

The Efficacy of Advanced Nurse Practitioner in Reducing Left without Being Seen (LWBS) Rates From Emergency Department

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*Capstone Project Submitted for the Master of Science in Nursing: Advanced Practice
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Date of Submission: 21-01-2020

Date of acceptance: 12-02-2020

I. Introduction / Background

The goal of every health facility, especially emergency settings, is to provide adequate care to people who need health services regardless of their status. If healthcare providers in the emergency departments fail to attend to critical patients, many complications may occur, and patients might experience the reduced quality of life (Ebrahimi et al. 2016). Therefore, healthcare providers who work in the ERs must be proactive in ensuring that all patients receive high-quality health services. The treatment may be curative or preventive, depending on the health needs of patients, and medical professionals must meet patient needs in their entirety. This proposal will discuss the need to examine the efficacy of the advanced nurse practitioners in reducing the rate of low acuity patients in Taif region hospitals, who leave without being seen (LWBS) by physicians.

Overcrowding is one of the main reasons why patients fail to receive quality care in the ER. One of the proposed solutions to this issue is triaging and making the ERs special sub-department for managing emergencies (Ebrahimi et al. 2016). Bullard et al. (2017) suggest the Canadian Triage and Acuity Scale (CTAS) in the emergency department. This scale is useful in prioritizing patients depending on the severity of illness. The five acuity levels of this scale include Resuscitation, Emergent, Urgent, Less Urgent, and Non-Urgent. Yarmohammadian et al. (2017) confirm that understaffing is one of the main reasons why patients leave without receiving care from physicians. Roberts et al. (2017) confirm that nurse practitioners receive additional training in their area of specialty, and therefore, they can provide regular care to patients accordingly. Thus, nurse practitioners are among the health professionals who can address the issue of inadequate care provided by physicians.

Saudi Arabia is among the countries that experience a shortage of physicians. This shortage leads to patients leaving without getting the attention of doctors. For example, Villanueva et al. (2017) argue that long waiting times often delay patient care, and thus, about 10% of patients leave ERs without treatment (p. 56). Failure to get high-quality and timely care is an indicator of the substandard care provided by the Saudi Arabia health facilities (Villanueva et al. 2017). Thus, increasing the number of healthcare providers who attend to patients in Saudi hospitals and reducing the waiting times can demonstrate improved healthcare delivery. A detailed history of this problem has not been documented, but it remains to be among the most significant problems facing the healthcare system.

Statement of the Problem

The primary issue to be addressed in this project is LWBS rates in the ER in Taif hospital. This study will be done in a tertiary hospital, which has an emergency department with 40 beds capacity. However, the number of physicians within this department is inadequate to meet their needs entirely which only 20 physicians and 55 nurses. For this reason, when patients fail to receive the needed healthcare in time, they leave without treatment. MacPhee et al. (2017) also argue that the shortage of healthcare providers and waiting time are the reasons for substandard patient care. In this case, patients who visit this setting are at risk of inadequate care and are highly vulnerable to disease complications.

Significance of the Problem

LWBS occurs even in industrialized nations that are believed to have developed healthcare systems. For instance, in the United States, up to 15% of patients who visit the ERs leave without receiving the attention of physicians (Mataloni et al. 2018, p. 2). The same issues apply to Australia, which has an LWBS rate of 10.1%

(Mataloni et al. 2018, p. 2). According to Taif hospital statistics, that is the focus of this study has worrying trends of LWBS rates, which was around 35% in 2017 and 2018.

Purpose

The purpose of conducting this project is to devise a strategy that will ensure the reduction of LWBS rate in the ER of Taif hospitals. According to Mataloni et al. (2018), LWBS is an indicator of poor quality healthcare delivery. For example, Durai and Muthuthandavan (2016) argue that the failure to manage hypertension can lead to other cardiovascular complications. Roberts et al. (2017) confirm that nurse practitioners receive additional training in their area of specialty, and therefore, they can provide regular care to patients accordingly. According to Morley et al. (2018), one of the main reasons for overcrowding in the emergency departments is the presence of low acuity patients competing for urgent health services. Nurse practitioners can handle such low acuity cases and leave only critical patients for physicians. This process is hypothesized to reduce the LWBS rates.

Aims

This project has one aim and two objectives that can assist in answering this project question in its entirety. The primary aim is to see if nurse practitioners can reduce the rate of LWBS when attending to the health needs of low acuity patients from category 4 and 5 from CTAS triage. The first objective is to examine the trend in the reduction of LWBS in the ER, and the second one is to assess the efficacy of treatment of low acuity patients by advanced nurse practitioners.

II. Literature Review

This review of the literature will focus on the available evidence that can be used to reduce LWBS rates in Taif region hospital in West of Saudi Arabia. The databases used to identify the needed articles are Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, DCU library, and Google Scholar. Additional evidence from the world health organization (WHO) and the ministry of health in Saudi Arabia (MOH) were considered while searching the articles.

Three keywords that included LWBS, a nurse practitioner in ER, triage and ANP in ER were used to search for the articles. This literature was to be 'current,' and therefore, the articles had to be published from 2000 to 2018. Only one article was published in 1995 and still valid to use. The entire search led to the identification of 40 articles related to LWBS and the role of ANP in the ER. Of these, only 15 articles are included in this review. Of these, ten were quantitative while five were qualitative.

The Canadian Triage and Acuity Scale (CTAS), which is useful in facilitating timely care in the emergency settings, will be considered in this review. There are five Categories of patients in this scale, Category one should be seen immediately; Category two within 15 minutes, and Category three within 30 minutes. For the purpose of this review only articles related to LWBS from ER in category four and five, which are low acuity. Categories one, two, and three are excluded from this study. Also, outpatient clinics are excluded (Alquraini et al. 2015).

The role of ANP in the ER to reduce waiting time and LWBS rate:

The number of patients who have been seeking health services from emergency departments has been increasing since its inception. An increase in the number of these patients has not been at par with the increase in the number of health professionals who provide health services to patients. Thus, the LWBS rates have inevitably increased and have become an indicator of quality patient care. For instance, Quattrini and Swan (2011) assert that from 1992 to 2002, the number of patients who obtained health services from emergency departments increased by 23% (p. 10). Quattrini and Swan (2011) further indicate that about 110.2 million people obtained care from emergency departments per year (p. 10). Sometimes, the hospital can be at capacity due to overcrowding, but healthcare providers cannot regulate patients. This process has often resulted in the straining of both human and material resources in the emergency departments. Healthcare providers within the emergency departments can control this problem, not by chasing away patients but by regulating and coordinating their services to ensure that patients get quality health services. Quattrini and Swan (2011) argue that nurse practitioners can assist in reducing the LWBS rates. Fast-track, which involves a timely approach to care and discharge of low acuity patients, can reduce the waiting time and LWBS rates (Quattrini, & Swan, 2011). For this reason, the researchers sought to analyze various studies that addressed the issue of fast track in emergency departments. The authors used various databases that included PubMed, CINAHL, Scopus, and Cochrane Database of Systematic Reviews. The process generated 50 articles, which confirmed that nurse practitioners were useful in the utilization of fast-track unit. This evidence demonstrates how nurse practitioners can contribute immensely to reducing LWBS rates.

Further evidence indicates how nurse practitioners can utilize fast tracks area to ensure that patients get quality and timely care, thus reducing the LWBS rates. For instance, Devkaran et al. (2009) recognize overcrowding as one of the issues that have delayed patients from getting quality health services. These authors insist that the use of the emergency department by non-emergency cases has also contributed significantly to increasing the LWBS rates. The authors support their claims with relevant evidence, thus demonstrating how this problem has been studied in details and how it has remained a significant issue in healthcare. Overcrowding, which has been repeatedly mentioned in this project, is the main problem that leads to inadequate attention to patients. For this reason, patients have been leaving the emergency departments without getting the needed treatment. Devkaran et al. (2009) argue that the fast track area has been useful in reducing waiting time and enhancing the satisfaction of patients. Thus, these researchers indicate that it could be a solution to the overcrowding in the clinical departments. In quasi-experimental research, the researchers assessed the impact of this approach to improving the care of 10485 patients in the emergency department. The research led to findings, which demonstrated how the fast track approach could reduce the waiting time. Thus, nurse practitioners can utilize this method to ensure that all patients get timely and quality health services in the clinical departments.

These studies contain evidence that relates to the one found in articles authored by Woo et al. (2017) and Lee et al. (2006). For instance, Woo et al. (2017) recognize the role of nurse practitioners in improving patient care. According to these authors, the prevalence of chronic diseases is rising, and therefore, the demand for critical care services is also high. Nurse practitioners are trained to handle various health problems, and thus, they can be useful in caring for patients who seek care in emergency settings. For this reason, Woo et al. (2017) utilized a systematic review approach to identify the contribution of nurse practitioners in clinical settings. The 15 studies analyzed by the findings, and among them was the improvement of patient satisfaction. The results reveal the importance of nurse practitioners in improving access to health services. This research shows how nurse practitioners can ensure that patients in emergency departments get timely and high-quality health services. The same case applies to a study done by Lee et al. (2006). These authors demonstrate how nurse practitioners have been useful in providing quality care to patients in clinical settings. Additionally, the authors indicate that LWBS is a significant problem in healthcare but can be addressed by nurse practitioners. For this reason, these researchers decided to assess the number of patients who were seen by nurse practitioners and those who left without being seen. In this research, 718 patients were selected from the emergency department. The number of patients who were seen by nurse practitioners was 344, while those who were impatient and left without treatment were 374. This process was useful in making comparisons of patients to determine the efficacy of care provided by nurse practitioners. Eventually, the researchers noticed that nurse practitioners managed a considerable number of patients, thus confirming how nurse practitioners can increase access to healthcare and reduce the rate of LWBS. Considerably, although these studies were done in different settings and utilized different participants, they show how nurse practitioners can reduce waiting time, reduce LWBS rates, and further improve the satisfaction of patients.

Further evidence indicates that nurse practitioners are well-prepared to handle issues that affect patients in emergency departments. For example, Rothwell et al. (2018) argue that emergency departments face various challenges that put patients at risk of harm. Some of these changes include the shortage of qualified healthcare providers and can reduce the efficiency of service delivery in clinical settings. For this reason, Rothwell et al. (2018) sought to study the efficacy of nurse practitioners in caring for patients in the emergency department. These researchers implemented a pre-post intervention, which involved nurse practitioners managing patients. No specific number of the participants was documented, but the sample involved adults and children who presented to the emergency department. The researchers noticed that after three months, the number of patients who left without being seen reduced significantly. This study confirms the efficacy of nurse practitioners in reducing the LWBS rates in the emergency departments. Although a cohort study conducted by Considine et al. (2006) seems outdated due to the date on which it was published, it also confirms that nurse practitioners can increase access to healthcare. In the process, they can reduce the LWBS rates. For example, in the background section, the authors assert that nurse practitioners can prescribe medications, order for further diagnostic tests, and refer patients to specialists. Additionally, according to Considine et al. (2006), emergency nurse practitioners can determine the admission and discharge of patients. These roles are crucial in emergency care, and therefore, an increase in the number of nurse practitioners can enhance access to health services, thus reducing the rate of LWBS. Considine et al. (2006) wanted to examine the scope of practice of nurse practitioners further. The researchers used a sample of 476 patients. The study ran from July 2004 to March 2005, and the average age of the participants was 29 years. The researchers eventually realized that emergency nurse practitioners cared for a considerable number of patients, thus justifying how they have increased the scope of practice. Therefore, they are best suited to assist physicians in reducing the rate of LWBS in emergency departments. Dudley and Dowling (1995) explain the same sentiments as indicated by Considine et al. (2006). For instance, Dudley and Dowling (1995) confirm that nurse practitioners are competent in patient care.

Additionally, the authors indicate that emergency departments are considering employing nurse practitioners since they are not only qualified but also cost-effective. These researches conducted a descriptive analysis of 3157 charts to identify the efficacy of nurse practitioners in meeting the emergency department needs. The researchers noticed that nurse practitioners could increase the number of patients who were seen in the emergency departments. These sentiments justify the need to introduce nurse practitioners in emergency departments to increase access to healthcare so that the increased rates of LWBS can reduce. However, an observational study conducted by Dinh et al. (2013) using 320 patients shows that doctors are also of crucial importance in the delivery of care to patients seeking care. Thus, while nurse practitioners are crucial in reducing wait times and increasing the number of patients who can be seen, collaboration with doctors is necessary for reducing the wait time. The efficiency of patient care can also increase or be maintained in the collaborative efforts since nurse practitioners are also qualified and have an increased scope of practice. The emergency departments should be compelled, using rational evidence, to use nurse practitioners to reduce the rate of LWBS. According to McGee and Kaplan (2007), overcrowding is a serious problem in emergency departments and has been an issue of concern to many health facilities. These authors indicate that many of the emergency settings employ physicians despite knowing that nurse practitioners are also qualified in providing quality patient care. Therefore, the researchers intended to understand the factors that influenced the decision to employ nurse practitioners in emergency settings. McGee and Kaplan (2007) utilized quantitative research in which four emergency department managers were assessed. The results show that the managers knew the significance of nurse practitioners in improving patient care in clinical settings. Additionally, the managers supposed the idea of employing nurse practitioners despite not employing them. This study reveals limited barriers to employing nurse practitioners in emergency departments. This evidence, together with other studies, support the need for hiring more nurse practitioners in emergency settings to ensure that many patients get quality care without delay.

The efficacy of interventions implemented by nurse practitioners is the reason why they should be considered to provide health services within the emergency settings to reduce the LWBS rates. According to Colligan et al. (2011), nurse practitioners have skills and competencies that can allow them to provide high-quality health services to patients. However, limited evidence exists regarding the comparison of nurse practitioners to emergency medicine registrars. For this reason, Colligan et al. (2011) compared nurse practitioners with emergency medicine registrars regarding the care of minor injuries in emergency departments. The researchers did a prospective observation using 420 patients. The study revealed that nurse practitioners managed minor injuries timely as compared to emergency medicine (EM) registrars. Similarly, Thompson and Meskell (2012) recognize the significance of nurse practitioners in improving patient care. The researchers sought to assess the outcome of nurse practitioners in emergency departments and did a prospective observational audit. The sample included 1366 patients, and the results demonstrated high-quality care by nurse practitioners and revealed that nurse practitioners could reduce waiting times. Hayden et al. (2014) argue that nurse practitioners can enhance the flow of patients in the emergency department. This assertion is due to a study conducted to assess the effect of nurse practitioners on triaging in emergency departments. The sample in the study was 67,358 ED visits, and the results revealed how nurse practitioners were useful in reducing wait times. Roche et al. (2017) implemented a cohort study to assess the efficacy of nurse practitioners in caring for patients who presented to clinical settings with chest pain. The sample included 61 participants, and the results confirmed how nurse practitioners could provide safe and quality care. All this evidence does not contradict itself and confirms that nurse practitioners are not only competent but also well-prepared in handling clinical emergencies and low acuity patients. However, there is insufficient evidence regarding low acuity patients, and therefore, there is a need to study how nurse practitioners influence such patients.

Patient satisfaction:

Different other researchers have demonstrated how nurse practitioners can play a crucial role in reducing the LWBS rates and further enhancing patient experiences. For example, according to Griffin and McDevitt (2016), patient satisfaction is a critical indicator in the quality of services that patients should get from clinical facilities. When patients fail to get high-quality care from healthcare providers, they may fail to be satisfied with the services that healthcare providers provide. This process can adversely affect the reputation of various health professions, including health facilities. Griffin and McDevitt (2016) confirm that nurse practitioners can contribute immensely to improve patient satisfaction. For this reason, the authors sought to understand how nurse practitioners could enhance the experiences of patients who needed services from the emergency department. In this prospective survey, a convenient sample of 114 participants was used. Patients who were treated with nurse practitioners completed questionnaires, and the researchers noticed that nurse practitioners delivered high-quality care that improved the experiences of patients. Therefore, the researchers concluded that the services of nurse practitioners had to be considered in emergency departments. This research applies to this case since it shows how nurse practitioners can lay strategies on how to lower the LWBS rates.

This study relates to the one conducted by Plath et al. (2018). These authors indicate that nurse practitioners are useful in healthcare as they are qualified to handle various emergencies that may arise during patient care. According to Plath et al. (2018), a regional hospital was facing various problems that include workplace shortages and delays with being seen by healthcare providers. The researchers hypothesized that nurse practitioners could help in addressing these problems. In descriptive exploratory research, Plath et al. (2018) sought to identify how nurse practitioners could help in addressing the needs of patients who presented to the emergency department. The sample was not specified, but the researchers monitored patient safety and patient satisfaction during the period that nurse practitioners were delivering the needed care. After data analysis, the researchers noted reduced waiting time for patients in the ED department. In addition to this positive outcome, there was a significant reduction in the length of stay. This research justifies the crucial importance of nurse practitioners in not only treating patients and reducing the waiting time for patients in the emergency department but also in improving patient satisfaction.

Fast-track area and waiting time:

Nurse practitioners can ensure a reduction of waiting time and further enhance the satisfaction of patients when they collaborate with other health professionals. Dinh et al. (2013) indicate that fast-track has been utilized in various settings and has been proven to be useful in reducing waiting times for patients who seek health services in emergency settings. In the background section, the authors demonstrate how fast-track is a suitable area for nurse practitioners. For this reason, Dinh et al. (2013) sought to examine how fast-track could increase patient satisfaction when implemented by nurse practitioners in collaboration with doctors. A convenient sample of 236 patients was used in this survey research in the emergency department. Randomization was done, and both nurse practitioners and doctors were assigned, different patients. The researchers noticed that fast-track and a reduction of waiting time improved the satisfaction of patients significantly and nurse practitioners can significantly improve the experiences of patients who seek services in the emergency departments. This study relates to the one conducted by Carter and Chochinov (2007). According to these authors, the number of patients who have been seeking care in clinical facilities has been increasing. Additionally, the authors indicate that many of the patients who seek care in the emergency departments are non-emergency cases. Then, the authors confirm that nurse practitioners are qualified and can handle non-emergency cases to reduce waiting times in those clinical settings. Carter and Chochinov (2007) indicate that various researchers have studied the quality of care provided by nurse practitioners, and therefore, it was prudent to review articles regarding this issue. The location was not specified. These authors assessed patient satisfaction as one of the outcomes of the delivery of healthcare by nurse practitioners by studying articles retrieved from MEDLINE and Cinahl. The 36 reviewed articles led to findings that showed how nurse practitioners could supplement physicians and ensure that every patient gets quality healthcare. Overall, the study was significant as it demonstrated how the introduction of nurse practitioners in emergency departments could improve the quality of care and reduce the LWBS rates.

III. Summary Of The Review

The detailed evidence, as presented in the literature review, came from different studies that utilized different samples and settings, but the assertions of the researchers supported the idea of nurse practitioners in emergency departments. For instance, various studies demonstrate how nurse practitioners can provide quality health services (Roche et al., 2017; Hayden et al., 2014); Meskell, 2012). Other studies show how nurse practitioners can reduce waitingtime in the emergency departments and further improve the satisfaction of patients (Dudley, & Dowling, 1995; Considine et al., 2006). Others demonstrate how nurse practitioners can reduce the rate of LWBS (Quattrini, & Swan, 2011). Considerably, the idea of using nurse practitioners to see patients in the emergency departments to reduce the LWBS rates is justified and should be practiced in Taif region hospitals. However, further studies should focus on low acuity patients.

IV. Methodology

The most appropriate methodology that has been proposed for this project is a quasi-experimental approach. Reeves, Wells, and Waddington (2017) claim that this design lacks random assignment aspect but somewhat resembles an experimental design. It does not involve comparing subjects side by side to assess the efficacy of an intervention. Instead, it estimates the causal impact of an intervention by assessing the phenomena at present and in the future thus being useful for generating evidence that can be used in evidence-based practice. The project improvement will occur in a single setting, and therefore, it may be difficult to identify a large sample to instigate the appropriate and instant comparisons that can lead to valid conclusions. Thus, conducting a quasi-experimental study will help in performing a complete analysis of the 'before' and 'after' situations in the emergency departments.

The setting of this project will be an urban tertiary hospital with a 40-beds in the Emergency Department in Taif region, Saudi Arabia. This setting has an annual emergency visits census of 30, 000 patients. These statistics are appropriate to assess the LWBS rates reliably. This study will focus on low acuity patients in ER, and thus, the outpatient clinics will be excluded from the project. The CTAS triage will be significant in selecting patients who will have come to get the needed care. According to Morley et al. (2018), some of the patients that seek care in the emergency departments do not necessarily need critical care. Additionally, some of the patients that leave without being seen are low acuity cases. For this reason, the CTAS triage will exclude one, two, and three category of cases, which are not the focus of the current quality improvement project. This study will focus on the less urgent and non-urgent cases

The approach that has been considered appropriate in this quasi-experimental design is the 'before' and 'after' methodology. Before the study, it will be necessary to use the data from the emergency department to assess the rate of LWBS. The percentage of patients who come and register in the ER will be taken, and six months period will be considered since this study is cross-sectional. Yousefi et al. (2018) argue that various patients, including low acuity patients, leave the clinical settings without the attention of physicians. Therefore, while collecting the data, the focus will lie on low acuity patients who arrived and either received care or left the clinical setting without the attention of certified physicians. The acquisition of these data will facilitate the calculation of the rate of patients who will leave without being seen by a physician.

An intervention will be done based on the data from the 'before' assessment. Plath et al. (2018) insist that advanced nurse practitioners are qualified and competent in diagnosing patients and implementing therapeutic measures to improve patient outcomes. Therefore, in the beginning of this project, three advanced nurse practitioners will be assigned to work in ER. They are useful in assisting physicians in attending to patients to cover two shifts per day. A competent undergraduate nurse will help triage patients so the emergency cases could obtain the attention of physicians while advanced nurse practitioners address the low acuity cases. Those considered being less urgent in the fourth and fifth category of the CTAS scale will be selected to get the attention of nurse practitioners. Considerably, during this period, the advanced nurse practitioners will manage low acuity patients. However, they will have to consult physicians about diagnosing and treating patients if necessary. Nurse practitioners will be given a full mandate on how to assess this group of patients, diagnose their illnesses, recommend treatment, and schedule the follow-up measures. Tsugawa et al. (2017) argue that physicians are competent in performing these duties. Thus, in the process of care, the focus will be on both the reduction of the LWBS rates and the efficiency of care provided by both nurse practitioners and physicians. This intervention will last for six months, and during the process, the trend of LWBS rates will be assessed by using the department's documents and quality auditing .

Although nurse practitioners and physicians are instrumental in the process of executing this project, the administrator of the health facility will be involved when it comes to the provision of the needed resources. Several individuals from all level of hospital administration will be involved in this project, and they will come from the hospital administration, human resource, nursing administration, ER administration and hospital general services. This study will require computers to store the access and store the information of patients who will participate in the study. Additionally, the study will demand the permission of not only the administration but also that of health records officers to access and retrieve the needed data to assess the LWBS rates.

Translation Framework: Plan-Do-Study-Act (PDSA)

The most appropriate framework that can guide this project is the PDSA cycle. Coury et al. (2017) claim that this cycle is useful in healthcare as it tests the change by ensuring planning, trying, assessing the results, and then acting on what is learned. Thus, it can assist in planning how to reduce the rate of LWBS and then guide health professionals in taking the appropriate measures to improve the outcomes of patients who leave without getting the needed care. Undergoing the process of change is necessary for ensuring that health facilities meet the needs of all patients who seek healthcare. Furthermore, conducting systematic change processes is useful in reducing the resistance to change (Coury et al. 2017). In this case, the PDSA cycle can eventually minimize the resistance to change if advanced nurse practitioners are found to be useful in reducing the rate of LWBS in the pediatric hospital.

The first step in this cycle is planning. At the planning stage, healthcare providers should first state the objective of the test (Coury et al. 2017). In terms of the research, the test's goal is to introduce the services of the advanced nurse practitioners who are competent in managing patients' health problems in clinical settings. The aim of using this test lies in seeing whether these practitioners can help in treating low acuity patients to reduce the rate of LWBS. At this first stage, as McGowan and Reid (2018), argue, it is necessary to predict what can happen and the reason for it. The prediction that has been made, in this case, is that the advanced nurse practitioners can manage patients effectively. Therefore, they can help in treating non-urgent patients to reduce overcrowding and the rate of patients leaving without getting medical care. Finally, at this stage, healthcare providers should develop a strategy to test the change (McGowan & Reid 2018). It should include the what, who,

where, and when in regard to data collected. In the selected case, the emergency department in Taif region has been deemed the most appropriate one. Advanced nurse practitioners, physicians, and patients will be useful participants in the process of strategy's implementation. The planning stage will take place for only one month, and each nurse practitioner will be compensated as any ANP in other hospitals in Saudi Arabia not as a registered nurse, due to the difference in their job descriptions. Also the project budget will be calculated and approved from the executive hospital committee.

The second one is the 'do' stage, which can be considered as the implementation stage. Coury et al. (2017) assert that it involves conducting the test on a small scale. In terms of the study, the implementation of patient care by advanced nurse practitioners will occur in one specific hospital. Furthermore, it will occur in a single setting. The small-scale nature of this implementation makes the PDSA cycle the most appropriate framework for implementing patient care in this project. Additionally, this stage involves documenting problems and unexpected observations that may occur during the implementation process (McGowan and Reid 2018). The provision of care by advanced nurse practitioners may differ from the one provided by physicians. Therefore, initially, nursing care has to be carefully assessed to determine if it is as effective as the one provided by physicians. Any discrepancies can be noted and considered during the next stage. This 'do' stage will take place for one month.

Another stage is 'study,' where the analysis of the identified data should occur. McGowan and Reid (2018), indicate that this stage must involve the comparison of the data against the predictions made during the planning stage. Thus, at this stage, the efficacy of the care provided by nurse practitioners can be seen. This stage should also involve a summary and a reflection of what was learned. The conclusion of whether advanced nurse practitioners are useful can be made at this stage. This stage will take place during the third, fourth, and fifth month. Once the action has been implemented, analysis of the LWBS rates will be assessed the sixth month. Data from the health record officers will be collected. Comparisons of previous and current data will be done to assess the efficacy of healthcare providers.

The final stage entails taking action. McGowan and Reid (2018), argue that during this stage, change can only be made based on what was learned. Thus, during the final stage at the end of the sixth month, recommendations will be made. Modifications will be made at this stage, and they can help for planning for the next project.

Ethics

This research proposal must undergo the scrutiny of the hospitals' institutional review board to ensure that the intervention is safe for implementation within the emergency department. The process will occur in collaboration with the hospital's quality improvement department and ER stakeholders. Once the proposal has been approved, the next step will be to seek consent from healthcare providers who work within that setting. According to Spatz et al. (2016), the provision of informed consent is useful as it ensures the shared decision-making and demonstrates respect for individuals. Thus, seeking to obtain the permission of the healthcare providers will be a demonstration that their work is seen as useful, and their contribution to improving patient care is recognized. Nusbaum et al. (2017) insist that in any research study, the participants must provide consent to avoid such risks as litigation that may occur in the event of an adverse outcome. Therefore, the patients who will also be managed during the process of study will also have to provide consent. However, before they do it, they must be informed about the reason for conducting the project. Then, they should be made aware that the care provided by physicians may not be the same as the care of the advanced nurse practitioners, but that both groups are equally qualified. In so doing, the patients will engage willingly in the study, and they will feel respected during the process of care since their consent will be recognized.

V. Data Analysis

Analysis of the project will be conducted with careful consideration of the overall project and plan. All data collected during the steps of the project will be analyzed using descriptive statistic as applicable. Other numerical data will be organized and evaluated. Tables and excel will be used to illustrate the data as appropriate. Benchmark will be used for Data analyzed for comparing purpose.

PDSA framework will be used in the data analysis phase. Data will be collected from the emergency department that has it in an electronic system. Sample characteristics in this project are low acuity patients from category four and five from CTAS triage. The number of patients in category four and five and the number of patients who will have been seen by nurse practitioners will be collected. The rate of LWBS will be recorded to compare it with the rate of LWBS after six months of activating this quality improvement project. Tables will be presented to illustrate the descriptive statistic. Excel program will be used to organize and manage the data.

This process will occur in collaboration with the hospital's quality improvement department. The data collected and analyzed before the implementation of the intervention will be taken for comparison. Then, the quality department will assist in assessing the trends of the LWBS rates over the six months, particularly before

the intervention and currently. The final LWBS rates at the six months point will be calculated against the initial data, and the percentage of the reduction will be known. The percentage will help in assessing any significant reductions or statistical significance created by the efforts of the advanced nurse practitioners. The privacy of this data will be maintained as per the hospital and department policy.

Evaluation and Sustainability

The evaluation phase, which will occur after the analysis of data, will happen in the emergency department. This phase will involve two assessments. The first one will involve the evaluation of collaborative efforts between the physicians and the advanced practice nurses in managing patients within the department. According to Rosenberg (2018), collaboration is significant during nursing care and in healthcare as a whole as it ensures that healthcare providers meet all the needs of patients. In the emergency department, healthcare providers do not work in isolation. Therefore, this process will be evaluated mainly to see if nurse practitioners, triage nurse, and physicians can discharge their mandates together to meet the needs of both low acuity and acute patients within the ER.

The Second assessment will involve the evaluation of the experiences of nurse practitioners in managing low acuity patients in the emergency department. This evaluation is significant as it will reveal any challenges that nurse practitioners encounter in caring for patients. Yang and Kim (2016) argue that the management of many patients' demands within the clinical setting can lead to fatigue in nurses. Advanced practice nurses may narrate such experiences while addressing the health issues of low acuity patients. The data collected during the evaluation process will be analyzed in both the department and the administration to assess additional needs that may be needed to improve patient care in the emergency department. Stakeholders will include advanced practice nurses, physicians, the facility administrator, the health records officer and the ER resources manager. Although the PDSA culminates into change, which cannot be done during the QI project, it provides a logical process of studying LWBS rates in the emergency department.

VI. Discussion

This entire research proposal has helped in understanding that LWBS is one of the major problems facing the healthcare system, not only in Saudi Arabia but also globally. Surprisingly, Advanced Practice Nurses can help in addressing this issue just as competently as physicians. However, the collected evidence reveals that Advanced Practice Nurses can make a significant impact when addressing the needs of patients in the fourth and fifth category of the CTAS scale. One of the useful skills learned during this proposal writing process was access to various evidence-based resources from online databases.

This study will contribute immensely to reduce the challenges that patients face due to overcrowding when they seek care in the emergency departments. Yarmohammadian et al. (2017) refer to overcrowding as a situation where an excessive number of patients wait to be seen by health professionals. Although this situation may be a problem, the literature reveals that advanced practice nurses can help in addressing it and also well competent in the management of patients in various clinical settings (Plath et al. 2018). In the process of caring for patients, nurse practitioners learn and gain experience in various competencies, including assessing patients, diagnosing their illness, and conducting treatment procedures.. An excellent example is a study conducted by Solomon et al. (2015) that sought to determine if this concept is evidence-based. In the study of the available literature, Solomon et al. (2015) discovered that nurse practitioners and physician assistants were useful in caring for patients in settings where the supply of physicians was limited. Thus, the inclusion of these professionals during the study was appropriate. The strength of this project lies in the selection of the sample. Patients in category four and five of the CTAS scale are low acuity, and therefore, they are appropriate for nursing care. However, the limitation is the research design, which will not ensure side by side comparison to estimate the efficacy of the care provided by nurse practitioners. The prospective nature of the research justifies this methodology.

Implications for Practice

The extended periods of 'waiting' result in overcrowding that causes further delays in the ER department. Some patients are frustrated with the long waiting times, and for that reason, some of them leave the hospital without receiving the services of health professionals. Mishra et al. (2017) argue that when treatment is delayed or does not happen at all, the patients can develop complications. Therefore, this study will focus on finding ways of reducing this problem primarily by the introduction of patient care through the use of advanced nurse practitioners. Advanced practice nurses have various skills, including leadership, counseling, guidance, and education (Tracy, & O'Grady, 2019). These skills will be demonstrated during the care of low acuity patients to see if they can reduce the LWBS rates. Leaders within the ER department will assess the efficacy of care provided by the advanced nurse practitioners and then plan on how to use their services in the setting. The administration of the healthcare facility will also have to recommend the care of advanced nurse practitioners to ease the congestion within the department.

This study will further lead to the consideration of the improved collaborative efforts within the ER department. For instance, the triage nurse should work in close collaboration with advanced nurse practitioners and physicians. If the advanced nurse practitioners encounter a patient considered to be low acuity and later realize that he/she is in a critical condition, they must refer the patient to the physicians. According to Rosenberg (2018), teamwork within the clinical settings is crucial as it enhances the outcome of patients and increases the efficiency of care. Thus, in terms of the study, the reduction of waiting times and overcrowding will demonstrate the healthcare providers' ability to collaborate and help in initiating the practice of teamwork within the department. Furthermore, due to the great benefit for individuals and the community from this proposal, one suggestion will be provided. Activating the role of ANPs in Primary health care centers to see all low acuity patients rather than sending them to hospitals. This solution will help to reduce overcrowding in ERs and decrease the consuming of ERs recourses.

VII. Conclusion

Overcrowding, the delay in receiving health services, and leaving without getting the needed care within the emergency department are some of the main concerns of any hospital. However, the solution to this problem can be found, especially after assessing the ability of other health professionals other than physicians in providing patient care. Therefore, if patients fail to get the needed care, their recovery will be at stake and will experience complications of illnesses. Unfortunately, such cases are common since the rate of LWBS is high and has been an indicator of poor quality care.

Patients who wait until they get the attention of physicians are usually those in critical condition while low acuity patients often leave after waiting for too long. In the studied setting, many patients are of the low acuity group. Such patients have minor illnesses that may result in severe complications, which may take time to develop. Therefore, they usually decide to postpone their care. However, in the process, they put themselves at an increased risk of complications since the illnesses usually progress faster without treatment. Such patients often get advice on why they should wait until they get the needed care, but the increased workload experienced by healthcare providers due to overcrowding makes them leave. Therefore, the increased LWBS rates cannot be blamed on patients. Instead, it should be blamed on the system factors that must be rectified before patients get the needed care. The evidence-based literature documents the problem of healthcare provider shortage. Many clinical facilities do not have enough health professionals to address the concerns of patients. The available evidence-based information on nursing care indicates that advanced nurse practitioners are in a position to handle patients as competently as physicians. The training of these nurses involves equipping one with skills on how to detect health problems and restore health. Nurses also learn how to promote health and prevent illnesses at an advanced level. Furthermore, nurses are educated and experienced in assessing patients, diagnosing diseases, and initiating treatment measures. This educational preparation, together with their clinical experiences equips them with skills on how to manage patients within the emergency departments to reduce the cases of overcrowding and LWBS. However, there is a scarcity of evidence regarding the efficiency of care provided by nurse practitioners, especially when assisting physicians within the ER department. In this study, the advanced nurse practitioners will help in addressing the health needs of low acuity patients while physicians focus on acutely ill patients. The CTAS scale will be used to triage patients, and the quasi-experimental design will be used to facilitate the comparisons of past outcomes and the outcome after the intervention. The analysis will involve comparing the data of 'before' study and 'after' study. The reduction in waiting times and LWBS rates will be examined over the six months and the findings of this study will help in recommending the services of the advanced nurse practitioners in the ER.

Acknowledgements:

I would like to thank all DCU doctors for their guidance and support to this proposal; Dean of Nursing faculty in PNU Dr. Samira Al-Senani for providing this program her in Saudi Arabia, Great thanks should be given to all of My family members for their great support during my study outside my hometown (Taif)

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Jamila Ahmad Alzahrani "The Efficacy of Advanced Nurse Practitioner in Reducing Left without Being Seen (LWBS) Rates From Emergency Department". *IOSR Journal of Nursing and Health Science (IOSR-JNHS)*, 9(01), 2020, pp. 60-70.