

RUNNING HEAD: Synthesis of activity barriers and facilitators with breast cancer

## Barriers and facilitators to participating in physical activity for adults with breast cancer receiving adjuvant treatment: a qualitative meta-synthesis

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## Abstract

*Objective:* Physical activity can improve the health and well-being of individuals receiving adjuvant treatment for breast cancer, but engagement in physical activity can be low. This review synthesises the barriers and facilitators to engaging with, and participating in physical activity whilst receiving treatment.

*Methods:* The meta-synthesis of qualitative studies is reported in line with the PRISMA statement. We systematically searched eight databases (MEDLINE, EMBASE, CENTRAL, PsycINFO, CINAHL, British Library, OpenGrey and Conference Proceedings Citation Index) from inception to November 30, 2017. A total of 1276 abstracts were retrieved and screened by two reviewers independently. Data from eligible studies were extracted and critically appraised. As this review concerns qualitative studies only, a CER-QUAL GRADE assessment was completed.

*Results:* A total of 13 studies were included. Four clear themes emerged (*side effects of treatment; beliefs about physical activity; focus on health not illness; social factors*) each containing both barriers and facilitators. Key facilitators to participating in physical activity during adjuvant treatment included positive physical benefits, improvements in psychological well-being and increased self-esteem and empowerment. Further, having a knowledgeable instructor, tailored information and a supportive environment were important to women undergoing treatment. Main barriers included fatigue and pain, as well as work and caring responsibilities.

*Conclusions:* Incorporating physical activity into treatment regimens is important. Focusing on being less sedentary and providing accurate, tailored information should be prioritised within future interventions. Having a supportive environment and accounting for the particular barriers or facilitators to engagement identified here should aid the success of future interventions.

## **Barriers and facilitators to participating in physical activity for adults with breast cancer receiving adjuvant treatment: a qualitative meta-synthesis**

### **Background**

Breast cancer is the most common cancer in women worldwide and the second most common cancer overall<sup>1</sup>. There was an estimated 2.09 million new breast cancer diagnoses worldwide in 2018<sup>2</sup>. Individuals may receive adjuvant cancer treatment following surgery to reduce the risk of cancer recurrence and this treatment often consists of chemotherapy, radiotherapy and/or hormone therapy depending of the severity of the cancer<sup>3</sup>. Unpleasant symptoms and side effects including pain, fatigue and neutropenia are common when receiving cancer treatments<sup>4,5</sup>. Thus, undergoing treatment for breast cancer can affect a person's activities of daily living and reduce their quality of life<sup>6</sup>.

Physical activity refers to any movement caused by contracting muscles that increases energy expenditure and can include household chores, recreational activities or more structured and planned activities<sup>7</sup>. The intensity and frequency of physical activity are also important considerations. The National Institute for Health and Care Excellence<sup>8</sup> and the World Health Organisation<sup>9</sup> recommend that all adults should participate in at least 150 minutes of moderate intensity physical activity per week. The benefits of physical activity in individuals receiving adjuvant cancer treatment are reported within the literature, including improvements in quality of life, physical functioning and cardiorespiratory fitness, as well as reduced fatigue<sup>10-14</sup>. Consequently, physical activity is an internationally recognised recommendation for individuals with cancer, including women undergoing adjuvant treatment for breast cancer<sup>9,15</sup>.

Despite the potential benefits of participating in physical activity, research has shown that engaging in physical activity and healthy lifestyle behaviours reduce in individuals receiving treatment for breast cancer, and lower levels of engagement often continue once treatment has finished<sup>16</sup>. Studies have explored the barriers and facilitators to engaging in physical activity in individuals receiving adjuvant cancer treatment. Frequently reported barriers include fatigue, the fear of worsening symptoms<sup>16,17</sup> and time<sup>18</sup>, whereas improved wellbeing and social support<sup>19</sup> are the facilitators commonly reported. However to our knowledge a systematic review, which synthesises and consolidates the barriers and facilitators to gain a more comprehensive understanding of the issues affecting engagement to physical activity whilst receiving adjuvant treatment, has not been undertaken. Thus, we aimed to appraise and synthesise primary research relating to individuals' experiences of, and the barriers and facilitators to, engaging in physical activity whilst receiving treatment for breast cancer.

## **Method**

We have reported our review in line with the PRISMA guidance<sup>20</sup> and thematic synthesis procedures<sup>21</sup>. The protocol for the meta-synthesis was finalised by researchers in November 2017 prior to data search and extraction commencing.

### ***Eligibility criteria***

Studies were eligible for inclusion if they reported qualitative findings (including qualitative or mixed methods study designs) of the experiences of physical activity in individuals with breast cancer (invasive carcinoma and in situ disease; men and/or women), who were either undergoing treatment or were within 12 months of receiving treatment. We included papers reporting the findings from mixed samples (e.g., individuals with colon cancer or breast cancer) if findings were reported separately for each group. We did not limit studies by year, but only studies reported in

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English were included as we did not have access to translation resources and wished to avoid misinterpreting any qualitative data.

### ***Search strategy***

We developed the search strategy using the terms based on the population (e.g., breast near/**n** cancer), intervention (e.g., physical activity, exercise therapy) and outcomes (e.g., facilitator\*, barrier, experience\*) (see Appendix 1 for full list of search terms and an explanation of the Boolean and proximity operators). We searched: MEDLINE, EMBASE, CENTRAL, PsycINFO, CINAHL, British Library, OpenGrey and Conference Proceedings Citation Index from inception to 30 November 2017. We reviewed the references of the included studies.

### ***Data collection and analysis***

#### *Selection of studies*

We managed references in EndNote (Clarivate Analytics, Philadelphia) where we identified and removed duplicates before importing the references into Covidence Systematic Review Software (Melbourne). Two reviewers independently screened and reviewed the titles, abstracts and full texts; and were in agreement 96% of the time. Full agreement was achieved through review team discussions.

#### *Data extraction*

Two reviewers' extracted the data independently before subsequently consolidating the data extraction centrally. At this point any disagreements or discrepancies in data extraction were resolved through discussion with a third reviewer. The extraction sheet was informed by our aim and objectives and was piloted prior to use. We extracted the following information:

- Title
- Aims/objectives
- Study design
- Country of study
- Participant characteristics (inclusion and exclusion criteria, age, diagnosis)
- Physical activity intervention (frequency, duration, setting, mode of delivery)
- Data relating to key concepts and themes
- Funding source.

Where necessary the corresponding author was contacted for additional information.

#### *Critical appraisal of included studies*

Two reviewers independently assessed the quality of the included studies using the Critical Appraisal Skills Program<sup>22</sup> with reviewers in agreement 84% of the time with a moderate kappa score of .46. Given the nature of qualitative data synthesis the two indicators in combination indicate that the appraisal process was robust<sup>23</sup>. Any discrepancies were resolved through discussion with the wider research team. In addition, the evaluative criteria proposed by Yardley<sup>24</sup> was also applied as a further assessment of methodological quality. Yardley's criteria are developed specifically for application to qualitative research within a health context and comprises an assessment of sensitivity to context; commitment and rigour; transparency and coherence, and impact and importance.

#### *Data synthesis*

We analysed both narratives and participant quotes and synthesised the data thematically<sup>21</sup>. The quotes presented are the participant quotes. Inductive thematic analysis enables a systematic and

transparent approach to data analysis and facilitates rich data-driven themes<sup>25</sup>. The thematic synthesis involved coding the text, developing 'descriptive themes' (similar to those included in the primary studies) and generating 'analytic themes' to produce new interpretations<sup>21</sup>. Two reviewers (JL, SA) independently coded all of the data inductively and discussed all codes with the wider team to ensure that the coding framework remained true to the participants' quotes.

To ensure trustworthiness throughout this process, we have presented a narrative account of the synthesis and illustrated each theme using quotes taken directly from the included studies. A clear and transparent audit trail is provided which details the reflexive approach and team discussions of the findings. As health psychologists working with a variety of health conditions in different healthcare settings, we were aware of the influence this may have on our interpretations. Thus we reflected on and critically appraised our interpretations through open discussions, where alternative interpretations were explored. We assessed the confidence in the individual review findings using the four components included in the GRADE-CERQual framework: methodological limitations; coherence; adequacy of data; relevance<sup>26</sup>, and this information is summarised in a qualitative findings table (see Table 1).

*- suggest insert table 1 here -*

## **Findings**

The initial search generated 1276 records and a total of 13 met the criteria for inclusion in the review (Figure 1).

*- suggest insert figure 1 here -*

## **Study characteristics**

The included studies present qualitative data on the barriers and facilitators to engaging in physical activity in women with breast cancer only, not men with breast cancer. The characteristics

of each study are presented in detail in Appendix 2. The data were collected between 2007 and 2017 from a total of 598 women aged between 27 to 94 years. Studies were conducted across eight countries (Australia, Canada, Finland, Malaysia, Norway, Sweden, UK, and USA). Eight studies collected data from women who had participated in a specific physical activity intervention<sup>17, 27-33</sup>. The physical activities included in the interventions varied, some involved home-based activities and/or group interventions and aerobic and/or resistance-based exercises. The duration of the physical activity interventions ranged from eight weeks<sup>29</sup> to 12 months<sup>31, 33</sup>. The remaining five studies collected data from women with a focus on participating in physical activity more generally<sup>18, 34-37</sup>.

### **Critical appraisal**

The summary of the critical appraisal is shown in Table 2. All studies were assessed as having a clear statement of aims, and most demonstrated sensitivity to context, commitment and rigour by employing and reporting the appropriate qualitative methodology. The relationship between the researchers and participants was rarely reported, and this affected the transparency and coherence of the studies. It is not clear whether, and how, authors dealt with issues of reflexivity when collecting and analysing the data, which is important when considering how the researchers may have influenced the outcomes and does raise issues over risk of bias. Impact and importance relate to the theoretical, sociocultural and practical contributions of the studies, and was demonstrated in 11 of the studies. All of the studies provided a clear statement of findings and a valuable contribution to the barriers and facilitators to participating in physical activity during adjuvant treatment for breast cancer.

*- suggest insert table 2 here -*

### **Meta-synthesis results**



The data that contributed to the perceived barriers and facilitators to physical activity in individuals with breast cancer were similar across the included studies and were captured in four themes: side effects of treatment; beliefs about physical activity; focus on health not illness; social factors. There are both barriers and facilitators within these four themes, and we have described each theme and provided exemplar data extracts in Appendix 3.

### ***Side effects of treatment***

The severe and debilitating side effects of cancer treatment and individuals' concerns about the potential adverse effects of physical activity were reported as barriers to participating in physical activity in most studies (10/13). Fatigue, nausea, pain and shoulder stiffness were frequently reported. Low mood during treatment was reported less often (4/13), but it appeared to act as a barrier to physical activity in those reporting low mood. Symptoms such as fatigue "interfered with daily living and exercise". Having to prioritise time to enable the completion of the activities deemed to be necessary, and postpone those considered as additional, was present in most studies (10/13).

Side effects of treatment were reported to increase with the number of chemotherapy sessions leading to heightened concerns that treatment side effects would worsen with physical activity (e.g., they may become more fatigued):

*"The first three cycles I exercised twice a week but after the third one I felt worse and it felt more difficult, and I had to reduce the activity level" 27.*

However, in practice, physical activity appeared to improve the side effects experienced by the participants (e.g., fatigue, pain, low mood):

*“Exercise is essential in recovery. Slowly, slowly but my quality of life would be poor without it—both physically and mentally”* <sup>35</sup>.

### ***Beliefs about physical activity***

All of the participants in the included studies reported a desire to be healthy, but many were reluctant to engage in physical activity due to risk perceptions and fears about their safety.

Moreover, many of the women perceived their relatives to be concerned about the effects of exercise and uncertain about how safe activities are.

The information received from healthcare professionals, booklets and the internet appeared to affect the individuals' beliefs about physical activity. The provision of information about both the benefits and complications of physical activity was often reported as being vague, inconsistent or non-existent and increased the women's concerns and their reluctance to participate in physical activity. Much of the information the women received, either through reading resources or speaking to their healthcare professional, focused on complications such as lymphedema, rather than the benefits of safe activities. Receiving and/or reading 'conflicting' information about the safety of being physically active resulted in some individuals being “afraid of getting lymphedema” or doing “irreparable damage”. However, not receiving information advocating physical activity can lead to fears about the effects of physical activity and can leave individuals, their family and friends feeling concerned and reluctant to be physically active:

*“to begin with he [husband] was a bit sceptical...he was one of the ones who would say, ‘sit down, put your feet [up] and don't do too much’”* <sup>28</sup>.

Other beliefs that acted as barriers to physical activity included age, with women thinking that they were too old to exercise (3/13) or that they were not the “sporty” type. Physical activity was described as exercise that is “formally organised” and “structured” in nine studies and the participants explained that this did not appeal to them. Moreover, some activities were viewed as being “tougher to uphold” than others and “a bit strenuous”:

*“My clinician said that ‘I have to exercise’...I started a gym-based exercise programme but it does not feel natural, no matter how hard I try, I just can’t seem to do it”<sup>35</sup>.*

The benefits of being physically active and beliefs about the positive effects of physical activity during treatment were reported as facilitators in 11 studies. For example, some women viewed physical activity as a preventative measure that would reduce the likelihood of recurrence in the future:

*“There has been research on reoccurrence of the cancer, and that is what drives me!”<sup>30</sup>.*

However, feelings of guilt and anxiety were reported in four studies among individuals who were not able to be active.

### **Focus on health not illness**

In all studies it was apparent that the women focused on improving their health and well-being and many viewed physical activity as a “tool for maintaining and recovering health”. Being physically active provided a routine, distraction and “challenge”. In intervention studies, talking about cancer during the physical activity sessions was considered “optional”, as the members of the group seemed to be more focused on health and well-being, which provided the opportunity to “forget their illness for a while” and not just be “the cancer patient”. Having a “functioning body” was described as “empowering”. Physical activity can increase feelings of “self-

appreciation” through setting and achieving goals, providing a sense of pride and enabling individuals to begin to trust their body’s again:

*“You felt you were doing something FOR yourself...whereas other things are being done TO you and it gives you a wee bit of control”<sup>28</sup>.*

Consequently when developing and delivering physical activity interventions a holistic approach that incorporates improving well-being alongside self-affirmations is necessary, rather than purely focusing on physical activity and the physical benefits.

The physical impact of having breast cancer was reported in 10 studies and having a breast removed or losing hair can leave women feeling like they had “lost their femininity” and sense of self. Participating in physical activity “awakened a new interest in a healthy lifestyle” and many of the women saw this as an opportunity to redefine themselves and gain a sense of independence. For example, women can talk to family, friends and colleagues about physical activity rather than focusing on cancer. Having additional things to talk about can add to a sense of well-being and enable them, and others, to see beyond their cancer and treatment:

*“When I spent time together with people and could talk about other things than having cancer...I that I was in a research project, and exercising. It was important to me to stop talking about the cancer and start talking about exercise. It was a nice thing to do, to be able to change the subject.”*

<sup>17</sup>.

Taking an active role in health and well-being is important to women undergoing treatment for breast cancer. Being able to use physical activity as a tool to redefine themselves as individuals is vital in re-building women’s self-esteem and developing and maintaining meaningful relationships with others. It is apparent, that for women receiving treatment for breast cancer, being physically

active provides many benefits in addition to those typically associated with exercise (e.g., increased stamina, cardiorespiratory fitness).

### **Social factors**

All of the studies reported a number of social factors that were barriers and facilitators to participating in physical activity. Having the time to be physically active was the central factor with women's commitments often restricting the amount of physical activity they undertook as sometimes physical activities were viewed as indulgent, an additional luxury, rather than an aspect of treatment. For example the synthesis indicates that many of the women continued to work whilst undergoing treatment. Additionally prioritising caring responsibilities (e.g., looking after children, elderly relatives) was clearly evident, which meant that for a sizeable group of women the time for physical activities was severely limited:

*"We have to work for our family, work for ourselves, and this economy-factor is the key barrier stopping me to exercise. ... I said I cannot too because I have to send my son for his tuition-class and my daughter to her piano-class."* <sup>34</sup>

The setting for particular activities appears to influence levels of physical activity. Barriers to physical activity included distance to the gym, financial cost, concerns about safety (e.g. when walking to local parks) and the weather. The women valued being physically active with others who have had similar experiences, and this encouraged them to continue with the activity. Group interventions provided a space for the women to be socially interactive with others, share their experiences and receive support. The specific nature of breast cancer treatment can cause many women to feel "self-conscious" and as a result many can feel "uncomfortable to exercise in public" because of their changed appearance:

*"I would have liked to continue swimming but didn't dare because of the wig. I wish I could have used the hospital's swimming hall where I could have swum with or without a bathing hat."*<sup>18</sup>.

Being physically active in a "safe environment" with other women who were receiving treatment assisted with feelings of normality:

*"as unpleasant as it is not to have any hair, you don't feel as bad when you're amongst women who have been through the same thing"*<sup>28</sup>.

In addition to the peer support and feelings of normality, a lot of value was placed on the knowledge of the instructors and their ability to tailor activities to an individual's level of physical functioning. For example, being able to attend a class and not "have to explain yourself" was reported as being important and when attending a standard exercise class some women described feeling demoralised after the instructors either did not understand, or advised against participation (5/13):

*"I tried going to exercise classes and found that I was being asked to do things that actually hurt...when I said 'I'm sorry I can't do that', it was kind of like 'well why not' and I was 'well because I've had a lump out of my breast and I've had a bit out of my arm and I can't lift that weight'. And there was a kind of annoyance ... so in the end you stop going"*<sup>28</sup>.

## **Discussion**

This review thematically synthesised 13 papers reporting on the barriers and facilitators to engaging in physical activity in women with breast cancer who were receiving adjuvant treatment. There was consistency across the studies enabling the development of the four themes, which included both barriers and facilitators: side effects of treatment, beliefs about physical activity, focus on health not illness, social factors. Developing an understanding of the barriers and

facilitators to engaging in physical activity is essential for the development and evaluation of physical activity interventions.

Women receiving treatment for breast cancer are motivated to be healthy. However, beliefs about what constitutes physical activity appear to be a barrier to engaging in physical activity. The term 'physical activity' was often associated with formal and organised exercise which was sometimes viewed as an additional aspect of treatment that was not essential. This is an important finding relating to how information about physical activity and treatment regimens are presented to women and their relatives. Perhaps the emphasis should be placed on 'avoiding being sedentary' for the individuals whose physical activity levels are limited and those who would like physical activity to be less structured and more informal.

The provision of information about both the benefits and complications of physical activity is an important consideration. The vague and inconsistent information received by the women increased their concerns and reluctance to participate in physical activity. A survey of 460 doctors and nurses in the UK found that 36% were not aware of any guidelines relating to healthy lifestyles for patients with cancer and less than 50% of patients received information about adopting a healthy lifestyle<sup>42</sup>. However, our review indicates that women appreciated having a knowledgeable instructor who could tailor both the information and the activities to them. Thus, contact with experienced physical activity instructors, prior to beginning physical activity, may supplement the initial information provided at the time of diagnosis (verbal and/or printed materials) and increase levels of physical activity during treatment.

A recent meta-synthesis provided further qualitative evidence for the positive impacts of engaging in physical activity among cancer survivors<sup>38</sup>. Nevertheless, the debilitating side effects of their treatment and how their concerns about the potential adverse effects of physical activity affect their levels of physical activity during treatment are widely reported<sup>39-41</sup> and synthesised within this review. Our findings suggest that it would be beneficial to encourage women to participate in a manageable level of physical activity whilst undergoing treatment but the activity needs to be something that can be tailored depending on the severity of the side effects the women may be experiencing. Continuing with a small amount of physical activity throughout treatment may make the behaviour change more sustainable.

Our findings highlight the importance of being active across both group and individual settings. Physical activity provides a routine for women where they are able to set goals and achieve them. Within the literature there are numerous studies supporting the use of goal setting to improve health<sup>43,44</sup>. Self-regulatory measures, such as goal setting, can be used to increase an individual's physical activity-related self-efficacy and perceived behavioural control<sup>45,46</sup>. Our review supports these findings as the women reported that their confidence in their physical abilities increased and they regained some control over their body whilst focusing on their health and well-being and achieving their goals of having a healthy lifestyle. Participating in physical activity provided a distraction from the cancer and a topic of conversation with friends and family. In addition, physical activity enabled the women to develop their sense of self and redefine their identity.

Currently, there is little evidence to suggest that group-based interventions are more effective than individual-based activities in terms of physical outcomes<sup>47</sup>, but group-based activities may facilitate engagement with physical activity. For example, individuals with cancer sometimes



receive treatment that may alter their appearance. Body image is a multifaceted construct incorporating thoughts, feelings and behaviours related to the body and its' functioning, with cultural differences in psychosocial impact evident <sup>48,49</sup>. Our review indicates that group-based activities provide an opportunity to gain peer support and a non-judgemental approach, by both instructors and other members of the group, is particularly beneficial. Feeling 'normal' was an important aspect of the group-based activities and being able to be active in a supportive environment, where you do not feel different to others <sup>19,50</sup> and can choose whether to speak about cancer or not, was important.

#### *Implications for health psychology and intervention development*

Targeting both beliefs about the benefits of physical activity and the fear of side effects may increase an individual's motivation to participate in physical activity. Moreover, our findings suggest that physical activity has the potential to instil self-esteem and empower women to be confident during their treatment. Thus, incorporating self-affirmations into an intervention and embedding a focus on health and well-being into the foundations of an intervention are likely to be critical. Our findings map on to a number of behaviour change techniques (i.e. the active components of the intervention designed to change the target behaviour) <sup>51</sup>. For example, action plans involving implementation intentions could be used to assist those experiencing treatment side effects to develop a plan that would enable them to maintain some level of physical activity. For example:

*"If I experience severe fatigue following my treatment, then I will plan three short walks (approximately 10 minutes) per day".*

Nevertheless, increased motivation does not necessarily translate into behaviour change and an important consideration is the perceived meaning of the term 'physical activity'. The women

placed value on emphasising the importance of being less sedentary during treatment and focusing on improved health and well-being. Moreover, increasing individuals' self-efficacy in their physical abilities is likely to be an important factor in engaging with and participating in physical activity interventions both during and after treatment. Developing an intervention that incorporates the group aspect where women feel that their condition is understood and are comfortable to be active is important. Individuals must also have the opportunity to participate in physical activity: we have identified a number of barriers to physical activity that may limit an individual's ability to be less sedentary, such as cost, location and caring/work responsibilities. This highlights the importance of tailoring interventions to the needs of individuals.

The value of support from peers and instructors was clear in all of the studies and these factors may influence the success of an intervention. Also it is important that any intervention aimed at increasing physical activity in women undergoing treatment for breast cancer is accessible and flexible to suit the needs of women and fit in around their responsibilities.

### *Limitations*

There are some limitations of the current review. We chose to focus on individuals receiving treatment for breast cancer (invasive carcinoma and in situ disease) due to the limited engagement with physical activity in this patient population. Therefore we did not synthesise the potential barriers and facilitators to physical activity once individuals are no longer in active treatment, which may be different to the barriers and facilitators we identified. Additionally, our findings are based on studies of females and may not be applicable to males with breast cancer. Finally, our review includes findings from 13 studies that differ in their methodological rigour.

There was a lack of reported reflexivity within the included studies which does raise some

concerns over potential risk of bias in reporting. However, we assessed the quality of each of our review findings using the Confidence in the Evidence from Reviews of Qualitative research tool <sup>26</sup> and this indicated that our review findings are a reasonable representation of the barriers and facilitators to engaging in physical activity whilst receiving treatment for breast cancer. We took a reflexive approach within this review and believe that our findings have remained true to the original data and interpretations of the included studies.

### *Conclusion*

This qualitative review synthesises the key barriers and facilitators to physical activity in individuals receiving treatment for breast cancer. Our findings suggest that the debilitating side effects of treatment and the fear of causing irreversible damage act as barriers to physical activity. Physical activity in a supportive environment can provide a distraction as individuals feel 'normal' and can begin to redefine themselves, with a focus on their health and well-being rather than cancer. The provision of timely, accurate and tailored information about the benefits of incorporating physical activity into the treatment regimen, alongside knowledgeable physical activity instructors may facilitate engagement. Future research should explore the appropriate behaviour change techniques suitable for the barriers and facilitators identified and aim to improve the reporting of reflexivity in qualitative research.

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Table 1.

*Summary of qualitative findings*

Summary of review finding	Studies contributing to the review finding	CERQual assessment of confidence in the evidence	Explanation of CERQual assessment
<p><b><i>Side effects of treatment</i></b></p> <p>Women experienced severe, debilitating side effects from treatment which left them feeling fatigued, stiff and in pain. Some did not feel able to be physically active, while others reported the benefits of physical activity on their physical and mental well-being.</p>	<p>17,27,30-37</p>	<p>Moderate</p>	<p>Minor concerns regarding methodological limitations, coherence and adequacy that may reduce confidence in the review finding.</p>

<p><b>Beliefs about physical activity</b></p> <p>The amount of information available to patients about the benefits of physical activity varied. Women's concerns surrounded the potential adverse effects of physical activity with many preferring a goal of 'being less sedentary'.</p>	<p>17,18,27,28,30,31,33-37</p>	<p>Moderate</p>	<p>Minor concerns regarding methodological limitations, coherence and adequacy that may reduce confidence in the review finding.</p>
<p><b>Focus on health not illness</b></p> <p>Taking an active role in their health was a facilitator to physical activity adherence. Gaining a sense of pride through achieving goals and regaining</p>	<p>17,18,27-37</p>	<p>High</p>	<p>No or very minor concerns regarding methodological limitations that are unlikely to reduce confidence in the review finding.</p>

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trust in their body are particularly important factors that help women redefine their identity.

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**Social factors**

17,18,27-37

High

No or very minor concerns regarding methodological limitations that are unlikely to reduce confidence in the review finding.

Time, the environment and peer support all contribute to engagement with physical activity. Physical activity does not appear to be viewed as an integral component of treatment as many prioritised other activities. Feeling normal in an active environment was crucial for many women.

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Table 2.

*Critical appraisal of included studies*

<b>Critical appraisal tool</b>	<b>Yes</b>	<b>No</b>	<b>Can't tell</b>
<b><i>Critical Appraisal Skills Program tool</i></b>			
Was there a clear statement of the aims of the research?	13 (100%)		
Is a qualitative methodology appropriate?	12 (92%)		1 (8%)
Was the research design appropriate to address the aims of the research?	12 (92%)		1 (8%)
Was the recruitment strategy appropriate to the aims of the research?	13 (100%)		
Was the data collected in a way that addressed the research issue?	12 (92%)		1 (8%)
Has the relationship between researcher and participants been adequately considered?	2 (15%)	1 (8%)	10 (77%)
Have ethical issues been taken into consideration?	13 (100%)		
Was the data analysis sufficiently rigorous?	9 (69%)	1 (8%)	3 (23%)
Is there a clear statement of findings?	13 (100%)		
How valuable is the research?	13 (100%)		
<b><i>Yardley's Evaluative Criteria Demonstrated</i></b>			
Sensitivity to context	12 (92%)		1 (8%)
Commitment and rigour	11 (85%)		2 (15%)
Transparency and coherence	5 (38%)	1 (8%)	7 (54%)
Impact and importance	11 (85%)		2 (15%)