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Abstract

The number of dementia diagnoses is ever-increasing in the aging population, meaning that healthcare staff need to be equipped with the appropriate knowledge, attitudes, and skills to care for people with dementia. However, recent research suggests that globally, both healthcare workers and students require greater dementia education opportunities to meet the needs of people with dementia. There seems to be limited research exploring dementia education opportunities within occupational therapy (OT) and physiotherapy (PT) programs. A scoping review methodology was chosen to explore the literature about dementia education in global OT and PT programs. There was limited literature in this area and only four articles were found after an intensive search through databases. Three overarching themes were developed: 'Attitudes, knowledge, and confidence', 'Benefits of experiential learning', and 'Experience and working with people with dementia'. Further, the benefits of virtual learning interventions, peer support, and communication strategies were explored. All experiential learning interventions had a positive impact on student's knowledge, confidence, and attitudes toward dementia. However, students need to be prepared with adequate knowledge prior to engaging in experiential learning interventions. Results from this study recommend the use of didactic teaching in conjunction with experiential learning within the healthcare curriculum. Peer support, communication strategies, and virtual dementia learning may be beneficial methods for educators to use and need to be explored in further detail concerning OT and PT curricula.

Keywords

Higher education, occupational therapy, physiotherapy, dementia, higher education in dementia, curriculum

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Dementia Education Opportunities for Pre-Registration Occupational Therapy and Physiotherapy Students- A Scoping Review

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ABSTRACT

The number of dementia diagnoses is ever-increasing in the aging population, meaning that healthcare staff need to be equipped with the appropriate knowledge, attitudes, and skills to care for people with dementia. However, recent research suggests that globally, both healthcare workers and students require greater dementia education opportunities to meet the needs of people with dementia. There seems to be limited research exploring dementia education opportunities within occupational therapy (OT) and physiotherapy (PT) programs. A scoping review methodology was chosen to explore the literature about dementia education in global OT and PT programs. There was limited literature in this area and only four articles were found after an intensive search through databases. Three overarching themes were developed: 'Attitudes, knowledge, and confidence', 'Benefits of experiential learning', and 'Experience and working with people with dementia'. Further, the benefits of virtual learning interventions, peer support, and communication strategies were explored. All experiential learning interventions had a positive impact on student's knowledge, confidence, and attitudes toward dementia. However, students need to be prepared with adequate knowledge prior to engaging in experiential learning interventions. Results from this study recommend the use of didactic teaching in conjunction with experiential learning within the healthcare curriculum. Peer support, communication strategies, and virtual dementia learning may be beneficial methods for educators to use and need to be explored in further detail concerning OT and PT curricula.

Approximately 43.8 million people in the world are living with dementia and this is expected to increase to at least 100 million by 2050 (Nichols et al., 2019). This will not only increase the financial implications for healthcare services but will also increase the requirement for healthcare workers to obtain the appropriate skills and

knowledge to meet the needs of people with dementia (PWD; Williams & Daley, 2021). Dementia care is provided by a wide variety of healthcare professions, including occupational therapy (OT) and physiotherapy (PT), however, research suggests that healthcare workers are often not provided with the educational resources needed to develop the appropriate knowledge, skills, and attitudes required for working with PWD (Banerjee et al., 2016; Cariñanos-Ayala et al., 2022; Tullo & Allan, 2011).

The World Health Organization (WHO, 2017) argued there is a need for international and national action to improve the care of PWDs by improving the attitudes, knowledge, and skills of healthcare workers (Banerjee et al., 2016). In 2017, WHO created a global action plan aimed at improving the lives of PWDs, their families, and their carers. Specifically, Action Area 4 is comprised of enhancing “The knowledge and skills of general and specialized staff in the health workforce to deliver evidence-based, culturally-appropriate and human rights-oriented health and social care” (WHO, 2017, p.23). To achieve this, current and future healthcare professionals require adequate dementia training and education (Burrow et al., 2020). According to the National Institute for Health and Care Excellence guidelines (NICE, 2018), it should be ensured that all healthcare staff working with PWD have received the appropriate training to develop the skills needed to work with PWD. This will then allow healthcare workers to provide client-centered care to promote the health outcomes of PWD. Arguably, one way to do this is to enhance the education and training of current healthcare workers and healthcare students (Banerjee et al., 2016). However, the available literature suggests the dementia education provided to healthcare students is limited (Hvalič-Touzery et al., 2018). Further, it can be argued that different healthcare courses and programs receive varying levels of dementia education.

Higher education institutions (HEI) have a role to play in the provision of dementia education for both healthcare workers and healthcare students (Collier et al., 2015). For example, in the United Kingdom, HEIs offer postgraduate degree programs, postgraduate certificates, and diplomas in dementia for healthcare workers currently employed by National Health Services (NHS) and local authorities (see Appendix A). Health Education England (HEE) is responsible for educating the health and care workforce under the career frameworks for continuous professional development. HEE has developed a Dementia Training and Standards Framework and provides dementia education and training through different resources (see Appendix A). However, currently, there are no specific accreditation standards for dementia in the OT and PT curriculum by the UK accreditors, the Royal College of Occupational Therapists, and the Chartered Society of Physiotherapy. The Learning and Development standards only focus on four key areas of the career development framework, which include professional practice, facilitation of learning, leadership, research, and development. The American Council for Occupational Therapy Education (ACOTE) standards also discuss professional requirements needed for OT education and qualification but do not specifically talk about dementia and any other health conditions. This lack of specific accreditation standards is a limitation in terms of specific requirements for dementia education in the OT and PT curriculums despite the crucial role played by OT and PT in dementia care. There is also little known about the quantity or content of dementia education within existing healthcare

programs provided by HEIs and other institutions (Collier et al., 2015). Further, there is arguably a lack of evidence and policy directing the type of dementia education required for healthcare students (Feeney et al., 2021), including OT and PT students.

There has been some recent global development of different dementia education interventions for healthcare students (Banerjee et al., 2016). For instance, Mastel-Smith et al. (2019) utilized a 16-hour interprofessional education program in a dementia care boot camp, which significantly influenced healthcare students' attitudes and knowledge about dementia not just after the program, but also retained knowledge three months later. Other interventions such as placements, simulation experience, and dementia-specific lectures, followed by practice-based experience have positively influenced healthcare students' knowledge and self-efficacy towards working with PWD (Alushi et al., 2015). Surr et al. (2017) conducted a systematic review of the global literature on dementia education and training, which showed that dementia training was effective in improving outcomes for people with dementia. The study found that healthcare workers' knowledge, competency, and confidence in delivering dementia care increased with proper training. However, not every healthcare worker gets an opportunity to access these training programs. But, if healthcare curriculums integrate dementia education into higher education, there will be a reduced gap in healthcare workers' knowledge and competencies about dementia. There is arguably growing evidence and support for dementia education programs that have an experiential and longitudinal component. Experiential learning interventions allow students to have direct interaction with real clients, thus developing their knowledge and clinical skills (Trudeau & Gately, 2021). For instance, dementia experiential programs have been shown to improve students' relational learning, insight and understanding, challenging attitudes, and stigma towards PWD (Daley et al., 2020), as well as students' confidence, knowledge, attitudes, and empathy for dementia care (Banerjee et al., 2016; Choi & Park, 2017; Williams & Daley, 2021). Other experiential programs that have been developed include 'Time for Dementia' and the 'Buddy program'. Both programs are reportedly beneficial for healthcare students' knowledge and attitudes toward PWD (Banerjee et al., 2016). However, these programs have only been made available to specific healthcare courses, such as nursing, medical, and paramedic students.

A large quantity of the dementia education literature consists of nursing and medical students, and occasionally other healthcare professions. Sadly, there is very little, or no research done on OT and PT students in dementia higher education. Occupational therapists play an important role in the care of PWDs by encouraging their independence and ability to engage in their meaningful occupations (Du Toit et al., 2018). Physiotherapists also play a key role in the care of PWD and there has been growing evidence for the need for physiotherapists to improve the mobility and independence of PWD (Quick et al., 2022). Physiotherapists and occupational therapists often work closely together in healthcare settings and play a vital role in the care for PWD, this emphasizes the importance that future professionals need to have adequate knowledge, confidence, and attitudes to care for PWD.

Therefore, this study aimed to conduct a scoping review of the literature about dementia education opportunities for pre-registration OT and PT students. In the UK, pre-registration refers to an education and training program that leads to a professional qualification. Pre-registration students can be BSc (undergraduate) and/or MSc (postgraduate) pre-registration students. The terminology of pre-registration is used across the UK in HEIs.

The objectives of this study were as follows:

- To explore dementia education opportunities available for pre-registration OT and PT students.
- To identify the gaps in dementia education opportunities for pre-registration OT and PT students.
- To use the results of this paper to recommend inclusive dementia education for pre-registration OT and PT students.

Method

For this study, a scoping review methodology was selected. A scoping review is a comprehensive and evidence-based approach used to answer a broader research question and as the available literature on dementia education for OT and PT students is limited method, a scoping review seemed the most appropriate method to use (Asada et al., 2018).

A scoping review is advantageous as it is rigorous, transparent, and can be used to identify gaps in the literature for future research. By completing a scoping review, the risk of bias can be reduced, and the current literature on dementia education can be condensed and easily accessible for other researchers to use in their studies. To conduct this scoping review, Arksey and O'Malley's (2005) five stages were followed, which is considered the best framework for a scoping review. Additionally, Levac et al.'s (2010) refinements and the Joanna Briggs Institute (JBI) approach (Pollock et al., 2021) were also used to guide the review.

Stage 1. Identifying the Research Question

An exploratory review of dementia education opportunities for healthcare students was originally conducted. From this initial review of the literature, a research question was created that was broad and clearly articulated a scope of inquiry related to the purpose of this study (Levac et al., 2010). This also helped to establish an effective search strategy and guide the next stages of this scoping review (Levac et al., 2010). The research question can be seen below:

'What are the dementia education opportunities for pre-registration OT and PT students in their respective curriculums?'

Stage 2. Identifying relevant studies

Inclusion and Exclusion Criteria

Inclusion and exclusion criteria (see Table 1) were created to decide which articles would be included in this study. The criteria needed to relate to the study's aims, objectives, and research question (Pollock et al., 2021). The inclusion and exclusion criteria were based on the 'Person, Concept, and Context' framework outlined by Pollock et al. (2021) and Feo et al. (2019).

Articles that related to ‘dementia education or learning’ and included ‘Occupational Therapy students’ and ‘Physiotherapy students’ in the title were included. This scoping review specifically investigated the dementia education opportunities that were available for pre-registration OT and PT students. Therefore, the authors focused solely on articles that were relevant to these professions. Articles were included if the students were pre-registration undergraduate, pre-registration master’s level, or doctoral level. Articles that included ‘healthcare students’ in the title or abstract were screened, however, excluded if they did not focus predominantly on OT or PT students. Articles from the last 10 years were included to focus on the most recent evidence. Articles that were not in English were excluded as the researcher did not have the resources or time to translate them. The researcher searched for articles via electronic databases, grey literature, and reference lists.

Table 1

Inclusion and Exclusion Criteria

Inclusion criteria	Exclusion criteria
Literature published between 2012-2022	
Literature published in English	
Pre-registration OT students/ doctoral OT students	Other healthcare students such as nursing, social work, midwifery, paramedics, etc.
Pre-registration physiotherapy students/ doctoral PT students	Not focused on dementia education or education interventions
Dementia education or learning	Studies done with qualified OTs or PTs
Dementia education interventions	

Electronic Databases

It is important to include a broad range of relevant databases (Pollock et al., 2021). Electronic databases such as Cumulative Index to Nursing and Allied Health Literature (CINAHL), Pubmed, Taylor and Francis, and ScienceDirect were used. An advantage of a scoping review is the potential to include more than just academic literature, ensuring all relevant data is collected (Pollock et al., 2021). Grey literature was also considered by using databases such as the World Federation of Occupational Therapy (WFOT), Google Scholar, and Occupational Therapy News from the Royal College of Occupational Therapists (Aromataris & Riitano, 2014).

Reference Lists

The researcher also hand-searched the reference lists of the relevant articles found to help establish any further suitable articles for this study (Arksey & O’Malley, 2005; Aromataris & Riitano, 2014).

Search Strategy

The search strategy used was developed from the research question and the key concepts were created by the inclusion and exclusion criteria. The PICO search strategy was also considered to help develop the keywords for the search. Pollock et al. (2021) recommended a three-stage search strategy, including an initial search, a second search, and a reference list search.

The researcher completed a literature review using key terms such as dementia education, OT students, and PT students. The key terms were searched individually and the Boolean operator 'AND' was used to conjoin the search. The final Boolean search used across the range of databases can be seen in Table 2. The search was further filtered to include published articles between 2012-2022. A reference list search was then completed.

Table 2

Search Strategy

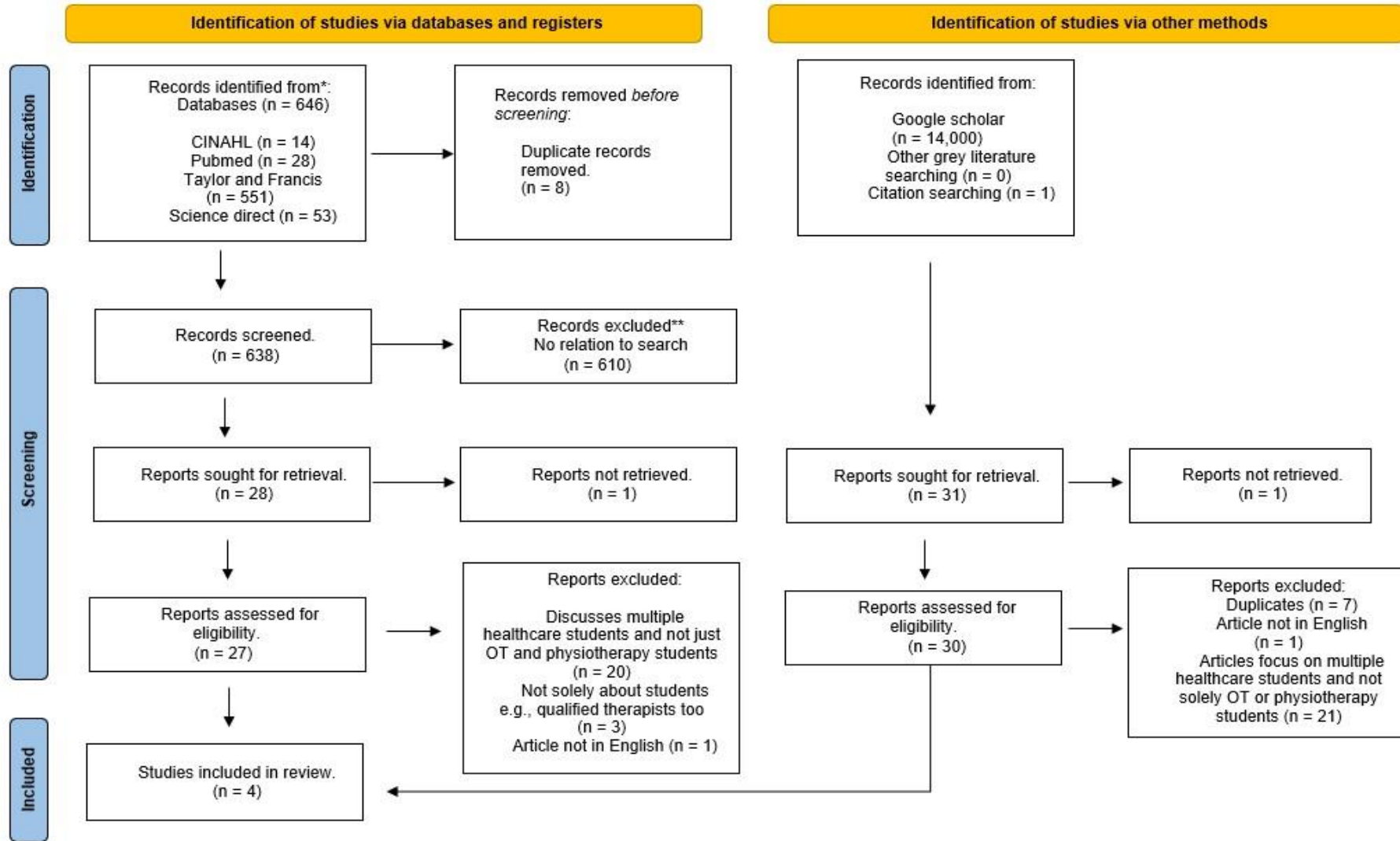
Search strategy	Dementia AND Educat* OR Learn* AND Occupational therapy student* OR physiotherapy student*
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Stage 3- Study Selection

The process of selecting articles was guided by certain criteria, both for inclusion and exclusion. The titles and abstracts of the articles were reviewed to ensure they met the minimum inclusion criteria (Pham et al., 2014). If the purpose of the study was not clear from the abstract, then the entire article was reviewed to determine its relevance according to the criteria established (Arksey & O'Malley, 2005). Data saturation was considered when the same articles appeared across different databases. All relevant articles were compiled into Mendeley to manage the references and eliminate any duplicates. The PRISMA flow chart, as shown in Figure 1, outlines the search process and the overall number of articles included in this study. A total of 14,646 searches were identified through database and citation searching. Out of the 57 articles (27 from databases and 30 from Google Scholar) that were assessed for eligibility from different databases, only four were found to be appropriate and relevant for this scoping review.

Figure 1

Prisma Flow Chart



Stage 4 – Charting the Data

The data was extracted allowing the results of the scoping review to be presented clearly and understandably. The data extracted was relevant to the research question and inclusion criteria (Peters et al., 2022) and was clear and logical (Khalil et al., 2016). The data was charted into categories such as Author(s), year of publication, origin, aim/purpose, methods, intervention, and key findings and limitations (Arksey & O'Malley, 2005; Khalil et al., 2016).

Stage 5- Collating, Summarizing, and Reporting the Results

The extracted data was summarized in a table (see Table 3). Levac et al. (2010) argued that Arksey and O'Malley's (2005) explanation for this stage lacked detail and they recommended three steps for this stage. Therefore, the data was first analyzed using thematic analysis which included following the six-step process of familiarization, coding, generating themes, reviewing themes, defining, and naming themes, and writing up (Levac et al., 2010). It was then reported, identifying the recurrent themes, strengths, and gaps within the literature. Finally, the meaning of the study's findings and the broader implications for research and practice were considered to encourage the legitimacy of this study. Due to the purpose and time constraints of this study, the optional stage of 'consultation' was not considered.

Critical Appraisal

Critical appraisal is not required in a scoping review (Peters et al., 2021; Pollock et al., 2021). However, for this study, and following the recommendations of Levac et al. (2010), the JBI's critical appraisal tools were utilized to critically appraise the articles included in this study and review any risk for bias. This should help determine the reliability and validity of the included studies (Pollock et al., 2022). The critical appraisals can be seen in Appendix B.

Results

Study Demographics

Four articles met the inclusion criteria of this study and were published between 2016 and 2022. Two studies were published in America, one in Australia, and one in Canada. The dementia education interventions utilized within the articles in this study consisted of experiential learning opportunities. These included a placement, dementia-specific lectures, peer-led experiences, a virtual learning experience, and a multimodal learning experience. Table 3 provides a summary of the four articles included in this study. The data was extracted from the articles directly to reduce any risk of bias from the researcher.

Table 3*Summary of the Literature*

Study Number	Title	Author(s)	Year	Origin	Aim/purpose	Methods	Intervention	Key findings and limitations
1	Physiotherapy students' experiences of working with people with dementia during their clinical placements: A qualitative study.	Hunter, S., Callisaya, M., & Lawler, K.	2022	Canada	The objective of this study was to explore the experiences of physiotherapy students on working with people with dementia during their clinical placements.	Qualitative data analysis used to analyse responses.	Clinical placement working with people with dementia and 2-hour lecture on "Physiotherapy and the patient with dementia."	Two overarching themes for the latent content of the data: Mastery and inequity. Six categories were then created to support these themes: Physiotherapist characteristics for a successful therapeutic relationship; communication strategies; best practice physiotherapy skills and knowledge; education strategies;

								<p>desire to work with people living with dementia; and equity.</p> <p>Limitations: Study only completed in one physiotherapy school in Canada. One researcher taught a dementia lecture, yet most questions were based on the clinical placement.</p>
2	Peer-led virtual learning: Impact of dementia-specific communication training for occupational therapy students.	Morrisby, C., Bogle, J., Dillon, R., Reen, C., & Tanner, G.	2022	Australia	This present study aimed to determine the feasibility of peer-led, dementia-specific communication training on the communication	Convergent mixed-method quasi-experimental design.	Experimental group (n=27) received face to face peer-led communication training and the CUES (a virtual learning experience) pre-and post-	Both groups had significant improvements in their self-rated knowledge, satisfaction, and confidence scores following the peer-led

					skills and self-reported knowledge, confidence, and satisfaction of occupational therapy students.		training. Control group (n=26) received online peer-led communication training.	training. The control group reported greater improvements in knowledge and confidence in communicating with people with dementia compared to the experimental group. Three major themes were identified: Skill development through practical learning, awareness of knowledge gaps, and a safe and authentic learning environment.
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								<p>Limitations- Covid-19 restricted the study. Convenience sampling limited the generalizability of the findings to other students. Some students knew researchers; possible researcher bias.</p>
3	<p>Teaching dementia care to physical therapy doctoral students: A multimodal experiential learning approach.</p>	<p>Lorio, A. K., Gore, J. B., Warthen, L., Housley, S. N., & Burgess, E. O.</p>	2016	America	<p>To evaluate a 12-hour multimodal experiential learning module including the virtual dementia tour (VDT) designed to provide a comprehensive and experiential</p>	<p>Qualitative-pre and post-intervention questionnaires for 31 doctoral physiotherapy students.</p>	<p>12-hour multimodal experiential learning module – included traditional didactic lectures, experiential labs, a virtual dementia tour activity, clinical work with patients with</p>	<p>Students experienced improvements in confidence in working with patients with dementia. There were no significant changes in students' knowledge scores.</p> <p>Limitations-</p>

					dementia curriculum with the goal to educate PT students on the challenges associated with dementia.		dementia and an interactive book club discussion.	There was sample bias meaning the results may not be representative of all healthcare students. Limitations of some of the scales used within the study.
4	Promoting quality of life in advanced dementia care: reading buddies program as service-learning.	Trudeau S.A., & Gately, M.E.	2021	America	The purpose of this exploratory study was to evaluate student perceptions of their professional development achieved through service-learning.	Qualitative descriptive approach through reflection papers.	The Reading Buddies Programme-occupational therapy students spent 45 minutes a week reading to residents in a dementia specialist care unit for 8-12 weeks.	Four major themes arose from the reflective papers- "I was a fish out of water", "I finally took a risk", "And then I thought, maybe I should give myself a little credit", and "I am still experimenting with how I feel." It was suggested that

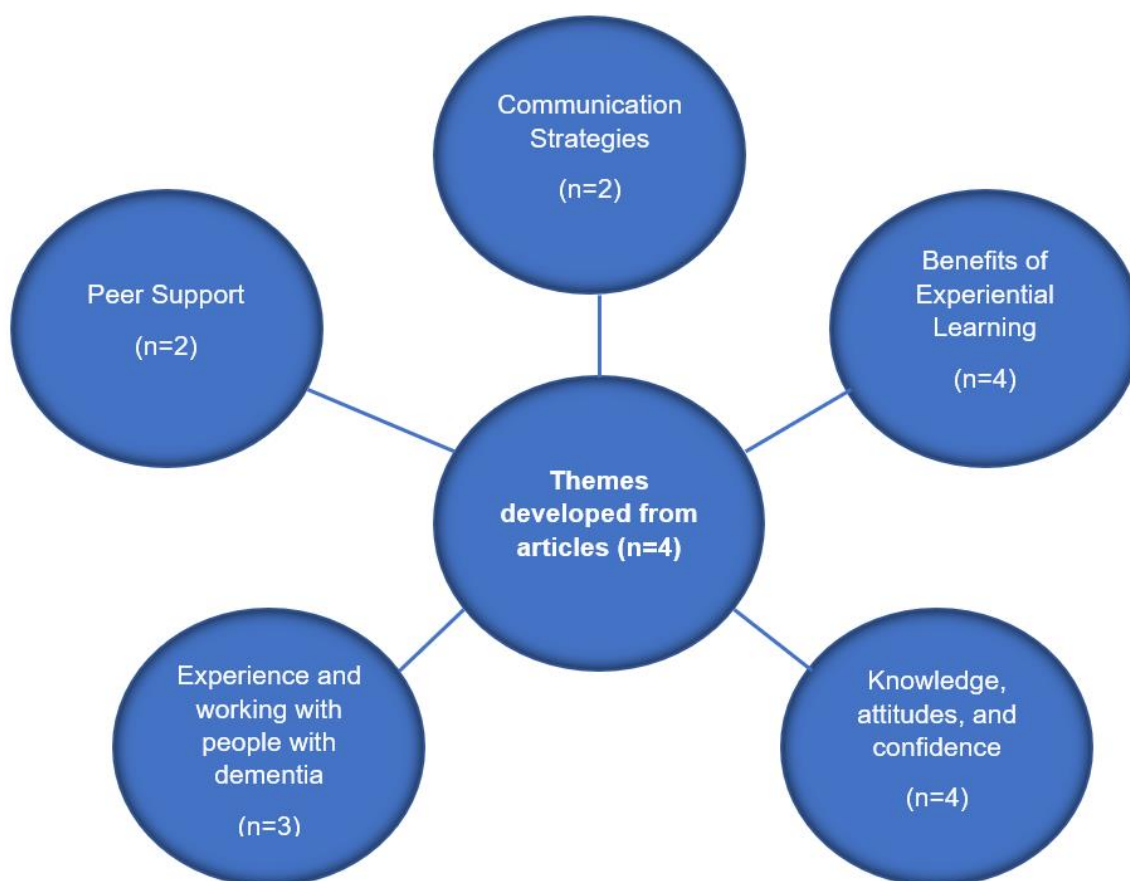
								<p>students' gained confidence in their clinical reasoning skills, working with people with dementia and challenging their implicit biases.</p> <p>Limitations- The article did not outline any limitations.</p>
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Themes

Three common themes were identified in this scoping review, 'Knowledge, attitudes, and confidence', 'Benefits of experiential learning', and 'Experience and working with people with dementia'. Based on these three themes, two subthemes, 'peer support' and 'communication strategies' were developed. All themes can be seen in Figure 2 below.

Figure 2

Developed Themes from a Scoping Review



Knowledge, Attitudes, and Confidence

All four studies discussed the relationship between the dementia education intervention utilized in their study and students' dementia knowledge, attitudes, and confidence. Ultimately, three studies showed that the dementia education intervention implemented in their study positively impacted students' confidence, attitudes, and knowledge when working with PWD. Further, one study emphasized that providing students with adequate knowledge before engaging with PWD was necessary for the development of student's confidence and ability to work with PWD.

Trudeau and Gatley's (2021) 'Reading Buddies' program improved OT students' knowledge and skills, and allowed them to grow as clinicians, aiding their confidence and perceived self-efficacy. Lorio et al. (2016) found that their multimodal approach improved PT students' confidence and attitudes towards working with PWD, as the students developed a better understanding of the challenges and emotional needs of someone with dementia. Morrisby et al. (2022) highlighted that both virtual learning experiences and peer-led training improved OT students' perceived knowledge and confidence in communicating with PWD. Interestingly, Hunter et al. (2022) emphasized the need for educators to provide students with adequate knowledge and skills before beginning placement to improve students' dementia confidence, knowledge, and attitudes. The author also mentioned how placements impacted PT students' dementia knowledge, confidence, and attitudes.

Benefits of Experiential Learning

All four articles discussed the beneficial impacts of experiential dementia education interventions on OT and PT students' confidence, knowledge, and attitudes toward working with PWD. Two of the studies, Lorio et al. (2016) and Morrisby et al. (2022), utilized virtual dementia education interventions and found that they improved students' understanding of the challenges and emotional needs of PWD. Morrisby et al. (2022) also found that using virtual learning environments and virtual patients, in addition to peer-led training, improved OT students' communication, knowledge, and satisfaction. However, students who underwent only peer-led training reported higher perceived scores of knowledge and confidence in communication strategies post-intervention. Trudeau and Gatley (2021) implemented a "Reading Buddies" program for OT students and PWD, which improved the students' knowledge and experience of working with PWD and aided the development of their professional identity and clinical reasoning skills. Hunter et al. (2022) suggested that placements were a beneficial experiential intervention, but PT students expressed a need for better preparation in communication skills before beginning their placements. All studies highlighted the importance of relevant didactic teaching in conjunction with experiential learning to best prepare students to work with PWD.

Experience and Working with People with Dementia

Trudeau and Gatley (2021), Lorio et al. (2016), and Hunter et al. (2022) explored the relationship between students' experience of dementia, and their confidence, knowledge, and attitudes toward dementia. This relationship was explored about students' desires to work with PWD in the future. For instance, in Trudeau and Gatley's (2021) study, the OT students had limited knowledge and experience in working with PWD. This negatively impacted their confidence to engage in the 'Reading Buddies' program, and their desire to work with PWD in the future. Lorio et al. (2016) and Hunter et al. (2022) suggested that students often lack experience, skills, and knowledge regarding dementia, and this can result in them feeling less comfortable working with this population. The researchers suggested this was possibly due to students' perceived difficulty in engaging and communicating with this population. Trudeau and Gatley

(2021), Lorio et al. (2016), and Hunter et al. (2022) all suggested that improving students' dementia knowledge will result in them having more positive attitudes towards working with PWD.

Subthemes

Peer Support

Two articles discussed the involvement of peer support within their dementia education intervention. Morrisby et al. (2022) utilized peer support as part of the main intervention and suggested it can develop students' self-confidence, leadership skills, and communication by fostering a safe, relatable, and less intimidating environment. Further, Trudeau and Gately (2021) successfully included peer support within their study, allowing students to support and provide feedback to each other during the intervention.

Communication Strategies

Morrisby et al. (2022) and Hunter et al. (2022) discussed developing students' communication skills through dementia education intervention. Morrisby et al. (2022) found that OT students had significant improvements in their communication skills, following either peer-led communication training solely or in conjunction with a virtual learning experience. Students developed skills such as active listening, confidence in holding a conversation and supporting a patient to engage in the conversation. Further, Hunter et al. (2022) discussed the beneficial communication strategies that PT students' supervisors introduced them to whilst on placement. These included developing alternative strategies for communication with non-verbal patients, re-introducing yourself with each interaction with a patient, repeating instructions, and using short, simple sentences.

Discussion

A scoping review was conducted to explore the opportunities for dementia education for occupational therapy (OT) and physical therapy (PT) students. The study found that experiential learning interventions were most effective in educating OT and PT students about dementia. The results revealed three main themes: 'Knowledge, attitudes, and confidence', 'Benefits of experiential learning', and 'Experience and working with people with dementia'. Two subthemes were also identified, namely 'Peer support' and 'Communication strategies'.

The studies conducted by Morrisby et al. (2022), Hunter et al. (2022), Lorio et al. (2016), and Trudeau and Gately (2021) found that experiential learning interventions positively impacted the students' learning and understanding of working with people with dementia. These interventions helped to develop their knowledge, confidence, and attitudes towards dementia. Therefore, it is recommended to implement dementia experiential learning opportunities within healthcare programs to help improve students' preparedness to work with people with dementia.

Trudeau and Gately (2021) and Lorio et al. (2016) suggested that didactic teaching alone is not enough to prepare students for clinical practice. Experiential learning interventions are advantageous as they allow students to have direct interaction with real clients and challenge their interpersonal skills. Such exposure allows the students to apply theory to practice, enhance their skills such as clinical reasoning and communication, and develop their knowledge. However, students need to have received basic information related to dementia prior to the experiential learning opportunity to benefit fully from it (Lorio et al., 2016; Morrisby et al., 2022; Trudeau & Gately, 2021).

Lorio et al. (2016) implemented a multimodal teaching approach, including lectures, clinical work with people with dementia (PWD), a virtual dementia tour activity, and an interactive book club discussion, to enhance physical therapy (PT) students' confidence and attitudes towards working with PWD. However, the questionnaires and surveys used to evaluate the outcomes of the study were not assessed for reliability and validity. While a multimodal approach could be an effective pedagogical strategy for healthcare programs, it's crucial to conduct further research using more valid and reliable measures before implementing it. For example, Hunter et al. (2022) reported that PT students wished they had more comprehensive dementia knowledge and skills before their placement with PWD. None of the included articles, however, directly examined occupational therapy (OT) students' preparedness for engaging with PWD. Morrisby et al. (2022), on the other hand, discussed how virtual patients and training helped OT students prepare for engaging with PWD. This suggests that didactic teaching on dementia, combined with experiential learning, may be a more effective approach for educators in healthcare programs.

Furthermore, Lorio et al. (2016) and Hunter et al. (2022) found that experiential learning improved PT students' dementia knowledge and resulted in more positive attitudes toward working with PWD. Therefore, enhancing students' dementia knowledge through experiential learning opportunities could lead to better care for PWD. However, this was only explored with PT students, and none of the included articles examined the same for OT students, making it difficult to draw any conclusions.

There is a controversial debate regarding whether clinical placements are sufficient on their own to prepare students to work with PWD. Research is beginning to suggest that traditional placements possibly do not provide as profound a level of learning as other experiential education opportunities (Williams & Daley, 2021). OT and PT students' placements are limited in terms of duration and availability and these factors differ across different universities and countries. Further, many students will not even have the opportunity to work with PWD during their already limited placements (Banerjee et al., 2016; Daley et al., 2020). This arguably reinforces the need for healthcare programs to implement experiential dementia learning opportunities other than clinical placements within their curricula. Placement educators, who are qualified OTs and PTs, provide support to students to achieve various professional competencies to enhance their learning. During the placement, supervisors guide the students with effective

communication strategies to interact with PWDs (Hunter et al. 2022). However, this study recommends that the placement educators may be involved more in didactic and experiential teaching within the curriculum before the placement.

Two papers discussed the use of virtual dementia education interventions. Lorio et al. (2016) found a virtual learning tour improved students' confidence in working with PWD. Morrisby et al. (2022) suggested that virtual learning can benefit students' dementia communication skills and knowledge. However, the OT students who were solely involved in the peer-led communication training reported significantly higher perceived scores of knowledge and confidence in communication strategies compared to the students who underwent the virtual training. Therefore, it was arguably unclear how beneficial the virtual training truly was in this study.

There has been a growing interest in the use of virtual training and its cost-effective benefits. Research suggests a positive pedagogical impact of virtual learning on students' empathy, knowledge, and attitudes toward dementia compared to traditional teaching approaches (Adefila et al., 2016; Peng et al., 2020; Vottero et al., 2014). However, there is conflicting research regarding the development of students' dementia knowledge through virtual learning (Jones et al., 2021). In addition, much of the available literature for virtual dementia education focuses predominantly on nursing and medical students. Therefore, it would be beneficial for further research to explore the benefits of virtual dementia education for OT and PT students too.

Morrisby et al. (2022) and Trudeau and Gately (2021) discussed the inclusion of peer support in conjunction with their dementia education intervention. Morrisby et al. (2022) predominantly discussed utilizing peer support to develop communication strategies. Peer support reportedly benefitted students' self-confidence when communicating with PWD and it created a less intimidating and safer environment. Further research has explored the use of peer support too. For instance, Surr et al. (2020) suggested that peer support is a key facilitator for implementing dementia training. Further, Sung et al. (2022) found that using a virtual reality-based dementia intervention in conjunction with peer support had positive effects on participants' knowledge, attitudes, and empathy regarding dementia. However, neither of these studies focused on OT and PT students. Ultimately, a multimodal approach, including didactic teaching alongside experiential learning with peer support could be a beneficial pedagogical method. However, further research exploring this approach with OT and PT students is needed to determine its effectiveness.

Students often feel unprepared to work and communicate effectively with PWD, partly due to their lack of knowledge, confidence, and experience (Lorio et al., 2016; Wood et al., 2017). Therefore, educating students about how to interact and communicate with PWD could help to reduce fear and uncertainty and improve their confidence and self-efficacy (Lorio et al., 2016). Morrisby et al. (2022) found that OT students' confidence in communicating with PWD was significantly improved following their intervention. However, Hunter et al. (2022) highlighted that the PT students in their study wished they had learned about communication skills prior to beginning their placement. Therefore, it

may be beneficial to address communication skills within didactic teaching before students engage in experiential learning. However, there is a lack of research exploring how to develop communication skills within dementia education (Wood et al., 2017). Therefore, there needs to be more research exploring how to develop students' communication skills and interactions with PWD before implementing this within healthcare curricula.

Implications for Occupational Therapy and Physiotherapy Education

The review's findings suggest that including dementia education in occupational therapy (OT) and physical therapy (PT) curriculums has a positive impact on students' knowledge before interacting with people with dementia. Similarly, Kirve (2022) recommended introducing a spiral curriculum and allocating time for dementia initiatives in nursing curriculums to enhance students' knowledge during classroom teaching sessions. Jones et al. (2023) conducted a study with paramedic undergraduate students which showed the necessity of embedding dementia education in undergraduate curricula to ensure that they are equipped with knowledge, confidence, and positive attitudes to provide quality care to people with dementia. Kimzey et al. (2016) conducted a mixed-methods study on undergraduate nursing students, which showed that experiential learning through clinical placements increased knowledge and attitudes about Alzheimer's disease (AD), compared to an online module and no dementia-specific placement. Adewuyi et al. (2022) conducted a systematic review that demonstrated how virtual and simulated experiential learning approaches helped increase undergraduate nursing students' knowledge of dementia care, a finding that was also supported by this scoping review's themes.

To improve the effectiveness of occupational therapy and physiotherapy education, incorporating dementia-specific teaching alongside hands-on learning and peer support could be beneficial. However, additional research is needed to fully understand the potential benefits of this approach. Using virtual dementia education could be a cost-efficient way for educators to include this method in their curriculum. Additionally, teaching communication strategies before working with people with dementia could be addressed through didactic teaching methods in the OT and PT curricula.

Limitations

Firstly, the study only focused on the experiences of dementia education interventions for OT and PT students. This means that the findings of this study may not be generalizable to other healthcare students. The researchers did not include other healthcare students in their sample and instead focused solely on papers that explicitly included OT and PT students. Additionally, the literature search was limited to articles from the last 10 years, resulting in only four relevant articles being reviewed. It is possible that studies older than the last 10 years that did include OT and PT students were missed due to this inclusion criteria. The search criteria used for this study did not specify any particular country. The researchers searched through various databases and included articles that met the predetermined inclusion criteria. Unfortunately, no relevant studies were found in the UK or any other country, except for four studies that were published in America, Australia, and Canada.

Although this study has some limitations and includes articles relevant to OT and PT students, its findings can still be useful for other healthcare students. This limited number of studies also highlights the lack of research on dementia education for OT and PT students compared to nursing or medical students. It is also expected that this study may encourage future research to include OT and PT students in the participant samples.

Conclusion

This scoping review aimed to investigate the availability of dementia learning opportunities for OT and PT students. The study found that experiential learning interventions are available in America, Canada, and Australia. However, there was a lack of information on dementia education opportunities in OT and PT programs in other countries, which requires further investigation. The review highlighted the effectiveness of combining didactic teaching with experiential learning and the potential benefits of incorporating peer support for OT and PT students. Moreover, more research is needed to develop dementia education interventions that emphasize communication skills and explore the use of virtual dementia education for OT and PT students. It is recommended that empirical studies are needed with OT and PT students regarding dementia education needs and its inclusion in the respective curriculums.

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Appendix A

The following are links to some of the UK HEI programs:

<https://www.worcester.ac.uk/courses/person-centred-dementia-studies-pg-cert>

<https://www.bradford.ac.uk/courses/pg/advanced-dementia-studies/>

<https://www.bsms.ac.uk/postgraduate/taught-degrees/dementia-studies.aspx>

This is the link for Health Education England's Dementia program:

<https://www.hee.nhs.uk/our-work/dementia>

Appendix B: Critical Appraisal forms

JBI CRITICAL APPRAISAL CHECKLIST FOR QUALITATIVE RESEARCH

Reviewer Alice Teague Date 02/11/22

Author Hunter, Callisaya & Lawler Year 2022 Record Number _____

	Yes	No	Unclear	Not applicable
1. Is there congruity between the stated philosophical perspective and the research methodology?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Is there congruity between the research methodology and the research question or objectives?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Is there congruity between the research methodology and the methods used to collect data?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is there congruity between the research methodology and the representation and analysis of data?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is there congruity between the research methodology and the interpretation of results?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Is there a statement locating the researcher culturally or theoretically?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Is the influence of the researcher on the research, and vice-versa, addressed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Are participants, and their voices, adequately represented?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overall appraisal: Include Exclude Seek further info

Comments (Including reason for exclusion)

JBI CRITICAL APPRAISAL CHECKLIST FOR QUALITATIVE RESEARCH

Reviewer Alice Teague Date 02/11/22

	Author Trudeau and Gately	Year 2021	Record Number _____			
			Yes	No	Unclear	Not applicable
1.	Is there congruity between the stated philosophical perspective and the research methodology?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Is there congruity between the research methodology and the research question or objectives?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Is there congruity between the research methodology and the methods used to collect data?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Is there congruity between the research methodology and the representation and analysis of data?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Is there congruity between the research methodology and the interpretation of results?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.	Is there a statement locating the researcher culturally or theoretically?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.	Is the influence of the researcher on the research, and vice-versa, addressed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.	Are participants, and their voices, adequately represented?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9.	Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10.	Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Overall appraisal: Include Exclude Seek further info

Comments (Including reason for exclusion)

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JBI CRITICAL APPRAISAL CHECKLIST FOR QUASI-EXPERIMENTAL STUDIES

Reviewer: Alice Teague Date 02/11/22

Author Morrisby et al Year 2022 Record Number _____

	Yes	No	Unclear	Not applicable
1. Is it clear in the study what is the 'cause' and what is the 'effect' (i.e. there is no confusion about which variable comes first)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were the participants included in any comparisons similar?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were the participants included in any comparisons receiving similar treatment/care, other than the exposure or intervention of interest?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was there a control group?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were there multiple measurements of the outcome both pre and post the intervention/exposure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analyzed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were the outcomes of participants included in any comparisons measured in the same way?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were outcomes measured in a reliable way?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was appropriate statistical analysis used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overall appraisal: Include Exclude Seek further info

Comments (Including reason for exclusion)

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Critical Appraisal Checklist for Quasi-Experimental Studies - 3

JBI CRITICAL APPRAISAL CHECKLIST FOR QUALITATIVE RESEARCH

Reviewer Alice Teague Date 02/11/22

Author Lorio et al Year 2016 Record Number _____

	Yes	No	Unclear	Not applicable
11. Is there congruity between the stated philosophical perspective and the research methodology?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12. Is there congruity between the research methodology and the research question or objectives?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Is there congruity between the research methodology and the methods used to collect data?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Is there congruity between the research methodology and the representation and analysis of data?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Is there congruity between the research methodology and the interpretation of results?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Is there a statement locating the researcher culturally or theoretically?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Is the influence of the researcher on the research, and vice-versa, addressed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Are participants, and their voices, adequately represented?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overall appraisal: Include Exclude Seek further info

Comments (Including reason for exclusion)

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