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Evaluation of a blended learning, simulation-based education package for first-year nursing students

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Abstract

Delirium is a neuropsychiatric syndrome that is sudden in onset and represents an acute medical emergency. Nurses must be able to recognise this change in presentation and seek support to assess and treat the underpinning conditions driving delirium. This paper reports a study undertaken at one university in the North-East of England. The study adopted a mixed methods approach to evaluate and explore first-year student nurses' perceptions and experiences of a blended delirium education package (online and in person). It also explores if students believe this will change or influence their practice.

Data were collected via an online questionnaire from 49 students following the completion of an online supported learning package and linked classroom-based simulation. Quantitative data were analysed using descriptive statistics. Qualitative data were thematically analysed using Braun and Clarke's (2006) thematic analysis principles. Both data strands were integrated to highlight core experiential themes.

Two themes were identified: Acknowledging the complexity of delirium and bridging the online-supported learning and classroom teaching and learning activity. This study demonstrated that a blended approach to delirium education is well-received and positively supports student nurses' understanding of delirium and confidence in practice. Still, there is a need for further refinement in educational practice.

Introduction and background

This paper reports on a novel education intervention to support first-year adult nursing students in the United Kingdom to understand and recognise delirium. It presents a mixed methods analysis of the intervention and highlights key areas for exploration and further curriculum advancements.

Delirium is known to be an acute neuropsychiatric syndrome which typically has one or more underpinning, causative medical illnesses (Bellelli et al., 2021). Broadly, it is believed that delirium affects up to 50% of hospital inpatients over the age of 65 and around 60% of people living in care homes or post-acute care settings (British Geriatric Society, 2019).

Delirium is increasingly being recognised as a medical emergency which represents complex dysfunction of the brain and may increase the risk of dementia by up to 10% (Rockwood et al., 1999; Caplan et al., 2020). Whilst the exact aetiology of delirium is still not fully understood, it is increasingly recognised to be linked with inflammatory pathways, hypoxia, impaired glucose metabolism (Wilson et al., 2020), and ultimately, represents an "acute brain failure" (Inouye et al., 2014).

Delirium presents an acute change in attention and awareness and hence, the historical association with 'confusion'. However, this does not represent the true scope of delirium presentations and risks as it only identifies the overtly changed, often agitated or distressed presentations of hyperactive delirium. It is well documented that delirium can manifest as hypoactive, with people seemingly sleepy or drowsy or exhibiting mixed, fluctuating presentations. Nevertheless, the manifestation does not mean either is more severe, and those with hypoactive delirium are placed in a dangerous position of having the evolving medical emergency overlooked.

Another confounding factor when considering delirium is the multitude of terms and names used to represent the condition or describe it in medical notes. Steis and Fick (2012) undertook a documentary analysis of nursing notes to assess if nurses documented delirium or recognised it clinically. They found that whilst nurses did document features of delirium, using descriptors indicating both hyperactive and hypoactive motoric subtypes, they did not associate them with delirium as a clinical condition. Rather, they documented confusion, delusions, and restlessness; failing to overtly consider a delirium diagnosis. Latterly, Pulle et al. (2015) found on review of medical records, eight keywords or phrases that indicated delirium presentations (Table 1) in patients over 70 who were to have planned orthopaedic, vascular, or general surgery. Nursing documentation of altered mental state and Deliri* had 100% positive predicted rates of subsequent delirium diagnosis. Interestingly, this American study included terms of encephalopathy. Whilst not a frequently used term in the study finding, it raises the question of variance in terms of delirium and the impact this may have when considering the international literature. Slooter et al. (2020) present the argument that delirium definitions are present and congruent across the International and American diagnostic manuals (American Psychiatric Association, 2013; World Health Organisation, 2019), whereas encephalopathy is an encompassing general term relating to global disturbances of brain function (Slooter et al., 2020), and terms such as acute encephalopathy, acute brain failure and altered mental state are not used consistently and do not represent a clinical diagnosis or diagnostic criteria. In addition, Slooter et al. (2020) recommend against using terms such as acute confusional state, acute brain dysfunction/failure and altered mental state in research and clinical practice as they lack construct or face validity. However, they recognise that the terms may be relevant in educational practice. For clinicians, having a shared terminology or language is paramount in ensuring successful multidisciplinary teamwork and accurate communication (Rabol & Ostergaard, 2011; Stuhlinger et al., 2019). The use of standardised tools and the language associated with these can support and strengthen the nursing voice within their teams (Van De Steeg et al., 2014).

Table 1: Delirium documentation trigger words.

Trigger words
AMS/Altered Mental State
Deliri*
Alert and Orientated
Hallucin*
Confus*
Reorient*
Disorient*
Encephalopathy

Adapted from Pulle et al. (2015).

Whilst psychiatrists and specialist practitioners may utilise the formal diagnostic manuals and classifications for delirium diagnosis, nurses of all levels of training and in all fields of nursing need to be equipped with the knowledge, skills, and abilities to recognise a potential delirium, articulate its presence to appropriate clinicians, and undertake associated nursing interventions. There is a plethora of tools used to support identification, such as the Confusion Assessment Method (CAM) (Inouye et al., 1990), which has multiple speciality variations (Marcantonio, 2019; National Institute for Health and Care Excellence, 2023), 4AT (MacLullich et al., 2014) and Single Question in Delirium (SQiD) (Sands et al., 2010). All have key components of recognising a change in cognition from a baseline but require a varied amount of time, training, and competence level. Considering the variation of tools available, and their utility in practice, Pryor (2021) found that in a sample of UK-based mental health nurses, there was a disconnect between a high awareness level of tools available to support delirium recognition and assessment, their actual use in practice, and a lack of consistency of tools selected for use. In addition, selected tools of assessment need to be seen as useful in order to be used, or risk devaluing professional autonomy (Gabbay & Le May, 2016; Bryce et al., 2018; Emme, 2020). There is a risk that binary metric-based tools may be perceived as organisational requirements (i.e., daily audits or bundles of pre-determined care) and not as influential to care decisions if they are seen as reducing people and their presentations to numbers or scores (Pryor, 2021).

Contemporary recommendations from the United Kingdom (based on an appraisal of diagnostic sensitivity, specificity and considerations of implementation, evidence quality and applicability to a range of practice areas) are that delirium assessments should be completed using the 4AT (National Institute for Health and Care Excellence, 2023). Whilst diagnostic tools are useful, student nurses need to first understand that delirium recognition is routed in non-clinical, person-specific, 'soft signs', then consider delirium assessment, leading to the formulation of a nursing plan. These signs and symptoms may include people being more confused, having difficulty following conversations, being less aware of their surroundings than usual, being frightened of dreams which may carry on when awake, visual and aural hallucinations, being worried people want to cause them harm, increased restlessness or agitation, movements slowing or being more drowsy than usual, reduced diet and fluid intake, and seemingly having a change in their personality (Health Improvement Scotland, 2020).

Historically, delirium has received little attention in nurse education, and discussions of new or acute 'confusion' do not represent the critical mass of physiological processes at play. Delirium education for nurses is evolving, with recent studies into novel and innovative ways to support delirium education in undergraduate curricula being published. In America, Davis and Nye (2017) utilised clinical simulation exercises to support assessment and communication skills in delirium care for older people experiencing delirium. More recently, responding to the need to transfer learning online due to the COVID-19 pandemic, Mitchell et al. (2021) in Northern Ireland created a delirium awareness podcast for first-year student nurses centring on delirium recognition, management, and prevention. Both interventions seem well received in education practice.

At the study's Higher Education Institution, prior to the substantial curriculum redesign in 2019, minimal focus was placed on delirium within the undergraduate nursing curricula. With rising awareness of delirium as a preventable and treatable condition and the complexity of diagnostic and descriptive terms representing the delirium presentation, education and support resources were developed. Initial integration of delirium education took place in the final year of the three-year degree pathway; however, this was considered to be too late in the nursing learning journey. The recent redesign of curricula has seen delirium education embedded into the first semester of the first year.

The United Kingdom's educational standards for preregistration nursing are set out by the Nursing and Midwifery Council (Nursing and Midwifery Council, 2018a; 2023). To allow approved Higher Education Institution's flexibility and creativity in the nursing programmes, the Nursing and Midwifery Council's nursing educational standards are reviewed and updated regularly (Nursing and Midwifery Council, 2023). While regular updates can lead to the challenge of frequent changes to curriculum and programme delivery, it does ensure that the educational requirements of 21st-century nurses are met and support local education institutions to be accountable in their educational approaches (Nursing and Midwifery Council, 2023).

The educational intervention

The session reported in this paper was created under the 2018 Nursing and Midwifery Council education standards (Nursing and Midwifery Council, 2018a). The module, which is delivered in Semester 1, Year 1, is a hands-on skills module that reflects the Nursing and Midwifery Council standards of proficiencies for registered nurses (Nursing and Midwifery Council, 2018b) in its learning outcomes. The Annexe B nursing procedures that were the focus of the session evaluated included symptoms and signs of deterioration and sepsis and symptoms and signs of physical ill health (Nursing and Midwifery Council, 2018b). Recognising sepsis and patient deterioration is a fundamental skill and topic that is scaffolded throughout the Higher Education Institution's 3-year BSc adult nursing programme.

In response to the nature of education delivery brought about by the COVID-19 pandemic and the subsequent return to learning with a hybrid of online and face-to-face delivery, the module adopted a novel delirium education. The module achieved this by merging a blended learning pedagogy of online-supported learning resources with face-to-face, scenario-based and simulation-based education. This supported students to recognise, understand, and consider the management of people presenting with delirium. Integrating online learning in higher education institutes to facilitate learning and student experience is not a new paradigm (Raymond et al., 2016; Dziuban et al., 2018). However, in recent years, programmes such as nursing have seen an increase in the method of delivering learning and instructions (Juan, 2021; Janes et al., 2023).

Blended learning has been defined as "a method of teaching that integrates technology and digital media with traditional instructor-led classroom activities, giving students more flexibility to customise their learning experiences" (Panopto, 2019).

Blended learning approaches may take three forms: one in which learners have the opportunity to exert control over the pace at which they learn using online resources, one in which learners utilise online learning and classroom-based activity, and one in which online and classroom-based learning are integrated and complementary which aids deeper learning and understanding. The latter is also known as the flipped classroom pedagogy (Janes et al., 2023).

The delirium learning intervention was developed to include an Online Supported Learning package that was to be completed prior to undertaking a face-to-face learning session with case-based activity centring on the art of noticing and recognising the acutely unwell adult in relation to sepsis and delirium. The delirium online learning package was written by two academic staff who had significant practice and academic experience relating to delirium practice and education. The face-to-face session was devised by the education module leader, drawing upon the aims and objectives of the education programme of study and delirium education package.

The delirium resource evaluated in this study was specifically created to be an online-supported learning-based activity, with students engaging in the resource as part of their self-directed study hours. The delirium resource sits within a Year 1 (all fields) nursing module, which has learning outcomes focused on developing nursing assessment skills such as taking and recording vital observations and the art of noticing skills.

The Delirium Online Supported Learning package used several strategies to illustrate delirium information and to engage students in delirium learning; these included case study activities, videos, imagery, and text. The knowledge gained from the resource included what delirium is, how it is defined, assessment tools for delirium, predisposing and precipitating factors, signs, and symptoms, reducing the risks of delirium, treatment, and nursing considerations for care.

Consolidation of learning the delirium online supported learning was undertaken in a face-to-face, classroom group activity. The blended approach in this instance, therefore, adopted a flipped classroom pedagogy. While the session's primary focus was on the topic of sepsis, one of the three activities presented students with two standardised patient case studies: one patient had risk factors and signs and symptoms of sepsis and the other had delirium of unknown medical origin. The two case studies provided students with patient information such as past medical history, their most recent set of vital observations, medication and any need for medication assistance, sensory needs, signs and symptoms, recent behaviour, and lifestyle information. Students were asked to review the information and answer the following questions:

- What do you think is wrong with the patient?
- What is your rationale?
- What else have you noticed which is significant?

Answers and rationale were then discussed as a group at the end of the session once all activities had been completed. All scenarios held components that could point to a potential delirium, but an extrapolation of underpinning rationale and actions was required.

Methodology

Study aims

This study aimed to:

- Evaluate and explore first-year student nurses' perceptions and experiences of a blended delirium education package (online and in person).
- Explore if students believe this will change or influence their practice.

Methods

In keeping with the study's aims to explore and evaluate student experience, a pragmatic mixed methods approach was developed. Crossing traditional research polarities of constructionist and positivist methodologies, a pragmatic approach affords researchers the opportunity to situate their research in an alternative paradigm: one which embraces the presence of single and multiple realities and explores these through empirical inquiry (Creswell & Plano Clark, 2007). Pragmatism recognises the complex contexts in which research sits, including social, historical, and political influences (Creswell & Creswell, 2018). As a result, pragmatic research is grounded in what works, for whom, and with what application or solutions (Patton, 2002).

A mixed methods approach was chosen to support 'completeness' within the study by combining qualitative and quantitative data. This offers a more comprehensive account than what could be derived through quantitative or qualitative data alone. Mixed methods approaches are clarified by Creswell and Plano Clark (2007) and Teddlie and Tashakkori (2009) as the inclusion of both qualitative and quantitative data collection methods to be used in one study rather than multimethod where several different qualitative or quantitative data collection processes are undertaken. Importantly, mixed methods approaches are employed when there is a clear aim to integrate or mix the two strands of investigation with purpose and rigour. This offers strength to inferences made and a greater sense of completeness and understanding (Morse, 2003; Tashakkori & Teddlie, 2003). For this study, a single-phased, triangulation design achieved a fit with the research purpose, allowing for the simultaneous collection of qualitative and quantitative data to draw together the strengths of both types of data collection (Figure 1). These are identified in sample size traditions: with quantitative studies usually requiring a large sample size, and qualitative requiring less. However, where sample sizes may be smaller, the addition of qualitative data offers depth and detail to the study (Patton, 1990; Cresswell & Plano Clark, 2007). The use of a single triangulation design supported a comparison between the qualitative experience and perceptions of the participants with the statistical data. This served to validate and expand the understanding of the student experience past a numerical understanding.

An online, post-learning package questionnaire was completed by participants. The questionnaire was devised and housed in the JISC™ online survey system. The questionnaire consisted of a blend of 12 Likert items and associated qualitative free-text response options. This allowed for the generation of statistical data and a deeper qualitative understanding of the respondents' thoughts and opinions.

Data analysis

Quantitative data was analysed using simple non-parametric tests (descriptive statistics). This is in keeping with the study's aims to evaluate and explore perceptions rather than hypothesis testing or comparison analysis.

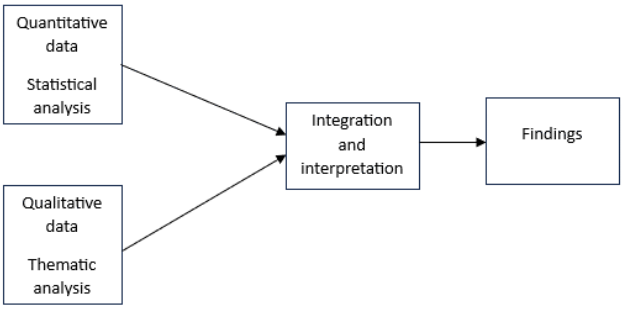

Figure 1: Research design.

Qualitative free-text responses were thematically analysed using Braun and Clarke's (2006) six-step approach to thematic analysis consisting of familiarisation, initial code generation, thematic search, review, defining and naming themes, and production of the report. Both authors conducted an analysis of qualitative responses independently prior to review and confirmation of the final three themes. The final analysis integrated qualitative and quantitative data to offer depth context to the understanding of the participant experiences.

Ethics

This study was granted ethical approval by the host university's Faculty of Health and Life Sciences (ethics reference 2022-0291-105).

Sampling and recruitment

All enrolled first-year adult nursing students at one United Kingdom Higher Education Institution were timetabled for workshop activity and instructed to complete the online supported learning as part of their undergraduate education (N=270). Purposive sampling was used to recruit participants following the timetabled sessions. Students were provided with information about the study and a link to an online questionnaire via the Learning Management Portal announcements system and linked emails. Follow-up announcements and a linked email were sent two weeks following the final education session. Potential participants were informed that their participation was voluntary, and all data was anonymised at the point of questionnaire submission. n=49 participants completed the questionnaire. All participants confirmed that they had completed both parts of the education strategy at the start of the questionnaire.

Findings

Two key findings can be drawn from the integration of the qualitative and quantitative data. These are an acknowledgement of the complexity of delirium and a bridge between online supported learning and classroom teaching and learning activity.

Acknowledging complexities of delirium

The blended activity increased the participant's confidence in delirium identification and ability to discuss delirium with their teams. Prior to undertaking the package, 44.9% (n=22) of participants expressed that they felt they knew what delirium was, with just 36.7% of participants (n=18) expressing confidence in recognising delirium (Figure 2). However, only 24.5% (n=14) felt they had cared for someone with delirium before.

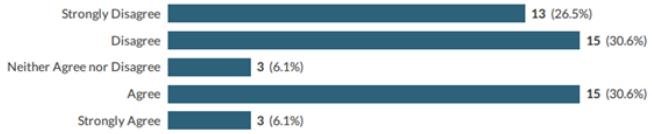

Figure 2: Agreement level "Before completing the online supported learning and attending the session, I felt confident in recognising delirium".

Following the blended learning activities, 89.8% (n=44) felt increased confidence in identifying potential delirium, and importantly, 89.8% (n=44) of the participants felt more confident in discussing delirium with their teams in practice after the sessions (Figure 3).

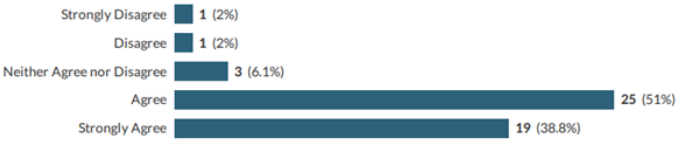

Figure 3: Agreement level "After the session I felt more confident I could identify potential delirium".

Whilst it could be identified that most participants did not have prior practical experience of delirium care provision, this needs to be considered with caution as the findings show that they also were unaware of the complexity of delirium and the full range of presentations. It may suggest that the participants did not recognise delirium prior to undertaking the learning activities, but that they may be better placed to recognise it now. Three participants' comments highlighted this, regarding their experiences of delirium care provision prior to the education package, in addition to acknowledgements of the complexity of delirium.

> [I] knew a lot around hyperactive delirium but not much about hypo delirium.

> … it was useful to be reminded that delirium is not always challenging behaviour - it can present as quiet and withdrawn, which I had never experienced.

These participants indicated that there is a need to draw attention to the complexity of delirium. It is not only the overt behaviour that indicates the presence of delirium. One participant suggested that an important factor in the education package was the articulation that delirium is

often multifaceted and may have many predisposing or precipitating factors.

> Knowing that delirium can be caused by numerous things.

Overall, the results show that there was a self-perceived improvement in confidence to recognise. This was coupled with a participant demonstrating that the importance of delirium recognition had been conveyed through education, irrespective of their current ability to recognise it.

> I was disappointed in myself I did not recognise the diagnosis in class.

Bridging the online supported learning and classroom teaching and learning activity

91.8 % (n=45) indicated agreement that the education package had improved their understanding of delirium; with the same proportion in agreement that the blended approach of preparatory online supported learning and classroom activity helped them to learn (Figure 4).

Figure 4: A combination of online-supported learning and classroom activity-supported learning.

Overall, 96% of participants reported that the materials on the online learning portals enhanced their learning, with only 4.1% (n=2) disagreeing. Further qualitative analysis indicated that for one participant, the volume of content in the [online supported learning] may have been hard to remember and time-consuming, with expectations of familiarity with content hard to achieve.

> lectures expect us to remember everything for an [online supported learning package] that is like taking us nearly two and a half hours to do (while taking notes, and not including side reading) and is full of so much information.

In addition, it was found that whilst the materials and classroom activity were useful and supportive as a total package, the qualitative text indicated that the balance struck in the classroom activity did not meet the students' expectations. They indicated that there was an overt focus on sepsis, and whilst delirium was present, they did not consider that to be the main facet of the face-to-face activity.

> The session was largely focused on sepsis, but the [online supported learning] was very helpful on delirium.

> [Online supported learning] yes, workshop session not as much. It only got spoken about when we did the case studies.

The participants showed a desire for more delirium-specific work to be added to the curriculum, matching, enhancing, and replicating the broader teaching and learning approach undertaken. This was coupled with requests for more time dedicated to delirium.

> Maybe include a delirium simulation alongside the sepsis one.

> ...more time to have a go at the simulation.

Whilst this indicates that there is a need to review the balance between the content and delivery, participants commented positively about the activities and overall strategy used. Specifically, the participants found the best features of the programme to be the interactive components and tutor support.

> The interactive quizzes and useful information...

> ... keeping it interactive and having to work out a diagnosis, as well as moving around different activities in smaller groups.

> [Online supported learning]: you learn at your own time and pace and anywhere. Classroom- face-to-face learning is also important as you have a better understanding of the subject in question, where you have the opportunity to ask questions and have things explained in detail.

Overall, there was satisfaction among participants in the quality of the teaching and learning strategy, and they found it intellectually stimulating (Figures 5 and 6).

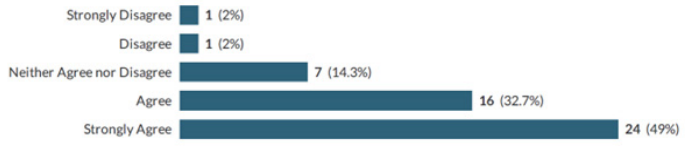

Figure 5: Agreement: Overall I am satisfied with the quality of the Delirium online supported learning and workshop session.

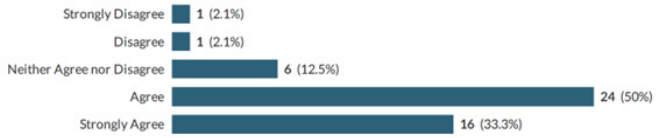

Figure 6: Agreement: The delirium content was intellectually stimulating.

Discussion

This study reports a novel delirium education intervention that exemplifies blended learning, flipped classroom pedagogy in which online and classroom-based learning are integrated and complementary to aid in deep learning of delirium. The inclusion of a standardised patient case study discussion offers an additional link to the growing field of simulation in nurse education. Including a delirium-simulated workshop additionally supports the new education standards published in January 2023 (Nursing and Midwifery Council, 2023). These standards have seen a transition from the more traditional methods of teaching to a contemporary pedagogy, with key changes including increased flexibility around simulated learning (Nursing and Midwifery Council, 2023). Simulation is defined as a technique to replace or amplify real experiences with guided experiences, often immersive in nature, that evoke or replicate substantial aspects of the real world in a fully safe, instructive and interactive fashion' (Health Education England, 2020, p. 6) Simulation-based education in nursing is considered an empowering and valuable teaching pedagogy that allows students and nurses to develop knowledge, skills and attitudes in a safe and controlled environment. This enables them to be reflective, make clinical decisions and do problem-solving, which provides preparation for clinical practice (Theobald, 2021; Martins et al., 2023) and managing of deteriorating patients (Bliss & Aitken, 2018). Health Education England (2018, 2020) recognises and supports the role of simulation and immersive learning in developing the healthcare workforce. While technology is predominately associated with recreating real-life simulated scenarios, simulation-based education can adopt multiple approaches that do not have to include technology and these can include verbal simulation, role play and standardised patients (Gaba, 2004). In addition, the simulation-based education strategy for learning and teaching is not exclusive to only including the simulation of clinical hands-on skills, with the approach also including the simulation of non-clinical soft skills (Sterner et al., 2023).

Delirium education in undergraduate students is evolving rapidly; however, the literature focuses predominantly on medical education. This study adds to the current body of literature that specifically focuses on nurse education. Echoing Mitchell et al. (2020), this study shows that supported education pertaining to delirium recognition, treatment, and management facilitates confidence within nursing students and supports interprofessional communication. This study clearly indicated an increase in the participant's confidence to discuss potential delirium presentations with members of the healthcare team. This is paramount to high-quality delirium care and supports positive steps towards prevention early recognition, treatment, and management. Whilst other healthcare professionals are vital for delirium care, nurses in hospital settings (Irving & Foreman, 2006; Fisher et al., 2015), and in care home environments spend more time with patients or residents than other healthcare professionals (Siddiqi et al., 2011). Therefore, a critical focus should be placed on nurse education regarding delirium, commencing at the start of education preparation to support, enhance and refine their understanding and insight into delirium. More broadly, it is recognised that health professionals in general have deficits in knowledge, confidence and skills pertaining to recognition, treatment and management of delirium (Sinvani et al., 2016). Studies by Fisher (2015), Copeland et al. (2017), and Copeland and Barron (2020) concur that across both medical and nursing undergraduate education, delirium provision is sporadic, inconsistent, and devised as per the individual universities' priorities and agenda. This is echoed in the UK Nursing and Midwifery Council Education standards (2018), in which delirium is not specified as to be included in the curricula, either as a condition to be taught or in terms of other content provisions. As with medical education, it falls to the specific university to decide upon inclusion and content. Investigating the nursing delirium education provision and content in Scotland, Copeland and Barron (2020) found a varied strategy. Concerningly, curricula appeared to be based, in some instances, on dementia principles and guidance which may add to the complexity, confusion and ill-preparedness of student nurses to support people with delirium. Whilst delirium and dementia share some similarities, and may co-exist in complex patient presentations, they are distinctly different conditions requiring specific tailored approaches and care interventions (Pryor & Clarke, 2017; Pryor, 2021).

As such, this study and educational intervention may support clinician education and practice to support the wider evolving multidisciplinary team awareness and confidence regarding delirium.

It is therefore proposed that for future sessions, the delirium workshop will adopt a verbal simulation approach to teaching and learning with delirium case studies supporting students in a safe environment to develop their knowledge, skills, attitudes, self-efficacy and self-confidence in caring for the delirium patient. The flipped classroom approach will first be adopted with students engaging with a delirium online supported learning package, before taking part in a simulated live delirium workshop. The flipped classroom tool, compared to other traditional methods, has been found to successfully engage students in learner-led learning whilst maintaining the ability to have tutor input and direction (Kemp, 2020) and improve overall levels of learning (Shikino et al., 2022). However, finding a balance in combining face-to-face with technology and self-directed learning is important to ensure that they enrich traditional teaching methods (Merrou et al., 2023). The balance for the delirium workshop was created with the intention that the online supported learning will complement and support the facilitation of the face-to-face classroom activities that aim to engage students in verbal simulated discussions of delirium patients. Shikino et al. (2022) support this approach with live classroom time being specifically allocated to consolidating new learning materials and knowledge (in this case, the online supported learning), which is aided through the support of an academic and through collaboration with peers. Their study which explored the flipped classroom approach for improving interprofessional collaborative competency in delirium care, found an improvement in collaborative practice straight after the learning occurred, as well as 3 months post-learning (Shikino et al., 2022). The use of patient case studies and/or scenarios is another key aspect of creating a successful simulation activity. Martins et al. (2023) outline the importance of creating case studies/

scenarios for simulation, with them needing to not only align with the learning outcomes but also be interactive and reflect real clinical practice situations and evoke real feelings and emotions.

In this study, the case studies for the face-to-face workshop were created by an academic who has clinical experience and expertise in delirium as a condition as well as in the care and management of patients with delirium. By using the verbal simulation strategy via the creation of delirium patient case studies, the simulated workshop will be sustainable for future teaching deliveries as it removes the costly requirement for high-fidelity simulators and staff who are trained to use them. This is a common barrier to simulation within healthcare (Ferguson et al., 2020).

Conclusion and recommendations

Early inclusion of delirium education supports student nurses in starting to feel confident in delirium discussion and understand the complexity of the condition. The rapidly evolving education context towards blended and simulation approaches is changing the landscape of nurse education. This study demonstrates that a blended approach, including simulation via a standardised patient case study, can contribute positively to the student learning activity and demonstrate engagement and a desire for more learning. There is a need to ensure focus is retained in blended approaches, and clear demarcations between conditions and symptoms may support first-year nurses in grasping the principles of care before moving towards more critical and integrated cases and presentations.

The outcome of this evaluation study of current delirium teaching has resulted in planned changes to the learning materials within the first-year skills module. The curriculum was redesigned to incorporate a standalone delirium workshop which sits within the pedagogy of simulated learning. This inclusion addresses the requirements of the 2023 educational standards and Higher Education Institution's requirement to acknowledge such changes and to take action within two years of their publication (Nursing and Midwifery Council, 2023).

As a direct result of this study, it has been recommended that instead of combining a delirium simulation-based learning experience with the sepsis session, delirium would be removed from the sepsis simulation and afforded its own independent simulation. When looking to replace existing materials with the new delirium content, it was important to consider the students' voices from module feedback along with the Nursing and Midwifery Council annexed proficiencies (Nursing and Midwifery Council, 2018b). As delirium presentations signify an acute medical condition and should be seen as a medical emergency, the session would address the symptoms and signs of physical ill health annexe B nursing procedure proficiency and therefore, help consolidate other sessions within the module. In addition, as delirium has cognitive and emotional effects, it addresses the annexe B procedures of symptoms and signs of physical distress and signs of cognitive distress and impairment.

Furthering education outside of Higher Education Institutions and nursing, it is recommended that education takes an interprofessional and transdisciplinary approach to support positive communication and recognition of the valuable insight and skills that all members of the disciplinary team can contribute in terms of delirium care and knowledge. This may support nurses' and other professionals' recognition and awareness of all types of delirium, and how to manage and treat them appropriately.

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