

Factors that influence the implementation of “sit less, move more” interventions in an outpatient mental health care setting

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ABSTRACT

Introduction: Few interventions in outpatient mental health care settings focus on tackling excessive sedentary behaviour in patients with severe mental illness (SMI). In order to develop effective strategies for reducing prolonged sedentary behaviour in these patients, the aim of this study was to understand and identify factors that influence sitting less (and moving more) from the perspectives of both patients and health care practitioners (HCPs).

Methods: Qualitative data were gathered from patients with SMI (3 focus groups, 18 participants, mean age 39.8 years, one third female) and HCPs (2 focus groups, 15 participants, mean age 43.7, one third female) in an outpatient mental health care setting in the county of Osona (Barcelona), between January and March 2018. Data were analysed using inductive thematic content analysis.

Results: Four factors relating to sitting less and moving more emerged from patients: “social isolation and stigmatization”, “lack of social support”, “difficulty following advice from HCPs”, and “sedation due to medication.” HCPs also identified four factors that constrained their ability to introduce strategies for sitting less and moving more with patients with SMI: “emphasis placed on the pathology”, “HCPs’ inadequate knowledge about the wider consequences of sedentary behaviour”, “HCPs’ insufficient advice on sitting less and moving more” and “HCPs’ lack of tools and time for promoting sitting less and moving more”.

Discussion: These findings provide practical insights into factors that could enable the introduction of *sit less, move more* interventions in outpatient mental health care settings. Special focus should be placed on promoting socialization.

1. Introduction

Prolonged sedentary behaviour (SB) - defined “as any activity with an energy expenditure ≤ 1.5 metabolic equivalents of task (METs) while in a sitting or reclining posture during waking hours” (Sedentary Behaviour, 2012) – is a health risk factor associated with premature mortality, cardiovascular, metabolic and mental health (Ekelund et al., 2019; Bailey et al., 2019; Gilchrist et al., 2020; Teychenne et al., 2015; Zhai et al., 2015). Accordingly, the 2020 new Physical Activity (PA) and Sedentary Behaviour (SB) Guidelines from the World Health Organization recommend limiting the amount of time spent being sedentary and

replacing it with PA of any intensity for health benefits, across all age groups and abilities (Bull et al., 2020). This highlights the need to develop evidence-based interventions to reduce, interrupt and replace prolonged SB in numerous settings (Martin et al., 2015).

People with severe mental illness (SMI) have higher levels of SB than age- and gender-matched healthy adults (Bueno-Antequera, Oviedo-Caro, & Munguia-Izquierdo, 2017; Vancampfort et al., 2017). Research has shown that the average time spent in objectively-assessed SB among outpatients is 574 min per day during waking hours (Vancampfort et al., 2017), while healthy adults spend an average of 530 min per day in SB (Loyen et al., 2017). In this context, the implementation of

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SB-reduction interventions for patients with SMI is a public health priority (Vancampfort et al., 2017) that could contribute to addressing outpatients' reduced quality of life (Meyer et al., 2020; Walker, McGee, & Druss, 2015) and to decreasing comorbidity for chronic diseases such as diabetes type 2 and cardiovascular disease (Ashdown-Franks et al., 2018; Martland, Gaughran, Stubbs, & Onwumere, 2021; Vancampfort et al., 2016).

Sitting less and moving more interventions may be a strategy for limiting and breaking-up long periods of SB in patients with SMI (Ashdown-Franks et al., 2018). However, interventions targeting lifestyle risk factors in outpatients have mainly focused on PA, exercise, diet and smoking (Firth et al., 2019), and evidence on how to effectively replace excessive SB with PA among these patients is inconsistent and scarce (Ashdown-Franks et al., 2018). While motivating factors towards exercise have been identified to maximize exercise participation (Firth et al., 2016) and determinants of community-based lifestyle PA have been also explored to design PA interventions (Soundy, Taylor, Faulkner, & Rowlands, 2007) in patients with SMI, less is known about factors to design and maximize participation in 'sitting less and moving more' interventions for these patients.

It could be argued that lifestyle interventions that target modifiable risk factors should be routinely delivered as a standard component of mental health care, and as a first-line strategy for managing the physical health and premature mortality of patients with SMI (Fiorillo & Sartorius, 2021; Firth et al., 2019). However, research has scarcely explored health care practitioners' (HCPs) views on how to effectively address outpatients' excessive SB. Involvement of practitioners, as well as service users (i.e. patients), is important for developing public health interventions (Craig et al., 2008) as practitioners are key influencers of patients' health behaviours (Kime, Pringle, Zwolinsky, & Vishnubala, 2020). While HCPs have identified barriers for PA participation in patients with schizophrenia (Soundy, Stubbs, Probst, Hemmings, & Vancampfort, 2014), less is known about HCPs' own barriers to address modifiable risk factors such as SB. In addition, research has focused on the role specific professions (i.e. physiotherapist) might have on the management of patients with SMI (Stubbs et al., 2014) rather than taking into account the multidisciplinary team that is required for integral care such as psychologists, occupational therapists, nurses or social workers.

In relation to developing strategies for reducing prolonged SB in outpatients with SMI, the aims of this study were to understand and identify factors that influence the modification of SB in outpatients with SMI, as perceived by both patients and HCPs. We aimed to understand why patients with SMI find sitting less and moving more so challenging, and what is needed in mental health care settings for practitioners to effectively promote sitting less and moving more to their patients.

2. Methods

2.1. Participants and recruitment

Patients with SMI were recruited during November 2017 from a mental health care centre located in the county of Osona (Barcelona). During routine practice visits, all the centre's Health Care Practitioners (HCPs) (n = 10) invited patients who met the eligibility criteria to voluntarily participate in the study using a convenience sample. Eligibility criteria included: a current diagnosis of SMI; attending the centre for at least one year; >18 years of age; no current diagnosis of cognitive disability and no active consumption of toxic substances. We excluded patients with learning difficulties and poor Spanish/Catalan speaking, understanding or writing skills.

HCPs were recruited during the first weekly staff meeting in December 2017, when the director of HCPs in the centre invited all staff members who had worked at there for at least a year to voluntarily participate in the study. Practitioners from all different professional roles (e.g. psychologists, occupational therapists, social workers and

nurses) were included. Psychiatrists were not included as they were not employed by the mental health care centre, but by the mental health care unit of the hospital.

From all patients and HCPs that fulfilled the inclusion criteria, 18 patients and 15 HCPs volunteered to participate in the study. Participants gave signed informed consent and were scheduled to attend a focus group during January 2018. Ethical approval was granted from the Research Ethics Committee of the Osona Foundation for Health Research and Education (2017).

2.2. Focus groups

Each focus group lasted for around 60 min, had between six and eight participants and was conducted in Catalan. Before any audio recording was undertaken, participants were informed about the aims and invited to ask any questions they had. They only asked about the duration of the focus group. Focus groups were informal, expressed no judgments, criticisms, or (dis)approval of contributions and were carried out in the outpatient mental health care setting where recruitment had taken place. Repeated focus groups or interviews were not conducted. Participants in each focus group were purposely allocated on the basis of age, gender and duration of illness to ensure homogeneity.

In the three focus groups with patients (January–February 2018), open-ended questions explored: a) patients' daily SB habits; and b) factors that limited sitting less and moving more during day-to-day life. In the two focus groups with HCPs (March 2018), open-ended questions explored: a) HCPs' daily SB habits; and b) factors that limited the promotion of sitting less and moving more to patients in their routine practice at the centre. Prior to formal data collection, the focus group process was trialled, according to the Consolidate criteria for reporting qualitative research (COREQ) guidelines (Tong, Sainsbury, & Craig, 2007). The guide questions were reformulated after each focus group in order to explore emerging themes from previous groups. For example, we added open-ended questions about perceptions of the effects of SB on mental health.

2.3. Data collection and analysis

Following the methods proposed by Levin-Zamir et al. (2016) and Berg, Bruce, and Lune (2017), a trained moderator (JMSL) led and conducted the focus group sessions using a guide to explore the study aims. A moderator's assistant (AGS) took notes, from which a summary was provided to participants for verification at the end of the session. Besides participants and researchers there was no one else present at the focus groups. At the end of each group, the moderator wrote "first impression notes" of the session content.

Patient and HCP responses were audio recorded and then fully transcribed and subjected to a series of five iterative steps to identify factors relating to "sitting less and moving more" using Atlas.ti. (Martland et al., 2021): (1) Familiarization with the data; (2) Inductive open coding to generate initial codes; (3) Searching for emerging themes within the codes generated from the patient and HCP transcripts; (4) Reviewing codes and themes; (5) Identifying the key factors which influence sitting less and moving more in this setting. The final step was based on two criteria: i) importance expressed by patients and HCPs (repetition and depth of discussion during the focus groups); and ii) repetition in the different focus groups. The most important factors were considered to be those that appeared more often, more repeatedly and with more depth of expression in either the patient or HCP focus groups. (Berg et al., 2017).

Two researchers (GJC and APR) performed the codification and the content analyses independently and then discussed and agreed on the key themes and data saturation. Themes were identified derived from the data. Transcripts and themes were returned to the moderator, the moderator's assistant, and to participants for verification and to provide feedback on the findings. Patient and HCP quotes to support themes

were identified and then translated from Catalan to English.

3. Results

From the 50 participants that were invited, 33 enrolled in the study. In patients, main reasons to decline to participate were (i) not being interested and, (ii) feeling too tired. In HCPs, the main reason not to participate was (i) not being available at the day and time the focus group was scheduled. The mean age of the patients (n = 18) was 39.8 years (range 25–48), one third were female (n = 6), and diagnoses included bipolar disorder (n = 3), schizophrenia (n = 13) major depression (n = 1), and others (n = 2). The mean age of the HCPs (n = 15) was 43.7 years (range 35–58), one third were female (n = 5) and their professional profile included psychologists (n = 3), nurses (n = 1), occupational therapists (n = 6) and social workers (n = 5) (see Supplementary File).

Codes and factors (i.e. themes) that emerged from the qualitative data analysis are shown in Fig. 1. The overall analysis identified eight different factors that influenced sitting less and moving more in the

outpatient mental health care setting; four emerged from the patient focus groups, four from the HCP focus groups, and two from both. Data saturation was achieved for all themes.

Factors that influenced “sitting less and moving more” identified by patients with SMI:

3.1. Patients’ social isolation and stigmatization

Suffering from a SMI seemed to lead patients to an increase in sedentary time, which in turn, lead patients to social isolation. Social isolation and stigmatization were raised in all 3 groups (19 times altogether). After their diagnosis with a SMI, several patients said they had changed their perception and understanding of their day-to-day life. Their “new” life was dominated by thoughts about their mental illness, about never being able to go back to their “previous” life and not being understood by friends.

“I’m all day thinking about my illness” [Participant number 2; Focus group A2]

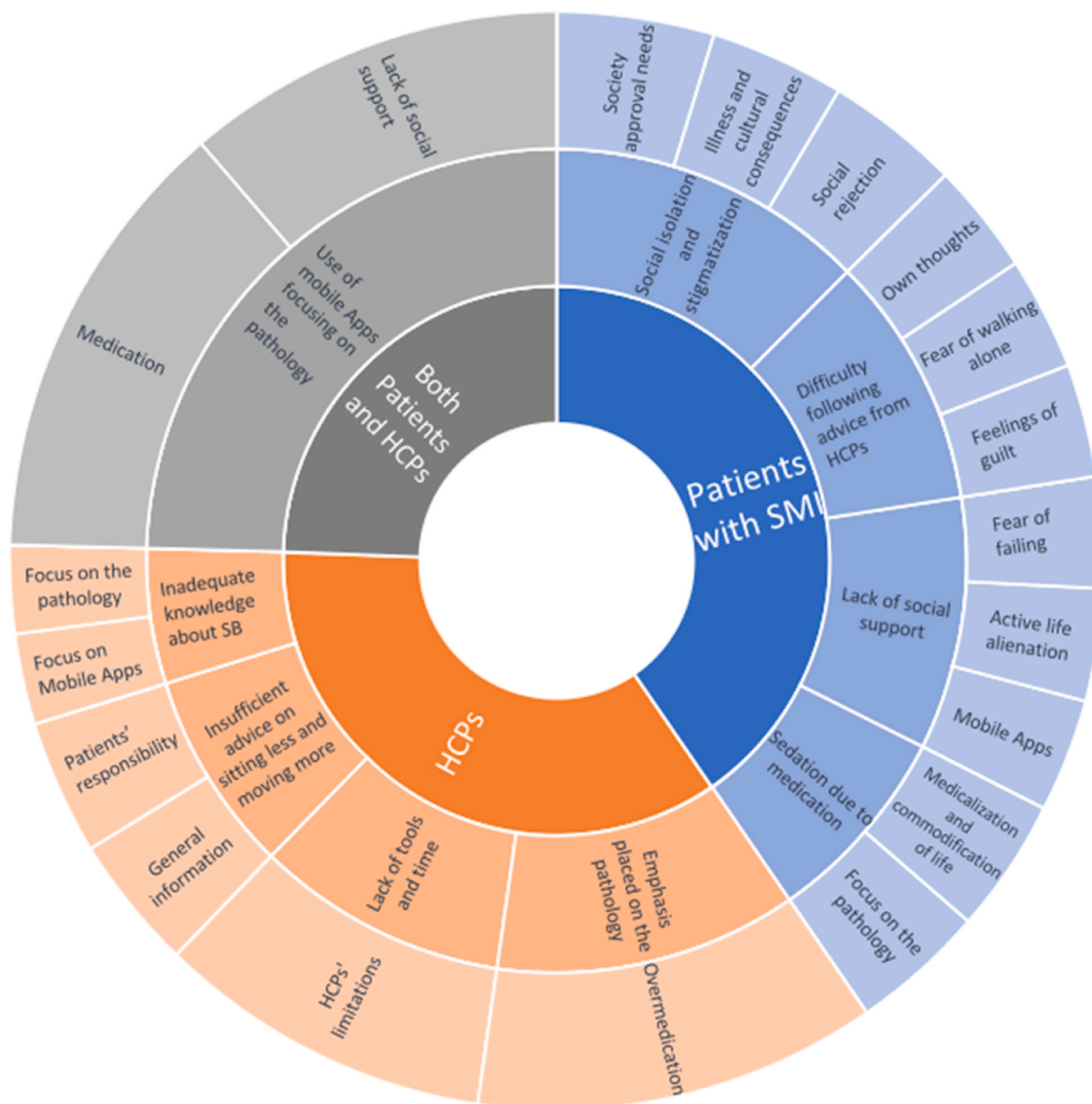


Fig. 1. Codes and themes (outside) for factors (middle) to “sit less and move more” in patients with Severe Mental Illness (SMI) and Health Care Practitioners (HCPs) (inside).

"The social worker told me I could never work again because of my disorder" [Participant number 3; Focus group A3]

"My friends did not understand what is in my head, what it means, or it implies" [Participant number 5; Focus group A1]

As a result, after diagnosis, these patients increased their time being sedentary, reduced their social habitual activities and isolated themselves.

"During weekends I did not go out of the house. If I could I did not even go out the bed!" [Participant number 3; Focus group A1]

3.2. Lack of social support after the diagnosis

After their mental illness diagnosis, patients perceived a lack of social support from significant others, which also led to an increase in the time they spent in prolonged SB. This was raised in all three groups, a total of 15 times.

"So, for example, my ex-wife left me like a dirty rag and I couldn't do anything, I felt alone, and I did not have energy to do anything. I was resting or watching TV, all day, no job, no friends to do anything ... they told me (referring to HCPs) that I would not have a job again". [Participant number 3; Focus group A2].

3.3. Difficulty following advice from HCPs

Patients were aware of the health consequences of spending too much time in SB and tried to avoid SB after receiving advice from HCPs. However, patients often failed to follow HCPs' advice (quoted 8 times) and felt guilty about it (quoted 7 times). Patients found "moving" was a difficult behaviour to adopt and maintain.

"I want to go out and walk with my dog, but I can't, I simply can't do it. I just sit instead. It felt awkward and it is disappointing not to be able to go and walk with my dog". [Participant number 3; Focus group A3]

"When I arrive at home, I live in a first floor flat, but I use the elevator because I'm really tired. I know it should be better to use the stairs, and the nurses also insist on it, but I'm sorry, I feel that I cannot do it". [Participant number 3; focus group A3]

From the patients' perspective, advice from HCPs to sit less and move more did not provide them with enough individual help, or with the social skills required to limit their SB and adopt new active behaviours (this was raised 9 times). Some patients explained that HCPs recommended and encouraged them to sit as little as possible during the day, and to try to walk outdoors as much as possible. However, patients perceived that doing this was even worse than doing nothing. This resulted in patients' low adherence to advice from HCPs on sitting less and moving more.

"I have panic walking alone because of me and my thoughts. I prefer watching TV, because I don't have to think, my mind is not talking to me. Then I kind of feel guilty, but it's better this [not thinking] than the other situation".

[Participant number 4; focus group A1]

"I know it's better to walk than to stay at home, to move a little bit. What happens is that what hurts me is not sitting, but what my mind tells me when I'm walking".

[Participant number 3; focus group A1].

3.4. Patients' sedation due to medicalization

Patients' day-to-day lives were perceived to be worsened by the medications used to attenuate the symptoms of their illness (this issue

was raised 12 times). Patients complained that the medications they took increased their somnolence and sedation, which had an influence on increasing time spent in prolonged sitting.

"You take 12 pills, you have a lot of dependency, you don't move, you don't do anything." [Participant number 3; Focus group A3]

"It's difficult to manage with the medication if you want to do something more active. If you take it in the morning, you will not do anything. It's better in the afternoon, but then, in the morning I'm not able to wake up to do it ... it's difficult!" [Participant number 4; Focus group A3]

Factors that influenced the promotion of "sitting less and moving more" identified by HCPs.

3.5. Emphasis placed on the pathology

Both HCP focus groups identified that practitioners mainly focused on addressing the pathology and physical health consequences of patients' mental illness (this was raised 18 times). As a result, HCPs tended to treat the pathology with medication. For example, a patient and an HCP said:

"Medication is a complex issue. It's very controversial. But we must assume that psychiatrists always give the right dose to patients"

[HCP participant number 1; Focus group A5]

Focusing on the treatment of the biological aspects of the pathology, rather than on promoting health and well-being, was seen to be a factor that influenced sitting less and moving more. HCPs perceived that their day-to-day work was generally focused on medicine. The medical specialization emphasized the pathology and its solutions as something biological, without taking into consideration how the patients lived or coped with their illness.

"We know that patients may feel somnolence due to medication, but it's necessary, isn't it?". [HCP participant number 1; focus group 4]

"Yes, doing physical activity is good for the body. It had many biological benefits, not only for patients, but also for us!". [HCP participant number 3; focus group 5]

3.6. HCPs' inadequate knowledge about the mental and social consequences of SB

HCPs perceived sitting less and moving more to be behaviours that impaired only patients' physical health, without considering the wider mental health and social consequences the illness had in their day-to-day lives (this was raised 9 times). For example, when HCPs were asked about the implications of patients' sitting less and moving more, answers tended to emphasize the biological consequences of sitting less and moving more.

"They all have some associated chronic pathology because they are sitting all day"

[HCP participant number 4; focus group A5].

"Moving more has direct effects on health, you increase the endorphins!"

[HCP participant number 2; focus group A4].

"Patients usually move more when they get sick, like hypertension or metabolic problems, then they get on track for some time". [HCP participant 4; focus group A4].

3.7. HCPs' insufficient advice on promoting sitting less and moving more

Advice from HCPs to patients was basically about general information and insistence on avoiding SB as being important for health (this was raised 12 times). Because HCPs perceived that SB was the patients'

responsibility, they did not pay attention to understanding or addressing patients' day-to-day factors that influenced SB.

"Patients stop being physically active and increase their SB due to the pathology, it is useless and a waste of time to try it. We recommend them to walk and do things and they do one or two days, not more". [HCP participant number 8; focus group A5]

3.8. HCPs' lack of tools and time for promoting sitting less and moving more

The HCPs perceived lack of time, tools and knowledge for changing SB in patients living with SMI (this was raised 15 times). In this context, some HCPs kept trying to promote "sitting less, moving more" and to raise awareness of the importance of sitting less and moving more, without having the tools or the knowledge to overcome the factors that influenced patients' SB (e.g. stigmatization that may drive medicalization and sedation).

"It's just that I have no idea how to deal with SB in these patients. I don't know what should be done". [HCP participant number 1; focus group A5].

"One of the problems is that here (in the outpatient mental health centre) we offer them free activities like Yoga, but when we can no longer offer free activities, and they have to go out and pay for it themselves, they don't do it." [HCP participant number 2; focus group A4].

"We have to deal with the medication, family needs, and patients' needs, and then we can recommend the patient to move more and sit less, but that's all? Only recommend, not much more." [HCP participant number 7; focus group A4].

Factors that influenced "sitting less and moving more" identified by both patients and HCPs.

Our analyses identified two cross-cutting themes which were raised by both the patients and the HCPs, but sometimes in contrasting ways. For example, the HCPs believed that *use of mobile Apps* would help patients with SMI to sit less and move more (this was mentioned 13 times). However, this perception was countered by patients who perceived that mobile apps did not fulfil their need for socialization (this was raised by patients 12 times).

"It will be hard for me if it is a mobile that tells me what to do. It has to be real" [Participant number 1; focus group A1].

"I would prefer human contact. Somebody who tells me and shares my experience and understands me". [Participant number 1; focus group A1]

"Let's put it the other way around. When you go to do it, mark it in the App. I think I would be the first one to do it. I set a schedule and the App helps me register it, right? Somehow, right? Turn it around". [HCP participant number 2; focus group A5]

"Focusing on the pathology and not the illness" also emerged from both the patient and HCP focus groups (and intersects with factors 1.3, 1.4 and 2.1). This issue was raised 20 times by patients and 17 times by HCPs. This theme highlighted the difficulties of recognizing how patients personally lived and socially understood their illness, and influenced the way prolonged SB had to be addressed in each case. This presented challenges for HCPs when dealing with patients' prolonged SB.

"You don't know whether it is the pathology, the medication or the personality of the patient. Some go for a walk, others do nothing despite everything I try; it's kind of hopeless" [HCP participant number 6; Focus group A4].

Thus, while patients lived and experienced their illnesses from different points of view than HCPs, some HCPs did not seem to

understand patients' day-to-day lives well enough to address prolonged SB in the routine practice of mental health care settings.

"I have no idea how it should be [to reduce patients' SB]. It makes me feel some kind of anguish, but I don't know" [HCP participant number 1; Focus group A5].

4. Discussion

This study sought to understand and identify factors that influenced the promotion of sitting less and moving more among patients with SMI and HCPs in an outpatient mental health care setting. We adopted a qualitative methodology to explore both the patients' perceptions of factors related to their personal behaviour of sitting less and moving more, and HCPs' perceptions of factors related to strategies for addressing patients' excessive sedentary behaviour (SB). Given the high levels of SB among patients with SMI, the well-known health benefits of reducing and breaking-up long periods of SB, and the scarce evidence on how to effectively limit and replace SB in these patients (Stubbs et al., 2015; Vancampfort et al., 2012, 2017), this formative research provides practical insights into the factors that could be addressed to maximize the impact of "sitting less and moving more" interventions in outpatient mental health care settings.

One factor that emerged clearly from both patients with SMI and HCPs was that these two groups understood and experienced mental illness from different points of view. These differences seemed to impair HCPs' ability to address patients' SB. While HCPs viewed patient pathologies from a purely biological point of view, patients with SMI experienced their illness according to how it impacted their life dimensions, with a special focus on their social life. Because randomized controlled trials of the effects reducing prolonged sitting have on mental health are scarce, HCPs may prioritize evidence-based medicine that emphasizes medication and pathology. This is in line with the theory of explanatory models (Kleinman, 1978), which suggests that individuals or groups have very different notions of health and disease, which influence their ability to address health-related behaviour issues in day-to-day clinical practice (Good, 2003; Martínez Hernández, 2008). In this context, several factors were identified that could be addressed to effectively promote strategies for *sitting less and moving more* in outpatient mental health care settings.

First, and not surprisingly, mental illness impaired patients' sociability and social health, which influenced daily time spent being sedentary. Mental illness also excluded them from society and isolated them with stigmatization and judgement. As a result, patients developed feelings of guilt about their health behaviours, including sitting more and not moving much. They could not accomplish the social health behaviours that were expected of them (Good, 2003), resulting in further societal exclusion, increased social isolation, and consequently increased SB. For patients, the potential social health benefits to be achieved from reducing SB seemed to be very important (i.e. avoiding social isolation), while for HCPs the focus was placed on the physical health benefits.

Patients with SMI appeared to value the potential opportunity of *sitting less and moving more* experiences in terms of improving social support and reducing social isolation through socially and physically active pursuits. Previous research has identified how physiotherapists could use social support for promoting PA in patients with SMI (Soundy, Freeman, Stubbs, Probst, & Vancampfort, 2014). Our study seems to identify that improving social support is also needed to target prolonged SB in patients with SMI and, that all experts who are part of the multi-disciplinary team managing these patients should be involved in doing so rather than only one specific group of professionals. Accordingly, using social support and tackling social isolation have been also identified as factors that influence recovery in patients with schizophrenia (Soundy et al., 2015).

Socialization activities may involve job responsibility (Mullane et al.,

2017), clarifying objectives (e.g. walking with friends to work or to a restaurant and less car use) (Wendel, 2020), or group activities in several contexts, including in blue and green areas (Burrows et al., 2020). For all these reasons, patients with SMI have difficulties following advice from HCPs. While it should be acknowledged that some sedentary activities that are social in nature (i.e. meeting with friends) can be beneficial for mental and social health, our study highlights that interventions to reduce, limit and replace SB with PA should focus on improving social connectedness (i.e. reducing loneliness and increasing rates of social contact and support) as a significant driver of well-being throughout the lifespan, including people with disabilities (Emerson, Fortune, Llewellyn, & Stancliffe, 2020; Franssen, Stijnen, Hamers, & Schneider, 2020).

Second, HCPs felt that they did not have the time or the tools to promote *sitting less and moving more* interventions to address patients' prolonged SB. For example, HCPs considered that certain tools that are widely used with healthy populations, like mobile apps (Ashdown-Franks et al., 2018; Firth et al., 2019; Martland et al., 2021), could be useful for limiting SB in their patients. However, patients did not think that mobile apps would fulfil their socialization and day-to-day needs (Haslam, Haslam, Jetten, Cruwys, & Bentley, 2020; Hays, 2012). Additionally, widely used self-reported tools that monitor intervention-related changes in PA for the general population (i.e. 7-day recall) may not be useful to HCPs as these tools might be inaccurate in patients with SMI (Soundy, Faulkner, & Taylor, 2007). Faced with a lack of tools and skills, HCPs may withdraw from strategies for promoting sitting less and moving more. According to Kime et al. (2020), when HCPs face multiple and complex barriers to PA promotion with diabetic patients - they use their time for more "useful" aims. This may also be true for HCPs who try to promote PA in their SMI patients.

Third, patients with SMI thought that they were overmedicated in order to keep them "calm", which resulted in higher levels of SB and social isolation (Firth et al., 2019). Since other researchers have shown that life expectancy may be reduced due to social isolation and lack of social support networks (Berkman & Syme, 1979; Good, 2003), it would appear that sitting less and moving more interventions might counteract patients' lack of social support networks and help them to overcome feelings of guilt and social stigma.

4.1. Future research

Our qualitative findings suggest two important strategies for improving current practice in relation to sitting less and moving more in patients with SMI. Future studies and research may try to understand that patients' SB is not only a behavioural risk factor with biological consequences, but a lifestyle (i.e. sociocultural construction) with social implications and repercussions that also need to be addressed. Future research should consider that socialization may be a key strategy for improving SB; providing patients with SMI with a social support network to change their SB may result in more active lifestyles, reduced fear of failure and guilt.

4.2. Limitations

Participant homogeneity and representativeness is a limitation of this study, as the sample was recruited from a single outpatient mental health care setting (Czwikla et al., 2021). The quotes translation from Catalan to English is also a limitation to comprehend and transfer the study results. To make it less a limitation, we added the original Catalan quotes at the supplementary file. More, following the CORE-Q, the interviewer/facilitator characteristic may be a limitation as it works at the place where participants were recruited. To minimize this bias, the two researchers that analyses the data were interdependent and did not know personally the participants of the study.

5. Conclusion

Our research found that patients' lived experiences of mental illness varied widely, and influenced their thoughts on strategies for sitting less and moving more. There was an overall perception from HCPs that incorporating *sit less, move more* strategies into routine practice in the outpatient mental health care setting would be challenging. The findings suggest that HCPs in outpatient mental health care settings should promote sitting less and moving more through socialization (Hays, 2012). In doing so, patients' with SMI would not only gain the benefits of avoiding prolonged SB and increasing PA, but also the benefits of socialization and a sense of community belonging (Good, 2003; Hays, 2012; Kim et al., 2021; Martínez Hernández, 2008; Yemiscigil & Vlaev, 2021). Left with the current status quo, the scale of the avoidable costs associated with inactivity-driven social isolation in patients living with SMI is only likely to escalate.

Declaration of competing interest

The authors declare that they have no known competing financial interest or personal relationship that could have appeared to influence the work reported in this paper.

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Data availability

Data will be made available on request.

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