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Keyworker mediated enhancement of physical health in patients with first episode psychosis: A feasibility/acceptability study

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Abstract

Aim: Early intervention for people experiencing first episode psychosis is a priority, and keyworkers are vital to such services. However, keyworkers' roles in addressing first episode psychosis patients' physical health are under researched. This study addresses this knowledge gap by evaluating a keyworker-mediated intervention promoting physical health among first episode psychosis patients.

Methods: The study was informed by the Medical Research Council's Framework for Complex Interventions to Improve Health. First episode psychosis participants were recruited from three Irish mental health services. The intervention was evaluated in terms of its feasibility/acceptability.

Results: Feasibility outcomes were mixed (recruitment rate = 24/68 [35.3%]; retention rate = 18/24 [75%]). The baseline sample was predominantly male (M:F ratio = 13:6; Med age = 25 y; IQR = 23-42 y). Common health issues among participants included overweightness/obesity (n = 11) and substance use (smoking/alcohol consumption [n = 19]). Participants' initial health priorities included exercising more (n = 10), improving diet (n = 6), weight loss (n = 7) and using various health/healthcare services. The intervention's acceptability was evidenced by the appreciation participants had for physical health keyworkers' support, as well as the healthy lifestyle, which the intervention promoted. Acceptability was somewhat compromised by a low-recruitment rate, variable linkages between keyworkers and general practitioners (GPs) and COVID-19 restrictions.

Conclusions: Physical health-oriented keyworker interventions for first episode psychosis patients show promise and further evaluation of such initiatives is warranted. Future interventions should be mindful of participant recruitment challenges, strategies to enhance relationships between keyworkers and GPs, and if necessary, they should mitigate COVID-19 restrictions' impacts on care.

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KEYWORDS

early medical intervention, feasibility studies, patient acceptance of healthcare, physical health, psychotic disorders

1 | INTRODUCTION

Psychosis can negatively impact health in numerous ways. Psychologically, it adversely affects mental health and wellbeing, cognitive functioning and sensory/perceptual processing. Socially, it impairs social perception and responding, thus leading to reduced social functioning. Biologically, psychosis results in poorer physical health (Breitborde & Moe, 2017). Patients with psychosis have above-average mortality rates, being likely to die 10–25 years earlier than members of the general population (Hayes et al., 2017; Hjorthøj et al., 2017; Laursen et al., 2014; Liu et al., 2017). This trend is due to increased risk of cardiovascular, infectious and pulmonary diseases, as well as medication side effects, metabolic syndrome, genetic predisposition, socioeconomic disadvantage and health risk behaviours including substance use, poor nutrition and sedentariness (Aubin et al., 2012; Auther et al., 2012; Dutta et al., 2012; Gurillo et al., 2015; Krishnadas et al., 2012; Lê Cook et al., 2014; McCreddie, 2003; Saddichha et al., 2008; Shiers et al., 2009; Stubbs et al., 2018). To compound matters, many persons with psychosis experience reduced/fragmented access to the healthcare services they need (De Hert et al., 2011; Moore et al., 2015; Rodgers et al., 2018).

There appears to be a ‘critical period’ for the development and treatment of psychosis (Birchwood et al., 1998). Evidence suggests that patients are more receptive to pharmacological/psychosocial treatments during the condition’s early stages (Galletly et al., 2016; Goldstein, 1996; Lieberman et al., 2001; Robinson et al., 1999). Similarly, many of the physical health problems experienced by individuals with psychosis arise within the first few years of the condition’s onset (Goldstein, 1996). Clinicians and researchers have taken this knowledge on board, and over the last decade there has been much work in the field of early intervention services (EIS) for people experiencing a ‘first episode of psychosis’ (FEP) (Birchwood et al., 1998; Breitborde et al., 2009; Lieberman et al., 2001). FEP definitions vary considerably, however for most part FEP is characterized by the earliest onset of psychotic symptoms and/or initial treatments for individuals presenting with psychotic symptoms for the first time (Breitborde et al., 2009).

Health policies in Ireland and internationally have increasingly recognized the necessity for EIS addressing the needs of people experiencing FEP (American Psychiatric Association, 2020; National Institute for Health and Care Excellence (NICE), 2016; Galletly et al., 2016; Power, 2019; Wong, 2012). In Ireland’s FEP model of care, keyworkers are valuable members of multidisciplinary teams as they serve as the main point of contact between services and service users, and manage personalized patient care plans (Power, 2019). The value of keyworkers was further highlighted in a recent scoping review (Lim et al., 2020), where they were shown to assume various important responsibilities including coordinating health services,

psychoeducation and assisting patients with practical and emotional needs. These responsibilities put keyworkers in a unique position to help ameliorate the organizational barriers (e.g., fragmented care systems) and poor lifestyle choices contributing to the poorer physical health of FEP patients (Lim et al., 2020).

Previous studies have evaluated both keyworker (Lim et al., 2020) and physical health interventions for FEP patients (Firth et al., 2018; Gallagher et al., 2020; Korman et al., 2020; Teasdale et al., 2016; Usher et al., 2019; Williams et al., 2016), with both kinds of interventions showing promise. However, to our knowledge, no studies have evaluated keyworker-mediated interventions seeking to promote FEP patients’ physical health. Consequently, whether and how such interventions might enhance FEP patients’ physical health is unclear. This study will address this knowledge gap by evaluating a keyworker intervention aiming to enhance the physical health outcomes of FEP patients in Ireland.

2 | METHODS

This study was informed by the Medical Research Council’s (MRC) Framework for the Design and Evaluation of Complex Interventions to Improve Health’ (Campbell et al., 2000). The framework recommends that complex interventions adopt a mixed methods/phased approach to intervention development and evaluation. This study was approved by the Irish College of General Practitioners Research Ethics Committee.

2.1 | Participants and setting

Study participants (FEP patients) were recruited from three mental health services (MHSs) in Ireland, these being Service A (Cork), Service B (Longford/Westmeath) and Service C (South County Dublin). Patients could participate if they signed consent forms and were deemed well enough to participate by clinical teams.

2.2 | Intervention development and design

The intervention was conducted from February through April 2020. As noted, it was informed by the MRC’s Framework (Campbell et al., 2000), as well as our study protocol (McCombe et al., 2019), a scoping review conducted on keyworker involvement in FEP patient care (Lim et al., 2020), 10 semi-structured interviews with healthcare professionals (general practitioners [GPs] and psychiatrists), steering group meetings, and Ireland’s national model of care for FEP (Health Service Executive (HSE), 2019) and making every contact count

initiatives (O'Brien & Scott, 2016). The intervention sought to provide keyworker led interventions that; (a) enhance FEP participants' physical health and (b) improve integration between healthcare providers (especially MHSs and GPs) regarding participants' physical health issues requiring follow-up. These aims were facilitated by regular bidirectional meetings between physical health keyworkers and FEP participants. Meetings were arranged at convenient times for participants and involved the provision of practical and emotional support for participants, identifying participants' physical health issues and concerns, conducting physical health and lifestyle assessments (e.g., how many days have you done moderate/vigorous physical activity in the past month?) (see Appendix A), setting/mapping the progress of participants' health goals, and physical health keyworker led consultation with healthcare providers (e.g., GPs, MHSs).

The intervention was introduced in face-to-face format approximately 6 weeks prior to the emergence of COVID-19 in Ireland and restrictions enforced to contain its spread. COVID-19 restrictions were initiated on 12 March 2020, when this intervention reached its mid-point. As a result, all face-to-face contact between physical health keyworkers and participants was substituted by remote (telephone) consultations at this point and for the remainder of the intervention.

2.3 | Intervention evaluation

The intervention was evaluated in terms of its feasibility and acceptability. As outlined in our study protocol (McCombe et al., 2019), feasibility was determined by participant recruitment and retention rates. The recruitment rate was defined as the percentage of patients invited who participated in the intervention, while the retention rate was defined as the percentage of patients participating in the intervention who completed it. Meanwhile, the intervention's acceptability was also examined with participant recruitment and retention rates in mind, as well as the outcomes of post-intervention semi-structured interviews with participating FEP patients. In the interviews, participants were asked about their view of the role of the physical health keyworker in the study, how physical health keyworker involvement in the study contributed to them adopting healthier behaviours, how physical health keyworkers affected engagement with GP/MHSs, and how the physical health keyworker role might develop further. Acceptability was also determined according to guidelines outlined by Sekhon et al. (2017) concerning acceptability evaluation practices in healthcare interventions. This framework outlines acceptability as a multi-faceted construct encompassing the following dimensions: affective attitude, burden, perceived effectiveness, ethicality, intervention coherence, opportunity costs and self-efficacy.

2.4 | Data collection and analysis

Participants' baseline characteristics were collected using a questionnaire investigating their demographics and physical health, tobacco, alcohol, substance use and exercise behaviours (see Appendix A). Specifically, the data included details on participant age, gender, height,

weight, body mass index (BMI), waist circumference, weight gain since the onset of mental health issues, blood pressure, pulse, medications, tobacco, alcohol, substance use behaviours, physical activity/exercise levels and physical health priorities. These data also contained information regarding participants' history of physical health interventions, as well as electrocardiogram and blood assessments. This information provided context for the study's sample and served as a useful reference point for physical health keyworkers and participants when evaluating progress.

This data was analysed using descriptive statistics, inferential statistics and qualitative coding methods. Post-intervention acceptability data meanwhile consisted of outcomes from semi-structured interviews with FEP participants. Because of COVID-19 restrictions, much of the data was collected remotely via telephone. Outcomes were coded and interpreted by two researchers using NVivo12 qualitative software and Braun and Clarke's thematic analysis approach (Braun & Clarke, 2006).

3 | RESULTS

3.1 | Recruitment and retention

Sixty-eight patients, all of whom met the study criteria, were identified by the MHSs and were invited to participate in the study. Thirty-one of these agreed to take part. Twenty-four of these patients signed consent forms and commenced, thus yielding a participant recruitment rate of 35.3%. Nineteen of these participants provided baseline data, while 18 completed the intervention and were seen at follow-up for post-intervention interviews (participant retention rate = 75%) (See Table 1). Reasons given by those who agreed to participate in the study but did not commence or complete it included 'not feeling well,' 'not interested,' 'already getting adequate physical health advice from staff at the gym' and 'COVID-19 disrupting recruitment.'

3.2 | Baseline characteristics

At baseline, the study sample consisted of 19 participants with 13 males and 6 females. Inferential analyses demonstrated that males were more likely to exercise than females during the previous month, $U(N_{\text{males}} = 13, N_{\text{females}} = 6) = 5.500, z = -2.247, p < .05$. Ages ranged from 20 to 57 years, with a median age = 25 (interquartile range 23–42). Three participants were overweight, eight were obese and three had elevated blood pressure. The sample's two oldest participants (56 and 57 years old respectively) had considerably higher BMI scores than the rest, and the three participants with elevated blood pressure were younger individuals (age range = 20–25 years). Thirteen participants reported that they had gained weight since the onset of mental health issues, with reported weight gains ranging from approximately 5 to 32 kgs. Eight participants smoked tobacco daily, 11 consumed alcohol within the previous month, and three used cannabis within the previous month. Younger participants were more likely to have consumed alcohol during the previous month, $U(N_{\text{consumed alcohol}} = 11, N_{\text{did not consume alcohol}} = 8) = 72.000, z = 2.319, p < .05$.

TABLE 1 Details of patient recruitment and retention

N	Service A-Cork	Service B-Longford/ Westmeath	Service C-South County Dublin	Total
Number of patients invited to participate in the intervention	22 ^a	18 ^a	28 ^a	68
Number of patients who agreed to participate in the intervention	13	12	6	31
Number of patients who participated the intervention	8	12	4	24 ^b
Number of patients providing baseline data	5	10	4	19
Number of patients who completed the intervention/ provided post-intervention data	5	10	3 ^c	18 ^b

^aInvitation via Mental Health Services.

^bOverall patient recruitment rate = 35.3%.

^cOverall patient retention rate = 75%.

Sixteen participants had their health monitored by a health professional in the past. Monitoring included X-rays, ECG, blood tests, CT scans, BMI tests, MRI scans and CAT scans. Health priorities identified by participants included exercising more ($n = 10$), improving their diet ($n = 6$), losing weight ($n = 7$) and using health and healthcare related services (i.e., lifestyle advice, weight management and blood test services) (see Table 2 for further breakdown of baseline characteristics).

3.3 | Post-intervention interviews

As mentioned, the intervention's acceptability was determined according to the participant recruitment and retention rates mentioned above, as well as the outcomes of post-intervention semi-structured interviews with FEP participants. Four themes emerged from these interviews: (i) the value of additional support, (ii) encouraging healthy lifestyle, (iii) variable experiences of links with GPs and (iv) COVID-19's impact on service.

3.3.1 | The value of additional support

When asked about how they viewed physical health keyworker's roles, participants mentioned that the keyworkers provided valuable support. This support involved physical health keyworkers' giving expert guidance, advice, information, helping them set health related goals/plans and giving patients someone to talk to about their health.

'My view is the keyworker is there to help and guide, to give a bit of advice' - Male, 24.

Participants also mentioned that keyworkers did a good job of supporting them in their efforts to improve their general health and wellbeing. Participants were especially pleased with the keyworkers' role in promoting their physical health.

3.3.2 | Encourage a healthy lifestyle

Most participants indicated that their physical health keyworker inspired them to live healthier lifestyles. Participants mentioned that the intervention led to them exercising more and adopting a healthier

diet. For some, a changed diet involved eating different kinds of food; for others, it meant eating different amounts of food. A few participants suggested that the intervention motivated them to use less substances (cannabis, cigarettes and alcohol). It was also common for participants to say that while they still occasionally engaged in unhealthy behaviours, the intervention made them more aware of their health, and what they can do to improve their health.

'It gave me the motivation to change what I know I had to change' - Male, 47.

3.3.3 | Variable experiences of links with GP/MHSs

Participants were also asked about whether the physical health keyworker intervention made engaging with GPs and MHSs easier. Half of participants said it did, and they credited the keyworker for helping them have their health monitored by GP/MHSs, encouraging contact with GPs and MHSs, focusing discussion with GPs and establishing common understanding between keyworker and GPs/MHSs.

'It is a good thing that one knows what the other is doing' - Female, 57.

On a less positive note, some participants mentioned that more could be done to enhance integration between physical health keyworkers and GPs/MHSs. Also, a minority of participants said they had little to no contact with their GP:

'I don't have much dealing with my GP so I suppose it's good if he was updated as to what physical stuff is going on around my health.' - Female, 21.

3.3.4 | COVID-19 impact on service

There were also mixed views regarding how the COVID-19 pandemic impacted on the intervention. Some felt the pandemic disrupted the intervention and blamed it for their inability to adopt healthier behaviours. In contrast, it was also mentioned that physical health

TABLE 2 Baseline characteristics of study participants

Variable	Characteristic	N (%)
Participant numbers	Service A (Cork)	5 (26)
	Service A B (Longford/Westmeath)	10 (53)
	Service C (South County Dublin)	4 (21)
	Total	19 (100)
Gender	Male	13 (68)
	Female	6 (32)
Blood pressure (mmHg)	<140/90	13 (68)
	>140/90 (elevated blood pressure)	3 (16)
	Missing data	3 (16)
Body mass index (kg/m ²)	Normal weight (BMI = 18.5–24.9)	8 (42)
	Overweight (BMI = 25–29.9)	3 (16)
	Obese (BMI = >30.0)	8 (42)
Number of participants taking psychiatric medications ^a	Olanzapine	9 (47)
	Aripiprazole; sertraline	4 (21)
	Pizotifen; paliperidone; amisulpride; invega; ativan; akineton; quetiapine; seroquel; clozaril; esomeprazole; movicol; lorazepam; rosuvastatin; mirtazapine; zinc; vitamin D	1 (5)
	None	1 (5)
Have had an electrocardiogram procedure	Yes	10 (53)
	No	8 (42)
	Unsure	1 (5)
Regular blood tests	Yes	14 (74)
	No	5 (26)
Smoking	Non smoker	10 (53)
	Daily smoker	8 (42)
	Occasional smoker	1 (5)
Alcohol month in the past	Yes	11 (58)
	None	8 (42)
Substance use in the past month	Yes	3 (16)
	None	15 (79)
	No response	1 (5)
Exercise month in the past	None	2 (11)
	1–4 days	3 (16)
	5–9 days	1 (5)
	10–17 days	5 (26)
	18 days +	8 (42)

^aOnly one participant was taking each of the medications where >2 medications are listed.

keyworkers helped participants cope with pandemic related stress. Also, as mentioned, COVID-19 restrictions meant that meetings between keyworkers and patients had to be conducted by telephone. Many participants expressed that they would have greatly preferred to meet keyworkers face-to-face. Some physical health keyworkers anecdotally mentioned that participants were more likely to attend appointments via phone than in-person, although participants did not report this being the case. Participants noted that they found it hard to improve their health without meeting their keyworker in person.

'We haven't been talking to each other face to face due to Covid-19. This has made things harder. When you're face-to-face you're more accountable to fulfilling the goals I set. Over the phone I feel that I can get away with things more.' –male, 23.

However, participants were quick to state that although unfortunate, a lack of face-to-face contact was necessary to protect public health and so was not possible at the time.

4 | DISCUSSION

4.1 | Summary of key findings

This study outlined the development, implementation and evaluation of a keyworker intervention aiming to enhance physical health outcomes among FEP patients in Ireland. The study sample was mostly male, participants were predominantly in their twenties, and issues concerning physical health, especially weight gain and unhealthy lifestyles, were common. Mixed findings were observed with regards participant recruitment and retention rates. The findings also indicate that physical health keyworker supports and encouragement to adopt a healthy lifestyle were especially pleasing aspects of the intervention, and that several participants adopted (or at least were more mindful of) healthier lifestyles because of the initiative. The study's findings also indicate that more could have done more to enhance links with GPs and MHSs, and that COVID-19 restrictions often had a negative impact on the intervention's ability to enhance participants' physical health and health/wellbeing more generally.

4.2 | How the findings relate to previous literature

The participants included in our study reflect those of other cohorts receiving care for FEP in Ireland (HSE, 2019) and internationally (Liu et al., 2017). This is especially true in terms of rates of physical comorbidities such as obesity and lifestyle factors (e.g., smoking rates). We admit that the intervention's patient recruitment rate was low compared to those of similar studies (Firth et al., 2018; Korman et al., 2020; Usher et al., 2019). Our high-retention rate meanwhile was like those reported in several similar studies (Firth et al., 2018; Korman et al., 2020; Teasdale et al., 2016; Usher et al., 2019; Williams et al., 2016). Meanwhile, our finding that participants valued keyworker support, particularly regarding physical health issues, reaffirms those of a recently published review of keyworker interventions for FEP patients (Lim et al., 2020). Also, we believe our findings are unique because they; (i) shed new light on the nature and potential of relationships between physical health keyworkers, FEP patients and third parties (particularly GPs) and (ii) demonstrate the acceptability of a telemedicine intervention for patients with severe mental health issues during the COVID-19 pandemic.

4.3 | Implications for clinical practice, health policy and future research

This study's findings help enhance scientific understanding of the feasibility and acceptability of keyworker physical health interventions for FEP patients. The findings may also help inform health care professionals and policy regarding the management of such initiatives. We believe the intervention is sufficiently feasible and acceptable to warrant implementation elsewhere, and that it can

potentially inform future randomized control trials, as well as health policy and service development internationally to bring about better patient care. Having said this, the findings also show that issues regarding patient recruitment, keyworker/GP integration and the impact of COVID-19 restrictions on intervention delivery should be better addressed before implementing future initiatives of this nature.

4.4 | Methodological considerations

This study was enhanced by our decisions to (a) adopt the MRC and Sekhon et al. frameworks, (b) collaborate with regional MHSs and relevant healthcare professionals, (c) measure participants' demographic, health and lifestyle behaviours, (d) conduct interviews with FEP patients and (e) utilize Braun and Clarke's Thematic Analysis approach. In combination, these choices ensured (i) that the intervention and its evaluation were adaptive enough to adequately meet and document the complex care needs of FEP patients, (ii) that suitable study participants were identified and recruited, (iii) that patients, physical health keyworkers and researchers had a good understanding of the participants' care needs and (iv) that a rich understanding of the intervention's impact on participants was acquired. However, the intervention was disrupted by the emergence of the COVID-19 pandemic in Ireland. Going forward researchers and clinicians could address this limitation by only conducting interventions of this nature when public health guidance permits face-to-face contact, or if such contact is not permitted, by developing and employing telemedicine strategies that are interactive enough to better meet FEP patients' care needs.

5 | CONCLUSION

This study demonstrated that physical health-oriented keyworker interventions for FEP patients show considerable promise. The study's findings indicate that interventions of this nature should be implemented elsewhere, and that their future implementation may benefit from efforts to improve participant recruitment strategies, FEP patients' links with GPs/MHSs, and telemedicine initiatives that attempt to mitigate the impact of COVID-19 and/or public health emergency related care barriers.

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CONFLICT OF INTEREST

No conflict of interest has been declared by the authors.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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SUPPORTING INFORMATION

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