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Exploring the Knowledge, Recognition and Management of Delirium amongst Nursing Home Staff

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Abstract: Research into nursing knowledge of delirium has revealed a lack of adequate understanding in a variety of settings. The negative impacts of delirium on older adults are well documented and it is recognized that residents of nursing homes are a high-risk group. Little research so far has explored the knowledge of staff and care processes for the management of delirium within nursing homes. This study aimed to explore the knowledge of delirium and the care processes in place to support residents who may have delirium. An exploratory descriptive qualitative design was adopted, with semi-structured interviews conducted with 20 participants across five nursing homes. Data was analyzed using reflexive thematic analysis. The findings revealed limited knowledge of delirium within the homes, with available clinical guidelines not used. Two themes, each with two associated sub-themes were developed from the data; 1. Misperceptions of delirium with subthemes, its’ infection isn’t it and need for training, and 2. Managing acute confusion; with subthemes knowing the residents and feeling isolated. Whilst there was a lack of knowledge specific to delirium identified, the close relationships staff developed with residents were evident, meaning that staff identified changes in physical and mental health in residents quickly. There is a need to develop appropriate training to ensure that care for delirium is based on evidence-based clinical guidelines and to ensure the quality of care and optimal outcomes for residents.

Keywords: Delirium, Acute Confusion, Long Term Care, Older Adults, Nursing

Introduction

Delirium is an acute complex neurological disorder that can cause reversible changes in cognition and is usually the result of an underlying medical condition (Bennett, 2019; Komici *et al*., 2022). Estimates of the number of individuals affected by delirium vary across clinical settings, including 17% of adults presenting to ED, 50% of ICU patients, 60% of residents in long-term care settings, and up to 80% of people receiving end-of-life care (Bennett, 2019). Studies indicate that the incidence of delirium in nursing homes is high, although estimates vary widely, ranging from 10-60% possibly due to different methods and tools used for diagnosis in different studies Komici *et al*. (2022). Many cases of delirium are thought to remain undiagnosed, particularly in older adults, with changes in the mental state often attributed to the aging process or dementia (Traynor *et al*., 2016; Baker *et al*., 2015).

Delirium is associated with particularly poor outcomes in older adults (Morandi *et al*., 2012; Traynor *et al*., 2016). There are significant economic and human costs in terms of increased length of hospital stay, cognitive deterioration, and increased functional dependence, notwithstanding the distress caused to residents and their families (Fick, 2018; Traynor *et al*., 2016; Martins *et al*., 2018).

The causes of delirium are frequently multifactorial and many predisposing factors have been identified including older age, dementia, hip fracture, and polypharmacy (Bennett, 2019; Komici *et al*., 2022). The nursing home population contains those with the highest risk of delirium (Voyer *et al*., 2011) with the presence of three or more predisposing factors resulting in a 60% increased risk of delirium (Everhart *et al*., 2019; Avelino-Silva *et al*., 2017). This underlines the need for healthcare professionals to have knowledge of the risk factors for delirium in older adults to adopt preventative measures, assess for delirium accurately, and provide effective care (SIGN, 2019; Davies, 2021; Helgesen *et al*., 2021).

The majority of research to determine nurses' knowledge of delirium has been conducted within hospital settings, including emergency departments, surgical units, Intensive Care Units (ICU), and wards for older adults, with all reporting inadequate levels of knowledge likely to result in missed diagnosis (Baker *et al*., 2015; Korkmaz *et al*., 2015; Elliott, 2014; Papaioannou *et al*., 2023). Few studies were found to have explored nurses' knowledge of delirium in long-term care settings. A study of nursing and care staff in the USA found that knowledge of delirium, particularly of hypoactive type, was inadequate (Steis *et al*., 2015). In Australia, a qualitative study was conducted with nursing and care staff (n = 6). The researchers reported four themes including the difficulty distinguishing between delirium, depression, and dementia; care based on intuition and automated actions; reliance on teamwork and absence of the word delirium, and suggested that lack of knowledge led to underassessment for delirium (Buettel *et al*., 2017). In a Korean study, nurses' delirium knowledge was tested pre and post-educational intervention and whilst knowledge was reported to have improved, in the intervention group it is unclear whether the baseline level of knowledge was deemed adequate in either group (Jeong and Chang, 2022).

In the UK, NICE published five quality standards in relation to delirium in adults that apply to both hospital and long-term care settings (NICE, 2014) aimed at improvement in the detection of delirium, incidence, falls, mortality, and carer involvement. Health Improvement Scotland (2019) produced a clinical guideline aimed at reducing risk and improving the management of delirium. Both guidelines advocate the use of the 4AT tool for assessment and advise consideration of a range of factors to prevent delirium and management strategies based on non-pharmacological treatments when delirium is detected (Health Improvement Scotland, 2019; NICE, 2014).

Research into delirium in long-term care settings in the UK has tended to focus on the prevention of delirium (Featherstone *et al*., 2010; Siddiqi *et al*., 2016), or the use of assessment tools (Teale *et al*., 2018). No research on staff knowledge of delirium within long-term care settings in the UK in the last 10 years was found during literature searches. Research of delirium in care home settings has been identified as an area for development (MacLullich and Shenkin, 2019) and they further highlight some of the challenges in conducting studies in care homes including recruitment, exclusion bias, and higher attrition, that have led to less research in these settings.

Overall, there is limited research conducted into delirium in Care Homes, despite this being a particularly at-risk population. There is little research so far in UK settings with most studies completed in the USA, South Korea, and Australia. The high cost of delirium in terms of economics and human distress can only be addressed by increasing staff skills to take evidence-based preventative action, accurate assessment, and care (Traynor *et al*., 2016). The sign guideline also identifies a range of areas requiring further research to better inform clinical guidelines including the need to study the detection and management of delirium in long-term care settings (Health Improvement Scotland, 2019). This study aims to address one of the gaps highlighted by the literature, exploring the knowledge of staff and the care processes related to delirium in nursing homes.

Aim and Objectives

Aim

This study aims to explore the knowledge of care staff in relation to delirium, the recognition of delirium, and the care processes related to delirium in nursing homes.

Objectives

- To explore the level of knowledge regarding delirium amongst health and social care staff in nursing homes
- To explore current assessment, care, prevention measures, and reporting processes related to delirium in nursing homes
- To identify potential training needs in delirium for staff in nursing homes

Materials and Methods

Design

An Exploratory Descriptive Qualitative (EDQ) design (Hunter *et al*., 2019) was employed for this study. This approach is considered appropriate where a subject has received less attention previously (Hunter *et al*., 2019). Although research into delirium has increased, nursing homes have received considerably less attention in terms of research so far (MacLullich and Shenkin, 2019). Whilst several studies have used a questionnaire to assess knowledge of delirium (Detroyer *et al*., 2018; Grealish *et al*., 2019), others have adopted a qualitative approach successfully (Buettel *et al*., 2017; Steis *et al*., 2015).

Data Collection

Semi-structured interviews were used to gather data from nurses (n = 12) and care assistants (n = 8) and all were conducted at the participant's place of work by the first named author between November 2022 and March 2023. Only the interviewer and participant were present in the interviews. Interviews lasted between 30 and 75 min and were audio recorded digitally and transcribed verbatim. Some field notes were made to allow the interviewer to focus on the participant and the conversation, however, reflexive diary entries were made after interviews. The transcripts and recordings were checked by the second author for accuracy. The strengths of semi-structured interviews include the ability to gain detailed, rich data about the individual's experiences and the flexibility to probe pertinent issues that are raised (Braun and Clarke, 2022). The interview schedules were informed by the Quality standards for delirium (NICE, 2014) and literature review to explore knowledge related to defining delirium, screening and assessment tools, prevention and management of delirium.

Ethical approval to complete the study was granted by the University Faculty Ethics Filter Committee (FCNUR-22-064), with participants provided with a Participant information sheet and asked to provide consent to the interview and audio recording. At the start of each interview participants' consent was confirmed and the limits of confidentiality were discussed. A distress protocol was also put in place in case participants had personally, or had a family member who has had delirium and became distressed recalling this.

Sampling and Participants

Inclusion criteria:

- Care staff currently employed in a nursing home within a defined geographical area
- Care staff who have been employed in the nursing home setting for at least 3 months

Exclusion criteria

- Staff employed in nursing homes who do not provide care to residents
  Staff who have been employed by the home for less than 3 months

A purposive sampling method was used (Moule, 2021), which is appropriate for an exploratory descriptive qualitative design (Sandelowski, 2004; Hunter *et al.*, 2019). Participants were selected from care homes (n = 5), set within an HSC trust geographical area serving a population of 300,000, containing 31 registered nursing homes with a total of 2087 beds. Homes of different sizes and urban/rural settings were included and are broadly representative of nursing care homes across the UK and Ireland, with high levels of dependency amongst residents. Homes were initially approached via email invitation and a follow-up telephone call. Once a nursing home had agreed to participate, a gatekeeper within the home was nominated (usually the manager) to pass information sheets and consent forms to potential participants within the care home staff. A minimum of 3 and a maximum of 5 staff were interviewed in each home including the manager and at least one registered nurse and care assistant to provide a reflective range of opinions across the main care providers. All staff who had completed a consent form were interviewed, none withdrew from the study. It is suggested that for a medium-sized research project, 10-20 qualitative interviews are appropriate (Braun and Clarke, 2013), however, others are less specific arguing that it is more important to use a few sites/individuals but ensure there is a lot of detail about those sites collected (Creswell, 2013), or that interviews should continue until data saturation is reached (Morse and Richards, 2012). Braun and Clarke (2013) argue that claims of data saturation with reflexive thematic analysis can be problematic suggesting that the researcher should consider the ‘richness’ of data obtained in relation to the aims and objectives of the study (Braun and Clarke, 2013).

Sample Characteristics

The participants for the study were from five nursing homes across northwest region of Northern Ireland. Two were specialist homes for dementia care, two for adults with physical disabilities or health needs, and one had units for both physical disability and dementia. Homes were based in urban areas (3) and rural areas (2). The total number of participants interviewed was 20, consisting of 12 registered nurses and eight senior carers. Of the registered nurses, 5 were home managers, 3 were deputy managers or clinical leads and 4 were staff nurses. The majority (n = 11) had a degree in nursing either adult or mental health nursing and one was a Registered Mental Nurse (RMN). The majority (n = 6) of the carers had an NVQ Level 3 in health and social care, although 2 had no formal care qualifications. Most staff had many years' experience (mean 11 years, ranging from 1-25 years) and had worked in the nursing home for some time (mean 7.6 years, ranging from 9 months to 19 years).

Data Analysis

The data was managed using N-Vivo 12 (QSR International, 2018), which assisted the researcher in the organization of data memos, and coding and has benefits in enabling a clear and precise audit trail of decisions made (Houghton *et al.*, 2017). Following the transcription of the interview audio recordings, data were analyzed using Braun and Clarke (2022) six-phase framework for reflexive thematic analysis (Moule, 2021; Braun and Clarke, 2022). Thematic analysis of data has been identified as appropriate for the aims of exploratory descriptive qualitative research, where the researcher sets out to explore the experiences of participants in a particular area (Green and Thorogood, 2018).

The phases included familiarisation with the data through rereading transcripts and listening to audio recordings followed by initial coding. Initial themes were then generated in phase 3, which were developed and reviewed in phase 4. In phase 5 themes were refined, defined, and named before writing up in phase 6 (Braun and Clarke, 2022).

Rigor

Braun and Clarke (2022) proposed a 15-point checklist covering the process of data analysis which was adhered to in this study. Quality can be further assured by keeping a reflexive journal (Polit and Beck, 2017) throughout the research, demonstrating a rigorous process through an audit trail, and ensuring sufficient time is allowed for depth of data analysis (Braun and Clarke, 2022). A journal was maintained throughout the study by the first author and the contents were reviewed with the team regularly through the development of themes. Additionally, the use of NVivo allowed a detailed audit trail to be maintained of coding iterations, and themes developed supported by the use of memos throughout all phases. In writing up the study the Consolidated criteria for Reporting Qualitative research (COREQ) were also adhered to (Tong *et al*., 2007). Initial coding was completed by the first author and reviewed with author 2. The themes developed were discussed, reviewed, and refined by all authors. In keeping with reflexive thematic analysis ideals, where there is more than one researcher working on the data, the aim should be to deepen understanding of themes produced from the data, rather than necessarily reach consensus (Braun and Clarke, 2022).

Findings

Two main themes were developed from the data with associated sub-themes (Table 1). The first theme was misperceptions of delirium, with sub-themes; It is an infection, isn't it? and the need for training. The second theme is managing acute confusion with associated sub-themes, knowing the residents, and feeling isolated.

Misperceptions of Delirium

Overall knowledge of delirium itself was very limited. Only one staff member was aware of the types of delirium, most were unable to list signs or symptoms and only two staff could name a screening or assessment tool.

Most staff reported that they did not believe they had met or cared for a person with delirium despite most having worked in the nursing home for a number of years. Some staff reported having cared for one or two people with delirium and usually associated this with very disturbed or aggressive behavior:

> *Meanwhile, there are conservatory chairs coming flying over that gate. You know and then it actually escalated to the point where he started to try and hurt other residents* P4

As staff knew so little about delirium, interview questions had to be adapted to discuss signs that indicate a deterioration in physical or mental health rather than specifying signs of delirium. Changes identified by staff as indicative of deterioration often included descriptions of people with acute onset confusion, increased agitation or restlessness, and behavior changes that could well have indicated delirium.

It's Infection, isn't it?

Most staff suggested that a change in behavior would be the first sign of a deterioration in health. This was evident in both homes that cared for people with dementia and those that cared for people with physical disabilities. Changes in cognition or behavior were usually attributed to infection:

> *So you see any change in behavior should it be that they get a bit more restless or they're more sleepy, they're not eating haven't passed urine or continually going to the toilet starting to get aggressive well that's the first thing we'll think is it an infection.* P18

Those staff with some awareness of delirium also linked this almost exclusively with infection. Some staff even used the terms delirium and infection interchangeably. This highlights the risk that the symptoms of delirium are being missed, particularly when it is hypoactive delirium and few staff members are aware to assess for causes of acute confusion and behavior changes other than infection:

> *Well, I just know it can show up with an infection kind of thing, like with agitation, confusion erm it's hard to distinguish when it's an infection and when it's delirium I think, so I've never actually seen someone with delirium or treated for delirium that I'm aware of.* P16
>
> *I always put it down to infection, not delirium* P3

Need for Training

Only one participant had received training specific to delirium and this was whilst working in a hospital setting. All staff expressed a desire for training in relation to delirium and recognized that knowledge was inadequate. Recognition and management of delirium were the two areas that staff most strongly wanted training to focus on. There was a strong preference for face-to-face rather than to online training and some felt that an algorithm or poster that could be put on the wall in clinical areas to supplement training would also be useful.

Table 1: Themes and sub-themes

Theme	Sub-themes
Misperceptions of delirium	Its infection, isn't it? Need for training
Managing Acute Confusion	Knowing the residents Feeling isolated

> *Staff have been more inclined to use terminology like maybe infection. It's getting them to realize that this can be pain-related as well and there are a lot of other factors for delirium. But like we need to get additional training for that.* P1

> *Probably face-to-face because online, it's kind of easy to get distracted or just go through it, but I think face-to-face, it's just you have to listen, then you're taking it in more.* P7

There was an acknowledgment by nursing and management staff that training for delirium needed to be improved and suggested that it was a topic that has not been discussed leading to the potential missing of cases in residents:

> *I think that in a nursing home delirium is a topic that doesn't really get discussed and it's kind of like a hidden, very hidden, and people do just treat it as an infection and not think well could it actually be delirium* P16

Managing Acute Confusion/Delirium

None of the staff reported using guidelines, pathways, or protocols to guide care for suspected delirium and only two staff identified being aware of the NICE Guidelines (NICE, 2010). The guidelines suggest that all new residents should be risk assessed for delirium, advocate the use of the 4AT to assess possible cases, as well as targeted interventions to reduce risk factors and the provision of information on delirium to residents and families where affected (NICE, 2010). Due to the limited knowledge of delirium in staff and that most did not believe they had cared for a resident with delirium, management was generally discussed in terms of behavior changes resulting from infection:

> *We usually sort of just do our own triage, I mean are they meeting their criteria, but staff have been more inclined to use terminology like maybe infection* P1

All staff agreed that swift action was required on noticing changes in a resident, particularly acute confusion. Care staff would report to a nurse and registered nurses described checking clinical observations including temperature, blood pressure, pulse, and obtaining urine samples and some mentioned chest auscultation:

> *Well, I would go down and I would probably check their early warning score and I would be…I would be saying hello, how are you? Talk to them, using a bit of humor in it too, and then I will go in and start taking their OBs. If there's anything irregular in it from their baselines and probably look at their history over the last couple of days; what they've eaten, what they've been drinking, have they had a BO? Have they been in bed? How they've been the last couple of days. Then if I do suspect something then usually it would be a GP call.* P2

In terms of caring for a person with suspected delirium, the safety of the residents themselves, and other residents, and the need to manage behaviour were the issues most frequently raised. Increased staffing was identified as important and was available in most homes when required. Staff also stressed the need for increased monitoring of physical care, ensuring adequate nutrition, hydration, and sleep. Behaviour changes were generally managed using distraction techniques, closer monitoring, and distressed reaction care planning:

> *I suppose maybe just a higher level of staffing support as well. We would look at whatever physical interventions we could put in place but a higher of support for the person you know whether that be reassuring, distracting, de-escalating whatever that might look like for the person.* P4

The use of PRN medication was described as a 'last resort' as staff were aware of the additional risks this posed. Medication prescribed as PRN was usually benzodiazepines rather than anti-psychotic medication.

Knowing the Residents Well

The staff in all homes identified a strength of the care they provide is that they know their residents very well, with staff describing themselves as 'lucky', 'privileged', and a 'beauty of the role' to know residents so well (P2, P9, and P18). Staff suggested that the detailed knowledge of residents meant that changes in physical and mental health or behavior that may signal delirium or other illnesses were noticed very quickly. The care staff described knowing the resident's patterns of behavior and 'their wee ways' (P5) and that any changes were reported promptly to nurses. Nurses confirmed that they felt care staff knew residents best and that they were regarded as the 'eyes and ears' of the nurses (P10, P16).

The language used to describe deterioration in a resident by the staff was less clinical than expected and more similar to informal language used to talk about a family member, using terms such as they are a 'bit off', 'somethings not right', or 'off their usual form' for example:

> *But they're [care staff] very good in noticing changes in behavior, because they know the residents so well and because we have the*

> *same residents every day, so they get to know when they'll say just something not right with them today or you know, they'll use that type of language.* P1

It was further suggested by some nurses that as they knew residents so well, they had the ability to identify changes in residents' behaviors speedily and treat possible causes such as infection quickly, thereby reducing the risk of delirium developing. This highlights that most staff did not identify these changes in initial behavior or increased confusion as possible symptoms of delirium:

> *So you would once you know there's an infection, act quicker, you know get your pain relief in there when they do have an infection that you beat it before it gets to the stage of delirium.* P16

Feeling Isolated

The impact of Covid 19 placed additional pressure on nursing homes along with other services. Some staff felt that they were left 'on their own' once the pandemic started, making it even harder to get access to outside services and agencies when residents needed them due to a deterioration in their health. It was reported that these access difficulties have persisted beyond the easing of the pandemic. The most common challenge staff reported was in relation to contacting GPs and getting them to visit a resident when needed. Some staff reported resorting to 'begging' a GP to come out to do a home visit:

> *'Pre covid we always compare everything pre covid and post covid now. We would have had a lot more hands-on support in the private sector, we're sort of finding it difficult now, I know there are backlogs and stuff and waiting lists and there is going to be a knock-on effect after the pandemic*' **P1**

> *'I mean GPs will say to you, right, do bloods, do this, do that. It's very, very difficult to get a GP to actually come to the home and set eyes on a person and it seems to be, I would say, probably increasingly more so since Covid.*' **P4**

In some homes, strategies were adopted to improve communication with GPs in an attempt to ensure they would visit residents who were deteriorating, such as the development of a 'triage' system where staff would have a standard set of information available before they rang the surgery. It was also acknowledged that the nurse's attitude could impact communication with the GP and how likely they were to visit:

> *'So the NEWS chart, then you'd be able to go to the GP and say they're scoring a news of 2 or 3, whatever it is, we would look at their hydration, see their fluids is in. We actually have like a triage now, before you phone a GP.* P1

> *'Although at times some of our nurses can let us down they say someone's unwell and they ring the GP and they haven't done a set of obs …. and the GP can then say, well, where's your numbers? What can you tell me about this person?'* P2

Staff also noted that as well as the difficulty in requesting GP visits, it was also hard to get the support they felt they required from other outside agencies, including acute care and mental health services. The challenges in obtaining outside support were also found to have negative consequences for residents in the home, including unnecessary delay in treatment:

> *'I suppose my whole frustration around that is, are you know, that that we are here, we're the ones that are looking after these residents …and there are whole big channels that we have to go through before you'll even be able to get anybody to come out and assess, you know, we're having to manage this behavior day in and day out and it can be very, very challenging and so you're having to go to the social workers, the GPs and then the CPNs and this process can take a few weeks before there's any treatment or any intervention put in place to try to help you and the resident'* P14

Discussion

The main findings of this study were that knowledge of delirium and the assessment and management of delirium amongst nursing home staff was limited. There are clinical guidelines available (NICE, 2010) however staff had little awareness of these and they were not used to inform policy or care. Nursing Home residents are identified as a high-risk group for delirium and there is a clear need to address knowledge of delirium in order to intervene early and avoid the significant long-term detrimental effects on individuals and families (Traynor *et al*., 2016). The first theme developed from the data was 'Misperceptions of Delirium' with associated subthemes, 'it's infection; isn't it' and the need for training. The second theme was the management of acute confusion with subthemes knowing the residents and feeling isolated.

The lack of knowledge specific to the assessment and management of delirium found in this study is in keeping with international research in many areas of nursing (Baker *et al*., 2015; Korkmaz *et al*., 2015; Papaioannou *et al*., 2023). Research specific to nursing homes is limited, however, knowledge of delirium has also been found to be poor in hospital and community settings for older adults (Papaioannou *et al.*, 2023) and in long-term care (Steis *et al.*, 2015). Whilst staff were mostly unable to clearly define, or name the different types of delirium or their symptoms, when asked about signs of deterioration in a resident, they went on to describe many of the symptoms of hyperactive delirium such as acute onset confusion, restlessness, or behavioral changes. Many staff were able to link such symptoms with the presence of infection or pain, suggesting that there was some understanding of acute confusion and potential causes. This bears similarities to the findings of a study in a residential home in Australia, where one of the themes identified was the 'absence of the word delirium' but recognition of symptoms (Buettel *et al.*, 2017). Participants there could describe acute confusion and some causes but did not use the term delirium (Buettel *et al*., 2017). Similar to findings in our study, staff described checking for the presence of infection when changes in a resident's behavior were noticed, but did not link this with a potential case of delirium. Most staff interviewed believed they had either not seen delirium in a resident or only on one or two occasions, despite describing regularly seeing residents with acute confusion caused by an infection and other symptoms likely to be delirium. This is a concern as studies of incidence in nursing homes suggest that prevalence rates are high (Cheung *et al*., 2018; Komici *et al*., 2022) and there is a risk that failure to recognize and treat delirium could have both short- and long-term negative impacts for residents (Morandi *et al*., 2012; Traynor *et al*., 2016).

There was very limited awareness of any assessment or screening tools that could be used to determine delirium, which is a concern as the NICE guidelines and standards for delirium emphasize the importance of carrying out screening for delirium for older adults in both hospital and long-term care settings (NICE, 2014; 2010). Most staff were unable to describe any actions they might take to try and prevent delirium in residents, with the main suggestion being close monitoring of residents for any changes, again despite the availability of clinical guidelines.

Delirium can present as hyperactive, hypoactive, or mixed types (Davies, 2021). Staff that had some awareness of delirium tended to provide intense accounts of residents' behavior during delirium, linking it with aggressive behavior, with only two members of staff highlighting the need for concern when residents became more withdrawn and 'quiet' as well as presenting with acute confusion. Many appeared to identify the development of delirium as a later stage of acute confusion due to infection, with staff suggesting that they identified signs of infection early thereby preventing a 'full-blown' delirium. Steis *et al.* (2015) found that staff were more likely to be able to identify hyperactive delirium in a series of case vignettes but were unable to recognize hypoactive delirium which presents with the individual being more withdrawn, as opposed to agitated (Davies, 2021), despite the risk of hypoactive delirium being more prevalent in older adults (Komici *et al*., 2022).

Nurses and care staff in the homes identified the close relationships that they had with residents meant that they knew them very well and therefore noticed even small or subtle changes in their behavior. Nurses suggested that this was an advantage as changes were noted and acted upon quickly and if an infection was suspected, treatment was obtained quickly, thereby hoping to reduce the chances of delirium developing. The benefits of staff knowing residents well and noting changes have been identified previously, however, whilst this knowledge may be advantageous, if staff do not have the appropriate knowledge of delirium, residents may not always be assessed correctly. Research suggests that delirium is under-recognized in older adults (Van Velthuijsen *et al*., 2018). There are also risks if staff rely too much on their own knowledge of residents and what may be wrong, rather than following evidence-based clinical guidelines. In a Korean study aiming to develop delirium practice guidelines for staff in long-term care settings, they found one of the most significant barriers to their implementation was the staff's reliance on their own knowledge of residents and a reluctance to engage with clinical guidelines (Jeong *et al*., 2020). Buettel *et al.* (2017) also noted staff reliance on intuitive or 'automated actions' in managing acute confusion rather than evidence-based practice. A lack of knowledge of the NICE guidelines for delirium in the UK was also found in our study, with none of the participants familiar with them.

In managing delirium, communication within the home about changes in residents' condition is aided by the proximity of staff working as well as the use of handovers. It was reported that care staff spend the most time with residents and due to close relationships with them report changes to nursing staff rapidly, a situation that has been found elsewhere (Steis *et al*., 2015; Buettel *et al*., 2017). Staff in all homes felt that communication within the team was effective. In this study the nurse appeared to play a central role in terms of communication, acting as a central relay point for communication between staff within the home (Home manager, care staff, other nurses), with families, and with outside agencies including the GP, care managers, and community services. When deterioration was observed in a resident's health, the nurse would contact the GP and report actions to be taken to the manager, care staff, family, and care manager. Clinical guidelines discuss the importance of providing accurate information on delirium to families and residents (NICE, 2010; Health Improvement Scotland, 2019), although none of the homes had such materials available. This could be addressed through the adaptation of materials already available.

Staff reported that access to other services when required to support the care of residents who may have delirium remains a major problem. Access to GPs was difficult particularly where staff felt the resident needed a home visit. There was some acknowledgment that communication with GPs could be improved and one home adopted a system of specific information/observations that had to be gathered before the GP was contacted, with promising results. Staff also reported barriers to accessing other community services including mental health teams and home interventions for acute illness, such as IV antibiotics varied depending on address. Access to GP and community services had been identified as problematic since before the pandemic (Iliffe *et al*., 2016; Victor *et al*., 2018) and there would be a need for care services to work more closely with the nursing home sector to ensure quality of care for residents.

Conclusion

This study provides new insight into the knowledge and care processes for delirium within nursing homes in the UK. It highlights that knowledge of delirium needs to be improved within nursing homes, where staff are caring for a high-risk group of individuals. The use of evidence-based practice guidelines requires promotion in homes to complement the value of the close relationships and knowledge staff have of residents. There are NICE guidelines available for delirium, however these are not currently being consulted by nursing homes. There was a desire for more training on delirium in all nursing homes and this should be developed in consultation with the care home sector and be based on evidence-based practice and made available to both nurses and care staff.

This study highlights the sense of isolation experienced by staff, which has persisted since the COVID-19 pandemic and there is a need for policy to address the lack of integration between statutory services and the nursing home sector to ensure equity of access to community services for treatment and management of delirium and other physical and mental health issues residents experience.

Further research into delirium care within long-term care is required, together with the evaluation of delirium training developed to establish changes in knowledge of delirium as well as the impact of training on practice and outcomes for residents.

Limitations

The study was carried out in one geographical area of the UK and the findings may be influenced by this. It is also acknowledged that the appointment of a gatekeeper within the home (the home manager in most cases) could potentially have resulted in the selection of specific staff to be interviewed with the risk of bias.

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Author’s Contributions

Susan McGrory: Contributed to study design, data analysis and manuscript drafting.

Marie O’Neill: Contributed to study design and data analysis and critically revised the manuscript.

Paul Slater: Contributed to study design and data analysis and critically revised the manuscript.

Ethics

The authors of this study declare that there are conflicts of interest concerning the study, authorship, or publication of this article.

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