, healthcare providers should initiate strategies for promoting good social support among women on an outpatient CR programme in order to enhance compliance with attendance.

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Social support refers to the emotional and material resources provided to an individual through interpersonal communication. Social support is a mutual process and a source of interaction that provides comfort, assistance and encouragement. It enhances successful compatibility, improves satisfaction, enables an efficient life, and is associated with numerous psychological benefits, such

as improved self-confidence, a sense of empowerment, efficiency, and quality of life (1). Social support is viewed as an interpersonal influence and a cognition focused on other individuals' behaviours, beliefs, or attitudes (1).

Acute coronary syndrome (ACS) is a major cause of death and burden among women worldwide (2). According to Malaysian Annual Report of the National Cardiovascular Database – Acute Coronary Syndrome (NCVD-ACS) Registry 2014–2015, the majority of men (50.5%) presented with ST-segment elevation myocardial infarction (STEMI), whereas the majority of women (70.8%) presented with non-ST elevation acute coronary syndrome (NSTE-ACS). NSTE-ACS encompasses both unstable angina (UA) and non-ST-elevation myocardial infarction (NSTEMI). Gender roles among women, such as childcare and providing and maintaining households, may lead them to make use of informal networks that are more available seeking information. Gender roles among women such as child care, providing and maintaining households, may lead them to use informal networks that are more available to seek information. However, interpersonal factors among women may also affect the selection of treatment resources (2).

A CR programme is an outpatient approach to the secondary prevention of heart disease, which comprises structured exercise, comprehensive education, and counselling. A CR programme is a recommended protocol for the treatment of cardiovascular disease (CVD) and has evolved from simple patient monitoring to a multidisciplinary approach focusing on patient education, tailored exercise programmes, modifications of patients' risk factors, and overall well-being (3). A CR programme is indicated when the patient is already stabilized after sustaining a coronary event and is initiated prior to leaving hospital. It comprises 3 phases; phases I, II and III, which refer to the time since the coronary event.

Phase I of the CR programme occurs within the first 6–8 weeks and focusses mainly on patient education and ensuring safe discharge home with medications, lifestyle modification, and an individualized limited physical activities plan. The first phase is mostly performed within the home environment. The primary objective of phase II is to deliver close monitoring in the outpatient setting while the patient receives more extensive physical training. Here, intensive rehabilitation training is conducted at regular intervals within a period of 8–12 weeks, with outpatient attendance between 1 and 3 times per week. The main goal for the final phase III is to promote patient empowerment for managing their own cardiac health in the long-term. In this review, women attending phase II of the CR programme were included for study selection and analysis (4).

CR programmes are under-utilized among older woman, obese individuals, those with multiple comorbidities, lower exercise capacity, less social support, lower education level, and competing family obligations (5). Previous studies have shown that 38% of women after surviving myocardial infarction (MI) died due to lack of emotional support compared with 11.5% of those with 2 or more sources of support (6). Social support provided by healthcare professionals for women after being discharged from a hospital influences this process (7).

This paper outlines the thematic analysis approach used for conducting a systematic review of qualitative studies with the main objectives of exploring social support for women coping with attendance at phase II of a CR programme after being diagnosed with ACS. Social support from family and peers received by women will help them to regain confidence, enabling a smooth recovery processes, and helping them to bridge the gap between their roles and attendance in the CR programme.

METHODS

Search strategy

Two reviewers searched the following terms: "woman" OR "women" AND "acute coronary syndrome" AND "cardiac rehabilitation" OR "cardiac rehab" AND "coping" AND "social support" through CINAHL (Cumulative Index and Allied Health Literature), Science Direct, and PubMed databases, to identify publications from the 2006 to 2019. Study selection was performed in 3 phases: first, duplicate studies were deleted; secondly, a selection of potentially related articles was made based on the title and abstract, which was hand-searched by the 2 authors; thirdly, a final selection was made after reading the full-text articles.

Eligibility criteria

The inclusion criteria were qualitative articles written in English conducted among women attending phase II of a CR programme after being diagnosed with ACS. The diagnosis is based on acquiring a MI event followed by the percutaneous coronary intervention (PCI) and/or coronary artery bypass graft (CABG). Articles that included participation experiences from a phase II CR programme as one of the outcomes were selected. Quantitative and mixed methods studies, women diagnosed with non-ACS conditions, such as UA or heart failure, thesis dissertations, case reports/series, and review articles were excluded. Participants were also involved and participated in phase II of a CR programme conducted in hospitals.

Quality appraisal

The Critical Appraisal Skill Programme (CASP) tool was used to appraise each selected article (8). This tool

includes 2 screening questions and 8 detailed questions regarding study design, sampling, reflexivity, ethical issues, data analysis, findings, and research value. The studies are rated as high, medium, and low quality when the article meets at least 8 of the 10 criteria, 5–7 criteria, and 4 or fewer criteria, respectively (9). Assessment was carried out by the primary reviewer and confirmed by a secondary reviewer. Any discrepancies were discussed and resolved by consensus with a third reviewer.

Data extraction, analysis and synthesis

The characteristics of each study were listed during the data extraction stage, consisting of author(s) and year of publication, aims of the study and country of origin, participants and age, data collection method and analysis, and outcome findings. Thematic analysis was used to analyse selected studies. Line by line coding was applied to develop succinct themes. The codes were then examined to enable the material to be organized into descriptive themes. These themes were gradually interpreted further and analytical themes were generated that offered new insights or interpretation.

In a qualitative study, trustworthiness should be highlighted. Trustworthiness involves credibility, transferability, dependability, and conformability. Credibility ensures the study is measuring an accurate reflection of the social reality of the attendees. Transferability denotes the ability of the research to be moved to the background of the settings. Dependability denotes that there is sufficient detail to carry out another search. Comparability is comparable to the objectivity of the quantitative study (10).

RESULTS

The total number of papers returned in the initial research was 727 (Fig. 1). After removing duplicate papers, articles were screened based on eligibility criteria through the study title and abstract. A total of 33 articles were retrieved for eligibility assessment before including the final 6 articles for qualitative synthesis.

Characteristics and methodological quality of selected studies

All selected 6 studies were categorized as high quality based on the CASP tool (Table I). The studies selected for this review reported their objectives clearly and findings comprehensively (7, 11–15). The choice of appropriate qualitative research design and study statements aims to address the research questions. The semi-structured interviews and focus groups used in the studies were suitable to collect data from participants. The summary and characteristics of selected studies are outlined in Table II. The most common themes identified from the review were integrated into insights: family support; female as primary caregiver for family; and peer support, as outlined in Table III.

All 6 studies received approval from their respective ethics boards, prior to the data collection process adhering to the principles of the Declaration of Helsinki. None of the studies described the relationship between the researcher and participants clearly (7, 11–15). The recruitment strategies were not clearly defined and described in all the studies. However, for all studies, the authors used representative quotations to support their findings.

Theme 1: Family support

Support from family emerged as the first insight from the qualitative studies on women's experiences in CR to promote their recovery process. This insight was integrated with support received from the family, appreciating social life, determining need for social support, preventing another MI, and contextual factors. The authors of 5 studies reported that women valued support from their family and friends as vital to their daily life and essential for their recovery. Some women valued that their partners accompanied them when attending the CR programme, and could understand how the women might feel following an MI (7, 12, 14, 15).

A qualitative study (7) explored how the women's recovery processes are promoted after the first MI among 26 women, whereby 10 were performed by telephone and 13 face to face. Before data collection, purposive sampling was utilized to recruit cardiac rehabilitation nurses (CRNs) at 10 hospitals in Sweden. Data were analysed using thematic analysis. The overall theme of appreciating a new life with a related second category of "Appreciating social life" reported that women felt grateful through talking to their respective partners and children. By talking, the women perceived that the burden of housework could be shared; thus, this generated feelings of support, and being treated with respect inspired strength.

Similarly, the authors of other reviewed studies also reported on gender and family caregiver roles (12–14), and explored women's experiences of a CR programme. Sutantri et al. (14) examined factors that influence women's attendance in phase II of a CR programme among 23 Indonesian women. Semi-structured interviews were conducted to elicit data, which were then analysed using thematic analysis. Information regarding ethics considerations and the rigor of the research were obtained. Theme 1, which looked at performing social roles, demonstrated that heart disease had a significant impact on their illness, preventing women from performing gender roles and

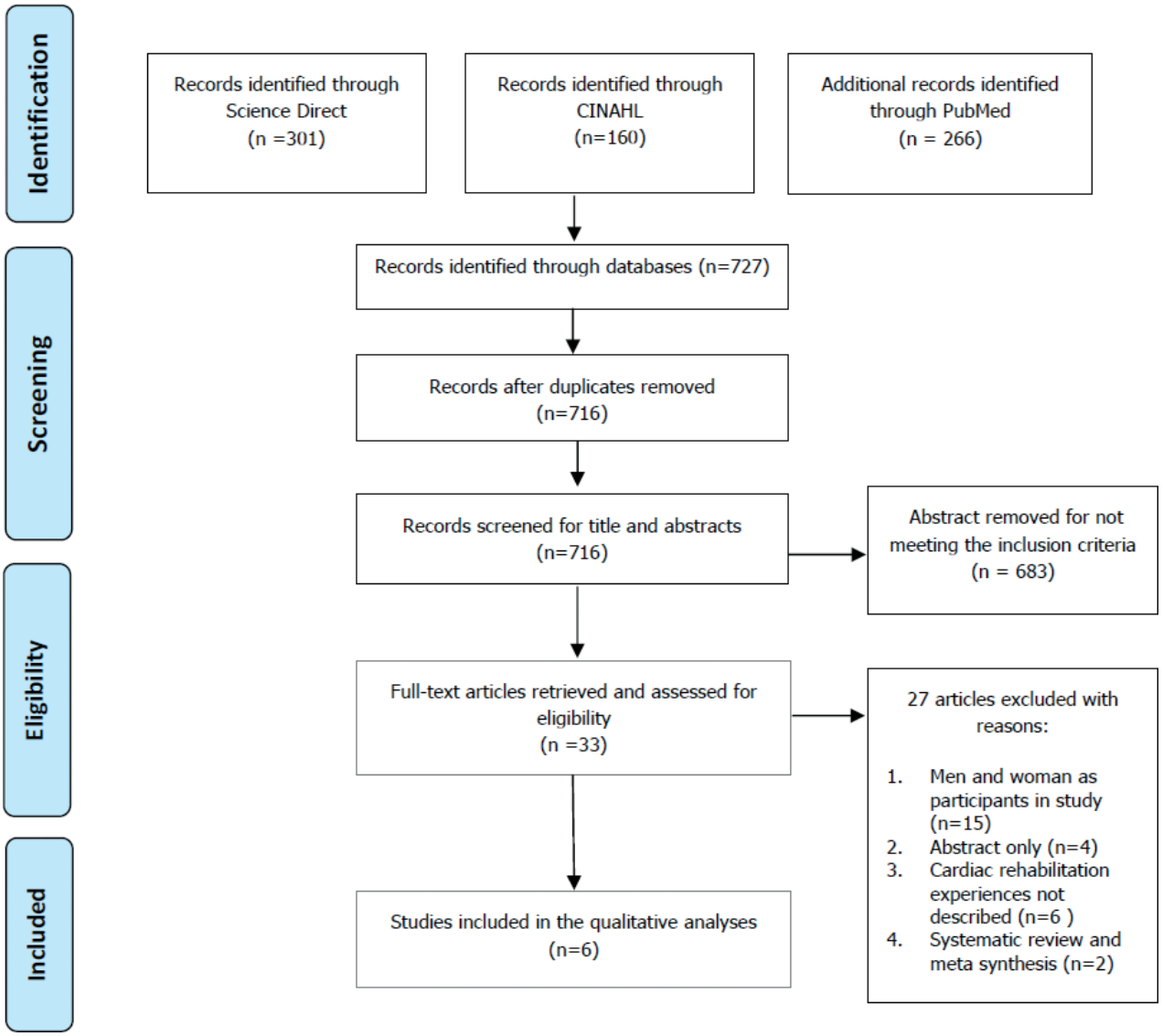

Fig. 1. Screening and selection of studies for the review.

responsibilities ascribed to them in their family life. These women expected that participating in CR would restore them to their former responsibilities in their family, which were disrupted by the cardiac event (14).

Theme 2: Female gender as primary caregiver in the family

Gender and family caregiver roles were the first insights to emerge from the qualitative studies on women's experiences during a CR programme in promoting their recovery process. These insights were perceived as such, based on the typical female roles as the primary caregiver. The authors of 4 reviewed studies reported that women experienced the need to protect their respective families from being overly concerned about their illness. The CR programme provided women with information on coronary diseases and how to control the risk factors. Still, some women felt that their caregiving responsibilities interfered with their participation in the CR programme, causing them to drop out of the programme.

A qualitative study was conducted among 10 women in Spain to explore their perceptions of their CR programme dropout. Before data collection, purposeful and theoretical sampling was utilized to recruit participants, with the help of nurses working at 3 CR centres. Women participants who met the inclusion criteria who dropped out of a CR programme were recruited at any time-point. Thematic analysis was used to analyse the transcripts. The authors found several views from the women who dropped out of the CR programme even though they had attended a few sessions. One of the factors was interpersonal reasons

Table I. Characteristics and findings of the selected studies

Author/Country	Aims	Number and age range of participants, *n*, years	Data collection, analysis	Thematic findings
Resurreccion et al. (27) Spain	To explore women's perception regarding the reasons they dropped out of attending the CR PROGRAMME at 3 different CR centres in Spain	10, 41–70	Semi-structured interview with thematic analysis	Five themes were identified: Theme 1: Intrapersonal reasons: Interpersonal health Theme 2: Interpersonal reasons: Family caregiver role, work conflicts Theme 3: Logistic reasons: Transport, Distance Theme 4: Characteristics of CR programme reasons Theme 5: Health system reasons
Wieslander et al. (7) Sweden	To explore how women's recovery processes are promoted after MI	26, 45–74	Open-ended interviews/ telephone interviews/ content analysis	One main theme with 3 subthemes were identified: Theme: Approaching a new perspective of life Subtheme 1: Approaching new perspectives on life Subtheme 1: Engaging in Activities Subtheme 2: Appreciating social life Subtheme 3: Mobilizing own resources
Pullen et al. (15) UK	To provide an analysis of how women think about their illness and CR and examine how this relates to their decisions about whether to attend a CR PROGRAMME.	8, 51–76	Semi-structured interviews/ principles of interpretative phenomenological analysis (IPA)	Five themes from accepting group: Theme 1: Making sense of the poor and understanding Theme 2: Determination and needed social support Theme 3: Emotional reactions Theme 4: Control Theme 5: Positive value of cardiac rehabilitation Five themes from the declining group: Theme 1: Previous cardiac history and co-morbidity Theme 2: Independence Theme 3: Anxiety Theme 4: Cause and control conflict Theme 5: No need for cardiac rehabilitation
Sutantri et al. (14) Indonesia	To explore factors that influence women's attendance of a phase II CR programme in Indonesia.	23, 32–66	Semi-structured interview/ framework analysis	Three themes with 7 subthemes: Theme 1: A bridge to normal Subtheme 1.1: Making my heart work again Subtheme 1.2: Performing social roles Theme 2: Connecting with others: being in the same boat Subtheme 2.1: Exchanging knowledge and experience Subtheme 2.2: Developing a give and take the relationship Theme 3: Contextual factors Subtheme 3.1: Recommendations from staff Subtheme 3.2: Support from family Subtheme 3.3: Availability of health insurance
Day & Batten (13) New Zealand	To investigate women's perceptions of the contribution of CR to their recovery from CR.	10, 50–89	Semi-structured in-depth interviews/ constant comparative analysis	Two themes were identified: Reframing a continue of recovery Theme 1: Regaining everydayness through a basic social process of Theme 2: Reframe their lives
Schou et al. (12) Denmark	To describe the experiences of women who participated, and those who did not participate in CR after MI.	6, 59–81: 3 participated in CR (focus group 1); 3 did not participate in CR (focus group 2)	Focus group interviews/ constant comparative analysis	Three categories were identified: Category 1: Crises Category 2: Preventing another coronary (MI), Category 3: Gender roles and family life

CRP: cardiac rehabilitation programme; CR: cardiac rehabilitation; MI: myocardial infarction.

Table II. Quality appraisal of selected articles based on CASP tool

Items	Resurreccion et al. (27)	Weislander et al. (7)	Pullen et al. (15)	Sutantri et al. (14)	Day & Batten (13)	Schou et al. (12)
1. Was there a clear statement of the aims of the research?	+	+	+	+	+	+
2. Is a qualitative methodology appropriate?	+	+	+	+	+	+
3. Was the research design appropriate to address the aims of the research?	+	+	+	+	+	+
4. Was the recruitment strategy appropriate to the aims of the research?	+	+	+	+	_	_
5. Was the data collected in a way that addressed the research issue?	+	+	+	+	+	+
6. Has the relationship between the researcher and participants been adequately considered?	+	_	+	+	?	?
7. Have the ethical issue taken into considerations?	+	+	+	+	+	+
8. Was the data analysis sufficient rigorous?	+	+	+	+	+	+
9. Is there a clear statement of findings?	+	+	+	+	+	+
10. How valuable is the research?	+	+	+	+	+	+
Score /10	10	9	10	10	9	8

+: Yes, currently met; – : No, clearly not met; ?: Not known.

Table III. Common themes extracted from each selected article

Themes	Resurreccion, et al., 2018[27]	Weislander et al., 2016[7]	Pullen et al., 2009[15]	Sutantri et al., 2019[14]	Day & Batten, 2006[13]	Schou et al., 2008[12]	Total
Barriers to attend Phase II of CRP							
Intrapersonal reasons:							
Self-reported health	+	-	-	-	-	-	1
Caregiver role of family	+	-	-	+	+	+	4
Work conflicts	+	-	-	-	+	-	2
Logistic reasons:							
Transport	+	-	-	-	-	-	1
Distance	-	-	-	-	-	-	0
CRP characteristics:							
perception of CRP objective	+	-	-	-	-	-	1
perception of exercise component	+	-	-	-	-	-	1
perception of CRP equipment	+	-	-	-	-	-	2
Health system reasons:							
Financial assistance	+	-	-	-	-	-	1
Long waiting list	-	-	-	-	-	-	0
Perceived features of CRP							
Managing crises	-	-	-	-	-	+	1
Preventing another myocardial infarction	-	-	-	-	-	+	1
Connecting with others:							
Being in the same boat	-	-	-	+	-	-	1
Exchanging knowledge and experience	-	-	-	+	-	-	1
Developing a give and take the relationship	-	-	-	+	-	-	1
Regaining Peer support	-	-	-	+	+	-	2
Contextual factors:							
Recommendations from staff	-	-	-	+	-	-	1
Support from family	-	+	+	+	-	+	4
Availability of health insurance	-	-	-	+	-	-	1
Making my heart work again	-	-	-	+	-	-	1
Being part of the group	-	+	-	+	-	-	2
Performing social roles	+	-	-	+	+	+	4
Engaging in activities	-	-	-	-	-	+	1
Appreciating social life	-	+	+	+	-	+	4
Lack of choices when exercising	+	-	-	-	-	-	1

with the subtheme of the family caregiver role. This factor significantly interfered with their participation in the CR programme, thereby leading the women to drop out of the programme (11).

A qualitative study with grounded theory study (13) was conducted on women's perceptions of the contribution of a CR programme to their recovery from MI, purposively among 10 women admitted to 2 New Zealand North Island hospitals who were referred for phase II of the CR programme. Semi-structured in-depth interviews were conducted to obtain the data. The interview was analysed using constant-comparative analysis, which was then analysed using the constant-comparative using explicit coding and analytic procedures. Although a substantive theory did not emerge, the findings were based on assumptions in which women framed their experiences of their MI. The core category theme of "regaining everydayness" emerged from the data. Thus, participants worked to regain their everydayness through a fundamental social process of "reframing" their lives to incorporate their MI experience. One of the participants shared the cause of MI and how this has impacted her daily life because she had to carry out all the household chores as her partner was unwell, which attributed stress to herself and was implicated in MI. Cardiac rehabilitation assisted this by providing information about possible causes, in which participants were able to identify a possible reason for their own MI (13).

Women's conventional role in the family challenges their participation in a CR programme after a cardiac event, as they would like to protect their respective families from being over-concerned about their illness. A qualitative study to describe the experiences of women who participated and those who did not participate in a CR programme after MI was conducted at the Unit of Cardiac Rehabilitation, in 1 of the hospitals in Denmark (12). Focus group interviews were conducted among three women who participated (focus group I) and three who did not participate (focus group II). Data were analysed using constant comparative analysis. The findings reported some categories of crises, preventing another MI, gender roles and family life.

The authors of the 4 reviewed articles reported that gender roles and family caregiver roles were important factors in women's participation in CR programme after a coronary event (11–14). These women reported that their caregiver role disrupted their involvement in the CR programme due to inconvenient timing with household chores, which eventually led them to drop

out of the programme (11). After being discharged from hospital, female cardiac patients quickly resume their house chores, such as looking after the home, husband and children, cleaning, preparing meals and washing clothes (12). Being able to re-engage with what was were long-established as "feminine" tasks were a crucial driver for participants attendance in the CR programme (14). CR plays a vital role in women's recovery from an MI, as the programme provided them with some information and causative factors and helped explain what had happened to them (13).

Gaining the support of family during a CR programme enhanced women's participation, as the support received from family assisted in practical aspects in fulfilling their obligations as a primary caregiver. Furthermore, assistance from friends for those women whose family lived a long distance away also helped to reduce the burden in their daily life and chores to ensure that that they did not miss CR programme sessions. Therefore, support from family and friends was expressed as a great relief in reducing their stress from being the primary caregiver. The women stated that they received a great deal of support from their spouses and family members following a cardiac event (14). Social support from family and friends is an essential predictor for participation in CR programme.

In another study (12) women expressed that, after a coronary event, they struggled to adjust to their roles as spouses and parents. Therefore, they tried to maintain their role in their respective families to avoid burdening them with their illness, by putting on an act that they were doing well and coping with their illness. The women protected their family members from being over-concerned about their illness and tried to maintain the role of mother and grandmother. This reflected social gender instilled norms that were present from early childhood, which influence development of the women's psyche, behaviour, awareness and identity. Therefore, support from family and friends was expressed as a great relief in reducing the stress of being the primary caregiver. Indeed, this was implicated as a vital factor in their attendance.

Theme 3: Peer support

Peer support was the third insight that emerged from the qualitative studies on women's experiences of a CR programme to promote their recovery process. The authors of 3 reviewed studies found peer support was an important factor in motivating women, regaining everydayness, and sustaining their participation in a CR programme (13–15). Women considered that interaction with other participants during the CR programme sessions was an important dimension of the programme. Increasing the opportunities for women to interact with fellow programme members may decrease their boredom and fulfil their need to talk with others who are experiencing the same health problems (15).

In one of the themes: "Connecting with others who are in the same boat" in 1 study (14), participants explained their primary reasons for attending and continuing their participation in the CR programme was that they had the opportunity to regularly meet and interact with another patient. They described that meeting other patients with similar conditions helped to reduce their feelings of alienation and gave them a sense of normality. Furthermore, they stated that the interaction, discussion, and exchanges with peers became a source of moral support. They described this as "being in the same boat". Participants in another study (12) expressed a need for peer support that was not met by attending phase II of the CR programme. Participants in a further study (7) reported the possibility to develop new perspectives on life relating to behavioural, social and psychological dimensions. The social dimensions concerned how the women in their social environment received support from family, friends, peers and healthcare professionals, which provided them with support and the opportunity to share thoughts with peers in the same situation. On the other hand, women also associated church associates as a significant provider for their social support in attending a CR programme. Several participants expressed isolation as if they had nothing in common with other people in their CR programme group (13).

DISCUSSION

This systematic review shows that women's experiences during participation in CR programmes for their recovery process after a coronary event are influenced by gender and caregiver roles, family support, and peer support. Following discharge from hospital, female cardiac patients quickly resumed their household chores, such as looking after their children, cleaning, preparing meals, washing clothes, etc. (12). For many women, this is seen as more important than their participation in the CR programme (16). The desire for these women to return to "everydayness" must be considered. Supporting women to regain their daily roles and responsibilities may make them feel more positive (17). Women considered the CR programme as a bridge to prepare them to return to their everyday lives and restore them to their conventional social position. This conclusion reflects the findings of previous studies in the USA and Canada, which reported that the intrinsic motivation of women's attendance at a CR programme was to reclaim their independence so as not to be a burden on their families (18).

An interpretative phenomenological analysis (15) examined how women think about their illness and CR programme. They analysed how this relates to their decision about whether to attend the CR programme, using purposive sampling among 8 women (5 accepted to attend and another 3 declined to participate in the CR programme). Under the theme 'determination and needing social support", the attending participant expressed that it was important to be personally motivated to participate in the CR programme and they required support. Family support was essential for assisting their return to daily activities. Therefore, it is possible to conclude that recognizing the need for control over the condition, identifying and receiving social support and valuing the role of CR programme are fundamental in the decision to attend the programme. Family support appears to be an essential facilitator of the women's attendance. Previous studies have demonstrated that women receive less family support than men (19).

Support from family became a significant factor that led to women's participation in, and completion of, the CR programme. This support helped them to cope with the immediate impact of their illness and positively influenced their decision to attend the CR programme. An essential everyday dimension in women's recovery is their relationships with other people. Women value support from family and friends and share their thoughts with other women in the same situation (20, 21). Social support from health professionals and family members plays an essential role in the CR programme following a coronary event. The literature has focused almost exclusively on spousal support. However, psychosocial adjustment during CR programme can stem from various support sources, such as adult children, extended family, friends, and broader social networks, particularly among women (19). Social support from a spouse has generally been shown to have a protective role in cardiac recovery and provide an incentive to participate in a CR programme (19). Furthermore, family members, irrespective of ethnicity, felt they needed advice and professional support from healthcare professionals in order to perform the role of carers' more effectively (22).

Peer support during participation in CR has strengthened women's attendance. Completing attendance in CR will enhance smooth recovery of patients and increase their level of independence. Research also has shown that women valued social interactions during CR programme more than men, and appreciated the opportunity for information exchange more than men (23). Making friendships with others was a significant phenomenon that participants considered empowering and which facilitated recovery during CR. The relationship with other women was identified as equal and non-hierarchal, in contrast with the medical provider-patient relationship (24). The feeling of hopelessness and having the opportunity to help others with a similar cardiac condition helped these women develop mutual relationships and a form of space in which they could share their concerns and experiences.

This review suggests that the gender and family caregiver role, family support, and peer support are influential factors that need to be addressed to ensure that women's participation in CR programme is completed successfully and to enable a speedy recovery process. The implications of these findings to the nursing practitioner may include introducing and designing a unique CR programme for women only. This might enhance the participation of female participants more effectively. A modified CR programme intervention for "women only" should be designed. Careful planning and structuring must be introduced in the content and delivery. Healthcare providers involved in developing the programme will need to incorporate flexibility, create a women-friendly environment, and ensure that participation benefits women from all ethnic groups. A 1-day workshop could be planned with a multidisciplinary group of nurse educators, cardiologists, rehabilitation physicians, physiotherapists, and occupational therapists to design the programme's content. A "women only" CR programme was found to reduce depressive symptoms among female attendees (25), and women attending this particular type of CR programme were more comfortable in their workout clothes compared with those attending a mixed-sex CR programme (26). Many women randomly assigned to home-based CR did not adhere to their treatment allocation (27). A "women only" CR programme may improve female participation rate in CR programmes and hence enhance the positive recovery process for women.

Although the quality of evidence was overall fair, some limitations were notable in this review. Firstly, a limitation was recognized as the approach to qualitative synthesis with limited analysis of sex, age and ethnic group membership from a diverse populations (28). Most of the studies were confined to high-income countries and middle-income countries with well-funded CR programmes within excellent healthcare systems. Furthermore, the articles were purely qualitative studies; thus, it was not possible to rank the themes into objective analyses in the form of figures for the factors identified in the findings. Therefore, several large clinical trials were eliminated because women were not analysed separately.

Secondly, the screening of the chosen studies was within a period of 10 years, which yielded only 6 studies according to the study settings. Therefore, the findings of this study were difficult to generalize to the

contextual background, especially for Asian countries, where the facilities might be more limited compared with developed countries with established rehabilitation centres for a CR programme with greater benefits. Further research is needed to assess the behavioural, social and psychological dimensions for women coping with a CR programme of their reasons for non-participation and their related family role. Participants should not be selected only from local participants, but considerations should also be given to the other age group of women and immigrants. In addition, studies should determine the facilitators provided by healthcare professionals in supporting these women in order to ensure their continued commitment towards their CR programme. Barriers that might affect how they cope with a CR programme, such as logistics issues, need to be addressed. Gender and culturally sensitive issues, such as dropouts and non-participation among women in Asian countries, must be explored further.

Thirdly, to reduce the possibility of bias in this study, in the selection and synthesis of the extracted data for the review, a detailed and comprehensive search was conducted by 2 reviewers. This could help in selecting more relevant articles that meet the review objectives, so that the findings can be generalized to the targeted population.

CONCLUSION

The current systematic review identified 3 common factors affecting the ability of women to cope with a CR programme after being diagnosed with ACS. Shared experiences allowed women to deliver their views on gender and their family caregiver role, family support and peer support as the factors that encourage women to attend and cope with a CR programme. shared experiences will enable women to cope with the expectations of CR when participating in it and to adhere to the CR programme. Therefore, the perceptions of women towards CR should be utilized to empower them to comply with attending phase II of the CR programme.

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