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DOI:

[10.1016/j.psycom.2023.100131](https://doi.org/10.1016/j.psycom.2023.100131)

Document Version

Publisher's PDF, also known as Version of record

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Citation for published version (APA):

Martland, B., Harding, H., & Jolley, S. (2023). Service user experiences of a physical health group for people experiencing psychosis, designed following service user consultation. *Psychiatry Research Communications*, 3(3), Article 100131. <https://doi.org/10.1016/j.psycom.2023.100131>

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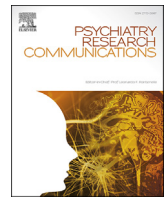
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Service user experiences of a physical health group for people experiencing psychosis, designed following service user consultation



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ARTICLE INFO

Handling Editor: Dr. Leonardo Fontenelle

Keywords:
Physical health
Exercise
Diet
Psychosis
Group

ABSTRACT

Background: Psychosis is associated with physical health comorbidities. Exercise and a healthy diet can improve cardiometabolic risk and mental wellbeing. This study explores the feasibility, acceptability, and experiences of a physical health group for clients experiencing psychosis.

Methods: The group was developed and refined following consultation with service-users and culturally appropriate peer support workers. It included eight weekly sessions. The aims of the group were to provide psycho-education on healthy living and to build motivation to engage in healthy living. Attendance, completion, and satisfaction were recorded to determine feasibility and acceptability of local service delivery. Clients took part in follow-up qualitative interviews to understand experiences of attending the group. Interviews were analysed using thematic analysis.

Results: Twenty-five clients were referred to the group. Overall, 10 clients enrolled in the group. Clients who enrolled in the group attended a median of 4.5 sessions. The mean satisfaction score for all sessions combined was 9.15/10 [SD 1.18]. Seven individual interviews were conducted. Two themes emerged. 1) Positive views towards the group, with clients feeling more aware of the benefits of healthy living, and clients finding the group setting motivating. 2) Considerations when planning healthy living support, which reflected subthemes in difficulties maintaining healthy living and concerns that the group should not be about weight loss.

Limitations: Investigations were limited to one mental health provider.

Conclusions: It was feasible and acceptable to implement a healthy living group for clients with psychosis in a community mental health team, and this intervention was met with positivity.

1. Introduction

People with psychosis die 10–30-year years earlier than the general population: approximately 60% of this mortality can be attributed to cardiometabolic ill-health (Correll et al., 2017). Cardiovascular disease (CVD), coronary heart disease (CHD), type-2-diabetes mellitus (T2DM) and metabolic syndrome (MetS) rates are between two and three times higher than the general population (Correll et al., 2017). Reduced quality of life, socio-occupational difficulties and cognitive impairment also occur in psychosis (Metzler et al., 2015). Physical activity has been shown to decrease cardiometabolic disease risk, improve mood, and cognitive functioning in the general population (Martland et al., 2020). Similarly, a diet high in fruit, vegetables, cereals, fish and low in meat, dairy, fat and alcohol is associated with a significant reduction in cardiovascular diseases (Sofi, 2008) and depressive disorders (Firth, 2019).

Despite the benefits of healthy lifestyle promotion for people with psychosis, these interventions are not always offered as part of routine clinical practice. People with psychosis engage in much less physical activity than the general population and are less likely to meet the World Health Organisation International Food Consumption Recommendations (WHO-IFCR) of ≥ 5 portions of fruit/vegetables, 30g fibre and < 5 g salt per day; $< 10\%$ of daily calorie intake in saturated fat (Martland et al., 2021a; Stubbs et al., 2018). Moreover, there is a lack of consensus regarding the best format for delivering lifestyle support to people experiencing psychosis.

Consulting with service users and healthcare professionals when designing and developing support packages for clients experiencing psychosis may expedite the discovery and implementation of pragmatic and acceptable lifestyle support. Consulting participants regarding their beliefs about the acceptability of lifestyle interventions is associated with

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increased engagement in interventions (Wheeler and Amanda, 2018). Consultation with service users in the design process involves asking service users for feedback before the delivery of the intervention whereas co-design is the process of actively involving service users in the design process and working together to understand their views and experiences and improve them (Wheeler and Amanda, 2018). Both processes can be used to support the development of interventions that incorporate material and session structures that are seen as useful to client groups.

There is no model for providing physical health interventions in routine care in mental health services and a lack of understanding of service user perspectives towards different models of physical health delivery. Whilst National Institute for Health and Care Excellence (NICE) guidelines exist for providing support for physical health in people experiencing psychosis, there is a lack of consensus regarding the best format for delivering physical health interventions in this population, and physical health interventions are not routinely delivered in all services. This project evaluated the feasibility, acceptability, and service user experiences of a physical health group for service users experiencing psychosis, that was developed and refined following consultation with service-users and culturally appropriate peer support workers.

2. Methods

Service evaluation approval was granted by the NHS trust through the local borough-based, governance system (20/11/2020).

2.1. Participants

Clients receiving support from a community mental health team for schizophrenia or bipolar spectrum disorders with psychotic symptoms in South London & Maudsley NHS Foundation Trust (SLaM), London, were recruited via clinician referral to the group. All participants were recruited from one community mental health team and the prospective sample size was set at 6–10 participants which was a similar group size to other group interventions run within the team. Prospective group participants were informed of the intervention via their care co-ordinator or via the psychology team. All clients who displayed an interest were given a call by the psychology team prior to the group and were sent a reminder text before each session.

2.2. The healthy living group

The Healthy Living Group comprised eight 1.5-h sessions run by a psychologist and a support worker from the team. The aims of the group were to provide psychoeducation on aspects of healthy living, to build motivation to engage in healthy living and to gain peer support from other group members. Each session involved a teaching element and a practical part, and healthy snacks were provided. The sessions incorporated content on healthy eating; exercise; the impact of diet and physical activity on mood; cardiometabolic disease risk; how to stay motivated; sleep hygiene; and signposting to local healthy living initiatives. Additionally, one session comprised a walking session where clients were invited to walk to a local park together. Throughout the sessions clients worked on a healthy living goal which they set in week one and updated throughout the sessions to problem solve difficulties and ensure goals were sustainable and achievable. Attendees received a handout for each session summarising the session content and tips for incorporating ideas into their daily lives. Detail regarding the structure of sessions is provided in Appendix One.

A similar group had been developed and run in the service three years prior to the running of the group, and session content had been developed by a psychologist and nutritionist. Session material from this previous group (that did not utilise consultation) was incorporated into the session materials. Content was subsequently modified, and additions made by psychologist in training who had a PhD in exercise and psychosis.

Once the session material was developed, 1 h of preparation time was required before each group, to print handouts, set-up the room, brief staff involved in the running of the group and prepare healthy snacks.

2.3. Consultation

Session structure and materials were reviewed by two clients with psychosis who were receiving treatment within the service. One service user had previously been a participant in the healthy living group and was able to reflect on what aspects of the group they had previously found enjoyable, and areas for change. One service user had not attended the group previously but had an extensive background, and professional training, in fitness and personal training. These service users were chosen based on recommendation by the psychology team in the service due to their interest in healthy living and ease of contact. Meetings with each service user ran face-to-face for 1 h.

Additionally, a consultation group was held with three culturally appropriate peer support workers from “BlackThrive”: an independent partnership of Lambeth's communities and services established to address the inequalities that negatively impact the mental health and wellbeing of black people. The consultation ran for 1.5 h.

Elements of consultation informed the range and nature of topics discussed in the group, practical activities, snacks shared, and length and frequency of sessions. Specifically, more information about eating on a budget, defining a healthy diet cross-culturally, cooking with fresh seasonings, step by step recipes, the benefits of walking and signposting to local community gyms and foodbanks was emphasised in the group itinerary following consultation. Moreover, details about the links between spirituality and our physical and mental health was added to the group materials, and the normalisation of setbacks.

In addition to service user involvement in the design stage of the group, a service user with a diagnosis of psychosis and a background in personal training, who had been involved in the consultation stage of the project offered to run an exercise session for group members. This exercise session was conducted in session five of the group and comprised a 15-min workout, including warm-up exercises, stretches, lunges, squats, and cool-down exercises.

2.4. Outcomes

Number of people referred to the group, attendance, completion, and dropout rates were recorded to determine feasibility of local service delivery. Acceptability to local service users was assessed at the end of each group session using a single item 10-point Likert scale ranging from 1 (not satisfied) to 10 (most satisfied).

Service users who took part in the healthy living group, and those who disengaged, were invited to take part in 30-min follow-up qualitative interviews (face-to-face or remote/telephone) to understand experiences of attending the group. Responses were transcribed manually during each interview. The interview schedule is provided in Appendix Two.

2.5. Data analysis

Feasibility of the group was defined as: 1) comparable recruitment numbers and attendance to other psychology groups in the service (approximately four clients attending each week), 2) comparable completion rates to other healthy living interventions in people with psychosis (drop-out rates of previous healthy living interventions in people with psychosis has averaged 24–32.5%) (Firth, 2015), 3) participants expressing that the conduct of the group was acceptable on the satisfaction Likert scale.

Follow-up interviews were subject to a thematic analysis in accordance with Braun and Clarke (2006) and using NVivo software (version 12.6.0) (Braun and Clarke, 2006). This involved a series of steps comprising: (1) familiarization with the data, (2) generating initial codes,

(3) searching for themes, (4) reviewing and refining themes, and (5) defining and naming themes. Themes were generated by one clinician (RM) and verified by a second clinician (HH) with discrepancies resolved by discussion. Transcripts, and themes, were not returned to participants for comment and/or correction.

3. Results

3.1. Feasibility

Twenty-five clients were referred to the group. Overall, 10 clients (40%) attended at least one session (7 male, 3 female). Of the ten clients who attended at least one session of the group, eight of these referrals came from within the psychology team and two of these clients were referred by either their care coordinator or support worker and had not received psychological therapy before. Clients were informed of the referral via their care coordinator or psychologist before contact was made.

Reasons for non-attendance (n = 15) included client being uncontactable (n = 5), lack of interest (n = 3), time commitments (n = 1), weather too hot (n = 1), concerns due to physical health limitations (n = 1) and no reason given (n = 4). Two clients dropped out after session one and a further client involuntarily withdrew following a hospital admission. Clients who enrolled in the group (n = 10) attended a median of 4.5 sessions [mean 4.4, SD 2.55] (range 1–7). Between three and seven people attended each session (Mean = 5.50 (SD 1.41)). The mean satisfaction score for all sessions combined was 9.15 [SD 1.18] (range 5–10).

Clients who participated in the group were not asked to provide socio-demographic information to maintain inclusivity for those not wishing to disclose this information.

3.2. Interviews

Seven interviews were conducted, interviews were not conducted with those who withdrew due to lack of consent (n = 3). Two themes emerged. Fig. 1 and Table 1 provide an overview of each theme, sub-theme, and illustrative quotes.

Theme one: Positive Aspects of the Healthy Living Group

‘I am more aware of the benefits of healthy living’

This overarching theme captures a sense of an increased understanding of the benefits of healthy living for both physical and mental health, and the success of clients in implementing positive lifestyle changes in their daily routines. All clients commented that they enjoyed learning new things about healthy living, or that the group had reminded them of aspects of healthy living that they already know but might have not been implementing. Several clients commented that they enjoyed learning about the links between exercise and diet with our mental health. All clients found the session handouts useful in cementing their understanding of information learnt during the session. All clients commented that they had incorporated aspects of healthy living in their daily routine following the group, and some clients suggested that there have been improvements in their physical health since participating.

‘Sharing stories and normalising difficulties’

All clients felt that it was encouraging and motivating to share healthy living goals with other group members, and they found it normalising to share difficulties with the wider group. Clients commented that the face-to-face setting of the group aided these encouraging interactions. This said, one client commented that the group setting and interactions with others made them feel anxious, but nonetheless they recognised the benefits of mutual support in the group setting and enjoyed the group setting. Additionally, two clients commented that they enjoyed the case examples provided in sessions as they found them relatable and normalising.

‘I enjoyed practical aspects of the group’

All clients commented that they enjoyed the practical aspects of the group, including trying new foods, reading food labels, discussing recipes, walking and exercise elements. Additionally, clients felt that the exercise was suitable for people of different physical health abilities, and one client commented that exercising as a group was especially motivating. This said, one client noted that they found the exercises

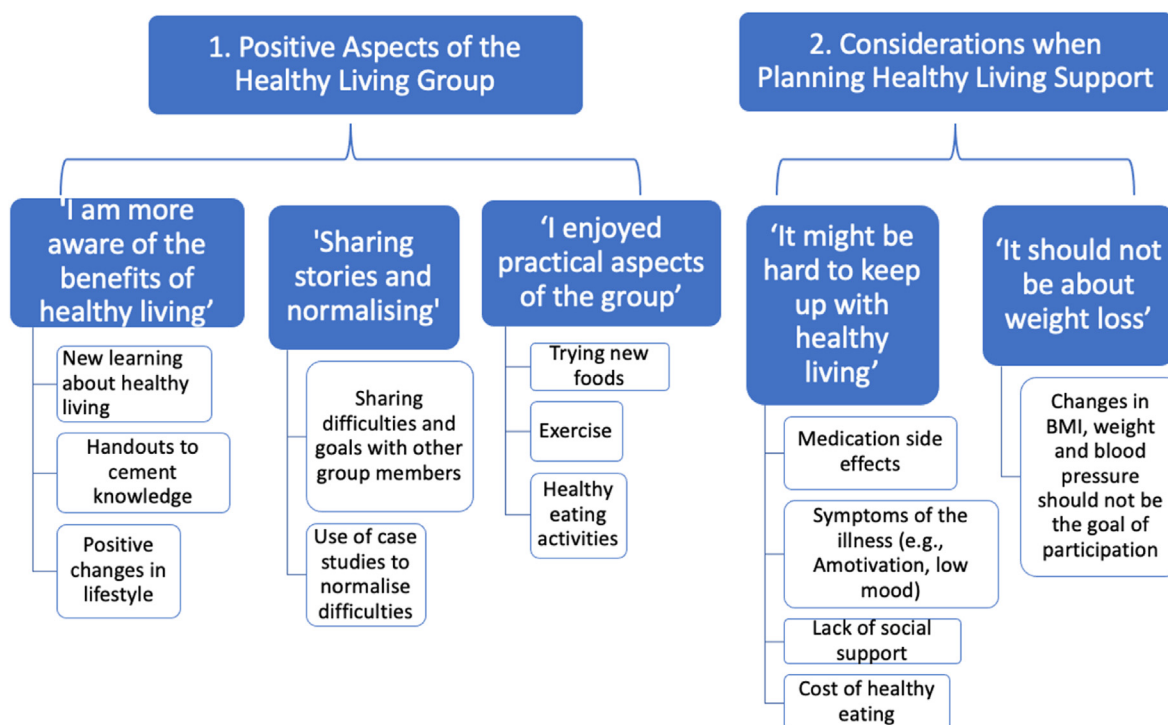


Figure One. - Main themes and subthemes.

Table
Illustrative quotes.

Main Theme	Subtheme	Quotations
Positive Aspects of the Healthy Living Group	'I am more aware of the benefits of healthy living'	<p>"I enjoyed learning about the heart and circulatory diseases ... and all those technical names of things I didn't know before ... I am more informed now than I was 8 weeks ago." P1</p> <p>"The group was really good. It mostly reminded me of things I should know, it was really helpful, and reinforced five a day and things like that." P7</p> <p>"[I have] lost a bit of weight as [I am] eating more healthy. [I am] eating quorn. I am more motivated to take care of my physical health, exercise and eat healthy." P4</p> <p>"If I read the sheets, they are good ... The exercise information gives me memories of what to do again for when I am ready to do those things." P2</p>
	'Sharing stories and normalising difficulties'	<p>"The most enjoyable part was listening to other people ... I think it is suitable, being together." P3</p> <p>"Every member have something new to share, everybody [was] sharing their ideas and people sharing questions about healthy eating, it was interesting hearing what others have to say." P1</p> <p>"The case studies, you could relate to them, it is like a person's case, you might be able to relate to someone's diet." P1</p>
Considerations when Planning Healthy Living Support	'I enjoyed practical aspects of the group'	<p>"I liked exercising together as it can get lonely on own ... I enjoyed the exercise and the snacks, they were healthy and snacks I can't afford, it was nice to taste them." P5</p> <p>"I liked the walking, that was good ... It wasn't too physical, so it was okay." P6</p> <p>"It would be good to do a cooking class, just do like easy prepare meals, healthy ones, and we could all try and prepare different meals each week." P6</p>
	'It might be hard to keep up with healthy living'	<p>"It is hard because there is other stuff going on, life stressors so it's hard." P5</p> <p>"I feel exhausted all the time from medication, so exercise was hard." P2</p> <p>"I'm stretched for money and use the foodbank but plan to eat a bit better when I can afford it. What is good is expensive, I eat more frozen than fresh, it's quite hard ... it's all gone up very much [in price]." P5</p> <p>"I would like to join the gym but I am a bit anxious, you know what it is like with new people." P1</p>
	'It should not be about weight loss'	<p>"If I keep weighing myself, I get paranoid and stop eating and that, I do that every 3 months with the nurse." P5</p> <p>"Giving the choice if the person really wants [weight] measurements, you have to give the choice because some people don't want to show these things as they are private." P2</p>

challenging and felt claustrophobic exercising in the group therapy room due to lack of space, and another client commented that they would have liked to cook healthy meals together as part of the group as well.

Theme Two: Considerations when Planning Healthy Living Support

'It might be hard to keep up with healthy living'

Three clients identified barriers that may make it hard to sustain healthy living changes, barriers that were identified included lethargy and medication side effects, amotivation, low mood, life stressors, lack of social support, and the higher cost associated with healthy eating. Moreover, all clients stated that they had not made use of the signposting for healthy living groups that was distributed throughout the group, reasons for this included forgetting, anxiety associated with joining new groups, and signposting groups being too far to travel to.

'It should not be about weight loss'

All clients suggested that the focus of the healthy living group should not be about weight loss, but rather about learning new techniques to support a healthy lifestyle. Three clients stressed that physical routine outcome measures, such as weight, BMI and blood pressure should not be issued and measured as part of the group as this may deter some clients from attending. This said, four clients thought these measures might be useful but stressed that clients should be given the choice of undertaking these measures, and it should not be a focus of the healthy living group.

No differences in themes were found between male and female participants.

4. Discussion

Our results demonstrate feasibility and acceptability of offering a healthy living group for people experiencing psychosis, and positive attitudes towards the group. Of those referred, 40% attended at least one session of the group, and 60% of those who enrolled attended at least half of the scheduled sessions. This is in line with the feasibility of other lifestyle interventions in people with psychosis, including exercise, nutrition, peer support platforms, fitness trackers and education-based interventions (Aschbrenner, 2016; Lovell, 2014). It is also useful to state that of the ten clients who attended at least one session of the group, eight of these referrals came from within the psychology team and only two of these clients were referred by either their care coordinator or support worker and had not received psychological therapy before. This indicates a need to increase the outreach of the healthy living group to clients who are not receiving psychological support, and more support may be required to encourage multi-disciplinary team members to refer clients to future rounds of the healthy living group.

Attendance at scheduled sessions averaged 5.5 clients each week. Attendance at other face-to-face groups in the service has averaged four or fewer clients each week. Attendance at therapeutic groups in the service might be limited by amotivation, cognitive difficulties with planning and the impact of positive symptoms. Attendance was higher than expected compared to other groups in the service that target mental health. It may be that attendance at this group was higher due to clients finding it more accessible to speak about wanting to be healthier as opposed to speaking about mental health due to stigma surrounding mental difficulties. Attendance at the scheduled walking session was lower, the physical demands of the session may have been difficult for some, suggesting greater support may be required to engage clients in exercise.

During the interviews, clients expressed a desire to improve their physical health, eat more healthily and/or exercise more. These findings are in line with the body of research which demonstrates that patients would like to improve their physical health and have access to lifestyle interventions in mental health services (Firth, 2016; Martland et al., 2021b). Clients expressed positive attitudes towards the group content, commenting that they enjoyed the learning and practical elements of the

group. It is likely that the use of consultation with service users and culturally appropriate peer support workers contributed to the development of a protocol that was seen as acceptable, and to this end, consultation, or co-design, should be considered in service development. Moreover, including a service-user in the running of an exercise class may have maintained inclusivity and cohesion. In future groups, it would be recommended to involve service users in the running of the group, in addition to the development of the group.

The interviews revealed positive attitudes towards the group nature of the intervention. Clients appreciated having the support of other members of the group, and the ability of other members to normalise difficulties with healthy living. Research demonstrates that peer support in lifestyle interventions for people with psychosis can promote positive behavioural change by normalising change, increasing motivation and cohesion and reducing anxiety (Gandhi et al., 2019; Hui et al., 2021). Thus, a group setting should be considered when planning physical health support for people experiencing psychosis.

Interviews revealed financial costs as a barrier to healthy living. In future groups, it may be useful to build more discussion around eating healthily on a budget, home-based exercise, and signposting to low-cost sports facilities. In the development of future healthy living groups, it may be useful to include more information to support clients to eat healthily on a budget. Ideas could include, creating a shopping list on a budget and a group visit to a supermarket to discuss prices of food and cheaper alternatives. In terms of exercise, a list of free and low-cost gyms and sports clubs was provided, but it may be useful to spend more time discussing the benefits of free and low-cost resources and motivating clients to attend and discussing what exercises clients can safely do at home to take care of their physical, and mental, health. Additionally, some clients stressed that the focus of the group should not be around weight loss or physical health improvements, but rather should be around lifestyle change. As this discussion was in the context of offering physical health measures, including BMI and blood pressure, it may be worth considering how group facilitators communicate the importance of these measures to clients more effectively. The interviews suggested clients would find these measures intrusive and felt they were framed around weight loss, rather than being used to encourage people to look after their physical health and to increase their understanding of what these measurements mean, linking to the content of the group.

Finally, during the qualitative interviews all clients revealed that they did not make use of the healthy living signposting that was provided in sessions but expressed a desire to continue to make steps towards healthy living. It may be that a more formal or tailored approach is required to support clients to access exercise clubs and other healthy living organisations. Support workers, psychologists and/or care coordinators may be able to provide this support on a 1:1 basis outside the setting of the group.

5. Limitations

The service evaluation took part at only one NHS service; thus the findings are not generalisable to other services. Secondly, a one item likert scale was used to assess satisfaction with the group. This scale was chosen for ease of administration but may not confidently capture satisfaction with all aspects of each session. Thirdly, limited number of interviews were conducted, and interviews were not conducted with clients who did not want to participate in the healthy living group or those who withdrew; thus, themes generated may only be reflective of those with a greater interest in healthy living. Moreover, interviews were not audio-recorded as permission to record was not given from all clients. The decision to run interviews without audio-recording was done to maintain inclusivity and participant's answers verbatim were recorded in as much detail as possible.

6. Conclusion

There is a lack of research regarding implementation of therapeutic

interventions to improve the lifestyle of people with psychosis that incorporate elements of consultation with service users. It was feasible and acceptable to implement a healthy living group for clients with psychosis in a community mental health team in South London, and this intervention was met with positivity by client groups. The high feasibility and acceptability of the group highlights the suitability of running the healthy living group in this service as part of standard care and offers a framework for other services. Moreover, the successful recruitment, high retention and satisfaction with sessions may be attributable to inclusion of service user consultation in the group development, alongside diverse session material including both group discussion and practical tasks, thus this framework should be employed in the design of future therapies.

Ethics approval and consent to participate

Approval for study procedures was granted from South London and Maudsley NHS Foundation Trust Governance. All participants provided written informed consent.

Availability of data and material

Original transcripts will not be made available in order to maintain participant confidentiality. Additional illustrative quotes may be available upon request.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Authors' contributions

RM and HH contributed to protocol development. RM carried out the analysis. The paper was drafted by RM. All authors read and approved the final manuscript.

Declaration of competing interest

None.

Acknowledgements

We would like to thank all service users who took part in the healthy living group.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.psycom.2023.100131>.

References

- Aschbrenner Kelly, A., et al., 2016. A pilot study of a peer-group lifestyle intervention enhanced with mhealth technology and social media for adults with serious mental illness. *J. Nerv. Ment. Dis.* 204 (6).
- Braun, Virginia, Clarke, Victoria, 2006. Using thematic analysis in psychology. *Qual. Res.* 3 (2), 77–101.
- Correll, Christoph U., et al., 2017. Prevalence, Incidence and Mortality from Cardiovascular Disease in Patients with Pooled and Specific Severe Mental Illness: A Large-Scale Meta-Analysis of 3,211,768 Patients and 113,383,368 Controls. *World Psychiatr.* 6(2),163-180.
- Firth, J., et al., 2015. A systematic review and meta-analysis of exercise interventions in schizophrenia patients. *Psychol Med* 45 (7), 1343-61.
- Firth, J., et al., 2016. Motivating factors and barriers towards exercise in severe mental illness: a systematic review and meta-analysis. *Psychol Med* 46 (14), 2869–2881.
- Firth, Joseph, et al., 2019. The effects of dietary improvement on symptoms of depression and anxiety: a meta-analysis of randomized controlled trials. *PsychosomMed* 81 (3), 265–280.

- Gandhi, Sailaxmi, et al., 2019. Facilitators of healthy life style behaviors in persons with schizophrenia—a qualitative feasibility pilot study. *Asian J. Psychiatr.* 40 (October 2018), 3–8. <https://doi.org/10.1016/j.ajp.2019.01.003>.
- Hui, Ting Ting, Garvey, Loretta, Olasoji, Michael, 2021. Improving the physical health of young people with early psychosis with lifestyle interventions: scoping review. *Int. J. Ment. Health Nurs.* 30 (6), 1498–1524.
- Martland, R., Mondelli, V., Gaughran, F., Stubbs, B., 2020. Can high-intensity interval training improve physical and mental health outcomes? A meta-review of 33 systematic reviews across the lifespan. *J. Sports Sci.*
- Lovell, Karina, et al., 2014. An exploratory randomized controlled study of a healthy living intervention in early intervention services for psychosis: the intervention to encourage activity, improve diet, and reduce weight gain (INTERACT) study. *J. Clin. Psychiatr.* 75(5) 498–505.
- Martland, Rebecca Scott Teasdale, et al., 2021a. Dietary intake, physical activity and sedentary behaviour patterns in a sample with established psychosis and associations with mental health symptomatology. *Psychol. Med.* 53 (4), 1565–1575, 1-11.
- Martland, Rebecca, Gaughran, Fiona, Stubbs, Brendon, Onwumere, Juliana, 2021b. Perspectives on implementing hiit interventions for service users in inpatient mental health settings: a qualitative study investigating patient, carer and staff attitudes. *J. Affect. Disord.* 283, 198–206.
- Metzler, S., et al., 2015. Changes in neurocognitive functioning during transition to manifest disease: comparison of individuals at risk for schizophrenic and bipolar affective psychoses. *Psychol. Med.* 45 (10), 2123–2134.
- Sofi, Francesco, et al., 2008. Adherence to mediterranean diet and health status: meta-analysis. *BMJ* 337, a1344.
- Stubbs, Brendon, et al., 2018. EPA guidance on physical activity as a treatment for severe mental illness: a meta-review of the evidence and position statement from the European psychiatric association (EPA), supported by the international organization of physical therapists in mental. *Eur. Psychiatr.* 54, 124–144.
- Wheeler, Amanda, J., et al., 2018. Codesigned Recommendations for Increasing Engagement in Structured Physical Activity for People with Serious Mental Health Problems in Australia. *Health and Social Care in the Community* 26 (6), 860–870.