

Evaluating the Impact of Continuing Professional Development within Intensive Care Unit Nurses in the UK

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Abstract Background: Continuing Professional Development (CPD) within a nursing context is the process by which nurses engage in ongoing activities and reflection that may eventually result in a complete control over an individual's personal leaning and development. Such course of action actualises working context and acts as a source of inspiration and a motivation towards the achievement of goals and objectives within the Intensive Care Unit (ICU) nursing context. **Objective:** The aim of this systematic literature review is to find out the impact of CPD among ICU nurses in the United Kingdom (UK). **Methods:** To achieve this aim, an online investigation for literature related to CPD in the UK is done using databases and internet search engines. In total, five academic databases proved to be important in isolation of materials for use in addressing the CPD of ICU nurses in the UK. These academic databases included MEDLINE, Cochrane, PubMed, CINAHL, and ProQuest, all of which provided multilingual academic sources of both primary and secondary data about CPD and associated programmes. The search strategy also employed the use of five academic search engines, which included Google, Yahoo, Bing, Ask.com, and Baidu, again, all of which provided multilingual data regarding the selected topic. The inclusion and exclusion criterion is employed to outline in this paper. **Results:** Eight academic sources is selected to discuss the provision of CPD in the UK, outline the views of ICU nurses regarding CPD and to address the various barriers facing CPD programmes in the UK. **Conclusion:** The research concluded that CPD programmes are very beneficial to practicing nurses since they keep the nurses' knowledge and skills up to date considering the changing nursing practice. The overall view of nurses regarding CPD is that the programmes should be retained and continued for a better nursing workforce. Certain barriers were identified as key to interfering with the provision of CPD among ICU nurses including financial constraints, nursing shortage and lack of adequate time due to improper scheduling.

Keywords: continuing professional development, intensive care unit, practicing nurses

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1. Introduction

1.1. Introduction

Continuing Professional Development (CPD) is the aspect in nursing education that surrounds adding and sustaining the knowledge acquired by nurses in different areas of specialisation [1]. There are various aspects of knowledge acquired by nurses through their involvement in certain activities within their areas of work that were never taught during the normal teaching programmes [2]. Moreover, the nursing environment is quickly changing towards the acquisition and sustainability of evidence-base practice (EBP), a situation that calls for CPD [3]. EBP is currently providing new ways of managing current disease conditions, illustrating its importance in CPD. Concisely,

CPD aims to improve the sustainability of nursing competence while at the same time improving the ability to acquire new skills that are necessary for contemporary practices [4]. The medical world is changing at a fast rate, fuelling the need for nurses to continue enhancing their knowledge and skills to address new challenges in the medical world, an attempt that can be achieved through CPD [5]. As such, it is important to note that CPD not only aids in the maintenance, improvement and broadening of nursing knowledge and expertise but also participates in the development of personal and professional qualities essential in the nursing profession. Furthermore, many countries within the UK and other parts of the world are working towards sustaining EBP so as to maintain quality contemporary healthcare to their consumers [6]. The purpose of this literature review is to highlight the importance of CPD to practicing nurses by collecting the opinions of the nurses on the essence of

CPD programmes. The review of literature also takes into consideration the barriers towards achieving CPD in other countries that may also play a role in the UK.

The necessity of vocational education during career development cannot be underestimated especially in a world characterised by an advancing technology [7]. The practice of professional development in the nursing industries has occurred in the form of approved events, which is conducted by experts on nursing amateurs progressing into more codified sets of activities to enhance nursing knowledge and expertise, an example of which is a teaching programme improvised to educate nurses on nursing leadership [8]. Such activities aimed at providing nursing professional development are an implication of acquiring and maintaining a continued registration and retaining the nursing right to practice this profession [9].

It is not easy, however, to obtain a good number of nurses within the ICU who appreciate the formal evaluation process within their firms in the form of CPD. The approval of the CPD programmes within nursing professions such as the ICU nursing professionals, however, is aimed at enhancing the outcomes of patients within the ICU [10]. Nevertheless, it is evident that some professional firms have considered introducing various novelties including professional growth strategies, self-administered tests and educational aspects aimed at eliminating the drawbacks associated with the critical care nursing practice [8].

1.2. Existing Reviews

Career improvement is significantly caused by CPD which improves the skills of the employees. A profession is often developed by giving continuous education to the employees so that they are kept abreast of modern ways of handling various situations. A continuous learning process in a nursing career brings improvement in patient care [10]. From the dictionary general meaning of development as advancement or evolution, application of the concept to the professional field can be used to signify that the professionals are in a process of being better in delivery. As for the case of ICU nurses, development in their profession entails an efficient ways of handling the patients continue improving patient care. Since this process is continuous, more skills will be acquired through the education programme [1].

Professional development equips the nurses with better skills that improve the manner in which they handle the patients in ICU. Various research works have prompted the need to reduce Hospital Acquired Infections in ICU, and such works have seen the nurses respond in positive way towards preventing transmission of the infections [9]. For example, a hand hygiene campaigns is to improve how the nurses wash their hands. Such developments have even helped to ensure safe child delivery, hence reducing the mortality rates associated with child delivery. Therefore, professional development involves development of professional's capabilities that helps to become competent enough in offering their services [11].

Since 2000, UK has prioritised the need for nurse experts to validate their skills through actual proof that they are competent enough to serve. Additionally,

assessment of ICU nurses has been enabled using technological means. Such technological means are frequently applied in Europe to gauge basic knowledge of nurses in the operations of an ICU. Existing reviews offer frameworks of assessing nurses on various concepts such as hand hygiene and communication, and if they can be flexible to comply with recommended changes. Communication is essential in ICU since it helps prevent falls among the patients who may require aid in movement.

Teamwork and consultancy is also essential in offering the best care after obtaining contributions from two or more colleagues [11]. These two concepts have also been supported in existing reviews and their advantages have been documented. Negative effects of professional development have been addressed, which include situations whereby some nurses become rigid to adopt change hence develop non-compliance. There is also the concept of different education systems that the nurses passed through, which makes it difficult for long serving nurses to easily accept change [5].

It is therefore, evident that there is need for professional development in all careers since better ideas are discovered continually. It is for this reason that the concept has received positive feedback and is implement in both the academic and professional organisations [12]. For instance, professional development in the ICU section has improved the quality of care that the patients receive through a similar improvement in attention and caution that is taught among the nurses [11]. This improvement has been brought about by the ability of researchers to address the various complications that occur to patients in the ICU and development of suitable solutions. Dissemination of the results to the nurses through trainings and publications impacts better skills to them, and makes them more competent [1].

1.3. Reasons for the Review

The altering demographic patterns of disease at a global level as well as the impact of service delivery implies that the initial nursing qualification only serves to prepare the professional for more challenging ordeals ahead. Otherwise, such pre-qualifying training may not adequately equip the ICU nursing professional in handling all changes that occur within the professional practice so inevitably [7]. As a result, this review is expected to create a firm foundation for nursing professionals in an ICU that hopes to improve the future outcomes of patients admitted in the ICU. Such an approach can be achieved through continued vocational and ongoing training on how to adequately provide services to their clients [2].

With a view to fulfilling the requirements of the NHS for ICU nurses in 2006, there is a great need for a lot more published literature materials addressing the issue for evaluating continued professional development in the ICU nursing sector [7]. In fact, very few published sources of literature like randomised controlled trials specifically address CPD in the ICU setting as compared to the number of literature sources that discuss CPD generally among nurses [9]. Moreover, there is limited knowledge regarding the extent to which some health institutions need to boost knowledge acquisition for furthering

professional development as well as the roles that such professionals need to play for the public. Establishing a review taking such limitations into consideration would, therefore, aid in an enhanced healthcare environment that addresses the problems of the professionals, healthcare consumers and the public at large [13]. A good example is observed in the England Department of Health that utilises non-prescribing strategies and regulations on support for overseeing that non-medical prescribing strategies are implemented at a national level [14].

Human resources are part of the most crucial contribution towards a better healthcare system not only in the UK but also in the entire world [2]. A system whereby nurses, especially those in the ICUs are subjected to an ongoing education and training system is important in a world characterised by changes in knowledge and development of new tools, technologies and diagnostic and therapeutic procedures [9]. In fact, there are rich sources of literature that focus on the essence of providing appropriate educational approaches to ensure that continuous professional development is performed effectively among nurses in various areas of specialisation [15]. This review, therefore, will provide adequate knowledge for a continued professional development of the nurses in the ICU department [10].

1.4. Potential Impact of the Review

Nurses in the ICU section of healthcare provision appreciate the fact that short informative courses offered during the professional activities serve to enhance their knowledge and describe such strategies as fit-for-purpose [2]. Therefore, it is expected that this review will influence the nursing professionals by providing sufficient knowledge and skills necessary the adequate preparation of individuals within the nursing field if it is published or shared amongst nursing managers [16].

1.5. Uniqueness and Significance of the Study

This is a pilot study presenting a systematic review that address the impact of CPD among ICU nurses in the UK. As earlier said, many of the available literature materials concentrate of a general perspective regarding CPD [12]. Moreover, the materials discussing CPD among nurses base much of their discussion on an American and Australian point of view [17]. As such, this systematic review will act as a major source of information on CPD within the UK setting.

The significance of this systematic literature review is to come up with information from available literature materials regarding continuing profession practice, particularly among ICU nurses in the UK [18]. This systematic literature review can be considered to be one of the pilot studies that feature the ICU nurses in CPD to enhance the quality of nursing care delivered by such nursing professionals [19]. In a nut shell, the literature review is expected to deliver results based on the provision of CPD, the accessibility of such programmes to the ICU nurses and the opinions of the ICU nurses on the provision if such programmes [20]. Eventually, the systematic literature review will address key challenges or

barriers towards the successful administration of CPD among ICU nurses in the UK.

1.6. Review Questions

- i. What role does CPD play in the professional development of ICU nurses within the UK?
- ii. What is the impact of CPD on ICU nurses within the UK hospitals?

1.7. Aims and Objectives

1.7.1. Aim

The aim of this study is to evaluate the role of CPD for ICU nursing and its impact on the continuously changing patients' needs in ICU

1.7.2. Objectives

- i. To evaluate the importance of CPD to nurses on a general perspective
- ii. To investigate the views of ICU nurses towards CPD programmes
- iii. To investigate approaches to the provision of CPD for experts in the field of ICU nursing
- iv. To isolate the various barriers towards achievement of CPD among ICU nurses in a continuously changing nursing environment.

Table 1. Key words and search terms

Keyword 1	Keyword 2	Keyword 3	Keyword 4
Impact or effectiveness	ICU nurses or critical care nurses or ICU nursing or nursing	Continuing professional development or CPD	Evaluate or assessment

1.8. Organisation of the Dissertation

After establishing the basis of the dissertation within the introduction part, this paper proceeds to discuss the various methodological aspects considered during the literature search. After an assessment of the methodological quality, the dissertation proceeds to provide a literature review rich in information concerning CPD among ICU nurses in the UK. A summary of the results obtained after the literature review then follows after which the results are discussed in accordance with the study objectives. Finally, the dissertation presents the major conclusions of the study as well as recommendations for the conclusions.

2. Methodology

2.1. Introduction

Systematic reviews are essential sources of summarised results of a large number of appraised research articles in a bid to communicate the results of such publications [18]. As such systematic reviews present one of the best sources of evidence-based research in healthcare as earlier

discussed in chapter one of this study. A systematic review needs to be guided by research questions that provides the ability to identify relevant studies [21]. Explicit methodologies are used to establish a proper way of handling the research question posed. The two review questions outlined below were arrived at through an extensive consultation with the supervisor and the ultimate consideration of the current situation of professional development not only in the UK but also at a global level. The key words in the dissertation were majorly obtained from the review questions and the implications of the review questions with some of them being synonyms of terms used in the review questions.

2.2. Search Terms, Inclusion and Exclusion Criteria

To access specific sources of information, it is essential for a researcher to identify the keywords referred to as the search terms that would be entered into the academic search engines or databases for an initiation of the search process [17]. To expand the breadth of coverage, the researcher also identified related synonyms of the key terms to include in the search process [20]. The keywords for this particular search strategy were CPD, evaluation, continuing professional education, staff education, nursing practice staff academic development, UK, ICU nurses, critical care units, nursing development, and quality care delivery [12]. All these terms are largely related to the research topic, evaluating the impact of CPD on ICU nursing practice in the UK. The terms can also lead to the identification of academic journals describing the topic in greater depths.

Table 2. Inclusion and Exclusion Criteria

Inclusion criteria	Exclusion criteria
The study From 2007 until recent	The study Prior 2007
ICU nurses	Other health care provider
Studies in the English language	Non-English study language
Qualitative or quantitative studies related to CPD	Letters News papers

The inclusion criteria for the literature materials is essential for this topic including literature that was published based on information from the UK with regard to the specific geographical location. Narrowing down the results to a specific geographical location is a way of ensuring a strict observance of the political and health arena under which the CPD could be evaluated in accordance with the parameters of the topic. Moreover, the results are aimed to contain materials published between 2007 and 2016. Apparently, these are recent journals ensuring that the information obtained while relating CPD in the UK to the stipulated policies is up to date [20]. Moreover, only materials published in the English language were considered useful for this systematic review and any literature source however relevant to the topic but written in another language was eliminated on the language basis. This is because the author targets a huge English speaking population in the UK and worldwide.

The exclusion criteria included materials that discussed evaluating CPD in other countries other than the UK except those that used the rest of the world as a part of making comparisons to the findings from the UK. Particular attention was accorded to countries like England, Wales, Scotland and Northern Ireland, herein referred simply to as Ireland. Materials published before 2007 may be relevant to the study but will not be considered for the review since some of the information they contain may not be up to date. The literature sources that discussed CPD in the context of other health officials apart from ICU nurses were considered unfit for the systematic review and discarded because this review is specific on ICU nurses. Only academic journals were selected for the systematic review with letters, newspapers and trade journals being discarded as well due to the issues of the credibility of findings from such literature sources as questioned by Bennett et al., [22]. Both qualitative and quantitative studies relevant to the research questions were considered important for appraisal so long as they were academic journals in the English language and published between 2007 and 2016.

2.3. Search Strategy

A systematic review is a close study of literature materials; hence, it requires that greatly credible sources of information should be identified for use as reference materials. Such literature sources were located through a thorough scrutiny of online data sources using various search engines as well as different academic databases. In total, five academic databases proved to be important in isolation of materials for use in addressing the CPD of ICU nurses in the UK. These academic databases were MEDLINE, Cochrane, PubMed, CINAHL, and ProQuest, all of which provided multilingual academic sources of both primary and secondary data about CPD and associated programmes. These databases were selected based on the relation of their content to evidence-based practice (EBP) since CPD is just one aspect of EBP as suggested by Bingham et al. [23]. The search strategy also employed the use of five search engines, which included Google, Yahoo, Bing, Ask.com, and Baidu, again, all of which provided multilingual data regarding the selected topic. Three Boolean Operators are used to identify the literature sources, especially those located within the academic databases [24]. These operators were AND, OR, and NOT. AND was used to join the key terms such that the results obtained contained all the key terms within the selected journals. OR was used to give options as in the case of CPD OR continuing professional education, OR staff education in which case either of the entities could be found within the results [21]. NOT was used to exclude some aspects of the research questions, for instance, in the academic search database where the search strategy read CPD in UK NOT Saudi Arabia. The literature sources obtained, in this case, were not based in Saudi Arabia or other nations in the Middle East but concentrated on literature whose results were based on the UK because the UK has made great advancements in CPD within their nursing system [18]. Studies from the US were also included in the literature search for comparison since the

US has also made great advancements in CPD similar to those the UK [25].

The process of searching for relevant literature produced 796 results of relevant literature. Among these, however, some were published before 2007, and after eliminating them, only 201 materials were left. Literature sources dated before 2007 were assumed to contain some outdated information despite the information being appropriated for study so such materials were left out of the study. After eliminating 51 resources that were published in Gaelic, 150 literature sources were left for subjection to a thorough scrutiny of the contents. Incidentally, the author targeted an English speaking audience; hence, literature materials published in other languages were assumed to be irrelevant for this study. Following and analysis of the abstracts and Medical Subheadings (simply denoted as MeSH) of the remaining sources of academic literature, only eight sources were found to contain relevant information regarding the impact of CPD among ICU nurses in the UK. Such were the materials that were considered for discussion in the results and discussion section of this dissertation.

2.4. Assessment of Methodological Quality

Academic research materials are analysed through research appraisal to establish both their strengths and weaknesses, a process that aids in determining the value of the research paper. While writing systematic reviews, it is crucial to make an assessment of the quality of the literature materials being used to create the basis for the review. Five steps have been identified as key procedures to evaluating the quality of a selected number of literature studies [23]. These steps include the formulation of the research question as the first step and the study selection criteria as the second step. Both of these steps present the minimum requirements for an acceptable level of study [26]. A third step may be necessary if more refined quality of literature is required, an objective that is achieved through general critical appraisal guides and some design-based quality checklists. The quality assessments are designed with detail for use in the exploration of the heterogeneity and informing verdicts concerning the appropriateness of meta-analysis in the fourth step [27]. The fifth step is concerned with the assessment of the strength and of the inferences and the recommendations made by a particular study for further research in the future [28].

The Critical Appraisal Skills Programme (CASP) tool was adopted to critically appraise the eight research studies selected for this systematic review [29]. This tool makes use of ten essential questions (see Appendix C) that critically appraise a given research study. Using the ten questions provided by the tool, the researcher could easily determine whether the research paper in question is credible, relevant, rigorous and valuable to practice. While addressing the first two questions, the researcher can easily identify whether the critical appraisal for the paper should be addressed [30]. The rest of the questions explore the details of the research paper in terms of whether the paper took into considerations aspects of the research design, sampling protocols, data collection, reflexivity, ethical issues, data analysis, the results and the

significance of the research. With CASP, the researcher will be able to find out the rigour, the credibility, and relevance of the paper to the review question [31]. The CASP tool has been utilised in many systematic reviews to appraise the quality of papers eventually selected to form the basis of literature review in many health-related studies. The Mixed Methods Appraisal Tool (MMAT) is another tool for appraising literature materials just like CASP. However, researchers using this tool for appraisal of study materials need to be extremely cautious so as to obtain the desired results. To avoid this extreme cautiousness, the author decided to completely leave out this appraisal tool in favour of the CASP.

2.5. Data Analysis

The thematic method of data analysis is used in the extraction and analysis of data obtained from the five electronic databases utilised [32]. The thematic method is a system of data analysis in which the proposed data is identified, reported and quantitatively analysed. Themes can be referred to as a group of related categories that portray similar meanings and are realised through the utilisation of key words used all over the search strategy [33]. The popularity of this method of data analysis is linked to its simplicity, being able to be used by researchers with limited knowledge of the topic of research. The thematic data analysis identifies fifteen literature sources relevant for use in the current review. However, the number was eventually reduced to eight study papers after a thorough consideration of the inclusion and exclusion criteria. Furthermore, the eight literature sources identified were analysed using the CASP tool for relevance, credibility and rigor evaluation [34]. Three groups were established with one group consisting of materials addressing the provision of CPD to ICU nurses in the UK, views of nurses on CPD programmes in the UK and the barriers or limitations to embracing CPD practices among ICU nurses in the UK. The remaining topics of this study critically evaluate the articles selected for this systematic review, critically evaluating the results of the specific studies.

Three studies among the eight were found to describe the importance of CPD among ICU nurses in the UK. Two other literature sources were found to describe the views of nurses on the provision of CPD programmes to ICU nurses in the UK. The last three articles were found to describe the barriers or limitations affecting the provision of CPD programmes to ICU nurses in the UK.

3. Review of Literature

3.1. Introduction

The study materials that were relevant for the literature review were as outlined in Table 3.

Some of them attempted to tackle the importance of CPD among nurses in their nursing practice while others collected the views of nurses towards the administration of CPD programmes during their practice. The final set of literature materials selected for this study explored the barriers that hinder the advancement of CPD in the UK.

Table 3. Selected literature sources

Theme	Citation	Method	Summary of findings
Importance of CPD	[35]. Basic Competence of Intensive Care Unit Nurses	Cross-sectional survey that used questionnaires to aid in the description and evaluation of the reported competencies of the participating ICU nurses. Competence was assessed in terms of conversance with clinical laws, teamwork and ability to make sound decisions.	CPD is important in a hospital setting as compared relying solely on experience. CPD increases nurses' competence as well as supporting experience.
	[27] Interdisciplinary communication in the intensive care unit.	Experimental design that describes the real-time scenario in ICU wards.	Teamwork and effective communication are essential concepts towards preventing errors in ICUs.
	[36]. Internet-based information-seeking amongst doctors and nurses	Quantitative: Open ended questionnaires were used to find out the extent to which internet is used by doctors and nurses to obtain information. Emphasis was also placed on how the information was sought, and whether it gave satisfactory feedback.	The use of internet further knowledge on nursing skills. However, less significant information is obtained when the right options fail to be selected by the nurses and doctors.
Barriers to achieving CPD	[36]. Opportunities and barriers to successful learning transfer: impact of critical care skills training.	Quantitative: Semi-structured interviews were used to explore how the learning process was perceived students who had attended the COD training.	Barriers to CPD include prior knowledge which causes hesitation to accept change, education histories, financial constraints, and tight schedules.
	[38]. Continuing professional development: investment or expectation?	Questionnaires were used to obtain information from nurses about why they engaged in CPD. There was also room for qualitative data which was obtained through the extra information which the respondents were allowed to add.	Reasons cited by nurses included promotion and extension of their clinical roles. Therefore, the intended purpose of CPD is not achieved.
	[39]. A survey of intensive care unit visiting policies in the United Kingdom	Quantitative: Participating nurses responded to questionnaires on the importance of CPD which is negatively influenced by policies.	Certain policies such as restricted visitation of ICU patients deteriorate CPD. ICU patients' conditions are improved through unrestricted visitation.
Views of nurses on CPD	[40]. Creating a culture of professional development: A milestone pathway tool for registered nurses	Quantitative: Nurses opinions were obtained through questionnaires to relate the problem of nurses' shortage with CPD	Nurses agreed that the tool was essential for their practice since they would be encouraged to frequently develop their skills through continued education.
	[41]. Leadership Skills beyond the bedside: Professional development classes for the staff nurse.	Quantitative: The author was interested in the shift of ICU nurses from applying theoretical knowledge to practical one, which is gained through CPD.	The platform offered by Lannon was received positively with more than 205 nurses attending the classes

3.2. Importance of Continuous Professional Development in the UK

CPD within a nursing context can be said to be the process by which people engage in ongoing activities and reflection that may eventually result in a complete control over an individual's personal learning and development [24]. Such a course of action is actualised within a working context and acts as a source of inspiration and a motivation towards the achievement of goals and objectives within the ICU nursing context [17]. In other words, CPD helps nurses to achieve personal development that can be later used by nurse leaders and their associates in crucial decision making exercises. Actually, CPD can be considered to be a situation whereby the ICU nurses express thirst for new knowledge, upcoming techniques and the latest information to improve their experiences within the intensive care units. The CPD programmes have been greatly advanced in the UK as well as the United States, making them a leading basis on which the studies on CPD are established.

The fact that the job security of an individual is no longer vested on the employer or the organisation but rather on the individual's experience, skills and knowledge created the biggest need for CPD introduction into the ICU nursing setting [34]. The introduction of

CPD among the ICU nurses in the UK, therefore, benefited not only the nurses themselves but also the entire ICU departments, the organisation, universities and colleges as well as the patient fraternity. Apparently, the employers expect the ICU nurses to take personal responsibility to acquire CPD during their service as nurses for their benefit [42]. In fact, most employing organisations are aware that the acquisition of CPD helps their nurse employees to keep up to date with new technologies and knowledge. Due to the competitiveness of nursing organisations and other healthcare facilities, CPD has become an added advantage that helps in employee retention [43]. Research has established the fact that some of the ICU nurses that leave their jobs in a particular health facility to find a job in another facility is driven by the failure of the initial organisation to assure nurses of CPD programmes [44]. It has always become necessary for teaching institutions such as universities and colleges in the UK to ensure that their content is appropriate to the needs of students during their studies and as they plan for their future career as ICU nurses [22]. This necessity is deemed fit for part-time ICU nurses that come across problems during their practice that need to be addressed through CPD. As such, introducing CPD in tutorials and learning sets is an efficient way of relating the person's agenda to the course curriculum [45].

Furthermore, the role of CPD in succession planning cannot be underestimated because such added information for practising nurses can be used as a basis for the preparation of a nurse to assume a new role. By so doing, CPD helps in shaping the prospective heads of department to come from the team of practising ICU nurses who acquire managerial skills from CPD programmes [44]. CPD may also be shaped to attend to the needs of individuals that are new to the available posts through an induction programme for incoming head nurses in the ICU. Since the primary aim of introducing CPD programmes in the nursing sector is the betterment of patient care, the healthcare consumers become the chief beneficiaries of such programmes in the ICU setting [46]. As such, the uplifting of the quality of nursing care provision through the administration of CPD is a key method of enhancing the clinical management of patients.

Three articles have been analysed within this section, all of which show the importance of CPD to nurses in ICU. The first article by Lakanmaa et al. [35] links quality patient care to both experience and CPD among the ICU care nurses. The article describes the essence of ICU nurses being competent enough in terms of their knowledge in their professional areas. The second article by Reader et al. [27] shows the importance of teamwork and communication skills as some of the aspects included in CPD programmes, in enhancing nursing skills. The author explains how training the nurses on the importance of teamwork and proper communication skills during CPD can aid in the reduction of medication errors. By so doing, the quality of nursing care is enhanced since the patients receive quality and safe care. The third article by Younger [36] establishes the importance of enhancing internet skills to nurses and general practitioners through CPD so as to save on the time required to attend to patients by practicing nurses. The internet is a good source of nursing information according to Younger [36] but the nurses need to be aware of the best methods to surf the internet while avoiding too much wastages of time.

3.2.1. Study one by Lakanmaa et al. [35]

The article describes the essence of ICU nurses being competent enough in terms of their knowledge in their professional area. This introductory statement makes the article relevant to the review and it creates a need to find out how data was collected and analysed to solve the problem. [35] propose the importance of CPD as opposed to relying entirely of nursing experience to attend to emerging disease conditions in the hospital settings.

Various literature searches have identified the ICU as a care unit that has patients who are vulnerable to secondary infections and threats. The authors of this article also acknowledge that such patients need to be taken care of by nurses who are competent enough to care for the patients satisfactorily. Therefore, the study aimed at describing and evaluating self-assessed competence among Scottish ICU nurses [35]. According to this study, competence was described as the ability of the nurses to express independence in the care they delivered, and this was intended to give quality patient outcomes. Values such as teamwork were also involved in the study, and this demonstrates the possibility of refined information being shared when collaboration is implemented [35]. This

study affirms that basic and continuing education improves ICU nurses' autonomy.

In this study, competence of the nurses is evaluated on the basis of knowledge, skills, attitude and experience. The current knowledge that the nurses have about handling a given case in the ICU is likely to lead to delivery of quality care to the patients. Experience, also, enables the nurses adjust to the best model of patient care since they are likely to have tried out more. However, acquisition of knowledge is a continuous process hence experience does not guarantee quality care. In fact, some long serving nurses find it hard to adapt to the newly suggested models of care due their trust in the way they have always handled the case. On the contrary, the study affirms that for the case of ICU nurses, experience is a core aspect that facilitates efficient CPD among ICU nurses [47]. This conclusion establishes the evidence that experienced ICU nurses were more competent in terms of the tested values. Literature review used in the study gives a progressive overview of the state of ICUs in Scotland. A future estimate of the situation at the care centres is also given whereby the authors point out that by 2030, more ICU nurses will be needed. With approximately 30 ICUs in the country which handle more than 28000 patients, there is need to improve the quality of care they receive through increasing the number of care nurses as well as continually developing their skills [32]. ICU nurses are on the limelight of CPD since they are largest, hence main professional group that works in the ICU. Since ICU contains severely ill patients and only the professionals who are highly skilful should handle them. ICU nurses offer first-hand contribution towards patient recovery since they work to reduce morbidity and mortality rates through preventions of contributing complications. EBP also equips ICU nurses with the relevant behavioural practice that improves both physiological and psychological outcomes of the patients [35].

In terms of the study design, the research involved a cross-sectional survey to aid in the description and evaluation of the reported competencies of the nurses. It was the aim of the researchers to provide insights that would be used by educators who would implement CPD for clinicians. The study's research questions aimed at getting feedback on the level of ICU nurses' competence as well as factors that contribute towards relevant competence. The questionnaires used were distributed among ICU nurses who were sampled from university hospitals. This sampling technique was one of the limitations of the study since it was only done in university hospitals, hence reducing the validity of the results. However, the researchers managed to include a university hospital that had been excluded in a previous research of 2008, hence reinforcing the results that had been obtained in that study [35]. It has an implication that further research work can be extended include ICU nurses from other hospitals other than university hospitals. Five university hospitals were selected for obtaining the sample ICU nurses whose response was average. Data that was obtained from the questionnaires was analysed using the Intensive and Critical Care Nursing Competence Scale. Competence analysis was done based on two major sections; clinical and professional expertise, which were further divided into various areas [48]. For instance,

professional competence was assessed under conversance with clinical laws, ability to reach a sound decision, development skills as well as teamwork. Knowledge and attitude were assessed under basic clinical competence whereby CPD lies. The nurses' attitude to educational trainings on their profession was assessed. The article concludes by stating that CPD among ICU nurses is a key concept towards attaining satisfactory patient care in ICUs. Although experienced nurses may be efficient in service delivery, they should willingly adapt to new procedures enacted through CPD. It is also essential for newly employed registered nurses to be informed that CPD is part of the post qualifications that will be ongoing throughout their profession [35].

In a nutshell, this study gives insight to the importance of CPD in a hospital setting as compared to relying solely on nursing experience as some of the nurses assessed during the survey did. According to the researchers, CPD is beneficial in that it not only increases nurse's competence but also supports the nursing experience with nursing theory and new techniques of approaching a medical condition new in the sector [35].

3.2.2. Study Two by Reader et al. [27]

This research was performed in three ICU units in the UK. The authors aim at describing the real-time scenario in an ICU, a step that is geared towards creating a room for continuous profession development among the nurses in these units. According to Reader et al. [27], teamwork and effective communication are important values that prevent various errors from occurring in the ICU. Quality patient care can easily be obtained through effective team work and communication among the nurses in these acute care centres as also proposed by Johnson [48]. The authors' study question is derived from the numerous recent and past studies, which have been done on medical errors and on the organisational structure as a whole [12,38,49]. Teamwork and communication go hand in hand since the studies have documented failure of teams that fail to adapt effective communication strategies [12,38,49]. This relationship spreads hierarchically up to a point whereby the junior staff fails to enquire or air their views about a certain procedure. Such members of staff may feel reluctant to communicate whenever they feel uncertain due to the fear of being termed as incompetent by their seniors. In such a scenario, the resulting embarrassment may be unbearable hence lowering the self-esteem of staff and their confidence to attend to patients [27]. On some occasions, the enquiring nurse may fear being reproached for the action and the consequences might be demotion. Therefore, it is for such reasons that ICU nurses in organisations with poor teamwork and communication networks sometimes fail to offer effective patient care [12,38,49].

Medical errors may occur and duties for patient care may also be misunderstood when there is a gap in the communication scheme. Chope [12] argues that since ICU patients are under constant care of a chain of nurses, the leaving nurse should effectively communicate to the next one on the exact drugs that need to be given to the patient, while avoiding the ones that had already been administered. If the nurse does not explain that, the incoming one will not know whatever ought to be given to

the patient. There are also patients who need special assistance, and this can only be explained by the leaving nurse. Effective communication is not only among the staff, but also between the nurses and their patients. Individualised care is best given to the patient when there is a smooth communication strategy between them and the nurse [49]. ICU patients are vulnerable to various complications, including falls, as mentioned in the introductory part. Such complications can be well discovered if the nurse frequently communicates with the patients to note the problem in advance and help prevent it. Some patients suffer frequent falls because they may need to perform a certain activity or obtain an item [27]. Such a scenario can be salvaged if the nurse communicated with the patient to offer assistance in the arising need.

In summary, effective communication skills and team work are part of the contents of CPD essential for nurses during their practice. Such skills may not have been effectively covered during the nursing education programmes, but can be availed in the form of CPD as suggested by Reader et al. [27]. From the insights presented in this study, it is evident that medication errors that have been prevalent in the nursing sector can be avoided through the introduction of CPD programmes that increase the nurses' effectiveness in communication and team work [27]. However, communication needs to be done in a way that does not scare the patients, or portray the nurse as a harsh and unapproachable person [27].

3.2.3. Study Three by Younger [36]

This study is based on the extent to which both doctors and nurses (including ICU nurses) use the internet as a source of information to aid them in decision-making. It was also concerned with how the stated professionals search for information in various medical databases. This study, therefore, was done to monitor the way internet sources have been used by nurses and doctors. Its objectives were geared towards finding out if there existed substantial differences in the way the nurses and doctors seek information online. Additionally, the manner in which the professionals identified the relevant information was established. In the long run, this study advocates for CPD among the professionals since it concludes that the findings of the study might be of significant benefit to the health care sector. Value addition to this sector will come as a result of ensuring that the frequented medical libraries offer influential information to its users.

Regarding the methodology, the author issued questionnaires with open-ended questions to be filled by the participating nurses. The advantage of such a method is that it allows a proper communication between the author and the participant in a research. However, the contents of the response given by the participant may not be scientifically proven; hence, the researcher relies solely on the honesty of the participant in responding to the provided questions.

The study found out that nurses and other medical professionals choose to use the internet as a way of furthering their knowledge on nursing skills. While it provides vast information as an advantage, it may become disadvantageous for those who fail to choose the best from the given options. Specificity is also high when using internet sources of information since one just searches the

title to be researched on and the various journals containing such information are made available. Such procedures are easier when compared to searching for hard copies of literature that contain a specific topic of interest [50]. While some nurses may also avoid the internet, they prefer referring from their immediate colleagues. However, this becomes disadvantageous if the team members are uncertain about the information needed.

The study accomplishes much since little research works have been done to screen the information that reaches medical practitioners [51]. Most studies have focused on the general sources of information for the public since there are very many sources [50,52,53]. Although some research has been done on the relevance of academic material in school libraries [53], the results obtained from such studies give a standard model of information cycle, which may be of minimal relevance in the medical field where professionals here deal with real life situations. However, since this study has narrowed down to online sources of information for ICU nurses and doctors, it becomes of great relevance to a specific focus group. Results of such a study enable specific corrections to be made so that reliable information is at the disposal of the group that was being investigated [54]. Some effort has been made in libraries, including health libraries, to ensure that there are information skills trainers [52]. Even with all these stakeholders put in place and information displayed for them there is no sufficient evidence to show follow-up on how the users of the sources actually search for information. This study seeks to address such an issue such that online the selected population is monitored on how they search for information online. Such an evaluation can aid in determining whether relevant information is obtained since the user is tracked [53]. Additionally, certain sites or databases that are frequented are noted hence it can be an insight to ensure that they contain the right information being sought. Findings of this study are likely to highly exhaustive since comparison will be made between two groups to establish the right way in which the search strategy should be done. It reinforces preceding cohort studies which have been done on nurse practitioners and GPs.

Ideally, the use of the internet is one of the ways through which CPD can be administered to practicing nurses. Its importance in equipping the nurses with current knowledge cannot be underestimated. However, nurses and medical practitioners need to be continuously educated on the use of the internet through CPD so as to obtain relevant information from the internet without too much wastage of time. Time spared due to improved internet skills can be used in attending to patients as proposed by Younger [36].

3.3. Barriers to Achieving CPD among ICU Nurses in the UK

3.3.1. Study One by Meyer et al. [37]

This study seeks to establish the barriers that prevent successful learning efforts of CPD among nurses in the critical care. This paper reports a study that assesses the effect of skills of critical care on the nursing practice. The study was prompted by the UK government review of

adult critical care, which brought a change in the way the patients in ICU needed to be attended to. In as much as a post-qualification training can be made available for these professionals, there may exist barriers that make adequate acquisition of knowledge difficult. The study also does a survey of the impact of new skills learnt during CPD on the care of patients with critical illnesses. The main participants are critical care nurses who practice majorly in the wards. The attending nurses had to shift from the norm of caring for the patients basing on their location, and start attending to them basing on their needs.

The study was carried out using semi-structured interviews that explored how the learning process was perceived by course attendees. Most of the information was first-hand since it was obtained from the attendees themselves with some pieces of information being given by line managers [37]. 118 participants were involved in the study of which 61 were males and 57 were females. Gender parity was, therefore, factored in the study since disparities along this line may have interfered with the validity and credibility of the study findings. The biggest disadvantage of this method is that it relies on the honesty of the respondents in providing the outcomes of the study.

It was found that the learning process was affected by ability to apply the new skills in clinical practice and the knowledge they previously had. The barriers to CPD, however, were said to include the prior knowledge, which the course attendees previously had, which gave them confidence and the hesitation to adopt change [55]. This barrier is related to others such as education histories, which differ among the nurses. Long serving nurses are likely to have belonged to a different session of education as compared to newly employed ones. For example, in England nursing has not always been a degree entry profession. Therefore, when a certain procedure has been adopted for a long time, and there is existing inter-professional cooperation, it becomes challenging to create a shift [37]. Other barriers included financial constraints that make it impossible to effectively implement the proposed change in certain organisations. This scenario creates disparities whereby while some hospitals offer better care, others maintain the older version which is considered not appropriate. According to the study, some nurses also failed to attend the training sessions citing reasons of lack of relevance of the course to their practice. Even if they attended the sessions, they may have no time to practice the new skills since it would take so e time to get used to the new recommended way of practice [56].

The study concludes that education sessions of CPD should be coordinated between the trainers and commissioners to ensure that what has been taught is actually being implemented on the ground [57]. Moreover, study materials need to be adequately provided to reduce the possibility of some nurses absconding classes assuming that the programmes are irrelevant. Finally, successful training interventions should also involve adequate timing for the training so that the nurses also have time to attend to their patients in the hospitals.

3.3.2. Study Two by Joyce & Cowman [38]

This study was performed to determine the reasons as to why nurses engaged in CPD. It was performed in an organization in Ireland where prospective candidates

had applied to undertake a CPD programme [38]. The methodology involved the issuance of study questionnaires to the participating nurses who served as the study subjects. These nurses were expected to fill in the questionnaires and return them to the authors before the beginning of their studies. The researchers also chose to allow the respondents to fill the questionnaires anonymously so as to avoid victimization of the participants in the study. However, an improvement from the previous studies that could not be cited here due to exclusion Protocol of the study was evident with the provision of filling in the questionnaires. The respondents were allowed to add extra information regarding the course, hence this step created room for the generation of some qualitative data [38]. The response was fairly good with 46.7% of the questionnaires being returned after being filled, considering that previous studies were unsuccessful due to poor response. The ICU nurses who participated in the study had varied reasons for participation in the education programme, citing reasons such as promotion and extension of their clinical roles. These findings, therefore, indicate that on most occasions, the intended purpose of CPD is not achieved since the participants engage in it with their own motives.

The study concludes that CPD in ICU nursing should consider the reasons for the programmes such they are clear to all participating staff. Professional development can only be achieved if the reasons are clear and outcomes manifested by the target group. However, investing in professional development is not considered a waste either, since expectation comes after adequate investment [38]. From the findings of the study, the strongest barrier affecting CPD is the idea that prior nursing education is sufficient to ensure that nurses succeed in their practice. However, awareness needs to be created to ensure that the nurses understand the importance of CPD while drawing its distinction from initial nursing training.

3.3.3. Study Three by Hunter et al. [39]

The aim of this study is to explain the role played by policies as a barrier towards achieving CPD by ICU nurses. The specific policy under investigation in this study is the unrestricted or open visiting policy. The ICU is a traumatising environment for both patients and their relatives as well [39]. Therefore, the relatives would like to be in constant touch with their loved ones whereby they are allowed to see them whenever need be. However, in as much the nurses could understand the plea from patients and their relatives, they may be restricted by existing policies on visitation. The patients who were transferred to other units reported depression and related issues [39]. Anxiety and depression rates are high in relatives, courtesy of a French multicentre study as proposed by Hunter et al. [39]. Therefore, these wards should involve unrestricted visiting hours, which is beneficial to both patients and their family members and friends [39]. The patient is likely to feel reassured when they see their family members from time to time coming to visit them.

Like many other studies in this paper, Hunter et al. [39] collected the opinions of nurses on the importance of CPD through issuing out questionnaires to the participating nurses. As such, dishonesty in responding to the open-ended questions remains a huge challenge in

determining the validity and credibility of the findings of the research. 216 respondents were interviewed, giving a good sample size for generalizability of the findings of the study.

This study reports various studies that have been done to prove the positive effect of unrestricted visitation of ICU patients, most of which the ICU nurses are aware. The patients' lives are improved through good relations with the care nurses as well as reducing anxiety and depression. Those who have cardiovascular complications have also been shown to show significant improvement due to unrestricted visitation policy. The study also made use of questionnaires which were distributed to lead nurses in all UK hospitals with ICUs [39]. It found that most of the hospitals had formal visitation policies, which makes it complicated to offer unrestricted visitation. Therefore, existing policies were identified as barriers towards implementation of CPD outcomes. However, restricted visitation may be advantageous to the various organisations in terms of regulating movement within the wards.

3.4. Views of Nurses on CPD in ICU

Like in the UK, the US American Nurses Association has taken CPD with seriousness, defining it as a planned educational activity that is proposed to establish an educational and experiential foundation of the professional nurses within the ICU. Moreover, the US nursing governance systems advocate for CPD among such nurses so as to improve nursing knowledge, administration of nursing services as well as to enhance the research and development of among these nurses with an overall improvement of the general public health [58]. According to the American Nursing Association (ANA), CPD for nurses incorporates all learning experiences that the registered nurse undergoes following the initial nurse education [59]. In the US, CPD for ICU nurses is much advanced than the UK. The US has developed clearly defined CPD activities including short courses, seminars, conferences and days of study [33]. It is, however, important to notice that CPD goes beyond the courses and seminars organised by the management to benefit ICU nurses [18]. On the contrary, such CPD programmes are concerned with an individual's participation and internal motivation in broadening their own skills and knowledge through self-directed readings among other methods of skill and knowledge acquisition [34].

There is changing trend on the perception of health service security which is shifting from the organisation providing the service to the service givers based in their knowledge and skills exemplified during service delivery [60]. Literature covering ICU nurses shows that such nurses need to show an enormous desire to find opportunities that enable them to address their learning needs following the basic nursing qualification. Similar to the CPD in the UK, CPD in the US has also been defined as a lifelong learning experience that takes place during an individual's professional career following nursing qualification or registration [51].

The advancement of CPD in the UK and the US aids in the provision of opportunities for nurses to advance their quality of care provided to patients for the benefit of the

patient and the community at large [22]. In actual sense, CPD in the UK and the US is considered as a self-motivated activity for nurses that pursue knowledge for personal or professional benefits at voluntary basis [26]. CPD, therefore, acts as a factor that improves social inclusion, active citizenship as well as personal development and competitiveness in the job market.

3.4.1. Study One by Cooper [40]

Cooper [40] attempts to address the barriers to nursing shortage in the UK by advocating for CPD among nurses in the ICU. The article presents a new mechanism of addressing nursing shortage through the enhancement of nursing skills at unit and individual level by utilizing CPD. The tool that Cooper [40] brings into focus is a unit-specific concept map which is also a milestone template containing a personal development plan. It has been mentioned elsewhere in this paper that one of the biggest challenges in the nursing industry is to retain the nurses within their working stations. However, some nurses and especially those working in the ICUs have been found to develop a trend of moving from one facility to another in pursuit of personal development. Change is inevitable according to Berg et al., [57], and with the continuous change in the form of diseases that ICU nurses are presented with, it is important for the nurse managers to implement systems that aid in enhancing the skills of such nurses in an attempt to quench their thirst for personal professional developmental [25]. Cooper's objective in this paper is clear in that CPD plays a major role in the retention of nurses in their station by avoiding a situation whereby nurses migrate to other stations that provide an opportunity for personal development.

Cooper chose a good theoretical framework to address the problem of nursing shortage in the UK. The Knowle's adult learning theory [37], is an essential approach towards administering new knowledge to registered nurses who are adults and lack similar learning skills to those of children as explained in the theory and shown in Appendix A. Apparently, nurses in the ICU consider this theory is workable for them due to their commitment to CPD in that they rely on their self-concept and determination to achieve personal development [26]. The aim of their educators herein would be to help the ICU nurses to achieve their set goals and objectives, building on their experience and common problems they face during their practice. The ICU nurses are oriented to learning, a behaviour that is portrayed by the nurses' application of what they learn in their day-to-day practice in the intensive care units [25]. Building from the assumptions made from the theoretical framework, Cooper [40] was able to identify a good method for educating adult nurses through CPD.

The opinion of the nurses in this study were that such a tool would be important for their practice as they embrace personal development through continuing education while in practice. Cooper suggested that the tool needs to be assessed in an evaluation process that entails a pre and post-survey to find out its effectiveness in retaining ICU nurses in their workstations until retirement age. Ideally, the pathway towards professional development of ICU nurses is a way of creating a culture of professional development in the nursing industry, which is an adorable

way of addressing the education needs for nurses. Cooper, however, does not perform an opinion poll to find out the views of nurses on whether such a tool should be made compulsory for all nurses working in ICU settings in the UK.

In conclusion, the literature sources selected for this study are only slightly up to date with some of the materials quoted containing information of the 1980s [19]. Such information is good due to its originality, but changing trends of nursing may deem such information inaccurate considering the changing trends of diseases and conditions in the ICU. The format in which the study was compiled is also questionable as the proper journal writing procedures were not incorporated to address key topics in a research study.

3.4.2. Study Two by Lannon [41]

Lannon [41] was concerned about the ability of ICU nurses to move from a theoretical knowledge base to a practical one attained through professional development. For example, Lannon [41] refers to other authors such as Benner's work that suggests professional development from novice to expert, a situation that can be successfully achieved through CPD programmes. She continues to emphasise on the importance of acquiring clinical skills during basic nursing education as a foundation for further education during CPD practices. Such basic education is important in retaining clinical competence and qualification as an ICU nurse [37]. However, the role of nursing is always changing, and the nurses need to change with their role so as to assume duties of nurse managers that continue to retire and switch into other positions at the plight of each day. It is possible that some ICU nurses will find themselves specialising in clinical expertise, finding no time or opportunity to venture into leadership and managerial trainings [25]. However, Lannon [41] brings such critical knowledge into practice through this study and emphasises on the need to have nurses being trained to adopt managerial duties during their clinical practice. She proposes various non-clinical skills that are essential for all nurses working in critical care units, a good example of which is the need to have managerial skills. Lannon [41] also emphasises on the importance of such non-clinical skills in the process of nurse advancement since such skills may act as prerequisites for climbing the ladder of leadership within the nursing industry.

One of the non-professional skills is professional presentations. These Professional presentations became a necessary move for the ICU nurses to adopt in cases whereby some of them venture into research and wanted to present the findings of their studies in a professional manner. There is a way in which the findings may be presented but become unacceptable in the scientific world if they are not professional in the way they are brought to light. As such, Lannon found it important to train ICU nurses on how to professionally present their findings to the general public for acceptance and adoption of the results of potential studies. In addition, Lannon brought in the idea of poster presentation and writing for publications. This knowledge further puts ICU nurses in a better position to venture into research and come up with new ways of addressing existing problems within the critical

care settings [61]. Eventually, the quality of care offered to patients is bound to be improved through quality research. Further implementation was on the portfolio development, a training that apparently registered the greatest number of attendees as a result of its importance. Finally, Lannon introduces the topic of writing resumes and interviewing skills as part of the important non-clinical skills that make the life of an ICU nurse more comfortable in practice.

Ideally, Lannon offers a right platform for CPD and the nurses received the ideas positively. More than 205 nurses have attended classes in their series since the inception of the propositions that she made. The most attended workshop that is freely offered to the nurses is the development of a portfolio workshop, which fully supported the professional advancement initiative. The research, however, used a shallow literature search containing of only ten literature sources, some of which are as outdated as of the 1960s. Considering the changing nursing environment, it is possible that some of the ideas put across in the course of this research would no longer be useful in the nursing practice.

4. Findings and Discussion

4.1. Importance of CPD to ICU Nurses

CPD can be said to incorporate all the learning experiences that are offered to the nursing team following their basic nursing training. Such experiences are designed to fall into categories such as seminars, short courses offered during nursing practice, study days and conferences [58]. In order to address their nursing academic needs, the ICU nurses are obligated to take advantage of such teaching programmes to improve their skills [52]. Such skills may also act as a ladder to take them to higher levels of the nursing practice as well as assist them during nursing transitions into new posts within the healthcare facility. Overall, CPD has been found to play a huge role in the enhancement of nurses' knowledge and skills, ultimately improving the quality of healthcare services offered in the UK [62].

A lot of literature has been documented addressing the importance of CPD among nurses in general [58,62,63]. Particularly, the UK being one of the geographical regions that were among the first in the world to address CPD has lots of literature pertaining its importance and drawbacks to success in its intent [64]. However, very few sources of literature have been documented to particularly address CPD among ICU nurses in the UK, laying a fundamental importance for this systematised review.

The study had eight studies selected to address the impact of CPD among ICU nurses in the UK. The studies were also heterogeneous regarding their aims and objectives, study designs and theoretical frameworks, methods of data collection, findings, the quality of the studies and the ability of the results to be generalised based on the sample size and study quality [63].

This systematic review concluded that the NHS as well as nurses and nurse leaders were committed in the administration of CPD to nurses in general evidence. These CPD programmes were offered to all nurses as a way of

boosting their nursing skills and keeping their nursing knowledge up to date for the benefit of the nurses themselves and the community at large through the betterment of healthcare services [34]. According to information obtained from the selected literature, it is evident that there was no sufficient follow-up mechanisms put in place to ensure the workability of certain CPD programmes that were conducted among nurses in various hospital departments. However, it is evident that the nurses' views on the significance of CPD programmes to their personal professions were obtained and found to concur with the expectations of the researchers [58]. Such follow-up strategies if implemented may act as methods of finding out whether the programmes were befitting the targeted nurses and find out the response of the nurses through studying the number of nurses that attend such programme in a given timeframe. Such findings are essential in deciding whether the NHS or the government should continue to invest in such programmes as they are quite expensive, especially if no positive good will is expressed by the consumers. Established follow-up strategies may also find out whether the goals of the CPD programmes have been fully met while also confirming the apparent changes in nurses' commitment towards the programme over a given period [3]. It is not mandatory for nurses to attend CPD programmes but most of the nurses find it necessary to attend such programmes voluntarily for their personal professional development and in an attempt to raise the expectations of their clients towards the nature of services that they provide. Since there are nurses from all over the world in the UK, it is important to continue advocating for nurses to engage in CPD, a system that aids in standardising the nature of nursing skills in the UK.

4.2. Views of ICU Nurses towards CPD Programmes

Nursing practice occurs on a platform whereby continuous change is anticipated considering the changing trends in disease incidence and management techniques. As such, there are new technological developments that are realised in the nursing sector occurring from new government initiatives and various enhancements in scientific technology affecting nursing and general healthcare [31]. Nurses will, therefore, be required to inevitably adopt the new changes so as to suit in the environment while maintaining an updated status of knowledge. By so doing, the nurses will be able to highlight the practice and be able to monitor and evaluate their own progress in nursing practice. Many literature studies have been performed in the UK aiming at exploring the practice of CPD with its underlined role in an attempt to provide the best care services. All in all, the nurses positively internalised the idea of CPD with most of them bearing the opinion that the programmed benefits themselves and their clients.

Before the acquisition of a degree was mandatory for nursing practice, there was minimal exposure to online information sources among the nurses as compared to doctors who have always needed an undergraduate degree to begin practice. The article uses literature searches that give the evidence of progression of the use of internet

since 1995 [37]. This progression shows an exponential advancement among the general population, with minimal use among health professionals. Medical professionals began using online sources of information from 1996 when there was the idea of application of EBP. Although it is assumed that they obtain information online, it is still unclear how they do it, and in this context, specifically ICU nurses. These group of intensive care professionals began using concepts of EBP after the dissemination of results of various research works that had been conducted on the vulnerability of patients in these units. However, when these nurses are on duty, that is, in real interaction with the patients, it is not clear how they get information of EBP online [26]. To answer its research question, the study involved a scoping study which was performed on the two prime medical and nursing databases. These are MEDLINE and CINAMHIL respectively; whereby the former was accessed through PubMed. The search strategy was limited to the timeframe of 1995-2009 and only allowed text searching, titles and abstracts. Since EBP began being on frequent use in 1995, the timeframe and relevant articles were used for the scoping study. The articles were identified, hence inclusion and exclusion criteria were clarified. A comprehensive search strategy was involved whereby search reruns were done for each database. This search strategy was followed by an examination of the article titles and abstracts, and their relevance was appraised as proposed by Bell [52].

It was found out that there are relevant sources of information for CPD among the nurses for use as EBP. However, some of them fail to arrive at the appropriate source due to reasons cited as tight schedules, lack of available information that can be accessed and lack of searching skills. Some of them obtain information which may need further appraisal, but they fail to do so since they feel unskilful to do so [29]. There was also the failure to use the right terminologies in the reach process hence such a move is likely to lead to less relevant information. Therefore, this article creates room for CPD among ICU nurses who should constantly visit nursing databases for further information that can be of great significance in their practice [26]. They should, however, make it a continuous process since the information keeps on being updated. The barriers that lead to incorrect information acquisition have been addressed in the study. It, therefore, creates a clear way of future nurses correcting on how they search for information online.

CPD has been found to be a professional blueprint for lifelong learning and is crucial to the quality of planning by the government through the National Health Service (NHS) besides being closely associated with clinical governance [44]. The system of lifelong learning is guided by the government's desire to ensure that the nurses within the ICU settings are equipped with the necessary knowledge and skills essential for use in the 21st century. In fact, all registered nurses working in ICUs are required by the Nursing and Midwifery Council (NMC) to undergo a Post-Registration and Practice requirement as a legal obligation as explained by Dadich and Hosseinzadeh [26]. The NMC is the body bestowed with the authority to crosscheck the authenticity of nurses' registration statuses through programmed post-registration examinations. It is only after engaging in some form of pre-registration nurse

education that takes three years of successful study offered by the NMC that a person can practice nursing. To increase the awareness of one's personal development, it is important to consider a reflective practice and self-commitment to lifelong learning if the individual is to successfully survive as an ICU nurse in the UK.

4.3. Barriers towards Achieving CPD among ICU Nurses

The barriers that limit the practice of CPD are very similar to the barriers involved in the implementation of EBP large discussed in nursing literature. Although there may be a lot of available research information about healthcare, it may not be applied in clinical settings due to various reasons [45,65,66]. For instance, a hospital may lack necessary resources and equipment such as internet services where information about EBP can be obtained. Furthermore, education is a factor that separates nurses into two groups such that there are those who learnt in like 20 years ago and were never taught that EBP is a key healthcare tool. It also becomes challenging because each institution has its own EBP culture, which becomes hectic for a newly transferred member to adapt to. Also, the workshops that are normally organised to teach about the practice do not occur occasionally hence it becomes difficult to change [67].

Nevertheless, the concepts of CPD have been found beneficial in offering long life learning experiences to nurses and other healthcare professionals for their benefit and that of the general public through provision of high quality care services. Education may not solely serve as the solution to all the puzzling and ever-growing range of healthcare needs. This study has traced most of the barriers to be related to the inadequate financial support, commitment or scheduling difficulties [66]. Moreover, the study noted an inability to attend classes during nursing practice for one reason or the other. Some of the reasons cited for difficulties in attending classes were listed as family commitments and nursing shortage, a situation that is characteristic of almost all nursing sectors in the world. As such, it is evident that the same barriers that deter ICU nurses in the UK from engaging in continuous professional development are the same problems affecting nurses in the same department all over the world as noted from a wide literature search. Crossing such barriers paves way to the series of advantages associated with implementing the administration of CPD programmes at a worldwide perspective as noted in this systematic review

4.4. Limitations of the Study

Since single authors are tempted to influence the design of the review question and direct the literature search to favour the formulation of their research design. As such, the findings may be skewed to a particular direction with the choice of databases, studies and analysis of data being directed in a way that favours the researcher's pre-concluded opinion [68]. However, the researcher in this review tried their level best to give an honest opinion on the critical appraisal of the literature materials selected for the study.

Ideally, the researcher used a thematic extraction method of data analysis from the literature selected for appraisal. Unfortunately, this method of data analysis is dependent on the skills and knowledge of the researcher on the materials presented for appraisal. The researcher, throughout the method was expected to draw similarity in themes from the literature materials chosen for appraisal implying that the author's judgment was key to the entire process [69]. Again, the researcher performed the study singly provoking prejudicial findings from the study materials. If the study incorporated more than one researcher, the opinions of all the researchers would have been brought together to critique the literature sources for a better presentation of the point of view [70].

Also, the study entirely dependent on already published literature materials that were bound to be from academic journals as per the inclusion and exclusion criteria for literature material selection. Considering the fact that very few literature materials have been published addressing CPD among ICU nurses in the UK, a problem arose in meeting a relevant number of literature materials selected for appraisal [45]. Being a small scale study, this research did not qualify to receive funding of any form, laying all the expenses on the researcher. With more funding, the researcher may perhaps have gotten an opportunity to travel to libraries to look for more relevant materials instead of entirely relying on the limited online literature sources.

4.5. Summary

The concept of CPD has over the years been practised in many countries, both developed and developing with the identification of continuing education, professional development, staff development as well as lifelong learning [48]. However, the UK and Canada present two of the most different approaches for the delivery of CPD to ICU nurses. At its preliminary stages, the implementation of CPD in the UK faced various challenges citing the lack of commitment from the NHS and the high costs associated with such an approach to nursing [16]. It was not until 1979 that the Royal Commission on the NHS in the UK found the need to look at the need for CPD as a matter of urgency. Following this finding, the commission proposed an increased in funding to actualise additional learning following nurse registration and during the practice of nursing in all departments, including the ICU nurses. Unfortunately, there are still ICU nurses who up to date strive to fund their own education while practising as nurses, a matter that raises a serious concern directed to the NHS. In the 1980's, it was also noted from increasing sources of literature that there were main concerns on the commitment of the nurses as well as the healthcare authorities towards the implementation of CPD in the UK. By 1987, there was still a limited commitment to continuing professional development in England and Wales cited from the limited opportunities for CPD [64]. The health authorities of both countries expressed a limited commitment in the development of CPD programmes and the extent to which such programmes were recognised in practice. There was also an associated lack of commitment from practising nurses to venture into

CPD although such nurses complained of lack of such opportunities. In fact, the lack of opportunities for nurses in ICU to practice CPD has been cited in many sources of literature. Yet another causal issue for the lack of CPD programmes during those olden days was insufficient funding by health authorities, a factor that can be reversed to the lack of commitment on the importance of CPD programmes [26].

At such a time in history, there was an increasing concern on whether CPD should be made compulsory for nurses or should continue remaining voluntary. Even up to date, it is a general feeling by experts that CPD for all nurses is an important aspect of practice that should be retained under all circumstances [71]. This general feeling from experts is explained by the important role that CPD plays in keeping nurses informed on the developing knowledge and nursing skills that benefit the healthcare consumers. In 1990, the UK Central Council for Nursing, Midwifery and Health Visiting suggested that CPD among nurses, including those in the ICU should be made compulsory. This suggestion, however, has not been fully embraced due to the expenses surrounding the provision of CPD among all nurses in the UK [6]. The same health affiliated body in 1992 came up with the Code of Professional Conduct that required registered nurses, midwives and health visitors to perform some tasks in the best interest of the patients. These nursing professionals were required to encourage and preserve the interest of patients at all times as well as to provide service in the best interest of the society while defending public trust and confidence [28]. Moreover, these healthcare providers were expected by the Code of Professional Conduct to offer support and facilitate the improvement of the respectable character and standing of the profession. As such, this Code in one way or the other plays an important role in maintain such requirements through advocating for CPD [72]. Particularly, part three of the Code emphasises on the fact that basic education alone may not be sufficient to attend to the complex demands of modern health care. In this way, therefore, the Code indirectly supports the need for CPD among all nurses, including those in the ICU.

In the present day United Kingdom, the need for CPD needs to be cost effective owing to the limited resources marking today's situation in the UK. In actual sense, allowing and supporting continuing professional education in the UK would possibly cost the NHS about 50 to 100 million euros every year [73]. In addition, there would be about 800,000 working hours that would be lost through the provision of study leaves for nurses intending to take CPD courses outside the working environment [34]. Moreover, there is no enough assurance that once the nurse attends the professional development programme they would actually acquire knowledge. For the CPD programmes to be truly successful, the learners would be expected to express commitment to learning to benefit fully from the programme [74].

Currently, the Nursing and Midwifery Council requires all nurses to engage in continuing professional learning as one of the standards related to Post-registration Education and Practice [70]. The provisions that are made accessible to the nurses and particularly the ICU nurses are, however, varied. Some Trusts provided by the NHS provide

excellent CPD programmes to nurses while others tend to express limited commitment and intention to providing comprehensive continuing professional development programmes [26]. Nevertheless, many NHS Trusts have taken CPD to be a marginal programme that requires the allocation of trivial resources.

The situation in Canada is, however, different from that in the UK in that the College of Nurses of Ontario (CNO) proposed and at the same time implemented a unique programme requirement all nurses in Canada to undertake an annual reflection process. The annual reflection process has seen a general success considering the fact that CNO became the first nursing institution to embrace such CPD programmes [59]. The idea of annual reflection gave the nurses, including those working in ICUs, an opportunity to perform self-assessment and give peer feedback. Such a forum for practising CPD granted the ICU nurses a chance to understand the significance of such a knowledge transfer intervention with shared decision-making. At the same time, the approach stood a chance to increase the clinicians' options for espousing the most effective healthcare practices. The Canadian Institute of Health Research has gone ahead to provide funding for international and interdisciplinary groups as opposed to the situation in the UK whereby the healthcare authorities are not very well prepared to support CPD in nursing. The situation is worse in South Africa according to a study performed in 2006 whereby the findings proved that most of the nurses in the country were unaware that it was their responsibility to look for opportunities to further basing nursing education [51]. It is globally expected that nurses need to be aware that it is their sole responsibility to make an effort to keep up to date with new nursing knowledge; hence, the South African outcomes were shocking. The outcomes contravened the expectations of the European countries that have regulations supporting the importance of CPD among all practising nurses [57]. Only a few of the nurses randomly selected from two hospitals in Cape Verde provinces positively filled the questionnaire proving their awareness of CPD programmes while having participated in some of them. Otherwise, the greatest proportion of the responses from the questionnaires administered proved that most of the nurses were unaware of such programmes [18]. A significant number of nurses chosen to participate in the study confirmed that they had never participated in a CPD programme, raising suspicion on the quality of healthcare within the country. The major barriers hindering the South African nurses from participating in such programmes were financial limitations, shortage of healthcare workers, accommodation restraints, and deficiency of information on such programmes. Despite the fact that these nurses expressed their disappointment in making the CPD programmes compulsory for nurses, they also expressed willingness in increasing their knowledge on such programmes to increase their competency [75]. Given an opportunity, the nurses expressed their willingness to engage in both formal and informal learning activities to better their nursing skills.

Ireland is one of the countries that has made CPD mandatory for all nurses. Some researchers within the country, however, suggested that compulsory CPD programmes are against the moral statutes within which continuing professional development was founded.

Nevertheless, the Irish Nursing Board still believes that the CPD among nurses is a lifelong process that is designed to enhance nursing quality and improve patient outcomes. There needs to be diversity in the purpose of CPD as making such programmes compulsory would render the programmes beneficial only to the most competent nurses [42]. By so doing, the administration of CPD would become a form of marginalisation with the nurses that were not trained a university setting feeling isolated by the programmers. Some researchers still believe that the purpose for engaging in post-registration education in the form of CPD is one way of seeking promotion and extension of the clinical role [33]. The authorities advocating for engagement in CPD programmes should take the reasons for nursing participation in such programmes into consideration. Such an approach would ensure that the authorities drive their focus on the limited available resources within their disposal and enhance their planning for such resources while addressing key educational interventions [76].

5. Conclusion and Recommendation

There is a general view by nurses that the importance of CPD programmes cannot be underestimated; hence, the NHS should take such programmes very seriously. Nurses feel that CPD programmes can be used to settle some of the nursing problems they face including nurse retention as many of the nurses had been noted to vacate their work positions citing their desire for professional development. Evidently, it is clear that the nurses and nurse managers all understand the importance of CPD for nurses, so do the healthcare leaders at the national level. The overall view of the nurses on CPD is that the strategy is beneficial for all nurses at a personal level and for the community as it enhances the quality of care provided by nurses [77]. The nurses acknowledge the fact that CPD programmes are aimed at impacting their knowledge, skills and confidence during nursing practice as covered in the views of nurses towards CPD in this paper. There were various challenges in the form of barriers that were identified as major sources of hindrance to the advancement of CPD among ICU nurses in the UK. Include the limited financial support from the government through NHS, problems in scheduling of classes, an inability to attend classes on regular basis citing nursing shortages and family responsibilities as well as limited commitment expressed by some of the nurses. This review, therefore recommends that the NHS takes a step of creating awareness on the importance of CPD programmes not only to ICU nurses but also to the nursing population in the UK. The study also recommends further research on the impact of CPD particularly on ICU nurses in the UK since literature citing the same has been deemed insufficient. Such further research should be aimed at collecting the views of more nurses, specifically those working within the ICU settings on the benefits of CPD and the need to increasingly consider them in their practice [28]. Finally, the research recommends the participation of the NHS in addressing the various barriers facing provision of CPD among ICU nurses, particularly by solving the problem of nursing shortage which limits the number of nurses that undertake

CPD. The NHS may also offer financial assistance to nurses that show commitment to acquiring CPD during their working periods. This review provides an insight in evaluating the impact of CPD among ICU nurses in the UK.

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List of Abbreviations

AAOHN	American Association of Occupational Health Nurses
APN	Advanced Practice Nurse
BMC	Boston Medical Centre
CASP	Critical Appraisal Skills Programme
CNO	College of Nurses of Ontario
CPD	Continuing Professional Development
EBP	Evidence-base practice
HRD	Human Resource Development
MeSH	Medical Subheadings
NHS	National Health Service
NMC	Nursing and Midwifery Council
UK	United Kingdom
US	United States

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