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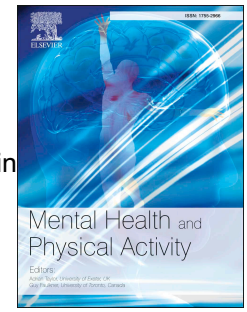

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From inactivity to becoming physically active: The experiences of behaviour change in people with serious mental illness.

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Abstract

Background: Physical activity (PA) has been found to improve physical and mental health and aid recovery in those with serious mental illness (SMI). However, individuals with SMI conduct less PA than the general population but little is known about how people with SMI adopt PA and what is involved in their behaviour change processes. The aim of this study is to explore individual experiences of PA to elucidate the behaviour change processes of PA in people with SMI who are in recovery. Method: A hermeneutic phenomenological approach was undertaken. Eight active participants (4 male, 4 female) who were in recovery with either bipolar disorder or schizophrenia, were interviewed and their data thematically analysed. Findings: Four main themes emerged which identified behaviour change facilitators when initiating and maintaining engagement in PA. Three themes revealed how participants became more active: 'Not ready to engage'; 'Initial steps to engaging in PA' and 'Becoming more active'. Within these themes, a variety of findings emerged, including: an awareness of the body in existence, a PA enabling environment and feeling real and normal. The fourth main theme, was labelled 'Doing PA', this outlined the experienced acts of PA. The type of PA conducted had different beneficial outcomes on the perceived symptoms of SMI. Individuals developed related PA preferences, which motivated them to continue with those activities. Conclusions: Individuals with SMI could be encouraged to conduct more PA by supporting individually meaningful PA. Strategies are suggested which may help individuals to initially engage in PA, but also to continue engaging in PA by enhancing their PA experience.

1. Introduction

People with serious mental illness (SMI) have poorer quality of life and physical health than the general population and mortality has been found to be reduced by up to 32 years (Walker, McGhee & Druss, 2015, Vancampfort, Knapen, Probst & De Hert, 2010, Narvaez, Twamley, McKibbin, Heaton & Patterson, 2008). This is mainly due to natural causes and poor cardiometabolic health in this population (Walker et al., 2015, Vancampfort et al.,

2015, Vancampfort et al. 2016a, Correll et al., 2017). The increased risk for cardio metabolic syndrome is associated with an unhealthy lifestyle and factors related to treatment, such as the weight gain associated with some medication. Physical activity (PA) has been found to provide many benefits, including an improvement to physical and mental health as well as cognition and quality of life in people with SMI (Firth et al. 2016a, Firth, Cotter Elliott, French & Yung, 2015, Bartels et al. 2013, Daumit et al., 2013, Dodd, Duffy, Stewart, Impey & Taylor, 2011, Faulkner, Cohn, Remington & Irving, 2007, Richardson et al. 2005, Vancampfort, Knapen & De Hert, 2009). Furthermore, PA has been found to enhance recovery by rebuilding identity (Carless & Douglas, 2008), mastering tasks, increasing their hope for the future (Soundy et al., 2014) and feeling more autonomous in their daily living (Leutwyler Hubbard, Jeste, & Vinogradov, 2012).

Although there are many benefits to being active in people with SMI, uptake can be low and attrition on PA programmes can be high (Beebe et al. 2010, Archie et al. 2003). Furthermore, people with SMI engage in less moderate and vigorous PA lower than the general population and sedentary behaviour is higher (Stubbs et al., 2016, Stubbs, Williams, Gaughran & Craig, 2016., Soundy, Wampers, Probst, De Hert, Stubbs, & Vancampfort, 2013).

A multitude of barriers to PA in this population have been reported, these include the symptoms of the illness, side effects of the medications, social physique anxiety, immediate negative outcomes, negative expectations, misconceptions about PA, lack of resources and the built environment (Soundy et al., 2014, Rastad, Martin & Åsenlöf, 2014, Vancampfort et al. 2013a). Firth et al., (2016b) carried out a meta-analysis of the motivating factors and barriers to PA in SMI and found that motivating factors include losing weight, improving mood and reducing stress. However, the most prevalent barriers were also low mood, stress and lack of support. Clearly, further research is required to explore how people could be supported to overcome these barriers and engage in PA. This has led to the

call for more research on how PA is adopted and maintained (Vancampfort & Faulkner, 2013) and to understand what behavioural processes may improve engagement in PA.

Behaviour change theories which have been considered in relation to PA in people with SMI include the Transtheoretical Model (Gorczynski, Faulkner, Greening & Cohn, 2010), Health Belief Model (Phoenix, Chon, Mak, Wong & Lau, 2016), Social Cognitive Theory (Beebe et al. 2010) the Self-Determination theory (Vancampfort et al. 2013b., Vancampfort, Stubbs, Venigalla, Probst, 2015, Vancampfort et al. 2016b.) and a combination of the transtheoretical model and self-determination theory (Vancampfort et al., 2014). Although related studies have found some significant associations between some of these theoretical constructs and PA, for example self-efficacy (Phoenix et al. 2016, Gorcynski et al. 2010), not all have been found to be significant and some have weak associations. Furthermore, these studies do not explore what happens during PA for the behaviour to be repeated. Research in the general population suggests that affect during PA could be central for maintaining PA (Ekkekakis, 2017). Factors such as intensity of PA (Ekkekakis, Parfitt & Petruzzello, 2011), attentional focus (Lind, Welch & Ekkekakis, 2009) and the environment (Thompson Coon et al. 2011) have all been found to be associated with affect. Outlining that the more pleasant the PA is perceived, the better the affect. For example, low intensity PA such as walking is associated with higher affect and therefore PA is more likely to be repeated (Ekkekakis et al, 2011). Individuals with SMI have outlined that they do prefer low – to moderate intensity PA, preferably walking (Subramaniapillai et al., 2016). In addition, moderate PA has been found to be associated with an aesthetically pleasing environment (Vancampfort et al 2013a). These findings suggest that types of PA and environmental considerations could also be important to engaging individuals with SMI in PA. However, what is not known is what is experienced during PA and how these experiences alter throughout recovery. Exploring these experiences and their interaction with the environment allows a deeper exploration of behaviour change processes and sheds light on what empowers and leads to participation

and continued engagement in PA. This in turn would help to develop interventions and to understand how they work, consistent with UK Medical Research Council (MRC) guidance (MRC, 2008).

By taking a phenomenological approach to studying PA experiences, we can begin to explore the interaction of the lived body in the environment and consider the experiences of behaviour change processes.

Only two studies to date have used a phenomenological methodology to explore PA and SMI. Johnstone, Nichol, Donaghy & Laurie (2009) explored the barriers of PA, and Pickard, Rodriguez & Lewis, (2017) explored the lived experience of PA and mental health through pictures, but there was no focus on behaviour change in these studies.

Exploring the lived experiences of individuals who are participating in PA and who are in recovery (but have been through periods of ill health and inactivity) can provide an insight into how individual's with SMI adopt an active lifestyle and what maintains their involvement. Most of the previous research has focussed on the views of people who are on a structured exercise intervention (Pickard et al. 2017) or a cross-section of people, most of whom were not active (Rastad et al. 2014, Johnstone et al. 2009). As there is high attrition on many structured PA interventions for this population, focussing on a variety of everyday PA, which individuals with SMI have chosen to conduct, may provide more in depth information on the behaviour change processes involved in adopting and sustaining PA. Individuals in recovery are more likely to be able to reflect on and share descriptions of their experiences throughout their illness and recovery. Therefore, highlighting how PA can be encouraged for those who may not be so well. Furthermore, exploring the embodied experiences of PA could provide insight into what is perceived to happen during PA and how this may support recovery and maintain effective behaviour change.

The aim is to explore individual experiences of PA to elucidate the behaviour change processes of PA in people with SMI who are in recovery.

2. Method

2.1 Methodological approach and epistemological perspective

An interpretivist epistemological position, underpinned by van Manen's (1990) hermeneutic phenomenology was employed in this study.

Phenomenology is concerned with the lived experiences of individuals, illuminating the understanding of experiences in the real world (Walton, 2001). Hermeneutic phenomenological research explores how things appear in consciousness and argues that the researcher cannot be separated from the participant, nor their own experiences and beliefs. Therefore, in the current study it is accepted that there are multiple realities of the phenomenon and the findings are our interpretation of PA in those with SMI.

This approach is in harmony with the recovery approach in mental health. The recovery approach outlines that meaningful experiences are central to recovery and these experiences are culturally interpreted by each individual. Therefore, a hermeneutic phenomenological approach is well suited to exploring the meaning of PA in recovery from SMI. van Manen (1990) claims that to help us to explore the lived experiences of individuals, four existentials can be drawn upon which pervade the lifeworlds of all human beings. These existentials are considered in the current study: 'Temporality' (lived time), lived time is the subjective time that we experience rather than the objective measured time; 'Spatiality' (lived space), lived space has little to do with geography and mathematical distances but more to do with 'felt space'; 'Embodiment' (lived body), we experience the world through our body; 'Relationality' (lived relation with others), lived relation is the social self that we are in the space that we share with others (van Manen, 1990).

2.2 Data collection & Procedure

Purposive sampling was used. Health Care Professionals (HCPs) such as Community Psychiatric Nurses were asked to identify appropriate participants. HCPs were originally approached by a member of the research team with whom they had a professional

relationship. This led to the identification of other HCPs who knew of appropriate participants. The criteria the HCPs were asked to use were as follows: diagnosis of an illness falling under the psychosis umbrella, according to ICD-10; Between the ages of 18-65; not in 'crisis' at the present time; willing and able to undertake an in-depth interview lasting about 60 minutes; conducted PA. For this final criteria of 'conducting PA' HCPs were asked to recommend potential participants who were undertaking any PA on a weekly basis. Assessing individuals as active (meeting PA guidelines) on a measure of PA was not undertaken as there is no equivocal evidence found that those achieving PA guidelines shared beneficial experiences with respect to recovery and SMI in comparison to those that do not achieve the guidelines. The amount of PA was not deemed to be important to this particular study, as the focus was to understand how to encourage more PA in this population.

Semi-structured interviews were conducted to explore the meaning attached to the lived experience of PA. An interview schedule was formed through knowledge obtained through previous literature, the author's prior experience of applied and research work with people with mental health problems and through informal discussion with people with mental health problems about PA. This knowledge and experience was collated and themes for the interview schedule were developed. This was refined and formed into open – ended questions. The interview schedule was funnelled and included questions about the participants' experiences of PA at the time of the interviews and also asked them to reflect on PA experiences at various stages in their life. There were 14 main questions with probes. Examples of these questions were: a) Think of one particular activity you did last week, describe how you felt before, during and after the activity, b) What PA did you do before you became ill? If this has changed why do you think this is? C) Does PA have an effect on your day to day life? If yes how and in what ways? If not, why not? D) What might prevent you

from being active? E) why do you do PA? All of the interview guide can be viewed on a supplement.

This schedule was used as a guide and allowed participants the freedom to discuss issues they deemed important that related to the phenomena under study and also provided the opportunity for further probe questions. The interviews lasted between 45-75 minutes and were conducted in a private room at either a leisure centre or a community centre. The interviews were undertaken by the lead author, who had appropriate training in conducting research interviews as well as experience of working with people with mental health problems. The participants met the interviewer once prior to the interview, which was organised through the HCP. In this first meeting, the research was introduced and the participant had the opportunity to ask questions and had time to consider if they wanted to undertake the interviews. If the participant was happy to conduct an interview an appropriate time was arranged. Following informed and written consent, the interviews were conducted, digitally recorded and transcribed.

Eight participants were recruited for the study. This was an iterative process and each interview was seen to build a picture. Within each interview, different experiences were shared and it was seen that these experiences added to the exploration of the phenomenon. However, after the eighth interview it was felt that this participant was describing very similar aspects of the PA experience to the other participants. Therefore, data saturation was felt to have been achieved; no new thematic areas were emergent at the close of analysis. A brief summary of the eight participant characteristics can be seen in table 1. All names were changed.

- Insert table 1 about here -

2.3 Analysis

A thematic analysis underpinned by van Manen's (1990) hermeneutic phenomenology approach to research was adopted for the current study. van Manen outlines six activities

which can be used to guide the research process. Reflecting on essential themes entails developing themes, which form a tentative structure to represent the meaning of the phenomenon. To help form this structure and organise the themes, Template Analysis was used (King, 1998).

The first process after transcription was to read and re-read the interview transcripts, making notes in the margins. For each sentence or cluster of sentences, reflection was undertaken about what it may reveal for the phenomenon (van Manen, 1990). These notes were transformed into codes, and clustered together, attaching meaning. After reading, re-reading, coding and forming themes for three interviews, an initial template of themes was drawn up. Template analysis (King, 1998) was used alongside van Manen's (1990) activities to help organise and form a thematic structure. A template is outlined consisting of a hierarchical structure with broad themes encompassing narrower themes, this template is not fixed and is refined throughout the analysis (King, 1998). Four different templates were outlined through the different stages of analysis, the final one can be seen in the findings (see figure 1). The final template was refined through writing and rewriting (van Manen, 1990). Through this writing the four existentials of embodiment, spatiality, relationality and temporality were used to help guide the reflection of the phenomenon. For each theme imaginative variation was employed to determine if each was essential to the overall experience of PA in people with SMI.

A qualitative data analysis software, NVivo (version 8), was used to aid the development of the analysis templates.

2.4 Trustworthiness

To ensure the quality of the research, the following principles were used as proposed by Yardley (2000): 1) Sensitivity to context 2) Commitment and rigour, 3) Transparency and coherence 4) Impact and importance. The research and analysis was grounded in phenomenology. A reflective journal was kept throughout the research process to aid

analysis but to also be cognisant of our pre-understanding. The interpretation of the experiences were influenced by these pre-understandings. For instance, the main author had previously worked in mental health hospitals, where she as an active person, was frustrated with the sedentary environment. Critical friends were therefore used at different stages of the analysis process to discuss the relevance of emerging themes. The role of the critical friends was to encourage analytic reflection and to offer alternative perspectives (Smith & McGannon, 2017).

2.5 Ethics

Ethical approval was obtained from the participating university and the Local NHS Research Ethics Committee. REC number: 09/H1306/52

3. Findings

Through the analysis, it became apparent that conducting PA was closely aligned with perceived symptoms, recovery and the environment in which the participants were inhabiting. Therefore, the findings follow the participants through from inactivity and perceived ill health, through to more regular PA and recovery. Although the recovery approach proposes that the focus of mental health care should not just be about symptom control, controlling symptoms through PA was very meaningful for the participants of this study. The final template was converted into a diagram to enable a visual understanding of the inter-relatedness of its parts in illuminating the total experience. This can be seen in figure 1.

- Insert figure 1 about here -

3.1 Not ready to engage in PA

Some of the participants described how when they perceived their illness to be at its most severe, the needs of the body were neglected. It was as though the mind, self and body were seen as separate entities, where the body did not feel that it belonged to them. At this point

in the illness it was as though they were completely consumed in their mind, they were living and existing in their minds and their bodies were left desolate, rendering PA impossible:

> *"I think I've touched base with all the points of the extremes of it [illness] to the point where I've just let my body…I've been so wrapped up in my mind that I didn't clean my teeth for a year, didn't wash, just let everything go, I was totally consumed in my mind"* (Tom).

At its worst, some of the participants described the felt space in which they occupied like being at the bottom of an enclosed, murky deep hole:

> *"I've been in that pit of dung it's not a nice place to be and it's a hard place to get out of" (Tom).*

Although, PA was often described as being impossible when their minds had taken over their body, there were occasions where people were able to conduct PA. Furthermore, these same factors drove some people to be active. This is discussed below in the theme 'desire to be active'.

Becoming more active appeared to coincide with recovery, therefore, the focus of the following themes is to explore how and why the participants adopted PA and how PA became a feasible activity in everyday living.

3.2 Initiating PA

To initiate PA in the first instance, some acknowledgement of the body in existence was described. If there was awareness of the body, the participants were able to move their body in a meaningful manner, especially if they had the desire to be active and were in a PA enabling environment.

3.2.1 Desire to be active

For some the desire to be active was in the form of extrinsic motivation, such as weight loss, (Tina), health (Diane), to be part of normal society (Larry) or symptom control (Mike, Ann). However, for others, PA was driven by the embodied urge to free themselves of some of their perceived negative symptoms and lethargy associated with the medications.

"I just seem to like be getting drove mad [by the voices and depression] and it drove me to do exercise... but it's [PA] definitely not something that has been pushed it's more what hearing the voices has pushed me to do' (Mike)

It was as though Mike's voices possessed his body and involuntarily drove him to move – he was not intentionally doing PA for the benefits or for fun, but out of necessity. Fortunately, for Mike, this began because there was equipment available at home (see the theme 'PA enabling environment' for a discussion on equipment).

3.2.2 PA enabling environment

No matter what the motivation was to be active, this was not sufficient without a PA enabling environment. This included supportive staff, the availability of equipment, safe environment and an opportunity to be active. Without these enabling factors the barriers to PA were too great. As the barriers to PA have been outlined in previous studies (see introduction), this was not a focus of these findings. However, one of the most relevant and frequently discussed barriers to behaviour change was the symptoms of their illness and side effects of the medication, such as lethargy. This is an example quote from Tina:

"With bipolar you start to get paranoid and you don't want to go anywhere because you think people are laughing at you and want to hurt you and it all escalates out of control…so it's stopping me from doing physical exercise and meeting people and enjoying it" (Tina).

Therefore, understanding how people engage in PA with these symptoms and how they are able to overcome some of these symptoms is now explored.

The availability of equipment at home was essential for some of the participants to engage in PA. Tina described how she had a treadmill at home, Ann used to dance at home with her music and Mike used his Mum's gym equipment. For Tina and Ann, being able to conduct PA within their home environment was essential in order for them to begin PA, otherwise their paranoid thoughts about going outside would have prevented them from engaging in any PA.

Mike described how his negative thoughts were the driving force to be active, but engaging in PA was only made possible as he came across the equipment at home.

"my mum's got a bit of a gym, she's a personal trainer so I thought I might as well start doing a few weights" (Mike)

The participants described how mental health professionals had both hindered and helped them in their initial steps to be active. This partly depended upon if they were living in a hospital or in the community. Many of the participants described the hospital environment as sedentary, where PA was not considered, nor encouraged. It was not part of the climate to be active within a hospital environment, which was often interwoven with the side effects of the medications, rendering people lethargic. Furthermore, mental health professionals, were described as preventing any attempt of PA:

"I were doing some press-ups actually in hospital and they said you can stop them, you're here to rest, so I stopped doing that and rested up and it just made me worse… just sinking back into chair… I was getting depressed, I went really lethargic and I didn't like it one bit" (Mike).

It appeared that Mike had been trying to prevent himself from losing control of an integrated mind-body. Undertaking PA helped the mind feel it belonged to the body, as he had some control over his bodily movements. Once this control was removed his mind took over, and for Mike his body at this time had been swallowed by his mind.

However, other participants described circumstances where professionals helped them to be active. This was both in hospital and in the community, and without this support being active was very difficult for the participants, if not impossible. Paul described a situation when he was encouraged to go for a walk by a PA professional (David) who would attend mental health hospitals periodically:

"It were quite a weird period…it were really funny actually because I was stiff as a board...and me nanna and me great auntie came down. I were just sat back you know in my bed like stiff and me nanna immediately shot down with a walking stick down to the nurses station, 'do you realise how stiff my grandson is do you know that he's poorly you're not looking after him properly' and they gave me some procyclidine and then David [name changed] appeared on ward and the stiffness just went with the procyclidine ... and I felt like going, so I went for the walk, really enjoyed it, we had something to eat, and then I got back on the ward and the doctor were shocked that I'd actually been out and gone for a walk and I felt really good and unfortunately for me at that time things didn't go well....but going for that walk that time and I felt that bit better, after feeling so low and being in bed and stiff it was just like it was like this is amazing, I had a snapshot of real life just for a day or two in a bad spell" (Paul).

Paul demonstrated that it is possible to engage in PA, even in phases when the participant described themselves as "really poorly". However, the medication needs to be facilitative of this, a PA opportunity needs to be available and encouraging professionals are required.

In the community, the provision of PA was more frequently described as being encouraged to support recovery. However, having the support from a professional was described as essential for some to engage in PA and overcoming some of the perceived symptoms associated with their illness. This was the case for Tina who described paranoia preventing her from participating in PA. Tina was on an individualised programme for PA and initially a fitness advisor (pseudonym is Sam) attended PA classes with her:

If you've got someone there that's come on I'll meet you there you know like Sam did, Sam said I'll meet you just get yourself to centre, the first couple of times I was absolutely terrified because I was getting myself down on me own and I was frightened but soon as I got here with Sam, Sam did the class with me and made sure I were alright (Tina)

Tina described how it was extremely difficult for her to travel to the sports centre alone and she could only do this in the knowledge that Sam was there. Tina went on to state that she participated in the class alone after a few weeks. Once an individual has begun to be active, it can be difficult to maintain PA when recovery has just begun, especially if engaging in a new environment. Paul attended a sports group for people with mental health problems. He described how it took time to become accustomed to the new activity and environment:

"There has been times when I've been more poorly and I've gone down and I've been nervous and if I've been paranoid about somebody…it takes a good 6 weeks and then once you get used to it… if your fitness comes back you get to know people and you get to know that they're actually big softies" (Paul).

It appears the body needs time to adjust to the environment for there to be a body-world connection. Once the participant was relaxed in their environment, the focus on their anxieties and paranoia can diminish and they become more embodied and less reliant on PA professionals.

3.2.3 Psyching up

An important part of the move from inactivity to engaging in PA was the preparation for PA. For all participants at any stages of the illness, some form of pre-exercise routine appeared to take place. For some, this was a simple case of putting their exercise clothing on. It seemed that the preparation was the first steps to focus on their body and away from their mind. Paul described how in preparation for his first competitive football game since he was diagnosed with schizophrenia, he used a CD of 'mindfulness' which encouraged him to focus his mind, to get himself into the right felt space to enable him to undertake this important match:

"The voice tells you to flick from one sound to another and then eventually after doing that you've got to submerge yourself into all the sounds…when I played football on Saturday I did the tape before playing so that I started to feel more in the natural world…it stops that being detached from what's going on, it stops your mind from wandering and it focuses you and on what you're doing" (Paul).

Paul used mindfulness to feel as though he was in the 'natural world' and to enable him to play.

3.3 Becoming more active

In the initial stages of becoming engaged in PA, PA was often trial and error and sporadic, with no regularity. However, through experiencing PA, participants were encouraged to continue with PA and for it to become more regular. These experiences were often related to 'feeling real' and 'feeling normal'.

3.3.1 Feeling real

When participants began to recover and experience PA, they described how they began to engage in a real and physical space, which is in contrast to the 'murky hole' as described by Tom.

There's that unreal feeling that you can have when you're poorly, when you're anxious and sport pops that anxiety bubble a little, certainly for that moment when you're doing it and that while after and if you keep doing it, it does pop that anxiety bubble a little bit and things that have looked unreal and flat and maybe a bit darker, become more 3D and more colourful (Paul).

Paul claimed that PA helped him to feel more real, as though he was using his body to engage in the world that beforehand he was not able to do because his thoughts would not

allow him. Paul described how his perception of objects altered in that they became more alive, more colourful and 3D, his outlook became brighter. It was like Paul had been existing through observing the world on a black and white 2D TV, the glass of the TV was a barrier preventing him from entering into the world. PA was like being given a pair of colour 3D glasses, where he broke down the barrier and entered the 3D world. A world that he could touch and feel, one which he felt was real life. Engaging in this world perhaps permitted Paul's self to re-engage in this 3D world.

For Mike, conducting PA outside was beneficial for engaging his body in the 'real world' because of the felt sensation:

"A bit of cycling, cycling's good for heavy depression as it works on your senses a bit... I did notice like the proper mountain bike or on the road it was good for depression...I just think if you're on a bike in the gym you're not looking where you're going and just putting brakes on and stuff and going round corners, flying round the corner" (Mike).

For Mike, depression was perceived as dulling his senses, whereas cycling with the wind in his face, with decisions to take and the environment to take in, awakened his senses and provided him with a body world connection.

3.3.2 Feeling normal

During times of severe illness, participants felt that their self was in turmoil, their experiences were often described as though their self was lost or was in battle with their mind. PA helped them to develop an identity in which they felt 'normal'; for some participants, this was the recognition of a former sporting self, for others it was a recognition of a self without the entrapments of mental illness. In both circumstances, it appeared to help settle the troubled relations in mind and self. Larry perceived PA as a way of developing himself. He perceived that if PA was part of his routine, and part of his self, that he would be able to cope better with life's challenges:

"Well if you're exercising you're developing yourself, I mean mentally so it's just another arrow in your cover that develops...at the moment things have been pretty bad but because I've developed myself .....it is not as scary and when I hit a bad patch I can sort of weather it out until the weather changes" (Larry)

Larry had knitted PA into his self and into his armour which helped protect against the self

becoming estranged. Others talked of building physical strength (Howard), and increasing fitness (Diane) or losing weight (Tina). However, the participants described how developing their physical self, developed alongside their mental self and the two could not be separated. The whole being was becoming stronger by integrating the mind and body.

Feeling normal was also associated with engaging in a social world. For Paul, the more he walked the more he realised that he was engaging in a social world. This was perceived by some to be the first step in recognition of recovery and 'being normal':

I'm actually saying hello to those people in the street, or instead of feeling really shy and anxious and put my head down, I'm actually looking at them or, been cued into how people work so if you notice that they're not looking at you you look away (Paul).

It was as though this participation in walking enabled Paul to focus on his body, in this case eye contact. This focus on the body brought with it recognition that he was once again engaging with others in the social world, which also produced a sense of achievement and a desire to continue. When recovery and PA are improving, participants began to understand the benefits for themselves and this resulted in participants becoming more autonomous over their PA, with respect to type of PA and what they hoped to achieve.

These experiences of feeling real and normal encouraged participants to continue with PA as their lived body was adjusting to a new environment. As some of the perceived symptoms reduced, they were able to experience more benefits and even pleasure from PA (see theme distraction and flow).

3.4 Doing PA

The actual embodied experience of PA shed some light on why people continue and these experiences were often described alongside their perceived symptoms and illness. Some of the participants described how these symptoms have become integrated into their self, but most stated that they would prefer to be without them. Therefore, some of the participants described how they actively use PA as a form of therapy.

3.4.1 PA as therapy

Participants described how they purposively used PA as part of their therapy and recovery. However, this was something which they had chosen to do and was not necessarily on their care plan. PA was recognised as important to maintaining and improving their self and coping with their illness, and was something which they hoped to maintain throughout their life.

3.4.1.1 Chemical release

A release of stress appeared to be reinforced by the visual and actual felt sensation of sweat and its associated heat. It is as though being hot and seeing sweat being excreted helped them perceive a release of negative thoughts and symptoms:

It's a release of all the negative stuff that I'm thinking...because I do it, and as I'm going along on the treadmill...you get hot don't you because you're exercising, you're body's working and it releases those chemicals… and I just think to myself ahhhhhh [relaxing sound], it's like a stress release (Tina).

Another way in which participants believed that PA could benefit them was through the release of 'good' chemicals into their body. It was as though the perceived good chemicals could counter-act some of the negative chemicals released into the body from either medications or the illness itself. For example, Mike discussed chemicals a lot during his interview and believed that adrenaline and endorphins were released during PA, which helped him cope with the knowledge of the perceived 'bad chemicals' released into his body from the medications:

"I try and have it with the medication so I'm like a normal person, instead of feeling really drowsy or feeling like you've got too many of these chemicals I just try and keep it just like normal" (Mike).

3.4.1.2 Working through thoughts

Some participants purposively chose low intensity PA as it provided them with the time and space to work through thoughts. This is illustrated by Tina who provided a thorough and insightful example of the alterations in her thought processes by using her time to work through these thoughts on a treadmill at home. She described a situation when somebody had kicked the wing mirror off her car outside her house and she became very upset and

paranoid about people 'having it in for her'. Further, when she reversed her car on to her drive, she drove into her neighbour's fence. Tina described feeling at rock bottom and crying into her neighbour's arms. Tina continued:

"I got in the house and I thought I just want to go to bed… then I actually got on the treadmill... I just thought I've had enough I get to the stage where I'm exhausted… so it's either go to bed or get on the treadmill, so I got on treadmill ...and I'm walking away on treadmill when you start thinking about things and I stood there and I thought 'why did I get myself into such a state it's only a car, you know it can be fixed and so what if you know it's there and they just decided to cause you loads of problems' and then I thought 'well I didn't knock fence down when I hit it like you know I were going 2 mile an hour' you know what I mean but it sounds like you've hit it hard when it crashes in car and I thought 'well they were alright I didn't have to rebuild his fence or owt and I just thought well he weren't bothered cos' all he said to me 'were it's only a bit of wood Tina', so then I started thinking and all the time I were walking on this treadmill and I were thinking 'why on earth were I getting myself all worked up about it, it's nowt it can be fixed' and after that my thought process changed completely and I just thought 'why, why did I get myself into a state, nobody else is bothered, and after I'd done it I felt quite alright and I weren't upset no more" (Tina)

This description demonstrated how Tina believed that walking on the treadmill helped her go from thinking 'everybody hates me' to 'it's nowt it can be fixed'. This was seen as going on a journey, with the beginning of this journey being 'rock bottom'. With every step she took she was getting closer to finishing her journey, grinding each negative thought down. By the end of her journey the negative thoughts were reframed in a positive manner. If Tina had not been on this journey, she described how she would have just gone to bed. It was perceived that those same thoughts would be ruminating, but she would be stuck in one place like her thoughts would also be stuck; the same thoughts being repeated over and over with no chance to escape. For Tina, going on this embodied journey allowed her the time to walk the thoughts out of her through the movement of her body.

For most participants, PA was used to distract from their thoughts and therefore undertaking a pre-reflective activity which required no conscious thoughts, such as walking was not sufficient.

3.4.2 Distraction and flow

A variety of PA was described which helped individuals distract them from their voices. This included setting goals such as the amount of time on an exercise machine (Ann, Tina), learning a new skill or conducting intense and stimulating PA. Mike found that boxing was the best for distracting away from his voices, but he attributed this to the fact that it was a skill that he was just learning:

"I think it's because you're thinking whilst you doing it, when you're running your legs just move naturally, but I'm just starting learning... thinking right fast as you do it" (Mike)

For others, the distraction from their thoughts was most successful if the PA was intense:

the hardest part I've got is combating and beating these voices and the more intense something is the less impact they can have…One thing I seem to remember from the training session was physical pain, not sadomasochism but physical strain and pain brings you back to yourself …. I could grab hold of myself whereas I was being taken over by my strangeness (Tom)

The physical pain associated with PA made Tom focus on his body as an object. If the intensity was high, often there was a focus on the pain in the body and therefore the participants were successfully distracted from their thoughts. Furthermore, the participants were brought into the present time, by focussing on their body, preventing them from being endlessly consumed by their negative thoughts.

When a person was totally absorbed in an activity there was no conscious effort to ignore the voices; it was something which happened as a consequence of the activity. This was seen as being like the concept athletes describe of 'being in the zone', theoretically described as having feelings of 'flow'. Flow is when individuals are not consciously aware of their movements and actions; they are concentrating on striving towards a goal and experience a loss of self-consciousness (Csikszentmihalyi, 1975). Some participants in this study were completely absorbed in their activity and their goal, making it unlikely that distractions would put them off. There was no attention on their body or mind. For Tom walking in nature was what he found thoroughly engaging:

"A voice I would be having a bad time with my head but when I was walking and out in nature things calmed down...the rhythm of walking it's….. my mind was racing at 100 miles per hour where's walking slowed things down, took time to look around see what was going on in

nature, took the smallest details watching the bees collecting pollen and things you just get lost in the moment" (Tom).

The rhythm of walking appeared to be important to Tom. This slow constant rhythm was in stark contrast to his mind which was perceived as working extremely fast, something which he was trying to fight and slow down. Tom viewed that his mind was separate from his body, and his mind was racing, but his body was able to walk slowly and rhythmically. Of equal importance to Tom was the nature around him, it was through observing this that he was able to 'get lost in the moment'.

On occasions, participants described how it was easier to become absorbed in the activity whilst being part of a group, but only if others were positive around them:

"Once you get there you get a physical lift, you get wrapped up in the excitement, it is rather exciting especially if you're winning, erm so yeah I think group activities are easier to participate in rather than erm solitary ones because you've just got your own thoughts"(Tom).

It appeared that being surrounded by people impacted upon his own thought processes; he could sense that other people were enjoying it and he got 'caught up' and 'wrapped up' in these emotions. He was functioning on a pre-reflective level where the task in which he was engaged absorbed his attention, and there was no focus on his body or his voices. When people are completely immersed in the activity and are described as experiencing flow, they are demonstrating feelings of pleasure and enjoyment. Experiencing pleasure is associated with living in the moment, where the participants' body and mind are integrated into the environment and the 'real world'.

To enable the participants to form a body world connection and to live in the moment and achieve flow, the participants had to be secure in that particular environment. Furthermore, achieving flow only appeared to be feasible if the attention during PA was not on external monitoring such as time.

4. Discussion

The aim was to explore individual experiences of PA to elucidate the behaviour change processes of PA in people with SMI who are in recovery. The hermeneutic phenomenological approach taken provided an in depth exploration of the lived experience of PA which highlighted how the experiences of adopting and maintaining PA altered as recovery progressed. The findings highlighted a variety of factors that support behaviour change, which are now outlined and represented in the model in figure 2.

- Insert figure 2 about here -

This study identified factors that help to initiate PA, often when the person is at an early stage of their recovery, and the processes, which help to maintain ongoing involvement. We also found that external, environmental factors and professional support were more important in the initiation phase, with PA becoming more autonomous as recovery progressed.

One of the novel findings of the current study was that acknowledging the body in existence is central to enabling PA to commence in the first instance. Without an awareness of the body in existence PA is not deemed possible as participants were consumed by their mind. One suggestion to aid individuals acknowledge their body could be to implement body awareness therapy prior to PA. This is a holistic method which focuses on the body and consists of simple exercise in stillness and movements. This has been found to be beneficial for people's perception of their body and self in people with schizophrenia (Hedlund and Gyllensten, 2013). It is a low intensity approach, so could be acceptable and effective in the early stages of encouraging PA in people with SMI.

The environment was also central to engaging people in PA, and included the physical and social space as well as the individual's relationship with the environment. This is consistent with previous research that has found that the built environment can prevent engagement in PA (Leutwyler et al. 2012). Vancampfort et al. (2013a) found that individuals living in more densely populated areas walk less and an aesthetically pleasing environment

was associated with moderate PA. Our study can offer further insight into these environmental associations with PA, as it was found that engagement in PA in different environments alters depending upon individual's perceived symptoms and stage in the recovery process. For example, symptoms such as feelings of paranoia and the perceived threat from others in society often prevented individuals from engaging in PA outside so they preferred to conduct PA inside, usually at home, where it was perceived to be safe. Where recovery was more advanced, individuals were able to engage more in a variety of environments. Availability of equipment was also important and helped people to overcome one of the key barriers to PA in this population. This is consistent with research suggesting the availability of equipment to be associated with moderate PA (Vancampfort et al. 2013a).

A further environmental consideration was the sedentary climate in mental health hospitals which has been identified as a barrier to PA in this study and other research (Gorczynski, Faulkner & Cohn, 2013). This includes the attitude of mental health professionals who often do not believe that service users are motivated to be active (Leutwyler, Hubbard, Jeste & Vinogradov. 2012). The current study highlighted how it is possible to overcome these barriers in this environment if people with SMI are not perceived to be over-medicated and have opportunities to engage in PA and support from staff. Participants described occasions where the support from professionals was imperative to engagement in PA, and is more important in the initial steps of PA engagement. As the individuals become accustomed to their environment they become less reliant on professionals. This is important knowledge for service providers (Taylor & Faulkner, 2014).

Participants described using different techniques to prepare themselves for PA, which enabled them to focus their mind to overcome some of their perceived symptoms. Rastad et al. (2014) found that cognitive behavioural strategies such as self - talk were used to help engage participants in PA. The current study furthered this by revealing that mindfulness was successfully used for focussing the mind into the current time and space to enable PA.

We identified a number of key benefits of PA which helped to maintain involvement and support recovery. One of the principle reasons for PA was symptom control and relief, which was a purposeful strategy and became very meaningful and motivating in that it helped them to feel a sense of normality. Previous research has found that feeling normal was one of the benefits of PA (Rastad et al. 2014, Carless & Douglas, 2010). Our study related normality to a development of a perceived stronger, better self, one that looked and appeared normal like the rest of society. Therefore, both the development of self and symptom management was a key motivation for people to maintain PA. Individuals may be more likely to choose PA as part of their recovery if they have knowledge of these benefits of PA for their symptoms. Previous research has found that 71% of people with schizophrenia and 53% of people with Bipolar Disorder were unsure if PA could be beneficial for managing their condition (Fraser, Chapman, Brown, Whiteford & Burton, 2015), thus suggesting that more education is required. Viewing PA as 'therapy' in itself was a factor for continuing PA because it was seen as a positive therapy resulting in 'good chemicals' flowing around their body, rather than psychotropic medications with which they had experienced negative side effects. Some people also used it like a self-talking therapy, as a way of rationalising their thoughts and problem solving.

Our study also highlighted that the type and intensity of PA chosen was dependent on the expected outcome of the impact of PA on the symptoms, which underlines the importance of choice in determining whether people engage in PA (Centers for Disease Control and Prevention, 2011). Type and intensity of PA varied depending on whether people wanted 'time-out' from symptoms or if they wanted to work through their thoughts. Other studies have found that PA can help distract people with SMI from their voices and other symptoms such as hallucinations (Johnstone et al. 2009, Faulkner & Sparkes, 1999; Falloon & Talbot, 1981). In our study those that used PA to help distract them from their thoughts did this by either focussing their attention on their body or the environment. This is related to

attentional focus in PA where thoughts can be broadly categorized into associative thoughts (focus on bodily responses) and dissociative thoughts (focus on environment or thoughts not associated with the PA) (Morgan, 1978). In our study, some participants required PA to be of a sufficiently high intensity to engage associative thinking, to prevent their thoughts from intruding. Although this type of focus has negative implications in terms of affect in the general population (Biddle & Ekkakakis, 2005), our study shows perceived benefits in that they were doing something positive for their body and preventing their thoughts from intruding. The focus on the body helped them to live in the present time and to be more mindful of their body, rather than their thoughts dominating. For others dissociated attention was used to distract from their thoughts by focussing upon aspects of either the social or physical environment. In these situations, PA was not physically intense but the environment was sufficiently stimulating to provide distraction. It was in these situations that participants were described as experiencing flow, as described in the finding section. These were deemed to be the most pleasant and enjoyable experiences by participants and according to Ekkekakis (2017) this type of PA is more likely to be repeated. This was more likely to happen further into their recovery. Attentional focus strategies, such as reading verbal instructions on either dissociative or associative factors, might be able to enhance enjoyment or symptom management during PA. Implementing attentional focus strategies have been found to enhance PA performance such as improving running economy (Schücker, Schmeing, Hagemann, 2016). However, we are not aware of studies exploring how attentional focus strategies could be used alongside PA to enhance PA engagement and the PA experience for people with SMI.

4.1. Practical implications and future research

This study highlighted a number of practical suggestions, which may help to encourage PA behaviour change in people with SMI:

1. If individuals have limited awareness of their body, professionals might encourage a focus on the body perhaps through body awareness therapy. Further research is required on body awareness therapy in this population.
2. Introducing mindfulness to PA could be explored with the purpose of overcoming some of the symptoms of SMI which are one of the main barriers to PA.
3. Early in recovery, PA may be better undertaken at home (or in the hospital) where individuals feel safe. Providing PA equipment and advice on PA in the home could be beneficial. Further studies could explore if this enhances engagement in PA.
4. People need to experience activities themselves to continue PA and to find activities that suit them, therefore offering a wide choice of activities which promote pleasure is also recommended.
5. Professionals could encourage individuals to be active by educating them of the benefits of PA, especially with respect to the self-management of symptoms and to overcome any frustration with negative thoughts and lethargy. Furthermore, they could highlight the positive chemicals released.
6. It is important to educate professionals on the meaningful benefits of PA in this population, especially with respect to the expected outcomes of symptom management. Further research into educational programmes for mental health professionals could be conducted.
7. Attentional focus strategies could be implemented and researched which may aid individuals achieve their desired outcome.
8. The importance of choice, professional support and increasing autonomy suggests that an autonomy-supportive approach underpinned by self-determination theory to increase PA could be implemented. This approach has previously been implemented to increase PA in people with depression (Chalder et al. 2012), but not for people with SMI. This is further supported as research has found that autonomous motivation, with respect to

self-determination theory is related to greater participation in PA in people with schizophrenia (Vancampfort et al., 2013b). Therefore, future interventions and provision should focus on autonomous-supportive approaches.

4.2 Limitations

Interviews were only conducted with people who chose to conduct PA. Although these experiences provided useful information on the benefits of PA and provide service and research implications, a broader range of people could be interviewed such as people in different phases of their illness or to follow the same participants through their illness trajectory. Despite this it is important to note that participants described a wide variety of types of PA throughout their illness and recovery and this provided a richness of experiences and insights. We also acknowledge that all of the participants in the current study were Caucasian so there was little ethnic and cultural diversity in the sample.

Although the sample was relatively small, it was acceptable for a study of this type and the methodological approach and phenomenological analysis used enabled a deep and insightful exploration of the participants' rich experiences. As the interviews were conducted with individuals who were relatively well and active, the participants shared some in-depth and insightful experiences of PA throughout the different phases of their illness. Understanding these experiences can build on previous work and offer an alternative and in-depth perspective of the lived experiences of PA in people with SMI. Furthermore, it is hoped that the behaviour change factors identified in this study, alongside the insightful quotes provided by the participants, will help practitioners to empathise with the individuals and identify key motivators and approaches to establish more meaningful PA at different stages in the recovery process.

5. Conclusion

This study explored the lived experiences of PA in people with SMI, with the aim of elucidating behaviour change processes. The exploration of the lived experience revealed an

726 understanding of what happens before, during and after PA which shed light on how people
727 adopt and maintain PA. In the initial stages of PA, individuals require an awareness of their
728 body, a desire for PA and a supportive environment. Individuals then maintained PA because
729 of the perceived benefits of self-development and management of symptoms. Furthermore,
730 choice of type and intensity of PA was important and associated with different expected
731 mental health outcomes. We suggest that to engage more people in PA, the PA experience
732 could be enhanced, this should consider the environment, stage of recovery and body
733 awareness. Strategies such as body awareness therapy, mindfulness and attentional focus
734 strategies could be implemented and are proposed for future research. In addition, mental
735 health professionals should be educated in the importance of choice and type of PA and how
736 this relates to the potential outcomes for mental health. The importance of choice,
737 professional support and increasing autonomy underlines the importance of an autonomy-
738 supportive approach in future work.

739 To close, here is a poignant quote from Tina: "*My exercise has been the most positive*
740 *influence in my life and I would recommend it to anyone with a mental health problem".*

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Interview guide for online supplement

Brief

Hi …….. How are you doing today? As described to you beforehand, this interview will be about you and your physical activity experiences. It should take no longer than an hour and you can stop the interview at any point. I will be recording the interview on this (show them MP3 player), is this alright with you? If you want to ask me any questions please feel free to ask at any point.

1. PA means anything from walking to the shops to playing sport, can you describe what you do to keep active.
    - how long do you do this?
    - could you describe how much effort you put in.

2. How does this activity make you feel? Give examples.

3. Think of one particular activity you did last week, describe how you felt before, during and after the activity.

4. Describe your physical activities of last week.
    - is this representative of every week, why?

5. Describe to me your physical activity patterns, i.e. do they alter depending on the season, how you are feeling?
    - can you give me examples?

6. If different types of PA have been described, do you feel differently about the different types of PA?
    - do the different types of PA make you feel different?
    - give examples

6. What PA did you do before you became ill? If this has changed why do you think this is?
    - can you give examples?

7. Does PA have an impact on your illness? Can you tell me about a situation where you feel this has been the case?

8. Does PA have an effect on your day to day life? – if yes how and in what ways? If not why not?

9. What might prevent you from being active? Why?

10. Why do you choose to do physical activity?

11. What are the benefits for you of taking part in physical activity?
    - can you expand on why these are benefits?
    - What aspects of the physical activity have lead to these benefits?

12. Is the activity you do, provided by the trust? Do you do activities that are provided by other agencies/charities?
    - who told you about it?
    - did you need a lot of encouragement to participate, why?
    - what are your views on these activities?
    - what are your experiences of these activities?

13. What activities would you like to see provided?
    - Why?
        - How would these benefit you and others?
        - Give examples.

Debrief

Thank you very much for participating. How are you feeling? (If the participant is upset the participant will be asked if they want me to contact anyone for them. I will have the contact details of the keyworker and PALS for them).

Table 1. Participant characteristics

Name	Age	Gender	Diagnosis	Employment	PA experience
Tina	34	Female	Bipolar Disorder	Part-time	PA fluctuated throughout Tina's life. At the time of interview Tina was on an individualised fitness programme designed in collaboration with an exercise specialist.
Ann	21	Female	Schizophrenia	Unemployed	Ann chose to be active by attending the gym once a week, walking in the local area and dancing in her own room and in other rooms at her community home.
Paul	32	Male	Schizophrenia	Voluntary work	At the time of the interview Paul had just returned to competitive football. Football is something Paul had taken seriously until his illness prevented him from playing.
Tom	34	Male	Schizophrenia	Voluntary work	At the time of the interview Tom attended sport sessions organised by the local mental health trust and chose to walk for leisure.
Larry	58	Male	Bipolar Disorder	Unemployed	Larry was on an individualised exercise programme designed in collaboration with an exercise specialist.
Mike	21	Male	Bipolar Disorder	Unemployed	Mike placed great importance on PA at the time of the interview. However, he was not interested in PA prior to the onset of his illness.
Diane	54	Female	Bipolar Disorder	Voluntary Work	Diane undertook weekly walks and swam frequently. She had tried a variety of PA to help improve her health.
Howard	31	Male	Schizophrenia	Full-time work	Howard cycled and walked for transport and his job entailed him walking for long periods of time. He had previously undertaken a lot of structured PA.

Figure 1. Diagram of themes

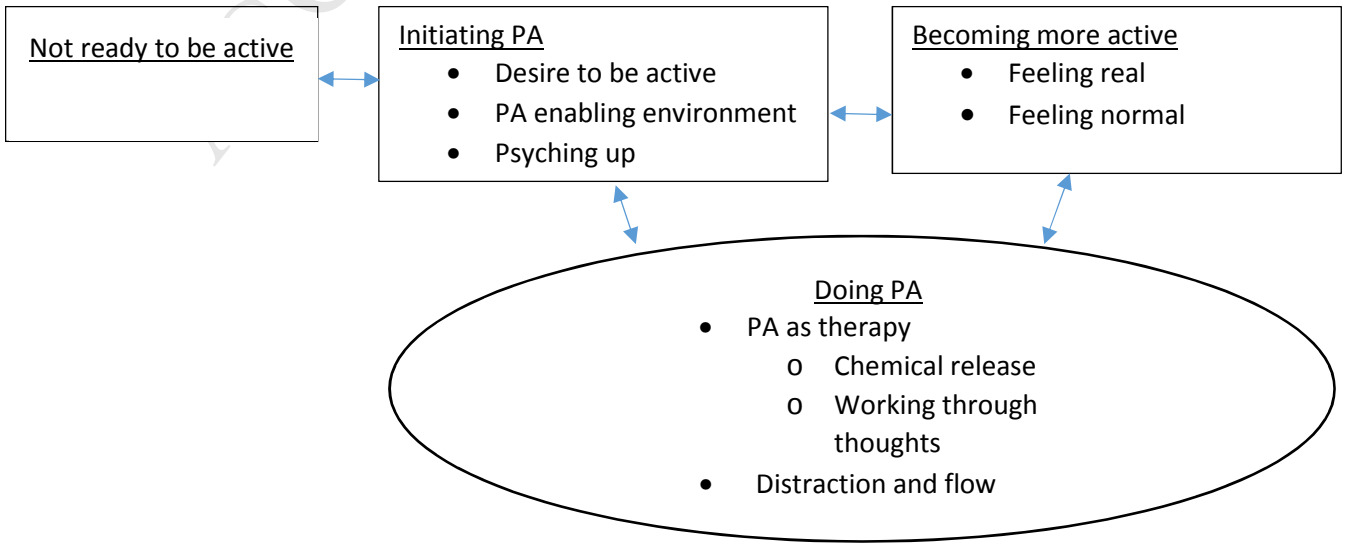
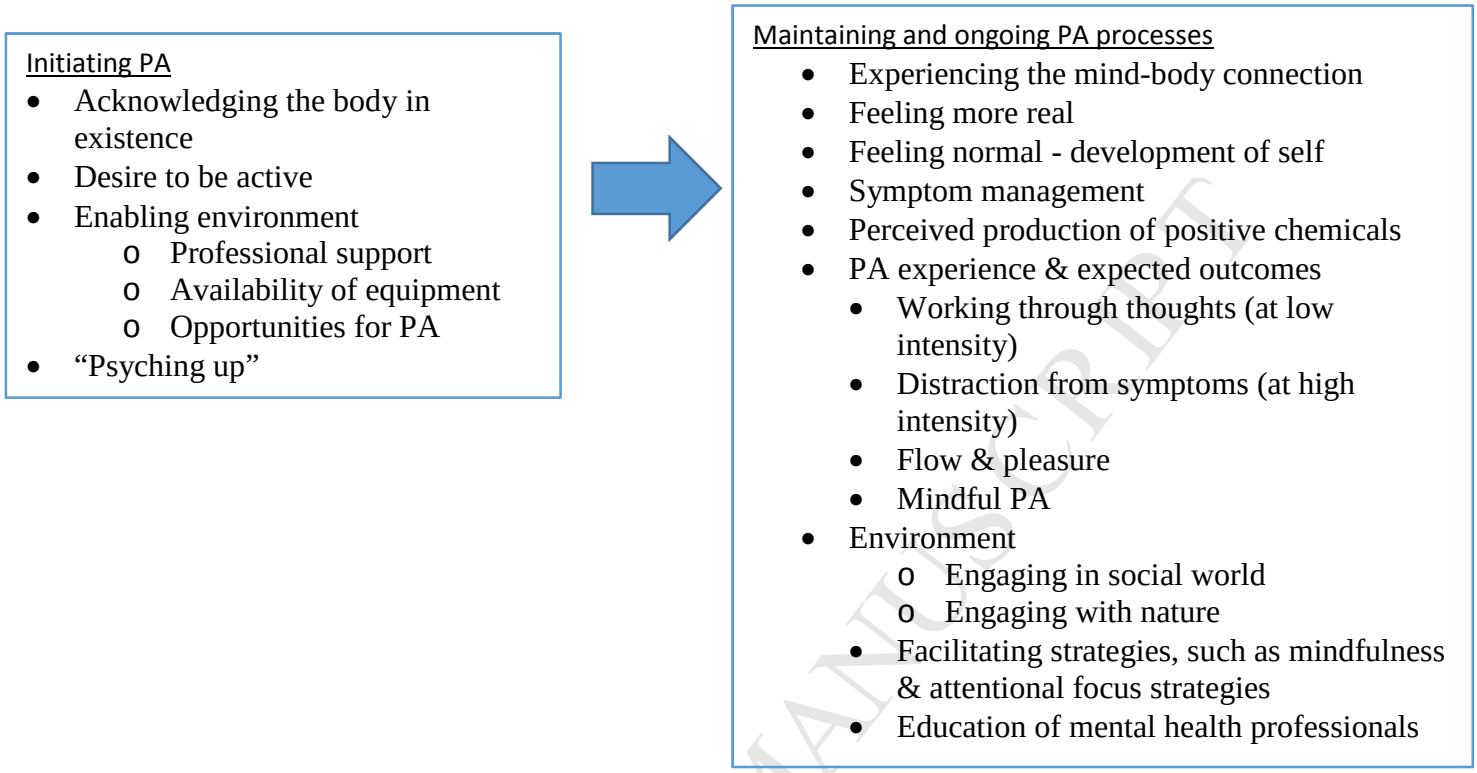


Figure 2 Behaviour change facilitators of PA for people with SMI in recovery



Highlights

- The experiences of adopting and maintaining PA altered as recovery progressed
- An awareness of the body and an enabling PA environment are key to initiate PA
- PA is maintained through experiencing benefits and by using PA to manage symptoms
- The type and intensity of PA appeared to alter the impact on perceived symptoms
- Provision of choice, mindfulness and attentional focus strategies are suggested to enhance PA