

The impacts of Dedicated Education Units (DEUs) on the Clinical Nursing Education: A systematic review

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Abstract:

Background: The DEU is proving to be a reliable learning methodology because it introduces nursing students to learning through working in an authentic clinical setting with actual patients. In this learning environment, staff nurses share their expertise with students and their teachers, who, as academics, lack the opportunity to spend time in a work setting. As such, teachers and other clinical instructors engage in clinical involvement and take part in the learning process at the same time as the students. While it is accepted that learning occurs in a classroom environment or with practice simulations, learning outcomes are vastly improved when students interact with professionals in a real environment.

Methods: In this SR, the data was drawn by searching five databases: Academic Search Premier, MIDLINE, CHNHAL, ERIC and the British Education Index. Studies between the 1996 and 2021 were chosen. The study approaches were a mixture of qualitative and quantitative, with data extracted dependent on study design, setting and sample, interventions, and outcome measures. The SR presents a synthesis of the findings.

Results: The search strategy identified 390 studies in total, but only fourteen of them met the eligibility criteria. These 15 studies used both qualitative and quantitative approaches. The study findings reveal that DEUs have a positive impact on nursing clinical education and provide high quality clinical learning experiences. They offer a highly appropriate clinical placement model, clearly facilitate high quality teaching and learning, ensure safe competencies, support learning in the workplace, and enhance students' leadership competencies. Two of the studies found no significant differences between the DEU approach and traditional clinical education, but the findings concluded that DEUs are capable of supporting academic development.

Conclusion: As evidenced from the review, the DEU is an effective learning model for students because it creates the opportunity for them to interact with professional nurses in a real clinical setting. The review has further explored the benefits associated with this learning model and supports the implementation of DEUs in the Kingdom of Saudi Arabia as well as in other countries.

Key Word: Dedicated Education units; EDU; Nursing student; Learning Environment; Undergraduate Students; Quality Improvement.

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I. Background to the Review

I.I Introduction

In order for nursing students to improve their skills and develop into experienced nurses, they need to experience effective clinical placements so that they can put into practice the skills they have learnt in the classroom. Consequently, clinical practice is a fundamental and essential aspect of nursing education. Ard, Rogers, and Vinten (2008) and Phillips and Pugh (2015) state that the education which takes place in the clinical setting is what truly triggers the expansion of the students' ability to make crucial decisions quickly and effectively.

I.II Background

In 2008, the Kingdom of Saudi Arabia introduced a Royal Decree requiring the relocation of health education facilities from the Ministry of Health (MOH) to the Ministry of Higher Education (MOE). This transition was effected in the hope of enhancing health education and ensuring a substantial improvement in student competencies. While these advances have been instrumental in the progression of nursing education, there are still overwhelming issues. The present century has witnessed nursing education, not only in KSA but also in Europe, Australia, New Zealand, South Africa, and the American continent, become decisively positioned in universities

with practice learning being located in health service settings and facilitated by practice relationships. This is in contrast with, for example, Britain, where up until the 1990s the majority of nursing education comprised vocational training within hospitals (Curtis, 2013). As a result of this vast adjustment, in comparison to other graduate subjects, there has been an increased lack of harmony between the nursing clinical education and higher education systems.

This transition has shifted education away from the apprenticeship model used in Diploma Nursing Programs towards that of the supernumerary model. In the apprenticeship model, nursing education took the form of students working and learning in hospitals with a few teaching sessions in classrooms (Scheckel, 2009). In contrast, nursing students of supernumerary status were counted as separate to hospital nursing staff and did not learn by being part of the workforce (Nursing & Midwifery Council, 2004). Won and Wong (1987) assert that in current clinical nursing education there has been a transition from vocational learning in hospitals by performance to academic learning in universities by acquisition of knowledge. However, there have been several efforts to support nursing education as an emerging sector in higher education. For example, in Europe in 2003, nursing was the earliest healthcare field to be considered as 'harmonized' by the Tuning Project. This project has tremendously increased the overall proficiency of nursing education as it works towards universal agreement and communication instead of a system of overbearing regulations. This philosophy is effectively articulated in the Tuning Project (González & Wagenaar, 2006), which advocates 'tuning of educational structures and programmes on the basis of diversity and autonomy'. Developments like this are key contributors to helping nursing education to advance and become an effective discipline in the higher education system.

While these advances are instrumental in the progression of the nursing education sector, there are still overwhelming issues. For example, clinical education schemes are proving inherently problematic. During a period of significant nursing scarcity, Elliott (2002) stresses that student nurses were dissatisfied with undertaking unpaid work, and Davey (2002) states that students were considered as a burden on the clinical areas. Although private association between health services and higher education was deemed unacceptable, nevertheless many liaisons developed between the two sectors. Edgecombe (2014) suggest that as a result, there emerged a demand for authoritative measures, such as rules for managing and governing these particular relationships.

Watson (1981) maintains that as a result of nursing training shifting to the domain of higher education, students are considered as outside the field of nursing proper, as they have not had the opportunity of vocational learning throughout their education. Won and Wong (1987) highlight that faculties, clinicians and even students are not wholly content with the outcomes of university nursing training. Edgecombe, Wotton, Gonda, and Mason (1999) also point out that healthcare providers, as employers of graduate students, are not consulted about the knowledge and skills student nurses will need to practice efficiently in the clinical environment. A possible explanation for this might be that there is a gap between the real educational needs of a nursing workplace and what the students are actually taught.

In 1997, in order to overcome the problems that were perceived in clinical nursing education, the FUSA School of Nursing introduced the Dedicated Education Unit (DEU) as a new concept in clinical education. The early development of DEUs is discussed by Gonda, Wotton, Edgecombe, and Mason (1999), who state that academics were particularly troubled by students' inability to apply the skills they had learnt in the classroom to clinical practice. Therefore, the idea arose that staff and students should work alongside each other for an extended amount of time in order for students to experience working in the field, and that this would also be an opportunity for directors to communicate with students about future employment. Further, developments such as the DEU aim to create a united nursing education by forming partnerships between nursing schools and healthcare organizations in order to generate optimistic and progressive clinical education settings (Brownlow, 2013). Actions like these contribute towards ensuring that all parties in the scheme cooperate to resolve issues and form an effective and coordinated clinical education team.

I.III Dedicated Education Units (DEUs)

Thus, the Australian Flinders University established the DEU as a response to the need for vocational learning systems as the most effective way to equip student nurses with the practical knowledge of nursing. A number of definitions of DEUs exists, each with a slightly differently emphasis. Edgecombe (2014) defines the DEU as an educational approach that allows students to have an effective clinical education and use a wider range of educational resources. This allows nursing faculties to increase student numbers in clinical areas and to close the gap between theory and clinical practice in a manner beneficial to both teaching and patient care. Another advocate of DEUs, Beal (2012) emphasises that in nursing education, associations between the academic and service fields is

most commonly underpinned by strategic factors that are geared towards improved teaching, research opportunities and overall practice.

I.IV Educational theory (A Theoretical Framework)

Edgecombe (2014) highlight that the DEU allows student nurses to spend a considerable amount of valuable time in the practical hospital environment with invaluable leadership and direction from experienced members of staff. Additionally, the DEU enables students to establish the foundations for building the extensive knowledge necessary to succeed at nursing (Tanner, 2006). Hunter, Weber, Shattell, and Harris (2015) state that the physical clinical setting triggers a heightened awareness within the student, as when students are interested in their tasks, they are much more likely to absorb and consolidate vital information. Overall, DEUs aim to stimulate nursing education.

Dewey (1986) proposes that in order to remember a substantial amount of information, one must physically practice the tasks which involve the use of that knowledge. Further, Dale (1969) highlight that this type of physical learning also boosts the maintenance of information and, consequently, when student nurses perform tasks, they are much more likely to store this information and retain it. Lastly, the DEU setting also provides students with the opportunity to reflect on their learning objectives (Smyth, 1989). Reflection is a pivotal method of uniting academic with practical learning and, as a result, the student has the opportunity to map the processes of theory onto the physical tasks (McBrien, 2007).

I.V Existing Review

Before undertaking this systematic review (SR), efforts were made to analyse the Cochrane Database to discover if reviews on this topic were already available. This process was recommended by the Centre for Reviews and Dissemination at the University of York (CRDUI). The search revealed no prior reviews on this topic. As a result, this SR of the literature will explore whether DEUs have any impact on nursing clinical education and if so, how they benefit learners.

I.VI Rationale and justification for this review

The reviewer has the knowledge and past experience of working as a clinical instructor in a nursing college since 2007. Her primary tasks were instructing nursing students in clinical areas about core nursing skills and tasks, and planning students' clinical training placements. This experience has provided her with valuable insights into clinical nursing education and she suggests that one of the pivotal aspects of being a clinical instructor is ensuring that students get the best from their practice placements and have the opportunity to integrate theory with practice. However, the common traditional clinical teaching model used to teach nursing students in clinical placement may be unsuccessful in facilitating high quality clinical teaching due to a number of reasons. First of all, there is a substantial variety of issues surrounding the traditional model of clinical teaching which directly alters the level of nursing teaching. It has been reported that the traditional model involves only one clinical instructor guiding a large number of students. This CI is responsible for instructing, leading and appraising the quality of care provided by the nursing students in a practical, clinical environment (O'Lynn, 2013). Consequently, due to the shortage of staff, these types of clinical teaching were critiqued by students, scholars and clinicians as being unsuccessful in meeting the requirements. For example: CIs failed to allow sufficient time for students to reflect on tasks; they did not sufficiently support an awareness of the purpose and occupation of the staff and they failed to support students in improving their performance (R. White & Ewan, 1997). Furthermore, DeWolfe, Laschinger, and Perkin (2010); (McCarthy & Murphy, 2010); and Mårtensson, Engström, Mamhidir, and Kristofferzon (2013) all conclude that the CIs who supervise traditional clinical teaching were disappointed by the lack of support and management by clinical executives and faculty. They believed that practical advice would have been immensely important in helping them to improve the quality of clinical nursing education.

I.VII Aim and objectives

This SR aims to explore what is known about the effectiveness of DEUs on clinical nursing education and to find in the literature any documented benefits to learners. The SR provides conclusions drawn from current research findings so that nursing lecturers in KSA or other countries can apply successful clinical teaching approaches and form a united approach to nursing education using vocational learning settings to enhance clinical education. Further, this SR makes recommendations for further research in the field of practical nursing education and for implementing DEUs.

The primary aims of the review are as follows:

- To critically analyse and review existing research on clinical nursing education, DEUs and applied learning.
- To investigate the influence of DEUs on standards of nursing education, student satisfaction with DEUs and how well students perform in clinical assessments.
- To consider how the findings could affect and improve nursing practice.
- To propose recommendations for implementing the DEU approach in KSA.

II. Methods

II.I Mixed method SR

This SR was created in line with a mixed-method approach and, for two reasons, included both quantitative and qualitative designs. First and foremost, this SR is the first to investigate the influence of DEUs on clinical nursing education alongside the benefits they can offer trainees. Evidence focuses on issues such as how the processes work and the experiences they have generated. Such processes require a deep research approach as these types of investigative questions are answered to a higher standard when referring to evidence from a variety of sources Dixon- Woods, Fitzpatrick, and Roberts (2001); Petticrew (2003); Jackson and Waters (2005). Moreover, knowledge on the subject is limited. The research thus attempted to maximise results and respond to questions raised, at length, by incorporating primarily qualitative and quantitative data. Holland and Rees (2010) stated that the inclusion of qualitative data tends to add strength to quantitative results.

As outlined by Johnson and Onwuegbuzie (2004) mixed-method research describes an investigation whereby the researcher collaborates quantitative and qualitative research practices, concepts and language into one solitary study. The mixed-method approach when conducting SR or Integrative Review can follow two processes. The first is a comprehensive study of two or more types of data. The second is a process whereby qualitative and quantitative data are combined into a final synthesis (Institute, 2014). Furthermore, Evans and Pearson (2001) defines Integrative Reviews as the broadest classification of research reviews, merging the findings of diverse research projects, for example those with qualitative and quantitative study.

II.II Systematic Review process

A systematic review attempts to incorporate research that is relevant to the question. Despite this, as outlined by Webb and Roe (2008), this objective can be undermined by a desire to include entire research findings with the hope of ensuring new research learns from previous mistakes. This SR follows eight essential steps as outlined by G. White (2013) in Table number 1 below.

Table no 1: Steps of conducting a systematic review (White, 2013)

Stage	Description	Rationale
1	Formulating the review question	To give the review a clear focus
2	Search strategy	Identifies the relevant studies?
3	Critical appraisal	To ensure the inclusion of rigorous and good quality studies
4	Selection of articles to be included in systematic review	To support the reliability of SR
5	Data extraction	Minimizes the risk of errors during data
6	Data synthesis	Summarizes the findings and provides an estimate of the effect of an intervention
7	Recommendation for practice and future research	Help to implement EBP
8	Updating the Systematic Review	To identify the advancement of research and necessity for an updated review.

II.III Inclusion criteria

We must formulate inclusion and exclusion criteria to answer the SR questions. Each SR has an individual purpose and thus the inclusion and exclusion criteria are unique. Inclusion and exclusion criteria tend to belong to a certain category. As outlined by Meline (2006) these are namely study population, nature of intervention, outcome variables, time period and cultural and linguistic range, and methodological quality. Table Number 2 shows the inclusion criteria.

Table no 2: The inclusion criteria.

N	Description	Inclusion criteria
1	Review questions	What is known about the effectiveness of DEUs on clinical nursing education? What benefits does students gain from the implementation of DEUs?
2	Population	The inclusion criterion was amended to solely consider nursing students who experience DEUs and clinical practice. Additionally, to evade inclusion bias and avoid selection bias Limitations on ages and levels of study were not considered.
3	Intervention	For this review, the intervention under question was clinical education through DEUs in the clinical area.
4	Comparator	The intervention was compared with alternative concepts in clinical education, such as Traditional Clinical Education.
5	Outcome	The primary outcomes measured were the quality of clinical education and clinical performance, but the satisfaction of students was also considered.
6	Setting	DEUs that were created upon collaboration of nursing academia and professional practice, with no limitation on country and with the avoidance of bias.
7	Study design	<ul style="list-style-type: none"> •RCT •Quantitative studies •Qualitative research design •Mixed-method research design
8	Time period	DEUs are currently in the initial stages of development. As a result, to maximise data findings, the time period of 25 years was used (1996 - 2021).
9	Linguistic range	Due to time restraints, and to reduce the potential for translation problems, the search was restricted to English-only published studies.
10	Exclusion criteria	Any study that did not meet the requirements for participants, intervention and review outcomes was excluded. Studies that were published in a language besides English were also discounted.

II.IV Data Extraction

Data will be taken from the relevant documents using the traditional data extraction tool from JBI-QARI. The extracted data will include exclusive details about specific objectives and concepts in line with the review question. Higgins and Altman (2008) state that, more often than not, two or more independent reviewers are required for data extraction. This helps reduce the subjectivity of the reviewer with regards to the interpretation of findings and errors. However, as this SR has been slightly modified, only one reviewer extracted the data independently.

II.V Data synthesis

Due to the level of variation in the types of outcome measures reported, a meta-analysis was not suitable for quantitative studies. However, the review was guided by research questions and types of studies applied Harden and Thomas (2005). In this SR, a mixed-method synthesis used both quantitative and qualitative studies to combine methodologies and directly bypass other syntheses (Institute, 2014).

A fundamental requirement for the development of a mixed-method review is that both quantitative and qualitative data are compatible enough to be combined into one solitary study. In the current study, the main focus was extracting data that was related to descriptions of interventions, outcome measures and the evaluations of interventions. The qualitative study from this review was also examined to reveal student experiences and benefits as a direct consequence of the intervention. To produce a narrative synthesis, there must be a combination of quantitative estimates with qualitative descriptions relating to the experiences and learner benefits directly from DEUs. In this SR, quantitative data is converted into themes, codified and presented, alongside qualitative data, in meta-aggregation.

III. Result

III.I Search results

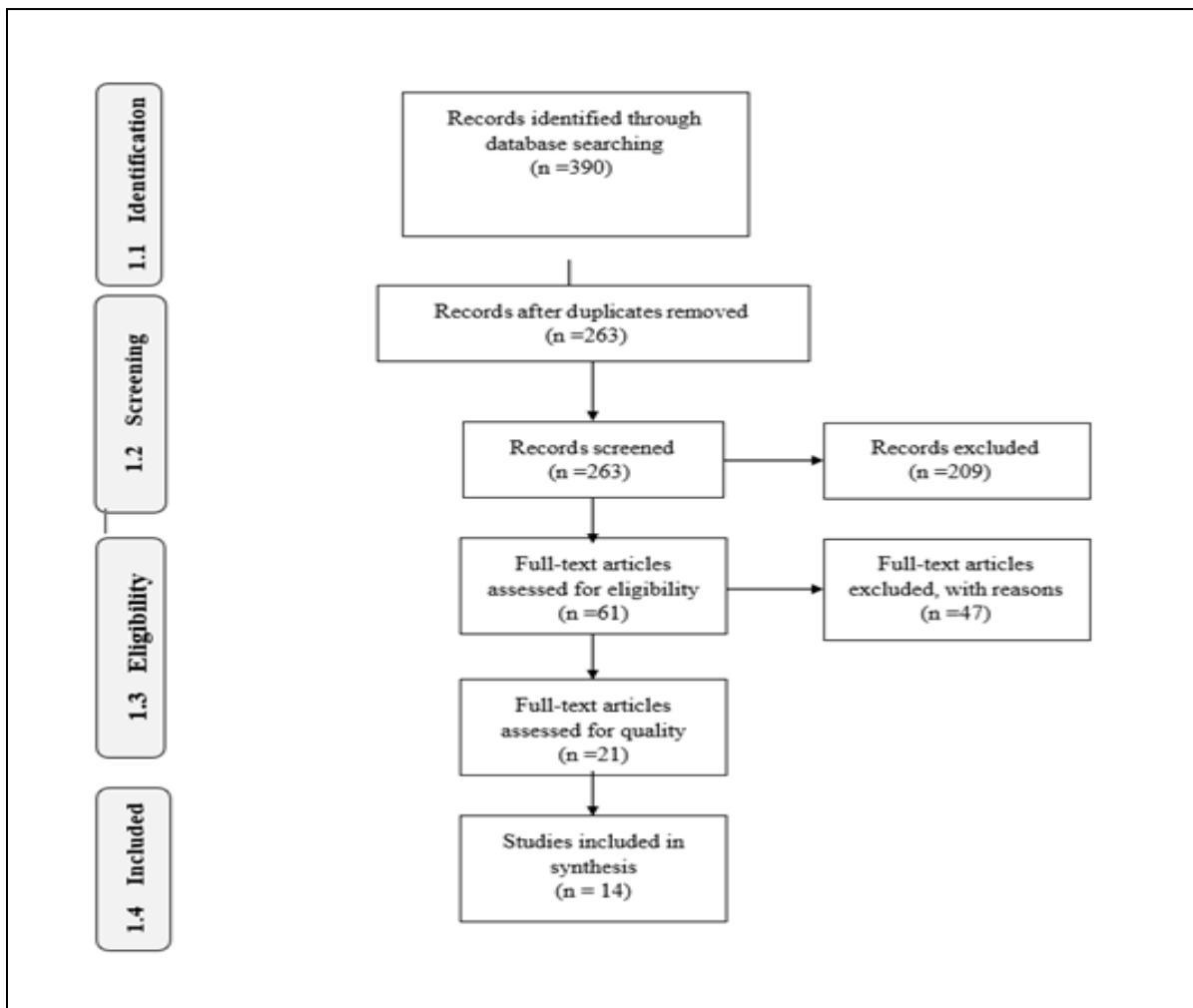
Following an extensive search of the literature in the recommended databases (Academic Search Premier, MIDLINE, CHNHAL, ERIC and British Education Index) 390 primary studies were identified, Figure 1 documents this process using a flow diagram. An extensive list of the included studies and their characteristics is outlined in the following section.

III.II Assessment of methodological quality of included studies

Included studies included in this SR are characterized by different research approaches. The quality of these studies was assessed according to study design, using the JBI Critical Appraisal Tools. The appraisal was used to assess the quality of study methods and to identify any biases (Institute, 2014). To assess a study systematically, the JBI uses 9 to 13 questions, depending on the study type. However, these questions address what counts as forms of evidence and assess the chosen method as applied to different types of data (Institute, 2014).

Tacconelli (2010) states that the JBI does not give the scoring and weighting of each item. However, the reviewer applied weight to each answer, “yes” being awarded one mark, and “no” or “unclear” no mark. The results show that the quality of included studies was good. The majority of included studies present adequate information, such as number of participants, method of data collection and study design. For more details of the included studies, see Table 3. There is no golden standard for the data extraction (Boland, Cherry, & Dickson, 2017), the reviewer extracted the data according to the research questions with as high a quality of evidence as possible and guided by the JBI data extraction forms. In addition, Popay et al. (2006) recommend that the reviewer can use the review questions to decide which data needs to be extracted.

Figure no1: PRISMA 2009 Flow Diagram



T able no3: Included studies.

Author(s)	Title	Source	Year	Study types
Williams, Al Hmaimat, AlMekkawi, Melhem, and Mohamed (2021)	Implementing dedicated nursing clinical education unit: Nursing students' and preceptors' perspectives	<i>Journal of Professional Nursing, 37(3), 673-681</i>	2021	Mixed methods study
Flott, Schoening, McCafferty, Beiermann, and Hercinger (2021)	The Influence of the Dedicated Education Unit Clinical Model on Standardized Test Scores	<i>Nursing education perspectives, 42(1), 41-43</i>	2021	Aretrospective, comparative design
Dimino, Louie, Banks, and Mahon (2020)	Exploring the Impact of a Dedicated Education Unit on New Graduate Nurses' Transition to Practice	<i>Journal for nurses in professionaldevelopment, 36(3), 121-128</i>	2020	Mixed methods study
Bittner, Campbell, and Gunning (2020)	Impact of a Dedicated Education Unit Experience on Critical Thinking Development in Nursing Students	<i>Nurse Educator</i>	2020	Descriptive study
Rusch, McCafferty, Schoening, Hercinger, and Manz (2018)	Impact of the dedicated education unit teaching model on the perceived competencies and professional attributes of nursing students	<i>Nurse education in practice, 33, 90-93</i>	2018	-
George, Locasto, Pyo, and Cline (2017)	Effect of the dedicated education unit on nursing student self-efficacy: A quasi-experimental research study	<i>Nurse education in practice, 23, 48-53</i>	2017	Quasi-experimental exploratory study
Smyer, Gatlin, Tan, Tejada, and Feng (2015)	Academic Outcome Measures of a Dedicated Education Unit Over Time: Help or Hinder	<i>Nurse Educator, 40(6), 294-297</i>	2015	Quasi-experimental
Nishioka, Coe, Hanita, and Moscato (2014)	Dedicated Education Unit: Student Perspectives	<i>Nursing Education Perspectives, 35(5), 301-307</i>	2014	Mixed methods study
Galuska (2015)	Dedicated Education Units: Partnerships for Building Leadership Competency	<i>Journal of Nursing Education, 54(7), 385-388</i>	2015	Mixed-methods study
Gonda et al. (1999)	Dedicated education units: 2. An evaluation	<i>Contemporary Nurse, 8(4), 172-176</i>	1999	Evaluative study
Mulready-Shick, Kafel, Banister, and Mylott (2009)	Enhancing quality and safety competency development at the unit level: an initial evaluation of student learning and clinical teaching on dedicated education units	<i>Journal of Nursing Education, 48(12), 716-719</i>	2009	Evaluative study
Mulready-Shick, Flanagan, Banister, Mylott, and Curtin (2013)	Evaluating dedicated education units for clinical education quality	<i>Journal of Nursing Education, 52(11), 606-614</i>	2013	Randomized Controlled Trial
Ranse and Grealish (2007)	Nursing students' perceptions of learning in the clinical setting of the Dedicated Education Unit	<i>Journal of Advanced Nursing, 58(2), 171-179</i>	2007	Exploratory study
Claeys et al. (2015)	The difference in learning culture and learning performance between a traditional clinical placement, a dedicated education unit and work-based learning	<i>Nurse Education Today, 35(9), e70-e77</i>	2015	Quasi-experimental

III.III Studies setting and samples

The included studies in this SR met the inclusion criteria; ten of them were conducted in the USA, two in Australia, one in United Arab Emirates, and one in Belgium. These studies were conducted in different settings within academic-service partnerships frameworks. The settings included public and private universities and hospitals. The totality of sample sizes from the included studies is 1305 nursing students and 137 new graduate students. In addition, the sample sizes range from 18 to 481, the mean is 93. Most of the studies compared the students in DEUs with one or more other groups. The target group in most of the studies was undergraduate nursing students, only the sample in one study was new graduate nurses. However, there were 12 students in the pre-licensure component of their second-degree master's program participating in the study by Nishioka et al. (2014). Students in intervention groups had to have experienced the DEU approach. The majority of participants in the studies were a mix of junior and senior nursing students, but only four studies reported details of gender and ethnic

group ratio. These were Mulready-Shick et al. (2009) and Mulready-Shick et al. (2013), Dimino et al. (2020) and Flott et al. (2021). Other studies included samples from other participants such as clinicians and faculty members, but these samples and participants were not included here because they were not relevant to the SR questions. For more details, see Table 4.

Table no 4 Study settings and samples

Author(s)	Title	Source
Williams et al. (2021)	Mafrag hospital, Abu Dhabi, UAE	Sixty-seven nursing students and 20 nursing preceptors
Flott et al. (2021)	A private Midwestern university, Downers Grove, Illinois, USA	388 students
Dimino et al. (2020)	William Paterson University, Wayne, New Jersey, USA	137 new graduate nurses
Bittner et al. (2020)	Lawrence Memorial Regis College, Medford, Massachusetts	243 students with 179 non-DEU and 64 DEU students
Rusch et al. (2018)	A private midwestern United States baccalaureate nursing program	481 students
George et al. (2017)	Three clinical agencies, USA	193 students
Smyer et al. (2015)	School of Nursing, University of Nevada, Las Vegas, USA	144 students studying Nursing Care on the Adult Medical-Surgical Patient course, with 135 clinical practice hours.
Nishioka et al. (2014)	University of Portland, Portland, Oregon, USA	32 students participated in focus groups, 12 were in the pre-licensure component of their second-degree master's programme. 473 students took part in the survey.
Galuska (2015)	Two hospitals, Los Angeles, California	32 senior nursing students
Gonda et al. (1999)	School of Nursing, Flinders, University of South Australia	49 nursing students, 23 students from the third year, 21 from second year, and 5 from first year
Mulready-Shick et al. (2009)	University of Massachusetts Boston, Boston, USA	18 nursing students (14 women and 4 men) Age ranged from 28-55 years
Mulready-Shick et al. (2013)	University of Massachusetts Boston, Boston, USA	165 nursing students, the average age of the students was 30 years. 91% were women.
Ranse and Grealish (2007)	School of Health Sciences, University of Canberra, Canberra, Australia	25 nursing students from second and third year
Claeys et al. (2015)	VIVES University College, Belgium	209 students, 33 students were from final year

IV. Discussion

The influence of implementing the Dedicated Education Unit model on supporting nursing preceptors' roles and promoting students' learning opportunities and hands-on experiences was discovered (Williams et al., 2021). To achieve the good effects of the DEU Unit, ongoing collaboration between the healthcare facility, nursing education programme, and faculty is required to address numerous aspects that influence students' learning (Williams et al., 2021). Besides, it is important to integrate the appropriate theoretical approach and practices that provide an important immersion for the right traditional model. Gonda et al. (1999) lists primary findings where students were asked to analyze patient care incidents while applying specific results that are ethical and legally interrelated. From their findings, it is clear that contextualized theoretical approach only become prospective if a clinical influence is added on to them. Hence, we agree that DEU inspires positive perceptions of learning; hence, students' benefits in enrolling to a course they widely understand Williams et al. (2021). DEU student nurses are capable of understanding the required perceptions of learning as well as the intensity of the career in relation to quality in the clinical setting. It has been noted that the theoretical training model helps in integrating right intervention and the collaborative techniques that are offered in professional nursing environment. However, practice and efficiency are not properly achieved, if these students are not welcomed in live clinical settings. Leaving in a clinical setting requires students and the clinical teachers to be mindful at the end. Hence, DEU technique benefits learners given it orient them to a clinical environment as well as prepare them into the right learning approaches.

Besides, students will benefit because they will be greatly engaged in the learning process. As such, it becomes possible to participate in the required professional standards, such as knowing how to give medication, administering care as well as attending to minor problems. According to a primary research documented by Mulready-Shick et al. (2009), it is clear that the student-to-teacher relationship was a vital approach in solving clinical errors if practical factors such as medication were applied and properly used. As well, there is strong evidence that show that students will be able to engage to the required project patient education, respond to the

required planned events, as well as discharge the planning process (Edgecombe, 2014). According to an analysis conducted by Mulready-Shick et al. (2009) it is clear that DEU students stand a greater chance to be collaborative, innovative and responsive to the required clinical skills. Such features are important in generating the right competency skills as well as features that would help these students generate sustainable efforts for organizational growth. These students are also engaged in quality, improvement processes, patient education, responding to clinical events as well as knowing how to plan for discharges (Mulready-Shick et al., 2013). When compared to students who participated in the standard clinical teaching model, Rusch et al. (2018) notes that the Dedicated Education Unit group scored considerably higher in 26 of 33 specific competencies and professional attributes. Students in the Dedicated Education Unit teaching model have a higher proficiency rating; on 26 of the 33 survey items, statistically significant differences were discovered. These findings

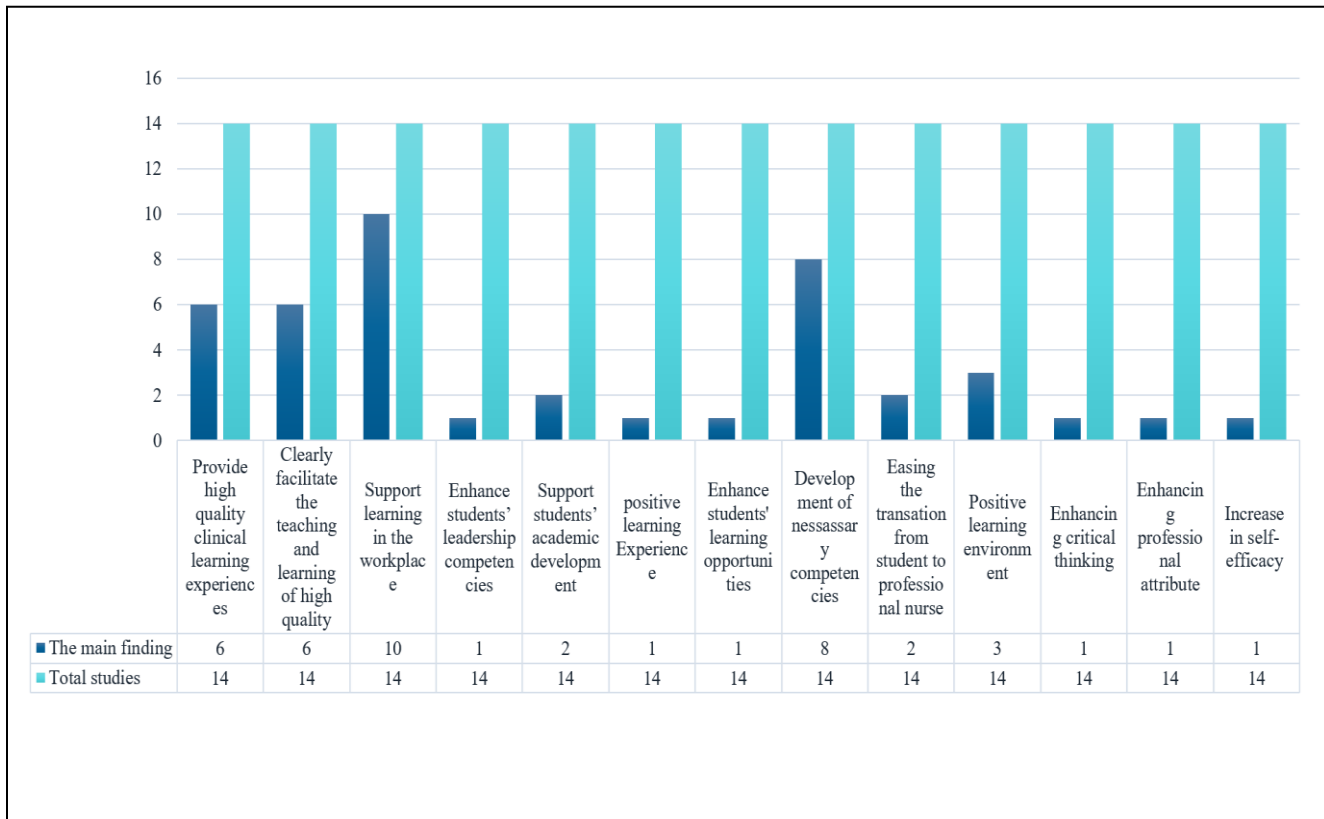
imply that the Dedicated Education Unit model is more effective than standard clinical teaching in terms of promoting knowledge, competency, and professional attribute development (Rusch et al., 2018).

Because strong self-efficacy has been related to a smoother transition from student to nursing professional, it is considered an important consequence of nursing education, George et al. (2017) pointed out that the increase in self-efficacy for the DEU students was significantly greater than the increase in self-efficacy for the traditional students. Examining student self-efficacy outcomes, supported the DEU's quality as a clinical education model (George et al., 2017). Moreover, students who are engaged in the DEU models benefit by understanding how to read and interpret charts as well as understand how various clinical delivery channels operate. In this case, the DEU model encourages students to learn to be effective time managers as well as develop other clinical skills. Galuska (2015) further explores the influence of the DEU model in helping students to generate the right leadership and development skills, some of which enhance their unique organizational skills, for instance, communication. Students in this case benefit from understanding the various process of clinical delivery as well as inherit the real time clinical setting in the studying environment (Edgecombe, 2014). During practice, DEU students are capable of enshrining quality and safety. Mulready-Shick et al. (2013) document the findings of a primary research that show the responses of students to a SECEE instrument which demonstrated favourable results of DEU student as compared to traditional students. Although the ratings were the same, it is clear that different cohort naturally prompted how the subscales were altered. We also note that each of these items demonstrated positive ratings that exceeded the single item were various cohorts. The SECEE instructor quality showed positive performance rate of DEU students at standing at 3.72 as compared to traditional students, which stood at 3.21. In relation to examining the nature of learning opportunities, the DEU showed positive performance rate of 3.67 as compared to 3.17 of traditional students. These students benefitted these clear results properly in relation to achieving the appropriate quality. Students who are involved in the DEU model also enhance collaboration between faculty and the staff. As well, they benefit in having the right communication skills that are vital in building the right professional skills. As such, they benefit from being involved in the appropriate professional setting that is vital in knowing how clinical as organizations operate. Galuski (2015) present themes of students and other focus groups whose converge around perceived benefits for the students alongside student and staff. It is clear that organizational communication closely related to various relational competencies, hence such lucid communication systems made DEU students better than traditional students in relation to partnerships for building leadership competency. Besides, students are also required to the engage to the appropriate patient care by ensuring that they are accredited with the appropriate DEU experiences, which are vital in building right professional practices (Smith, Carpenter, & Fitzpatrick, 2015). In addition, the result of Bittner et al. (2020) study support the effectiveness of the DEU model in enhancing critical thinking, there was a significant increase in critical thinking mean scores by category (prioritization, problem recognition, clinical decision making, clinical implementation, and reflection) for the DEU group (Bittner et al., 2020). These results are in agreement with the study of (Vnenchak et al., 2019).

While, adequately preparing new graduate nurses (NGNs) for contemporary practice remains a challenge, Dimino et al. (2020) indicated to DEU as a positive clinical learning environment where future nurses are supported with the development of necessary competencies, thus easing the transition from student to professional nurse. Academic and practice organizations are urged to collaborate to align curriculum and efforts to address the difficulties NGNs experience as they transition from student to practicing professional. The collective wisdom and collaborative efforts of academic and professional leaders in nursing can potentially serve as a powerful catalyst for improvement in the preparation of NGNs for practice (Dimino et al., 2020). Although the dedicated education unit (DEU) clinical model is becoming more often used in nursing schools, there is a dearth of research on objective assessments of this approach (Flott et al., 2021). Students who had a DEU experience were compared to those who completed the identical rotation in a regular format using standardised test scores. Despite the fact that no

statistically significant differences were found, some scores were higher for students in the DEU model (Flott et al., 2021). Figure no2 below shows the benefits to learner.

Figure no2: Impacts of DEUs on nursing students



IV. Conclusion

This SR has aimed to explore the effectiveness of dedicated education units on clinical nursing education and the benefits to the learner of this model. As shown by the review, the DEU is an effective learning model for nursing students and provides many benefits that may be due to the direct interaction of students with professional nurses in a real clinical setting. The review has further explored benefits associated with the learning model. As noted, DEUs help to increase the number of student placements in the clinical area, giving students close interaction with professional nurses and enabling them to access vital information from experienced staff. Moreover, students in DEUs show a higher level of cognitive skills which are necessary for handling patients compared with students working in the traditional clinical education model. Students using the DEU also required less clinical training after completing their education as DEUs clearly facilitate the teaching and learning of quality and safe competencies. Students with clear DEU knowledge are better able to advise patients on necessary healthcare precautions in both the clinic and at home. Moreover, DEUs improve students' communication abilities and help nursing students to gain high-quality clinical learning experiences and job satisfaction. This review is important as it is the first systematic review to explore the effectiveness of this model and assess the benefits to learners.

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