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RESEARCH: EDUCATION AND PSYCHOLOGICAL ASPECTS

Eliciting the mechanisms of action of care navigators in the management of type 2 diabetes in people with severe mental illness: A qualitative study

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Abstract

Background: People with severe mental illness and type 2 diabetes have a reduced life expectancy compared to the general population. One factor that contributes to this is the inability to provide optimal management, as the two conditions are typically managed by separate physical and mental health systems. The role of care navigators in coordinating diabetes care in people with severe mental illness may provide a solution to better management.

Aim: To explore the views of clinicians and people with severe mental illness and type 2 diabetes on an integrated health service model with a focus on the care navigator to identify potential mechanisms of action.

Design: Qualitative one-to-one semi-structured interviews and part of a wider pilot intervention study.

Setting: Community Mental Health Unit in South London.

Method: Topic guides explored the perspectives and experiences of both clinicians and people with severe mental illness and diabetes. Data analysis was conducted using Thematic Analysis.

Results: From the analysis of 19 participants, five main themes emerged regarding the care navigator role: administrative service; signposting to local services; adhering to lifestyle changes and medication; engaging in social activities; further skills and training needed.

The key findings from this study emphasise the benefits that the role of a care navigator has in helping people with severe mental illness to better manage their diabetes i.e. through diet, exercise medication and attending essential health check-ups.

Conclusion: This study illustrates that having a care navigator in place empowers those with severe mental illness to improve the management of their diabetes. Future research should focus on the extent to which care navigators are effective in improving specific outcomes.

KEYWORDS
diabetes, integrated services, primary health care, semi-structured interviews, severe mental illness

1 | INTRODUCTION

The pooled prevalence rate of type 2 diabetes is estimated at 10% in severe mental illness) compared to 5.6% in the general population,[1–3] with increased rates of diabetes complications and diabetes-related hospital admission.[4] Antipsychotics increase appetite[5,6] and are associated with a higher BMI and an increased risk for type 2 diabetes.[7] These observations help to explain why the life expectancy of those with severe mental illness is 17–20 years less than the general population.[8]

Another factor that is contributing to the reduced life expectancy is that optimal management of type 2 diabetes for people with serious mental illness is a challenge for both physical and mental healthcare providers worldwide as the two conditions are typically managed by separate health systems.[9] The division or 'gap' between diabetes and severe mental illness care pathways reduces access to care by creating communication gaps between healthcare professionals and delays appointments and treatment.[10,11] Several barriers to accessing diabetes care in those with severe mental illness have been identified in semi-structured individual interviews and focus groups.[12] For instance, adults with severe mental illness and diabetes and the difficulties they face to manage their diabetes when their mental health is an everyday struggle that overshadows their diabetes care.[13] Furthermore, mental healthcare professionals define their role as monitoring psychiatric symptoms and not symptoms of physical health[3] and some have argued that the under-resourcing of mental health services has compounded this.[9–11] In addition, lack of cross-training between mental health and physical health has also been noted as a barrier to managing severe mental illness and diabetes.[21] Other qualitative studies that have interviewed both mental health and general health practitioners, support the need for a collaborative approach between primary and secondary services, tailored to the individual, to improve overall care.[14,15]

Developing effective interventions to reduce this gap could lead to improvements in life expectancy.[10,11] In primary care settings, randomised controlled trials integrating diabetes, cardiovascular and depression treatment pathways have been shown to improve composite outcomes and reduce costs over time.[16] In secondary care medical settings, observational studies of integrated diabetes, psychiatric and social care services have also observed significant improvements in multiple outcomes[17] and for children with type 1 diabetes.[18] To date, evidence of effective integration of diabetes and severe mental illness care in mental health settings has been very sparse.

The key active ingredient or mechanism of action in integrated care of multiple conditions is care coordination (also termed link working, support worker, care navigator, case management, healthcare ambassadors)[19,20] and can be delivered by a wide range of healthcare professionals such as nurses, social workers. This is broadly defined as having continuity of provider who addresses ongoing issues, assists with delivering the plan of care and can be a link to other healthcare services. The potential roles of care coordinators can include direct medical and psychiatric care, education, advocacy and logistical support to patients navigating multiple healthcare systems.[19] Therefore, the care navigator is a unique role from other care coordinator roles as it can provide key communication links between mental health and physical health professionals as well as between those with severe mental illness and the various services available to them. A

What is already known?

Both mental health and general health practitioners, support the need for a collaborative approach between primary and secondary services, tailored to the individual, to improve overall care and could lead to improvements in life expectancy.

What this study has found?

We found that care navigators were able to support in overcoming some of the barriers that people with severe mental illness experience such as attending health checks and making lifestyle changes, e.g. diet and physical activity, therefore, improving overall diabetes management.

What are the clinical implications of the study?

We illustrate that having access to care navigator can empower those with severe mental illness to improve their diabetes self-management and hence the physical as well as mental health.

systematic qualitative review has identified five main processes of care coordination: (i) the involvement of numerous healthcare professionals; (ii) interdependence of healthcare professionals to carry out disparate health care; (iii) adequate knowledge about their own and that of other healthcare professionals' roles and resources; (iv) information exchange; and (v) facilitation of healthcare delivery.[21] These processes demonstrate how the care coordinators problem solve the issues that are presented by the person cared for.[22]

The role of care navigators in coordinating diabetes care in people with severe mental illness has not been previously studied. We conducted a pilot observational study to test whether integrating diabetes care into a community mental health team for people with severe mental illness was associated with an improvement in glycaemic control and mental health compared to a geographically adjacent control community mental health team. The key features of this integrated model comprised joint diabetes and psychiatry 6 monthly clinical reviews of care plans; diabetes education tailored to an inner-city severe mental illness population to consider reduced attention and lower levels of literacy; the addition of a care navigator to coordinate the delivery of diabetes care into the community mental health team (Box 1). The results from the pilot study indicated an improvement in psychological symptoms and glucose control. This study is part of the pilot study with a focus on the care navigator intervention component using qualitative methodology.

The aim of this study was to explore the views of healthcare professionals and people with severe mental illness and type 2 diabetes on the integrated severe mental illness and type 2 diabetes intervention with a focus on the care navigator to identify potential mechanisms of action.

BOX 1 Psychosis and diabetes study

The integrated severe mental illness and type 2 diabetes intervention.

The integrated psychosis and diabetes intervention used a non-randomised controlled trial design to test whether integrating diabetes and mental health care in individuals with psychosis would be associated with improvements in glycaemic control, as well as other measures including lipid levels, blood pressure, body mass index and mental status compared to usual care. There were seven primary components of the integrated psychosis and diabetes intervention: 1. Multidisciplinary team to deliver the Diabetes Care Programme Approach. This included a 6-monthly review of diabetes, psychosis and social care based in the community mental health team. 2. Medications. The diabetes and community mental health team reviewed the rationale for the current diabetes and psychotrophic medication, and the merits and disadvantages of switching medications in terms of both mental well-being and metabolic status. 3. Lifestyle interventions, such as nutritional advice and a physical activity programme in order to encourage behaviour change. This included access to resources such as smoking cessation and alcohol services. 4. Structured diabetes education for patients and their carers. 5. Integrated care plan, which was implemented and monitored by care staff. This included the delivery of the 9 diabetes care processes. 6. Data sharing. The Multidisciplinary team care plan was linked electronically to involved members of staff. 7. Skills development.

2 | METHOD

2.1 | Design

This was a qualitative study using one-to-one semi-structured interviews with healthcare professionals and people with severe mental illness and type 2 diabetes (Supplementary files 1) using the consolidating criteria for reporting qualitative research checklist (Supplementary files 2).[23]

2.2 | Setting

This study was based in a community mental health team service in the Borough of Lewisham, London, UK, which is an inner-city and ethnically diverse. Typically, each community mental health team has a caseload of 20 people with severe mental illness.

2.3 | Participants

Two groups of individuals were interviewed:

(i) Healthcare professionals: these comprised the two care navigators who were involved directly in the implementation of the intervention, two psychiatrists, a diabetologist, a dietician, a health psychologist and three community mental health team care coordinators.

(ii) People with severe mental illness and type 2 diabetes who had participated in the intervention study were purposively recruited. The inclusion criteria for the intervention study were: aged between 18 and 65 years; confirmed diagnoses of severe mental illness, i.e. either psychosis or bipolar disorder and type 2 diabetes; registered as a person with severe mental illness needing Care Programme Approach.[24] The exclusion criteria for the intervention study were: pregnancy or planned pregnancy; advanced diabetes complications such as receiving dialysis, registered blind, above ankle amputations; lacking the capacity to consent at the beginning of the study. The purposive sample for the qualitative study was nested from the sample of those who had participated in the intervention study.

2.4 | Procedure

In-depth interviews were conducted directly after the end of the intervention using a pre-set topic guide. Topic guides were designed to explore barriers and facilitators of the care navigator role, what worked and what did not work with the intervention and what perceived improvements could be made. There were two different interview schedules: one for healthcare professionals and one for people with severe mental illness and type 2 diabetes at a prearranged private room at the community mental health team site to ensure access to a safe environment for the researcher and participants. The topic guide for the healthcare professionals included semi-structured interview questions that covered the healthcare professionals' experience of managing people with severe mental illness and diabetes, the barriers and facilitators of the intervention, what they thought worked and what could be improved. The topic guide for those with severe mental illness included semi-structured interview questions that covered how they manage their severe mental illness and diabetes, their experience of the intervention, their thoughts on the benefits that arose from the intervention as well as improvements that could be made. Each topic guide included specific follow-up prompts for each main question that the interviewer could use to obtain more detailed information if needed. Further details of these topic guides are provided in Supplementary files 1. The interview guides were piloted by a psychiatrist and a volunteer with severe mental illness and diabetes. This ensured quality and clarity of the questions. The pilot interview ensured the quality and clarity of the questions, as both healthcare professionals and those with severe mental illness were able to provide feedback on whether the questions were relevant to them as well as whether the language and wording used were appropriate. All participants were provided with an information sheet and written consent was provided before the interview commenced. All interviews were audio-recorded. Severe mental illness and diabetes participants were provided with a £10 high-street voucher for their participation. Interviews were between 35 and 70 minutes and began with an introduction describing the purpose, recording process and confidentiality of the study. One researcher conducted the interviews (CC) which were audio-recorded using a digital recorder, with the voice files transcribed verbatim. All identifying information, such as staff members or names, was removed. The transcriptions were then reviewed by two of the authors, CC and IPN, to assure quality, confidentiality and reliability as well as formatting for coding. The second reviewer analysed the transcripts with complete anonymity as they had no direct contact with any of those with severe mental illness nor were they involved with the day-to-day involvement of the intervention.

2.5 | Data analysis

The data was entered and managed in NVivo 12 and analysed using thematic analysis.[25] Thematic analysis was used to allow for both a deductive and inductive approach to the emerging themes. To guide the analysis, the six steps outlined by Braun and Clarke (2006) were followed.[25] First, a data familiarisation session was carried out, characterised by reading and rereading the transcripts several times. From these readings, notes were made to highlight any preliminary patterns of data. These notes formed part of the second step, whereby initial codes were generated and collated to potential themes recognised across the whole dataset. If statements did not fit within an existing theme, new themes were created, or existing themes were modified to account for the statement. Third, the initial themes were reviewed to ensure consistency with the codes and, fourth, to the whole dataset. In addition, to ensure dependability, two people (CC/IPN) analysed the data, to ensure consistency in data coding. A description of each higher and lower theme was used to define the themes, and quotes were used as evidence. A thematic map was then created, and specific names for the themes were generated, allowing for the generation of clear definitions for each (fifth step). Sixth, a final report was produced, consisting of a selection of the most compelling extracts examples and their analysis.

3 | RESULTS

Sixteen participants were interviewed. Six were participants with both severe mental illness and diabetes. They

TABLE 1 Demographic characteristics for the intervention group of those with severe mental illness and diabetes

Demographics	Intervention Group ($n = 19$)
Age	
Mean (SD)	45.8 (9.7)
Median (min., max.)	46.0 (25.0, 64.0)
IQR (lower quartile, upper quartile)	17.00 (35.00, 52.00)
Gender (%)	
Male	8 (42.1)
Female	11 (57.9)
Ethnicity (%)	
White	7 (36.8)
Asian or Asian mixed	2 (10.5)
Black or Black mixed	10 (52.6)
Current employment (%)	
Yes	1 (5.5)
No	18 (94.4)
Qualification	
No formal qualifications	3 (15.8)
O Level/GCSE/CSE/NV Q	8 (42.1)
A Level or higher	4 (21.1)
Unknown	4 (21.1)

had diverse socio-demographic backgrounds, with a range of co-morbidities and cultural backgrounds (Table 1).

From the qualitative analysis, five main themes emerged regarding the care navigator role. These include: administrative services, e.g. booking appointments; signposting to local services; adhering to lifestyle changes and medication; accessing social activities; supporting skills training. Themes and sub-themes are described in more detail in Table 2.

3.1 | Theme 1: Administrative services

Both healthcare professionals and people with severe mental illness and type 2 diabetes described that care navigators provided administrative support. This was a key mechanism of action as even though the clinical team provided a diabetes care plan, it was thought that without someone to help people with severe mental illness navigate the system and/or book the necessary medical appointments, the care plan would not be implemented. The care navigator would either book the appointments for the service user and/or provide the contact information, locations and opening times. It was noted that the care navigator had the time not just to book the appointment but also to accompany the service user to their appointment. The appointments that were mostly mentioned were blood tests, eye tests and foot checks.

> *'When left to the patients' own devices, the diabetes recommendations set by the diabetologist were simply not made.....the care navigators in particular, have helped to facilitate a lot of the admin side of things because if I'm honest navigating health and social care services is quite difficult even if you don't have an illness. So having someone to do it with you is very beneficial'. (consultant psychiatrist).*

> *'The information about diabetes has been useful as I didn't really know that much about it before. When I was first diagnosed, I buried my head in the sand a bit but since seeing the care navigator, it's highlighted it and I've been able to go for a foot check and understand the medication I need to take for it. As everything is explained properly and there is someone there to call up for you'. (person with* severe mental illness*).*

It was acknowledged by both HCPs and those with severe mental illness and type 2 diabetes that attending appointments could be difficult for a variety of reasons, including the effects of mental illness, childcare and socio-economic status. Both groups of interviewees felt that care navigators empowered those with severe mental illness to overcome some of these barriers by booking appointments for them and checking that they attend their appointments by going along with them or discussing it at the next visit.

Healthcare professionals described general practitioners (GPs) as a key resource to help those with severe mental illness manage their diabetes care plan. However, although the GPs were provided with the care plan, the GP did not further follow up to ensure the recommendations from the care plan were met. The care navigators were able to step in and help those with severe mental illness to fulfil these recommendations:

> *'We ask the GPs, can you do this, can you do that but the patient just like previously wouldn't go to see the GP or the GP assumes that we're doing everything, so it has to be clear who does what. Now with the care navigators they are really helping the patients to make sure they're going to their appointments, such as their foot and eye check. We can make the recommendations to the patient but without someone helping them to follow these up and implement*

TABLE 2 Table of themes, sub-themes and example quotes

Themes	Sub-themes	Example quotes
Administrative services	Booking appointments	*'The information about diabetes has been useful as I did not really know that much about it before. When I was first diagnosed, I buried my head in the sand a bit but since seeing the care navigator, it's highlighted it and I've been able to go for a foot check and understand the medication I need to take for it. As everything is explained properly and there is someone there to call up and book appointments for you'. (person with* severe mental illness*)* *The patient were more likely to attend their foot or eye checks, if I booked them in, as well as attend to see the dietician that was based at the mental health centre. That worked really well. (Care navigator)*
	Barriers to attending appointments	*'...if I'm honest navigating health and social care services is quite difficult even if you do not have an illness they are difficult to navigate and for someone who has a mental health illness that would be a huge barrier so having someone to do it with you is very beneficial'. (Consultant psychiatrist)*
	Care navigators having the time for admin	*'Having someone in place to specifically deal with the patients' diabetes is great, because we do not have the time, we are dealing with their mental health issues and the consultants as well. The care navigator was the only person really with the time to do all this, you know, all the chasing up for them and checking that they are trying to manage their diabetes and following the care plan (mental health coordinator)*
	Attending appointments with care navigator	*'I was never interested in going to the gym or any type of exercise but with the person helping me, like meeting me at the community centre and making sure I can sign up with my vouchers, that really geared me on, and I went at least five times with her, which was helpful' (person with* severe mental illness*)*
	Engagement with GPs	*'We ask the GPs, can you do this, can you do that but the patient just like previously would not go to see the GP or the GP assumes that we are doing everything. Now with the care navigators they are really helping the patients to make sure they are going to their appointments, We can make the recommendations to the patient but without someone helping them to follow these up and implement them it is very difficult to achieve'. (Consultant Diabetologist).*
Signposting to local services	Overcoming barriers	*'I really struggle to motivate myself sometimes with my mental health and hearing voices. It's difficult, you know, let alone trying to go for a bit of exercise. Having someone there to point out where I can go for swimming and where I can go if I want to spot smoking really helped me. I did start going swimming and spoke to the pharmacist about getting some patches. So that that worked out well (person with* severe mental illness*)'.*
	Co-ordinating care	*'The patients seem to be accessing services more. I think what has been good for some of them is that the care navigator has helped them to discover things in the community that they were not aware of such as living well programmes, leisure centres or food clubs. So, I think some patients might have got something out of being signposted to places that would help them benefit their physical health'. (mental health coordinator).*
	Reinforce changes	*'Because I know I'm coming here every week you know I like to come here and say oh yeah, I've lost a bit of weight even if I have not lost any weight as long as I can say I've been to the gym or I've been swimming or I've been to get patches. It's okay, that's good. It just helps to make sure I am making the changes we agreed on' (person with* severe mental illness*).*
Engaging in social activities	Education	*'Social activities, like the lunch club helped me to understand better what I should be eating for my diabetes but also overall being told what a healthy diet is was great and I learnt a lot. Need more of those activities please! (person with severe mental illness)'*
	Lunch club	*'I think what [the care navigators] are planning now with the lunch club could be something to test out, it might be more appealing to people to attend a session that is a little bit more casual, and it involves food rather than kind of education sessions' (mental health coordinator).*
	Reducing isolation	*'I found [the care navigator] more useful recreationally you know when we go to dinners. It's a great way to socialise and to be honest I would not usually go out in a group but this was good for me as I am usually a bit lonely and this helped to get me out with other people' (person with* severe mental illness*)*

TABLE 2 (Continued)

Themes	Sub-themes	Example quotes
Further skills and training needed	Underestimation of skills required	*'They were thrown in the deep end, so there's a lot of learning on the job and through that we learnt what the skills that were needed. That was probably a bit more than we thought. I think the care navigators should have quite good knowledge of what diabetes is and how to look after it to support the patient to self-monitor their blood glucose, choose healthy foods from a diabetes point of view and perhaps have some menu plans up their sleeves'. (health psychologist)*
	Increased supervision	*'I think that the [care navigator] needs more supervision. I think the supervision wasn't enough. If you were having weekly supervision with both a diabetologist and a psychiatrist for instance to problem solving the difficulties in a very structured way, the link worker would have found that more helpful' (Consultant psychiatrist)*
	Increased training	*'I mean, I do not have any medical training, I'm a social worker, I do not really know that much about diabetes other than what I've learned since being part of the intervention, so to have some sort of medical input that would be fantastic' (care navigator)*
	TREND framework	*'I would like to have a cohort of care navigator s for people with diabetes who have got some decent skills in diabetes level 1 level 2 level on the TREND framework' (diabetologist).*

them it is very difficult to achieve'. (consultant Diabetologist).

3.2 | Theme 2: Signposting to local services

The care navigator would signpost the person with severe mental illness to local services within their community, such as gyms, weight watchers and pharmacists for smoking cessation sessions. It was thought that the person with severe mental illness and type 2 diabetes would either be unaware of the local facilities available to them or because of their mental illness, they would struggle to have the motivation to look for services that could help them better manage their lifestyle.

> *'The patients seem to be accessing services more. I think what has been good for some of them is that the care navigator has helped them to discover things in the community that they weren't aware of such as living well programmes, leisure centres or food clubs. That kind of thing. So, I think some patients might have got something out of being signposted to places that would help them benefit their physical health i.e., going to a gym or going to a stop smoking service. I think the care navigator was a brilliant idea because what the care navigator was able to do was spend some time to find and provide information for healthy living, where other health professionals, particularly the consultants would not necessarily have the time to do'. (mental health coordinator).*

Those with severe mental illness felt supported by the care navigator as together they would discuss what lifestyle changes needed to be made and what barriers they had in taking steps to follow the recommendations. At that point, the care navigator would review local services and signposts. This increased the confidence of the person with severe mental illness to improve their lifestyle.

> *'It was helpful to have someone guide me as to where I should be going to help myself get fit. The care navigator gave me the address to the local swimming centre. She also advised me to go to the Chemist to help me quit smoking. Because I know I'm coming here every week you know I like to come here and say oh yeah, I've lost a bit of weight even if I haven't lost any weight as long as I can say I've been to the gym or I've been swimming or I've been to get patches. It's okay, that's good'. (person with* severe mental illness*).*

3.3 | Theme 3: Adhering to lifestyle changes and medication

Healthcare professionals described the care navigator role as beneficial in reinforcing suggested lifestyle changes set by the clinical team, such as diet and physical activities. People with severe mental illness thought that the support the care navigator provided, along with support from the rest of the team, helped to motivate them to act in improving their own health. Overall, the participants that were interviewed felt positive changes had occurred as a result of engaging with the integrated model service. In particular, the care navigator helped to reemphasise the

importance of having a balanced diet as well as helping them to engage with other lifestyle services and was able to increase their physical activity, review their diet and make small changes, as well as try and stop smoking.

> '*Because the more people that are involved with my diabetes the more what's the word, I'm looking for, the more willing I am to sort of stop eating rubbish, like sugary sweets. I was also encouraged to keep a food diary, so that helped. I'm more aware of my eating habits now*'. *(person with* severe mental illness *and* type 2 diabetes*).*

In addition to lifestyle changes, people with severe mental illness increased their medication adherence and healthcare appointment attendance.

> *'When I become unwell, I sometimes stop taking medication and that means the diabetic medication as well. I have found the intervention really useful, it's like support and I think with the care navigator, we have a click, otherwise if we didn't click, I wouldn't attend my appointments, so yeah it has been really useful. I've been able to manage better, just by the information I get on my health and what I should do to lose weight and comply with medication'. (person with* severe mental illness *and type 2 diabetes).*

This suggests that having the care navigators made the person with severe mental illness feel more empowered to self-manage their diabetes and having that rapport and seeing the care navigator regularly made them more likely to act on the HCPs recommendations.

3.4 | Theme 4: Engaging in social activities

It was expressed by those with severe mental illness that the care navigators were helpful in increasing access to social activities, such as encouraging them to participate in exercise groups. It was felt that this is something that could be developed further:

> *'The care navigators have done some social activity work with the patients and really working to engage them within society. That is potentially something that could continue and grow as it is particularly difficult for patients to reach out to peers' (Dietician).*

One of the social activities that the care navigators organised was a 'lunch club'. The lunch club was a social environment for those with severe mental illness and diabetes where they got together and helped to cook simple healthy dishes. Part of the purpose was to educate participants on the type of meals that they could eat to help them manage their diabetes and learn how to cook these foods. Recipe cards were given out to encourage cooking these meals at home. Furthermore, HCPs felt that this practical element in educating people with severe mental illness and diabetes was more useful in terms of enhancing service user engagement compared to more formal diabetes education:

> *'I think what [the care navigators] are planning now with the lunch club could be something to test out, it might be more appealing to people to attend a session that is a little bit more casual, and it involves food rather than kind of education sessions' (mental health coordinator).*

This suggests that social activities such as lunch clubs are a way of both increasing social interactions for severe mental illness individuals as well as educating them regarding diabetes and how to manage their physical health.

3.5 | Theme 5: Further skills and training needed

Healthcare professionals expressed that care navigators would benefit from developing their skills through receiving formal training. Healthcare professionals said they were pleased with the way the care navigators were able to fill the gaps in the overall care of those with severe mental illness and this was something that did not necessarily require medical training. However, at the same time recognised that some specific skills were needed for the role, particularly within diabetes management:

> *'They were thrown in the deep end, so there's a lot of learning on the job and through that we learnt what the skills that were needed. That was probably a bit more than we thought. With the care navigators, there was very little training. I think the care navigators should have quite good knowledge of what diabetes is and how to look after it so that you can support the patient to self-monitor their blood glucose, choose healthy foods from a diabetes point of view and perhaps have some menu plans up their sleeves'. (health psychologist).*

Healthcare professionals felt that the care from the care navigators could have been further improved by providing specialised diabetes supervision and training using a competency framework such as TREND, a framework for diabetes skills in primary care for both professionals and non-professionals.

> *'I would like to have a cohort of care navigator s for people with diabetes who have got some decent skills in diabetes level 1 level 2 level on the TREND framework' (diabetologist).*

> *'I mean, I don't have any medical training, I'm a social worker, I don't really know that much about diabetes other than what I've learned since being part of the intervention, so to have some sort of medical input that would be fantastic' (care navigator).*

4 | DISCUSSION

The aim of this study was to explore the views of healthcare professionals and people with severe mental illness and type 2 diabetes views on the psychosis and diabetes intervention with a focus on the care navigator to identify potential mechanisms of action. To the best of our knowledge, this is the first study using qualitative methods to investigate the role of care navigators for those with severe mental illness and diabetes. From the analysis, four main themes emerged regarding the care navigator role. These were: administrative service; signposting to local services; adhering to lifestyle changes and medication; engaging in social activities; further skills and training needed.

The key findings from this study indicate that the role of care navigators could have a positive effect on the wellbeing and motivation of people with diabetes and serious mental illness. From the interviews, healthcare professionals and those people with severe mental illness discussed the difficulties encountered by the person with severe mental illness to adhere to healthcare professionals' recommendations, i.e. lifestyle changes, medication and attending essential health check-ups. It was thought by both sets of interviews that the care navigator provided support and motivation to overcome these difficulties. Care navigators helped to enable those with severe mental illness to attend diabetes-related appointments, such as eye and foot checks. Findings also suggested that care navigators played a key role in changing diabetes-related lifestyle factors, such as diet and exercise. Care navigators were able to overcome some of these barriers that people with severe mental illness experience and increase their access to services, therefore improving overall diabetes management. The participants in this study perceived that the role of a care navigator can help to promote self-motivation, which can lead to positive behavioural changes for those with severe mental illness. as well as improving diabetes self-management.

4.1 | Strengths and limitations

A key strength of the current study is collecting different perspectives on the mechanisms of action of the care navigator component of the intervention i.e. from both mental and physical healthcare professionals as well as people with severe mental illness. Furthermore, this study is based on a pilot study, which directly examines an integrated severe mental illness and diabetes intervention and therefore, we were able to assess first-hand what barriers and facilitators arise from this type of service.

There are some limitations to consider. This study explored the experiences of a small number of people with severe mental illness. Overall n = 19 people with severe mental illness and type 2 diabetes participated in the intervention of which $n = 6$ consented to participate in the semi-structured interviews at the end of the intervention. Some were not invited to participate in this study as we needed a purposive sample so those with language barriers (due to no funding for translators), and those who were acutely unwell with their severe mental illness were deemed unable to provide sufficient information about their care navigators experience. Others declined to participate for other reasons, including previous negative experiences with research studies. However, four of the five themes that were identified by those with severe mental illness were also identified from the healthcare professionals', suggesting that healthcare professionals and service user experiences of the care navigators largely overlapped and the sample size may not have affected the themes identified. Furthermore, those involved in the intervention also participated in the interviews and therefore, there is a risk that the interviewees will say what they think the interviewer wants to hear. However, as the interviewer was a junior member of the research team and not directly involved with the set-up or management of the intervention, the participants were freely able to express their opinions and experiences. In addition, although the interviewer had previous interactions with the participants from the intervention, this was a strength rather than a limitation, as good rapport had been built and helped to engage this hard-to-reach group.

4.2 | Comparison with existing literature

The need to improve the physical health of people with severe mental illness is relatively widely recognised; however, who

should be responsible for the care coordination to ensure care plans are met is less well known.[26] The service users within this study had a multidisciplinary team in place, yet this did not necessarily ensure efficient care. Findings from this study indicated that an individual was needed to take on the responsibility and support the person with severe mental illness to adhere to their care plan.[25] This was the care navigator, which supports previous literature on the importance of the care navigator role.[20,22,26] Another important finding was the ability of care navigators to improve access to social activities for those with severe mental illness, including an organised lunch club. It has been increasingly recognised that feelings of social isolation can affect both mental and physical well-being.[21] As previous research has shown, the experience of social isolation is closely linked to severe mental illness.[27] This study indicates that care navigators have a potential role in enhancing physical and mental well-being through decreasing social isolation. Considering people with a diagnosis of severe mental illness may find it harder to develop social relationships,[28] the present study highlights the one-to-one rapport that developed between care navigators and those with severe mental illness. The evidence from the present study suggests that this may be an important mechanism for behaviour change. Furthermore, it may have short- and long-term benefits in relation to financial costs for healthcare providers.

Another prominent theme that emerged from the care navigator role was the need for increased supervision and training. Diabetes training programmes for community health workers increase knowledge, and confidence in providing care for those with diabetes, as well as improving the quality-of-care given.[29] Supervision for community health workers also improves their abilities to support those with chronic conditions.[30] Accordingly, it is recommended that future interventions prioritise such training and supervision for care navigators or their equivalent, to enhance diabetes-related outcomes for service users. In addition, this study supports previous literature that if staff are expected to take on new roles they must be provided with the appropriate training, in this case, both within mental health and diabetes.[29]

4.3 | Implications for research and practice

This study adds to the limited literature investigating the role of care navigators in the care of individuals with severe mental illness and type 2 diabetes, although there is a wider literature on the role of care navigators in other service user populations. Future research should focus on the extent to which care navigators are effective in improving specific outcomes, such as decreasing social isolation, increasing access to scheduled primary and secondary care and reducing unscheduled care, along with markers of integration, (joint diabetes and psychiatry appointments and increased traffic of communication between service). Therefore, this study can be further implemented and tested using a wider scale project. For example, testing out the care navigator model within other areas of England, measuring outcomes such as glucose control levels, diet and physical activity as well as psychological and social outcomes. The study would benefit from a stepped wedge trial, testing each site before further improvements are made and before setting up the next site.[31]

Previous care navigator models involving mental health services have encountered several barriers with care navigation implementation.[32] These are: the accessibility a person has to the navigator, including flexibility within locations and hours of services; adequate or existing local services to ensure effective navigation; ethical and transparent communication, this would involve providing honest information and ensuring assessment plans are held by the person being helped. Hence, ensuring these barriers are addressed within any further care navigator model implementation would be beneficial.

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CONFLICT OF INTEREST

The authors have declared no competing interests.

ETHICS STATEMENT

The NHS Health Research Authority granted ethical approval for the study intervention (ref: 16/LO/0873; from October 2016 to July 2018).

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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