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Quirk, H. orcid.org/0000-0003-2716-4681, Hock, E. orcid.org/0000-0002-8617-8875, Harrop, D. et al. (8 more authors) (2020) Understanding the experience of initiating community-based group physical activity by people with serious mental illness: a systematic review using a meta-ethnographic approach. European Psychiatry, 63 (1). e95. ISSN 0924-9338

https://doi.org/10.1192/j.eurpsy.2020.93

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Understanding the experience of initiating community-based group physical activity by people with serious mental illness: a systematic review using a meta-ethnographic approach

Short title: Initiating community-based group physical activity for people with serious mental illness

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Abstract

Background

People living with serious mental illness (SMI) experience debilitating symptoms that worsen their physical health and quality of life. Regular physical activity (PA) may bring symptomatic improvements and enhance wellbeing. When undertaken in community-based group settings, PA may yield additional benefits such as reduced isolation. Initiating PA can be difficult for people with SMI and so PA engagement is commonly low. Designing acceptable and effective PA programmes requires a better understanding of the lived experiences of PA initiation among people with SMI.

Methods

This systematic review of qualitative studies used the meta-ethnography approach by Noblit and Hare (1988). Electronic databases were searched from inception to November 2017. Eligible studies used qualitative methodology; involved adults (≥18 years) with schizophrenia, bipolar affective disorder, major depressive disorder or psychosis; reported community-based group PA; and captured the experience of PA initiation, including key features of social support. Study selection and quality assessment was performed by four reviewers.

Results

Sixteen studies were included in the review. We identified a ‘journey' that depicted a long sequence of phases involved in initiating PA. The journey demonstrated the thought processes, expectations, barriers and support needs of people with SMI. In particular, social support from a trusted source played an important role in getting people to the activity, both physically and emotionally.

Discussion

The journey illustrated that initiation of PA for people with SMI is a long complex transition. This complex process needs to be understood before ongoing participation in PA can be addressed.

Registration - The review was registered on the International Prospective Register of Systematic Reviews (PROSPERO) on 22/03/2017 (registration number CRD42017059948).

Key words: serious mental illness; physical activity; initiation; adults; meta-ethnography

Introduction

Individuals living with serious mental illness (SMI), inclusive of major depressive disorder, schizophrenia and bipolar disorder, experience premature mortality [1], increased morbidity (e.g., type 2 diabetes; [2], metabolic syndrome and cardiovascular disease [3]), and higher rates of obesity [4, 5] compared with the general population.

Reducing the premature death rate by targeting the physical health conditions experienced by people living with SMI is complex and multifactorial. One way to address this mortality gap is by modifying behavioural risk factors [6-8], including physical inactivity (or sedentary behaviour). Physical activity (PA), encompassing the wider domains of exercise and sport, may have a crucial role in addressing the health inequalities experienced by people living with SMI; addressing premature mortality, preventing the onset of comorbidities and improving the overall health and wellbeing of this population [9].

The benefits of PA for people living with SMI include improvements in psychiatric symptoms, quality of life, physical fitness, cardiometabolic risk factors, body mass index and weight [10]. There is also promising evidence that community-based PA (in a group situation) can reduce social isolation, stigmatisation and enhance social identity in people living with SMI [11-14]. Indeed, the World Health Organization's (WHO) *Mental Health Action Plan 2013-2020* called for the provision of mental health services integrated in communities for service users and families [15]. People living with SMI, however, engage in significantly less PA and greater amounts of sedentary behaviour compared with the general population [6-8, 16, 17]. For example, half of the people living with SMI do not meet the guidelines of 150 minutes per week of moderate intensity PA [17]. This is despite research showing that people living with SMI want to undertake PA [18, 19].

A better understanding of how to promote PA in a way that is engaging, appealing and socially supportive for people living with SMI is much needed. With this in mind, the purpose of this review is to explore the *initiation* of community-based, group PA in people with SMI. We define initiation as; 'the period in which people start being more physically active (also referred to as 'adoption' and 'uptake')' (p.3)[20] . Given the range of barriers faced by people living with SMI when trying to engage in PA (e.g., low mood, stress, lack of support) [19], a thorough exploration of the lived experience of initiation, rather than maintenance of PA, appears important. To achieve this, we undertook a meta-synthesis [21] of qualitative studies adopting a meta-ethnographic approach [22]. Meta-ethnography seeks to uncover new understanding of a phenomenon that is greater than that contained within individual studies. Its strength lies in its attempt to preserve the interpretive properties of the original qualitative data. Specifically, the meta-ethnography aimed to:

- Systematically search and appraise qualitative research on the experience of initiating community-based group PA for adults living with SMI.
- Synthesise findings from existing research regarding the experience of initiating community-based group PA and key features of social support within these contexts for people living with SMI.
- Identify from participants' experiences the active ingredients that could inform future interventions to improve uptake of community-based group PA among people living with SMI.

Methods

Detailed information on the methods undertaken in this review are published in the protocol [20]. The review was registered in the International Prospective Register of Systematic Reviews (PROSPERO): CRD42017059948. Noblit and Hare's (1988) meta-ethnography approach comprises seven stages, with the review authors moving back and forth between stages four to six as ideas for translation and synthesis are explored. The review is reported in accordance with eMERGe meta-ethnography reporting guidance [23]. The findings of the review were discussed with two individuals living with SMI with the purpose of sense checking themes and findings. One reviewer (HQ) had an informal conversation with each individual in which the initiation journey was discussed. Individuals were asked to comment on whether the review team's interpretation of the data was clear and easy to understand.

Search strategy

The bibliographic databases searched were ASSIA (ProQuest), CINAHL (EBSCO), Cochrane Central Register of Controlled Trials (Wiley), Health Technology Assessment Database (Wiley), MEDLINE (EBSCO), PsycINFO (ProQuest), Sociological Abstracts (ProQuest), SportDiscus (EBSCO), Web of Science (Thomson Reuters, now Clarivate). Reviewers searched the author list and reference lists of all papers included in the review for other potentially eligible papers. No date limits were applied. Only papers published in the English language were included. The search strategy is identical to that published in the protocol [20], with the addition of two new terms 'autobiographical' and 'mental health' that the team recognised as necessary after initial searches.

Search processes

Literature searches were undertaken in November 2017 by an experienced Information Scientist (DH). All results from the literature searches were exported to the bibliographic software, RefWorks. This tool, instead of EndNote as indicated in the protocol, was selected as a majority of the review team were familiar with this resource. RefWorks was also used to remove duplicate papers.

Selecting primary studies

The selection process was divided equally amongst four reviewers (DH, EH, HC and HQ) with a fifth reviewer (RC) available to advise on the overall approach. All papers were screened by one of the reviewers and 10 per cent were independently double checked by a second reviewer. Eligibility criteria are described in detail in Quirk et al. (2017)[20]. In brief:

- **Population** - adults (≥18 years) living with SMI, defined as a primary diagnosis (as described in the studies) of schizophrenia, bipolar affective disorder, major depressive disorder, personality disorder, severe anxiety (including phobia and obsessive-compulsive disorder), schizophreniform disorder or psychosis. If the population was described as those with SMI, but the specific condition was not reported, the paper was considered for review.
- **Intervention** - community-based group PA (inclusive of sport and exercise and any frequency, intensity or duration). The PA needed to take place in the community (i.e., those that take place outside of hospital, clinical, residential or care settings), with a group being defined as a minimum of 3 people. If the intervention was multicomponent, PA needed to be a main component and the findings needed to be attributable to the PA.
- **Comparison** - if an intervention was described, no comparator condition was needed. Where a comparison was made, the comparator could be no activity or any other activity.
- **Outcomes** - qualitative data from the perspective of the participant living with SMI reporting the experience of initiating community-based group PA. Initiation was defined as the period in which people first start to engage in a PA. The initiation period could represent the first participation occasion or period of PA engagement, as long as findings could be attributable to the early phase of participation.
- **Setting** - community-based group setting.

Outcome of study selection

The databases searches yielded 18,727 papers. After the removal of duplicates, there were 11,804 unique papers. All were screened using the title and abstract against the eligibility criteria. Following this process, 366 papers were retained for full-text screening. Sixteen papers met the eligibility criteria and were included in this review. A summary of the search and screening process is shown in the PRISMA flow diagram (Figure 1).

[Insert Figure 1 about here. Caption: PRISMA flow diagram]

Data extraction and quality appraisal

The data extraction method is outlined in Quirk et al. [20]. The extraction and quality appraisal document was piloted by the four members of the review team using two of the papers included in the review. Verbatim quotes from the findings and primary author statements were extracted and grouped into themes and sub-themes, being careful to keep these distinct from the reviewers' own comments or interpretations. Each reviewer's data extraction tables were cross-checked by a second reviewer and any disagreement or discrepancies were resolved via discussion between the review team. The quality of each of the papers was assessed using the Critical Appraisal Skills Programme (CASP) Qualitative Checklist [24]. Critical appraisals of all papers were cross-checked by a second reviewer and any discrepancies resolved via discussion among the review team.

Translating second-order concepts

The outcomes extracted from primary studies were used to determine how studies were related (as per Noblit and Hare [22]) and identify the 'key concepts'. The 'key concepts' were themes that seemed particularly salient to the initiation of community-based group PA for people living with SMI. Each reviewer identified the key concepts in the studies they extracted and appraised. The key concepts were then copied into a 'key themes and concepts' table, again preserving the meaning and source of the original text by copying quotes and study author comments verbatim and highlighting original participant quotes as first order concepts, study author comments as second order concepts and reviewer interpretations as third order concepts [25]. The 'key themes and concepts' table helped the review team to identify patterns and relationships within and between studies. Translating second-order concepts was entirely grounded in the data. It was not guided by theory nor was the intention to substantiate or compare against previous theories or models of behaviour change. For the same reason, our definition of initiation did not derive from any specific theory of behaviour.

Translating studies into one another

To generate third order concepts, an Excel spreadsheet was created for each paper included in the study. The Excel spreadsheet outlined the first and second order concepts and a third column allowed the reviewer to add their own conceptualisation of the theme/subtheme. Reviewers (HC, DH, EH, HQ) followed step 5 of Noblit and Hare's approach by exploring how the key themes and concepts related to each other. This was an iterative process determined by how much the studies agreed or disagreed with each other..

Synthesising translations

In meta-ethnography, the product of synthesis is the translation of study findings into one another to reach a new interpretation of the phenomenon being studied[23]. A series of review team meetings were held to synthesise the third order concepts for each theme/subtheme. To ensure conceptualisations remained grounded in the original papers, cross checks were continually made to first and second order concepts. According to Noblit and Hare, studies can relate to one another in three ways: they may be directly comparable (reciprocal translations); they may stand in opposition to one another (refutational translations); or taken together they may represent a line of argument. A 'line of argument' synthesis approach was used because the papers focused on different types of PA experiences that could usefully be brought together to construct overarching arguments about phenomena (stage 6; [22]). We did not identify any cases where concepts were strongly contested across papers (i.e., refutational translations [22]). Where findings from studies refuted other studies, these were noted.

Expressing the synthesis

Key concepts identified across the papers, combined with a priority to retain the individual voice of people living with SMI led to presenting this as *'a journey'* to visualise the complexity of the findings and identify potential phases of PA initiation. The phases of a person's journey in the initiation of community-based PA were identified as: thinking about being active, planning and preparing for the activity, getting to the activity, and beginning the activity. In this case, the process of moving through the phases was cyclical, with people moving back and forth between phases as well as being static for extended periods of time. The service users viewed our interpretation as an accurate reflection of their own experience and likened our proposed journey to the 'SMI recovery journey'.

Confidence in cumulative evidence

Two reviewers applied the Confidence in the Evidence from Reviews of Qualitative Research (CERQual) tool to the review findings [26]. CERQual assesses confidence in evidence based on four components contributing to each review finding: the methodological limitations, the relevance, the coherence, and the adequacy of the data. The assessment of each component allows for a judgement of confidence; high, moderate, low or very low. High confidence in a finding would suggest that it is highly likely that the review finding is a reasonable representation of the phenomenon of interest [26].

Results

Description of included studies

Sixteen studies (of 198 participants) were included for review. An overview of the characteristics of the studies is provided in Table 1. The studies were published between

2003 and 2017 and were conducted in the UK (n=9), USA (n=3), Canada (n=1) and Sweden (n=1). Two did not report the location. A range of different PA types, interventions and participants were represented. Nine studies included people living with a range of diagnoses [13, 27-33]. Five studies included people living with schizophrenia or schizoaffective disorder [34-38] and four studies did not report the specific diagnosis, but instead reported a diagnosis of SMI [39-41].

[Insert Table 1 about here]

PA interventions varied across studies and included; walking group [41]; walking and swimming [38]; horse-riding [37]; golf [33]; swimming [35]; low impact walking and yoga [31]; and various activities including team sports [27-30, 32, 34, 36, 39, 40]. The majority involved PA facilitated by an instructor or leader (n=9). Five interventions were self-directed activities. In three studies level of facilitation was unclear. See Table 2 for intervention characteristics. Descriptions of the interventions can be found in Supplement 1.

[Insert Table 2 about here]

Quality of included studies

Using CASP, we judged that qualitative methods were appropriate in all studies and most studies had a clear statement of aims, an appropriate research design, data collection in a way that addressed the research issue, a clear statement of findings, and value in terms of practical application and aiding our understanding of community-based PA for people living with SMI. Study quality varied in terms of having an appropriate recruitment strategy to support the aims, whether ethical issues were taken into consideration, and if data analysis was sufficiently rigorous. Most studies did not adequately consider the relationship between researcher/s and participants. A summary of the methodological quality of studies is provided in Supplement 2.

Synthesising translations/line of argument

Table 3 shows a list of all the second order constructs, using the original authors' own words or a paraphrase to maintain the language used in each study [11, 42]. When grouping second order constructs into broader categories, we noticed a temporal sequence or 'journey'. The 'journey' captured a long sequence of phases which, although presented sequentially, is not linear in practice (Figure 2).

[Insert Figure 2 about here. Caption: The journey of physical activity initiation for people living with SMI]

The journey of physical activity initiation for people living with SMI

Table 3 gives a narrative ‘translation’ of each second order construct.

[Insert Table 3 about here]

Underlying influences impacting upon the initiation of physical activity

Two sub-themes were identified representing underlying influences that play a part across the initiation journey. Characteristics of SMI that affected people's ability to initiate PA were low self-esteem, feelings of failure and/or powerlessness - especially after a failed attempt at initiating PA [27, 28, 35]. For some people dealing with SMI was all-consuming and left little space in their life for anything else [28, 32].

Another challenge was side-effects of medication that caused people to lack motivation, feel drowsy and sluggish or too ill to participate in PA [13, 27, 30, 35, 38]. Getting the medication right to feel 'well enough' to partake in PA was important to reduce any set-backs in PA initiation [13, 36]. Weight gain or being overweight was considered a side-effect of medication and was spoken about in relation to feelings of poor body image and insecurity [32, 35, 38].

Thinking about being active

In the first phase of the journey, predisposing perceptions, beliefs and values influence the decision to engage in PA. These relate to perceptions about PA in general, rather than beliefs about a specific type of PA, which come later in the journey. Four sub-themes were identified within this phase of the journey; *thoughts and beliefs about being active in a group setting*, *expected outcomes of being more active*, *positive encouragement and informational support*, and *past experience of PA*. People living with SMI talked about feeling vulnerable in unpredictable group settings due to social anxiety, embarrassment and apprehension around strangers [28, 30-32, 34, 35].

While the perceived benefits of PA varied across studies (e.g., a worthwhile reason to get out of the house (or other residential setting) [13, 29, 35, 36] and weight control [27, 28, 34, 36, 38]), expected outcomes needed to be meaningful and outweigh the perceived negative effects for individuals to move to the next step in the journey. Positive encouragement from trusted sources was important when people were thinking about increasing PA [38, 39]. This included initial awareness-raising via information-giving from health professionals (e.g., about the benefits of PA) and verbal persuasion [13, 34, 36, 39]. On the whole, people living with SMI understood the benefits of PA [27, 34], so information about what was available in their local community and encouraging people to engage with what was available was most beneficial. Finally, having a previous positive experience of PA was also beneficial when thinking about being active, providing a sense of 'normality' for those who had been active prior to their SMI diagnosis [36].

Planning and preparing for the physical activity

Having thought about being more active, the planning and preparing phase of the journey involves developing an action plan and preparing for the activity. Three themes were identified within this phase; *thoughts about the specific activity and its expected benefits*, *thoughts about cost and location* and *thoughts about who will be there*. In thinking about activities, people living with SMI considered how desirable the specific activity seemed compared to alternative options [33, 35, 38, 41]. Often, the expected benefits of community-based PA related to having something to do and somewhere to go, rather than specific to the activity itself; doing something is better than doing nothing [29, 35, 38, 40, 41].

People living with SMI often felt unable to participate due to the activity being financially or physically inaccessible [28, 30, 39]. Activities had to be affordable to be perceived as sustainable [31, 33]. People living with SMI benefitted from feeling familiar with the location and easily being able to travel the distance to get there, as well as feeling they belong at the location [31].

Thinking about socialising with others, including staff delivering and facilitating the session, was appealing to some [30, 32, 38], but others felt apprehensive about having to have conversations with other people [28, 29, 35]. The presence of trusted and known health professionals or members of the mental health support team was valued and believed to instil confidence among people living with SMI initiating a new PA [32, 38, 39, 41].

Getting to the activity

The next phase involves putting plans into action. Two themes were identified within this phase of the journey; *physical dependency on others to get there* and *other barriers influencing ability to get there*. People living with SMI often depended on intensive support from other people to get out of the house (or other residential setting) and to the activity (e.g., reminders, transportation, travel expenses [34] and accompaniment [29, 33, 36, 39, 41]). Personal responsibilities or other commitments such as family life and childcare also made getting to the activity difficult [28, 34, 41].

Beginning the activity

This phase refers to taking part for the first time. Three themes were identified; *socialisation and the influence of the group, accessibility and scheduling,* and *immediate benefits of taking part.* The first experience was influenced by the other people present. A supportive atmosphere and feeling safe in the company of others fostered connectedness and mutual understanding [27, 28, 32, 35, 38, 40, 41]. Welcoming and supportive staff instilled confidence [29, 32, 37, 38, 41]. People living with SMI benefitted from knowing what to expect before arriving and from knowing that the schedule was adaptable to their needs (e.g., symptoms, health relapses and ability). They also valued autonomy to decide their level of participation [31, 32, 35, 41]. The immediate perceived benefits of taking part, such as enjoyment or mood enhancement, relaxation and sense of achievement were important contributors to the successful initiation of PA [13, 28, 35, 36, 38, 41].

Confidence in the cumulative evidence

The CERQual assessment of our level of confidence in the findings indicated that more and/or better quality primary research is needed in this area. On the basis of our CERQual assessment of the review findings, we have moderate confidence in 11 findings and low confidence in three findings (see Table 4 for the CERQual assessment).

[Insert Table 4 about here]

Discussion

The current review aimed to explore how adults diagnosed with SMI experience the initiation of community-based, group PA and key features of social support within these contexts. Findings illustrate that initiation of PA in community, group-based contexts is not a simple step from intention to participation. The journey is not always linear, but a slow process with challenges or setbacks at every phase. Similar to Soundy et al. [11], our findings demonstrate the challenges, complex processes and facilitators that exist before PA even begins for people with SMI. These are associated with thinking about being active, planning and preparing for PA, getting to the activity and beginning the activity. The journey we present enhances the existing evidence base by providing in-depth exploration of the complexities of the initiation process specific to community-based, group PA.

We identified some of the benefits and challenges that characterise group PA in the community setting for people living with SMI. Beneficial qualities include having a reason to get out of the house (or other residential setting), socialising and feeling connected with others. Challenges involve feelings of vulnerability and social anxiety, dependency on others to provide or pay for transport, and the perceived appropriateness of the activity setting. Furthermore, the cost of some activities (e.g. golf) may preclude participation compared to lower cost activities. People also benefitted from knowing what to expect from the activity and facilities prior to attending and we identified a need for a supportive, safe and non-judgemental atmosphere. Flexibility in scheduling of PA was also important, as reflected in UK practitioner guidelines for people working in mental health services [43].

The current review highlighted the importance of taking an individualised approach to PA promotion in people with SMI. This could be likened to a person-centred care approach [44]; [45] in that it takes into consideration an individuals' values, self-identify, family situation, social circumstances, past experiences, beliefs and preferences as well as medication, motivation, available support and cost of the activity (including transport and other associated costs). Expectations about the outcome of the activity can impact whether or not, how, and when people living with SMI initiate PA. Previous findings from quantitative studies in this population have identified health-related outcomes as important motivators for PA engagement [19]. Our findings support health-related outcomes such as weight control as important motivators, but also suggest that the desired outcome of the PA might be more about having somewhere to go and something to do.

The intensive nature of the social support required during the initiation of community-based, group PA for people living with SMI is a key outcome from this study. The need for instrumental and informational support has been demonstrated previously [14], as has emotional support [46]. We identified that sources of support need to come from someone who is valued and respected by the person living with SMI; someone who knows them well and is well known to them; which supports previous findings [46]. Consistent with previous research, this could be provided by mental health professionals such as physiotherapists and occupational therapists [47]. While some people with SMI are comfortable in accepting support from professionals, others do not want this [48] and prefer support from trusted caregivers, friends and family [49].

Social support from others living with SMI was also found to be important as it provided a supportive and 'safe' atmosphere. This was particularly important for those with low self-image and confidence, providing a sense of togetherness, and shared identity of doing something 'normal' without feeling judged or stigmatised. This supports previous findings about the importance of shared identities by people attending group-based physical activities [11, 41, 46]. Providing people with SMI with a safe environment within which to make choices and decisions about their participation could translate into benefits in different areas of life [11, 14, 46]. Carless and Douglas [50] likened this to having a door opened that is usually shut for people living with SMI.

Implications for future research

This review has demonstrated the importance of intensive social support in the initiation of community-based group PA. It is not clear however, how long this intensive support and close interaction is needed to facilitate successful initiation of the activity. Further research should explore whether the support needs to be consistent for the duration of participation and the implications of a break or change in the level of support provided. Carless [36] suggests that progress from initiation to maintenance of PA among people living with SMI can take years rather than weeks or months (as per a more traditional definition of initiation [51]). Using qualitative research to really understand the unique experience of the journey preceding each PA session is needed to help ensure the sustainability of programmes and related outcomes. Further research exploring the continuation of PA, to establish the extent to which the factors involved are similar to those for initiation appears warranted.

Many of the findings included in our review were derived from bespoke interventions that involved services that would not normally be available for people living with SMI in the community (e.g., golf lessons and exclusive access to a swimming pool). A recent position statement for PA as treatment for SMI by Stubbs and colleagues [10] has called for "*replicable and scalable methods for delivering PA interventions to people living with SMI, in a format which is accessible, engaging and effective for large numbers of patients*" (p. 140). It is currently unclear whether PA is a cost-effective treatment option for people living with SMI and more work is needed to establish whether the financial implications are offset by the benefits [10]. This raises important questions about the extent to which the findings included in this review can be generalised to the broader community of people living with SMI and suggests that further research is needed to explore the experience of community-based PA initiation in everyday life.

Strengths and limitations

This study benefits from a rigorous application of method, conducted according to the Noblit and Hare meta-ethnography approach. The manuscript also adheres to the reporting guidelines by France et al. [23] and guidance such as [52]. Most notably, service users felt reassured that the way the review captured the initiation of PA (e.g. a slow complex process rife with problems, barriers and setbacks that is heavily reliant on the support of others) was a 'real life' representation [53]. This is a particular strength of this study.

The findings should be considered in light of some methodological limitations. Our inclusion of manuscripts written in English language may have missed important research reported in other languages. Similarly, all studies were conducted in western, developed countries with no studies conducted in developing countries. The demographic characteristics (e.g., ethnicity) of participants were reported poorly, in part due to the need to protect confidentiality of participants. This means there has been no exploration of differences in the experience of initiation of PA by demographic variables, which is worthy of further research.

This review included papers with combined results and discussion sections, which makes meta-ethnographic analysis difficult due to a lack of clarity about what is a finding (first order concept) and what is the primary authors' interpretation (second order concept), limiting the ability to make third order interpretations. Despite this, as far as possible, we distinguished between first and second order constructs in the data extraction phase and can demonstrate that the papers with mixed results and discussion sections have added value (e.g., Carless [36]; Crone [41]). Crone [41] argued that the integration of findings and discussion allows the development of links between analytic categories and wider issues of theory.

Recommendations for practice

We make the following recommendations for practice based on the findings from the current review. Extra support and resource allocation may be necessary in the 'getting to the activity' phase of the journey, whilst ensuring that there is no disadvantage towards individuals in terms of cost of participating in the activity or ongoing participation. Financial cost has been a strong theme in previous literature [10, 11].

Promotion of PA would benefit from taking an individualised approach that is 'pitched' appropriately and takes into consideration the person as a whole and the social support networks they have around them.

Providers should be sure that people living with SMI have their preferred level of support throughout the journey, both physically and emotionally and that facilities are welcoming, non-stigmatising and make users feel safe and secure. The people providing support should ideally by known to the individual with SMI, preferably valued and respected by them.

Flexibility regarding attendance, scheduling and rate of progression appears central to PA initiation. Priority should also be given to promoting enjoyment, choice, autonomy and decision making in the very early phases of the PA initiation journey. To allow for this flexibility, traditional measures of success for PA programmes may need to be changed. For example, focussing on attendance rates may not be an ideal indicator of success in a programme with flexible scheduling and relaxed attendance expectations.

Conclusion

The outcomes and subsequent ‘journey’ presented in this review provides an authentic narrative of the lived experience of the initiation of community-based group PA for people living with SMI. It illustrates that initiation of PA is a complex process rife with challenges. It is not a simple step from intention to participation. The process of initiating PA among people with SMI and the facilitating factors demonstrated here should be fully understood before issues of ongoing participation can be addressed. The literature has demonstrated that alongside the complexity of the journey and the need to take an individualised approach to PA initiation, encouraging people living with SMI into community-based, group PA requires high resource, in terms of time, transport, cost and professional supervision. In particular, intensive social support from a trusted source (health professionals, providers, friends and family) has an important role in getting people to the activity both physically and emotionally. This review provides recommendations for practice that could inform future PA programmes and optimise the uptake of community-based group PA among people living with SMI.

Acknowledgements

We acknowledge the service users who made a valuable contribution to our interpretation of the findings.

Conflicts of interest

MH is employed by the funder, Sheffield Health and Social Care NHS Foundation Trust. All other authors declare no conflicts of interest.

Financial Support

This systematic review and meta-ethnography was funded by Sheffield Health and Social Care NHS Foundation Trust (UK). The funding enabled researchers to undertake the review. The funder was involved in determining the scope of the review with respect to which long-term serious mental illnesses are included in the review. The funder approved the proposed qualitative methodology and MH, representing the funder, made a significant contribution to the writing of the manuscript. The lead author (HQ) is currently funded by an NIHR School of Public Health Research post-doctoral Launching Fellowship, hosted at the School of Health and Related Research at the University of Sheffield.

Data availability

The datasets used and/or analysed during the current study are included in this published article and its supplementary information files and from the corresponding author on reasonable request.

References

[1] De Hert M, Correll CU, Bobes J, Cetkovich-Bakmas M, Cohen D, Asai I, et al. Physical illness in patients with severe mental disorders. I. Prevalence, impact of medications and disparities in health care. World Psychiatry. 2011;10:52-77.

[2] Stubbs B, Vancampfort D, De Hert M, Mitchell A. The prevalence and predictors of type two diabetes mellitus in people with schizophrenia: a systematic review and comparative meta-analysis. Acta Psychiatrica Scandinavica. 2015;132:144-57.

[3] Correll CU, Solmi M, Veronese N, Bortolato B, Rosson S, Santonastaso P, et al. Prevalence, incidence and mortality from cardiovascular disease in patients with pooled and specific severe mental illness: a large-scale meta-analysis of 3,211,768 patients and 113,383,368 controls. World Psychiatry. 2017;16:163-80.

[4] Pearsall R, Smith DJ, Pelosi A, Geddes J. Exercise therapy in adults with serious mental illness: a systematic review and meta-analysis. BMC psychiatry. 2014;14:117.

[5] Firth J, Siddiqi N, Koyanagi A, Siskind D, Rosenbaum S, Galletly C, et al. The Lancet Psychiatry Commission: a blueprint for protecting physical health in people with mental illness. The Lancet Psychiatry. 2019;6:675-712.

[6] Stubbs B, Firth J, Berry A, Schuch FB, Rosenbaum S, Gaughran F, et al. How much physical activity do people with schizophrenia engage in? A systematic review, comparative meta-analysis and meta-regression. Schizophrenia research. 2016;176:431-40.

[7] Stubbs B, Williams J, Gaughran F, Craig T. How sedentary are people with psychosis? A systematic review and meta-analysis. Schizophrenia research. 2016;171:103-9.

[8] Vancampfort D, Firth J, Schuch F, Rosenbaum S, De Hert M, Mugisha J, et al. Physical activity and sedentary behavior in people with bipolar disorder: a systematic review and meta-analysis. Journal of affective disorders. 2016;201:145-52.

[9] Ashdown-Franks G, Williams J, Vancampfort D, Firth J, Schuch F, Hubbard K, et al. Is it possible for people with severe mental illness to sit less and move more? A systematic review of interventions to increase physical activity or reduce sedentary behaviour. Schizophrenia research. 2018;202:3-16.

[10] Stubbs B, Vancampfort D, Hallgren M, Firth J, Veronese N, Solmi M, et al. EPA guidance on physical activity as a treatment for severe mental illness: a meta-review of the evidence and Position Statement from the European Psychiatric Association (EPA), supported by the International Organization of Physical Therapists in Mental Health (IOPTMH). European Psychiatry. 2018;54:124-44.

[11] Soundy A, Kingstone T, Coffee P. Understanding the psychosocial processes of physical activity for individuals with severe mental illness: A meta-ethnography. Mental illness. 2012;2:1-20.

[12] Gorczynski P, Faulkner G. Exercise therapy for schizophrenia. Cochrane database of systematic reviews. 2010.

[13] Carless D, Sparkes AC. The physical activity experiences of men with serious mental illness: Three short stories. Psychology of sport and exercise. 2008;9:191-210.

[14] Soundy A, Freeman P, Stubbs B, Probst M, Coffee P, Vancampfort D. The transcending benefits of physical activity for individuals with schizophrenia: a systematic review and meta-ethnography. Psychiatry research. 2014;220:11-9.

[15] World Health Organization. Mental health action plan 2013-2020. 2013.

[16] Ussher M, Stanbury L, Cheeseman V, Faulkner G. Physical activity preferences and perceived barriers to activity among persons with severe mental illness in the United Kingdom. Psychiatric services. 2007;58:405-8.

[17] Vancampfort D, Firth J, Schuch FB, Rosenbaum S, Mugisha J, Hallgren M, et al. Sedentary behavior and physical activity levels in people with schizophrenia, bipolar disorder and major depressive disorder: a global systematic review and meta-analysis. World Psychiatry. 2017;16:308-15.

[18] Mishu MP, Peckham EJ, Heron PN, Tew GA, Stubbs B, Gilbody S. Factors associated with regular physical activity participation among people with severe mental ill health. Social psychiatry and psychiatric epidemiology. 2019;54:887-95.

[19] Firth J, Rosenbaum S, Stubbs B, Gorczynski P, Yung AR, Vancampfort D. Motivating factors and barriers towards exercise in severe mental illness: a systematic review and meta-analysis. Psychological medicine. 2016;46:2869-81.

[20] Quirk H, Crank H, Harrop D, Hock E, Copeland R. Understanding the experience of initiating community-based physical activity and social support by people with serious mental illness: a systematic review using a meta-ethnographic approach. Systematic reviews. 2017;6:214.

[21] Hannes K, Lockwood C. Synthesizing Qualitative Research: Choosing the Right Approach: Wiley; 2011.

[22] Noblit GW, Hare RD. Meta-ethnography: Synthesizing qualitative studies: sage; 1988.

[23] France EF, Cunningham M, Ring N, Uny I, Duncan EA, Jepson RG, et al. Improving reporting of meta-ethnography: the eMERGe reporting guidance. BMC medical research methodology. 2019;19:25.

[24] Critical Appraisal Skills Programme. CASP Qualitative Checklist. 2017.

[25] Britten N, Campbell R, Pope C, Donovan J, Morgan M, Pill R. Using meta ethnography to synthesise qualitative research: a worked example. Journal of health services research & policy. 2002;7:209-15.

[26] Lewin S, Booth A, Glenton C, Munthe-Kaas H, Rashidian A, Wainwright M, et al. Applying GRADE-CERQual to qualitative evidence synthesis findings: introduction to the series. BioMed Central; 2018.

[27] Yarborough BJH, Stumbo SP, Yarborough MT, Young TJ, Green CA. Improving lifestyle interventions for people with serious mental illnesses: Qualitative results from the STRIDE study. Psychiatric rehabilitation journal. 2016;39:33.

[28] Wärdig RE, Bachrach-Lindström M, Foldemo A, Lindström T, Hultsjö S. Prerequisites for a healthy lifestyle—experiences of persons with psychosis. Issues in mental health nursing. 2013;34:602-10.

[29] Irving G, Flockton A, Webster S. It made me feel better about myself. A Life in the Day. 2003;7:9-15.

[30] Hodgson MH, McCulloch HP, Fox KR. The experiences of people with severe and enduring mental illness engaged in a physical activity programme integrated into the mental health service. Mental health and physical activity. 2011;4:23-9.

[31] Graham CR, Larstone R, Griffiths B, de Leeuw S, Anderson L, Powell-Hellyer S, et al. Development and Evaluation of Innovative Peer-Led Physical Activity Programs for Mental Health Service Users. The Journal of nervous and mental disease. 2017;205:840.

[32] Carless D, Douglas K. The ethos of physical activity delivery in mental health: a narrative study of service user experiences. Issues in mental health nursing. 2012;33:165-71.

[33] Carless D, Douglas K. A golf programme for people with severe and enduring mental health problems. Journal of Public Mental Health. 2004;3:26-39.

[34] Hoffmann K. A Participatory Approach to Physical Activity Among People with Severe and Persistent Mental Illness: University of Pittsburgh; 2013.

[35] Evans AB. To 'just be relaxed and with your own thoughts': Experiences of aquatic activity amongst individuals diagnosed with schizophrenia. Loisir et Société/Society and Leisure. 2017;40:175-92.

[36] Carless D. Phases in physical activity initiation and maintenance among men with serious mental illness. International Journal of Mental Health Promotion. 2007;9:17-27.

[37] Bizub AL, Joy A, Davidson L. " It's like being in another world": demonstrating the benefits of therapeutic horseback riding for individuals with psychiatric disability. Psychiatric rehabilitation journal. 2003;26:377.

[38] Faulkner G, Sparkes A. Exercise as therapy for schizophrenia: An ethnographic study. Journal of sport and exercise psychology. 1999;21:52-69.

[39] Carless D, Douglas K. Social support for and through exercise and sport in a sample of men with serious mental illness. Issues in mental health nursing. 2008;29:1179-99.

[40] Carless D, Douglas K. Narrative, identity and mental health: How men with serious mental illness re-story their lives through sport and exercise. Psychology of sport and exercise. 2008;9:576-94.

[41] Crone D. Walking back to health: a qualitative investigation into service users' experiences of a walking project. Issues in mental health nursing. 2007;28:167-83.

[42] Doyle LH. Synthesis through meta-ethnography: paradoxes, enhancements, and possibilities. Qualitative Research. 2003;3:321-44.

[43] Grant T. Physical activity and mental health: National consensus statements and guidelines for practice: Health Education Authority London; 2000.

[44] Health Innovation Network South London. What is person-centred care and why is it important? 2016.

[45] Blomqvist M, Sandgren A, Carlsson IM, Jormfeldt H. Enabling healthy living: Experiences of people with severe mental illness in psychiatric outpatient services. International journal of mental health nursing. 2018;27:236-46.

[46] Soundy A, Freeman P, Stubbs B, Probst M, Roskell C, Vancampfort D. The Psychosocial Consequences of Sports Participation for Individuals with Severe Mental Illness: A Metasynthesis Review. Advances in Psychiatry. 2015:1-8.

[47] Mason OJ, Holt R. Mental health and physical activity interventions: a review of the qualitative literature. Journal of Mental Health. 2012;21:274-84.

[48] Raine P, Truman C, Southerst A. The development of a community gym for people with mental health problems: Influences on psychological accessibility. Journal of Mental Health. 2002;11:43-53.

[49] Lassenius O, Arman M, Söderlund A, Wiklund-Gustin L. Motivation Does not Come with an Ending—It's the Beginning of Something New: Experiences of Motivating Persons with Psychiatric Disabilities to Physical Activity. Issues in mental health nursing. 2014;35:713-20.

[50] Carless D, Douglas K. Opening doors: Poetic representation of the sport experiences of men with severe mental health difficulties. Qualitative inquiry. 2009;15:1547-51.

[51] Prochaska JO, Redding CA, Evers KE. The transtheoretical model and stages of change. Health behavior: Theory, research, and practice. 2015:125-48.

[52] Campbell R, Pound P, Morgan M, Daker-White G, Britten N, Pill R, et al. Evaluating meta-ethnography: systematic analysis and synthesis of qualitative research. Health Technology Assessment. 2011;15.

[53] Topor A, Borg M, Di Girolamo S, Davidson L. Not just an individual journey: Social aspects of recovery. International journal of social psychiatry. 2011;57:90-9.