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Performance gap among nurses in splint application and crutch training

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Clinical Project Theme

This project explores the theme of patient safety and quality patient care. For high standards of patient care to be maintained, it is vital that the components which contribute to outcomes of patient care are evaluated and improved to address problems that impede positive outcomes. One of the important components that affect patient outcomes is how the nursing staff delivers patient care. As a CNL student functioning as risk anticipator and team manager, I will assess the competency levels of the nursing staff in orthopedic procedures, then lead other team members to provide a solution that best suits closing identified performance gap which has increased the risk of procedural errors and potentially risk patient safety and outcomes.

Statement of the Problem

Ideally each member of the nursing staff hired is capable of performing procedures that would provide safe patient care delivery within their scope of practice. To ensure that their employees perform their job competently, many healthcare organizations, such as the organization of the project's clinical site, have established general training sessions including staff orientation, skills fairs and employee evaluations. However, these sessions cover only broad topics and does not address skills specific to specialty departments, such as the urgent care. There are no formal interdepartmental competency or educational programs that check and monitor the skill level of the staff. Instead assurance of staff competence falls under the department's nursing administration, who may delegate it the charge nurse or senior nursing staff to orient and teach others on skills needed to provide appropriate care. Since this process is informal and heavily relies on the compliance and experience of staff charged with this duty, appropriate training of novice members is not guaranteed. Most often, the nurse who is unskilled

in these specific procedures is left untrained bringing about a disparity of competency among the staff. Several consequences of this performance gap increase risk for errors, endangering the safety of the patients and increases work dissatisfaction and stress among the staff members, . The purpose of this project is to address this identified problem experience among members the nursing staff of splint procedures and crutch training thereby closing this performance gap to prevent staff errors that can result in complications through interventional education

Rationale

A micro assessment of the project's clinical site was done to gather information on how the unit operates, serves the community ,and the dynamic interplay between the professionals and patients during the process of providing patient care. Direct observation of the workflow, the actual practice of nursing procedures, review of nursing policy and procedures, staffing schedules, informal interviews with the staff, nurse managers, front desk personnel and some providers provided a complete profile of the unit. Based on the data accrued, one of the identified needs for improvement was a performance gap among the nursing staff when applying splints and crutch instructions to patient. (Appendix A). A self -assessment survey that measures how the nurses feel about their skills in splint placement and crutch training was conducted and given to all the RNs and LVNs employed and is regularly on the schedule (Appendix B) The number of participants were 16 in total and all had completed the survey. The results of the survey showed that only 31% of the participants felt that they can perform these procedures independently, while the rest of the participants require assistance (Appendix C). Research for quantitative data to establish the direct correlation between this disparity and patient outcomes was attempted. However, such data was not available due limitation of access to records.

Nevertheless, a precipitating factor indicating that there is a need to address this issue was physician's complaint of a patient returning)

Cost Analysis

The cost of treatment for orthopedic injuries can be expensive as it depends not only on the medical condition and nature of these injuries but also the status of the patient's health insurance. According to the Fairhealth.org, the estimated out of pocket cost of a splint procedure for an injured finger at an hospital outpatient facility, is approximately $197.00, based on estimated reimbursement charges to be 70% . However, if the patient is uninsured, the cost of treatment for the same injury may reach up to $ 1000-5000 dollars, with non- surgical treatment alone to be $360-479.00. (Costhelper health, 2017))

The clinical site of my project is an urgent care and offers treatment services for non-complex orthopedic injuries. While the more complex and acute injuries are referred to the ER and surgical orthopedic consultation, the main treatment done for non-complex injuries are the application of splints for immobilization and crutch training for gait stability. Since splint applications and crutch training are done by the nursing staff, their level of skill in performing these procedures correctly and giving appropriate after-care instructions greatly impacts the healing process. The lack of knowledge and deficits in performance among members of the nursing staff can impede the healing process and expose the patients to risk of complications. These complications would potentially increase expenditures thereby financially burdening the patient and organization,

If an improper application of splint occurred or the patient has a complaint about initial care given during the first visit, a return visit for reapplication of the splint may be assigned as nurse visit only visit. Per the nurse manager of the unit, in this case the patient is not charged with this visit while cost of materials and labor are absorbed by the organization. If this return visit requires an evaluation by provider based on the patient's complaint, then patient may be charged for this visit with additional cost for any treatment incurred. Patients can challenge fees and charges through a grievance process, however wavier of these fees are not guaranteed. These preventable errors can affect the financial health of clinic through lowered patient satisfaction scores resulting in lagging patient volume, loss of contracts with HMO and PPO insurance companies and exposure to malpractice.

An on -site training program that develops the skills and knowledge of the current staff is a cost saving investment as it may promote increased staff retention , decreased turnover rates due to improved work satisfaction and higher patient satisfaction and outcomes. From 2016-2107, the unit has hired two nurse supervisors, four LVNs, three RNs, however, two LVNs were let go due to inadequate skills, two RNs and the two supervisors had resigned. Hiring new staff members to fill the unit with qualified adequate staff is more expensive than the implementation this in on-site training program. The average yearly salary for an RN in California is $94,120 and the average yearly salary for LVN is $51,170 (Nurse Salary Guide, 2017), while implementation of an onsite in service training session per hour is $558.00 per hour. (Appendix D).

Project overview

The project's clinical site is an urgent care clinic that is part of a medical center offering services of family practice, ob-gyn, oncology, pediatrics, ophthalmology and outpatient GI procedures. The center has been privately owned by medical group but is now affiliated with national healthcare organization. This urgent care clinic is open daily all year, sees patients on a walk- in basis with hours of operation to be from 9 am -8:30 pm on week days, and from 8 am-5:30 pm on weekends, It has an in- house laboratory, ultra-sound on call, and utilizes the X-ray department to function as a place that treats episodic conditions that are non- life threatening. It also coordinates with the closest affiliated hospital located less than 5 miles away. The average census seen in urgent care from the month of February to March 2017 is 123 patients a day. The population of patients are diverse in age, gender, educational, cultural and religious backgrounds. The type of medical complaints presented by these patients are also diverse. Depending on the complexity and acuity of the patient's condition, these complaints can be treated in the clinic then discharged home. Otherwise, they are referred to the ER or directly admitted direct to the hospital e for further treatment. The providers have a rotating schedule, working during the entire hours the clinic is open.

The nursing staff works on 8 hour shifts, divided as morning and evening. Each shift is composed of one unit coordinator, two to three LVNs, two MAs, one -two lab technicians, two to three RNs, with the RNS rotating to be the lead nurse of the day. Demographic data of the nursing staff were gathered through informal interviews with each member who has worked regularly on the monthly schedule. Each member had revealed that they had previous nursing experience, varying in years and specialties.

A review of the policy and procedures for splint applications indicated that they can be done by RNs and LVNs as within their scope of practice. The nurse manager confirmed that this is job expectation. However, a phone interview with the nursing supervisor who handles both sister sites confirmed that orthopedic procedures are not included in the new hire orientation checklist. Interviews with the four nurses hired within the last year revealed that they had some or minimal or some experience on splint procedures and gait crutch training but does not routinely doe these procedures in unit. During the informal interviews with some of the staff members who had at least 5 years employed in the facility stated that they had prior experience and routinely complete the splinting and gait training tasks in the unit. They also stated that in-service training was held in the past but is not known how long ago the training sessions were active as they did not participate. During investigation of the unit what was found are educational materials, after care instructions sheet for splints, and signage with pictures stored in the DME supply room and is not visible for use on the floor. Patient education for crutches were not available, instructions are typically observed to be given to patients verbally

Since the nursing staff are not assigned to rooms or patients, physicians typically ask any of the nurses is available on the floor to complete their orders, but may be unaware of this staff member's skills. However, direct observation of the workflow revealed that tasks such as splint procedures and crutch training are routinely delegated by other nurses or unit coordinator to certain members who are known to have experience, regardless if they are preoccupied with other tasks. Since staffing is based on the general needs of the unit, not on specific needs of services, only one or two out the six members of the nursing staff are found to be tasked with these procedures during their shift. The downside to this workaround is increased delay of

treatment, work dissatisfaction and stress. When nurses who are novice or do not routinely to these procedures attempt to complete these orders, it was observed that they wait ask for assistance. It is not known when these members independently perform these procedures that is correctly done.

The goal of this project is to improve the current work process among the nursing staff when giving direct patient care. The identified factors that contribute to the performance gap of splint application and crutch training provide supporting points that an additional training is needed . The specific aim of this project is improving the skills and knowledge of the nursing staff on splint procedures and crutch training by 100% from their individual baseline competency, with 100% of participation from the nursing staff over a three -month period upon the time of implementation

Methodology

The success of improving the level of skills among the nurses is their willingness to change the current pattern of behavior and level of participation. Therefore, the attitudes, beliefs, and behavior must be taken into consideration when implementing a program that would change how the nurses work in the unit. Based on Lewin's theory of change, behavior is made up of "dynamic opposing forces that is equilibrium (Nursing Theory, 2016) . For behavior to change the equilibrium must be tipped off balance to the forces that drive change. Lewin's method of making change happen is in three stages. The unfreezing stage is

where I can learn about the nurse's staff and attitude regarding splint application and type of training most appropriate using a preintervention survey (Appendix E ,). The results of the survey can help gauge the values important to the nurses which may motivate them to participate in the training program (Appendix F). The second stage is change. At this stage, the on-site training program is implemented and there is participation in training program which includes in service sessions and collaboration for hands on practice and training. The third stage is re-freezing. At this stage those who have participated in the in-service sessions and been mentored by the more knowledge nurse can now independently perform these procedures to patients.

In addition to the preintervention survey, the Plan, Study, Do, Act (PSDA) method was utilized, with myself as the CNL facilitator and other team members who volunteered to determine which type of teaching is best suited for the nurses. One PSDA cycle was a practice trial for hands -on approach and another cycle was a practice trial a short lecture session. Feedback from the volunteers was gathered along with details such as length of time each approach took as well what are materials needed. Based on the pre-intervention survey and PSDA cycles, I propose that in-service training sessions to be implemented in the unit, which includes a demonstration of splint application skills from the learners to be recorded in a competency checklist as a measurement of their baseline knowledge and skill .This competency checklist will also be utilized to measure their level of improvement after they participated these training sessions. . The training sessions will be held on non -working hours to ensure that at least half of the total the nursing staff may be able participate per session and to avoid interruptions if it was done during working hours. The competency checklist is divided into sections or category based on the extremities of the body. Each of

these anatomic sections have a list of objectives that each individual learner will be tested on and subsequently taught and trained to improve their current nursing practice. The following objectives include the following; neurovascular assessment and common indications of specific procedures by anatomic location, the knowledge and performance on the application of specific type of splints, and patient after- care instructions of each procedure done. (Appendix G). Crutch training is composed of type of weight bearing instructions; non-weight bearing and partial weight bearing. (Appendix H) The pre-designated teachers ,who will act as mentors ,will be will be the most experienced members of the team in orthopedic procedures , and had previously participated in previous practice trial runs when PSDA studies were done.

Over the course of three months, each learner can partner with any of the chosen mentors who will be responsible for checking off specific procedures on the checklist at each level. The learner will be deemed competent of each procedure and checked off when the procedure can be independently performed on a patient with standards of care set by the policy and procedures of the clinic. Assessment of improvement for each learner will be based on the data written on the individual competency checklist and how each person progress from their baseline. Since the opportunity to practice ortho procedures depends on the opportunity and availability of the time the nurse learner and mentor meet, data collection is done once a month giving the learner time and opportunity to learn.

Literature

Harris and Williams & Co (2013) stated that the urgent care industry has a projected annual growth of 5.8% till the year 2018 . The appeal of urgent care clinics to many consumers and insurance providers are the provision of similar services found in the ER but at lower cost and greater convenience (Harris and Williams &Co, 2013; Rodak,2013). The most common complaints seen the urgent care are upper respiratory conditions which can been seen in a physician's office (Urgent Care Association of America [acaoa],2016). However, orthopedic injures may require more care and is a common reason of visits in the ER. A 2012 study by New England Health Institute touted that sprains and strains are the most common complaints seen in the ER. (Rodak,2013), while an estimated 3.5 million yearly visits to the ER were due to fractures.

Due to its continued growth, urgent cares can now offer x-ray and lab services, granting them the capability of treating sprains and strains. Since "2009 approximately 80.7% of the clinics are able to offer fracture care such as splinting and casting" (Rodak,2013). Therefore, services and procedures that treat minor orthopedic injuries found in the ER can also be given in urgent care clinics but is less costly. Treatment of minor orthopedic injuries are splint procedures and crutch training) In the project's clinical site, these procedures are mainly handled by the nurses. It can be said, how well the nurses perform and work in their environment will directly determine patient safety and affect the quality of patient's, therefore it is vital that professional standards be developed and maintained. (Davis, 2014). However, there is a disparity of knowledge and experience of splint techniques among nurses in the project's clinical site, an urgent care setting. During research and investigation of clinical site, information that may provide insight of clinical outcomes due to nursing errors were unavailable. In journal article

written by M. Leahy, a prospective study was done to investigate the appropriate application of splints for pediatric patients among participating EDs and urgent cares in Maryland. Approximately 205 pediatric patients who had initially been given splints due to upper extremity injuries in the ED and urgent cares were later evaluated by orthopedic surgeons. The result of the study showed that 93% of 205 cases evaluated had improper splint application with 39% of these cases resulting in pain, edema, and skin complications. (2014) This study suggests that educational training would be beneficial but does not explicitly correlate that these errors were result of the quality of nursing care given.

Data collected suggest that splint applications and gait training are readily available and less expensive in the urgent care ,however there is limited evidence in literature that that can directly correlate how performance gaps of splinting techniques and crutch training among nursing staff results in complications in urgent care In an article discussing patient safety in ambulatory care, The Agency For Healthcare and Quality [AHRQ] asserted that previous research on patient safety and improvement has mainly been focused on hospital settings but is less known in ambulatory care (2016). The article also discussed common patient safety issues in ambulatory care, but it did not address how the state current nursing practices affect patient outcomes in this particular clinical setting. In a publication by the American Academy of Ambulatory Care Nursing [AAACN], it contends that as the ambulatory care settings evolves ".. care needs of patients increase and become more complex so does the demands for professional caregivers with the knowledge, skills, and ability to deliver care" (2012,p.3) However, it also has argued that the nursing practices are not standardized and lacking in quality control, where job roles are poorly delineated, and registered nurses are either underperforming or practice

beyond their scope of practice, contributing to poor outcomes. It can be eluded from this argument that the nature of the ambulatory care setting and lack of nurse leadership is a driving factor that leads to the problem of performance gaps in the nursing care given as identified in the clinical project site.

Therefore, this clinical care setting needs on- site developmental programs that can cultivate the quality of nursing care given to patients. The article from McEvenue et. al (2016) showed evidence that utilization of educational interventions can improve splint techniques for hand trauma among staff in the emergency department. The methodology of the study had a pre-interventional and post-interventional phase to determine the status of the splints applied. The results of this study revealed that the intervention improved the percentage of appropriate splint procedures from 49% to 69%. A follow up analysis showed that 70% of appropriate splinting was seen up to one year. This article support that an on-site training program, similar to this study, can ensure improvement of splint techniques and gait training among staff in urgent care.

Timeline

The inception of the project was started on January 25, 2016 after a short initial assessment of the clinical site and discussion with the nurse manger was done. During the following two weeks, a mirco-assessment of the unit which included a survey was completed which had identified the needs of improvement in the unit. From February 10- March 9, 2017, research was continued with included preintervention survey, multiple attempts of obtaining quantitative data from billing, accounting and collections department of the organization was done. The possibility of an appointment with an orthopedic tech in the orthopedic department of another facility was not realized as the director of that site had not responded within the time frame during this project. Practice trial runs were done prior to implementation of the project. On April 7,2017, the proposal will be given to the nurse manager and nurse supervisor on implementing the program on site. Depending on the approval of the administration the time of the program to be implemented is pending, however it is projected that implementation for the first in- service training is April 15, 2017. The time in -between allow the administration and staff to set up a schedule for the first in-service training. After a little less than one month, with a projected date of May 01, 2017, assessment of each learner who participated will be done based on their current performance and on the checklist (Appendix I).

Expected Results

If the training program is implemented and carried over the three-month period, the expected outcome would be improvement of skills from the nursing staff. However, there are anticipated barriers that would impede this predication. This training program requires the support and participation of the administration as well the nursing staff. Financially compensating the staff in their participation of in -service training may not be part of their budgetary goals. Another concern is the amount of time and effort factored for in-service training and subsequent hands on practice with a mentor. Momentum for this process to continue may be lost when the staff is facing an average load of 123 patients per day.

Nevertheless, this project support the theory of how the work environment affect patient care. Per Kieft et.al (2014) a qualitative study was done with participants to be nurses from different care settings. These participants responded that two of the clinical elements of a work environment essential to quality patient care are clinical competency and collaboration.

The timeline for the presentation of the training proposal was moved to March 31, 2017 (Appendix I). It was presented to the nurse manager, nurse supervisor, and administrative manager of the clinic. The feedback given during the discussion of this proposal, was that the original plan of implementing training sessions during non -working hours is not feasible as the funding of other agendas takes precedence, thus allocation of resources could not be spared. Barring this political barrier, the nursing and clinical administration still support this project as they had voiced their belief that this project is beneficial to unit. The alternative solution that they had proposed was to have the training program implemented during working hours. Review of both the morning and evening staff

schedules showed that the optimum time for training sessions to be held would be during the weekdays when there is full staff coverage and the time between 2:00 -3:30 pm when the nurses from both the morning and evening shifts are both present. It is also the time the morning staff have finished their lunches and prior to when the evening staff take their first break. It was agreed to have the training sessions be held at these times.

The nurse manager approved to have the training sessions to be held in one of the empty rooms unassigned to provider as a venue and to have free access of splint materials used for actual procedures from the supply room in the unit as practice materials during training sessions. Since the department orders the supplies in bulk, using these materials would not exceed the unit's operation budget. Crutches that were previously unwrapped but unused were found in the Durable Medical Equipment DME supply room was also approved as a practice material. The nurse manager stated that she would like to in-cooperate a checklist used by clinic's affiliated organization, however, since it was not available during the time frame for the implementation of the project, the nurse manager approved that the proposed competency checklist can be used for the purposes of this project.

During the week of April 3 to April 6, 2017, a PSDA cycle was completed with a trial run to determine what changes of the training session may be needed to accommodate the approved training times while still accomplishing the objectives listed on the competency checklist. The trial run of the session was held in the unit during the approved time, with a volunteer team member as a learner, another team member already pre-designated as teacher, myself as both the facilitator and as the practice patient. The two team members with the most experience in orthopedic procedures reconfirmed their willingness to participate as pre-designated teachers in the training sessions and to be mentors to the learners who will

continue to learn and practice these procedures after the training session is completed and until these learners have gained enough mastery to independently practice these procedures on patients. The nurse manager approved the roles these two team members will have in this project.

From this PSDA cycle the format of in-service training sessions was redesigned. The changes included reduction of the number of planned learners from eight to three nurses participate per training session. Since the training sessions will be held for 5 days ,15 learners will be given the opportunity to participate, which is the total number of nursing staff regularly scheduled to work this unit. It was previously 16 until one nurse had recently resigned. This change will enable the learner(s) and teacher to complete the entire process of the training session within the allotted time frame and avoid disrupting the workflow of the unit. The format of the session is composed of a pre-intervention assessment, interventional training /teaching with demonstration, then hands on practice with the learner. The session will start with the pre-intervention assessment where the knowledge and performance of each individual learner will be measured and marked using the competency checklist ,which will labeled with the learner's name , date and circled as pre-intervention assessment (Appendix G) .This will be followed by interventional training/teaching portion of the session to be done by the pre-designated teacher who will focusing on reviewing the specific objectives and principals of orthopedic procedures that require a need for improvement exhibited by individual learner during pre-interventional assessment. The teaching method of this review will include verbalization along with step by step demonstration using the available practice materials by pre-designated teacher and myself playing the role of the practice patient and facilitator. The learners will be encouraged to ask questions during the

review and follow along with the pre-designated teachers. After the teaching portion of the session is completed, the learners will be given time to have hands on practice using the practice materials on me as the practice patient, while the pre-designated teacher will act as a guide. During this time the learner is encouraged to ask questions for clarifications. At the end of the training session each learner will be given a self-assessment post training survey to be completed (Appendix J)

It was agreed with the nurse manager that these training sessions can be held on each day of the week of April 10th -14th, 2017 from 2:00-3:30 pm. It was also agreed that on the following week from April 17th to April 21st from 2:00-3:30 pm a post interventional assessment can be done, where the nurses who completed the training session will individually show what they had learned by verbalization and step by step physical demonstration using practice materials with myself playing both the role of practice patient and facilitator .The levels of improvement will be measured using new sheets of competency checklist but will be labeled with the learner's name, dated and circled as post interventional assessment. The post training self-assessment surveys given after completion of training session will be collected in an envelope and passed around as to avoid any undue influence or bias on the responses.

Nursing Relevance

. The relevance of this project is the ability of clinical nurse leader to impose a change within a micro clinical system that has far reaching affects. The defined problem of inadequate number of competent staff providing orthopedic care in a busy unit almost exclusively, may not yet have visible consequences. However, addressing and finding a solution for this problem may save the patients, the professionals and the organization from long standing harm before actual consequences are realized.

Also, given that the setting is an urgent care clinic, the model of care and practices are commonly physician driven but lack a strong nurse leadership that can provide the voice to advocate and promote high quality patient care through the development of nurses, best practices and patient education. This healthcare setting is an untapped area where the role of a CNL provides multiple benefits in this setting.

Summary

The aim of this CNL internship project is to improve the current nursing practices by closing the performance gap among nurses on splint applications and crutch training within the 3-month course of this project. This project was implemented in a urgent care setting. This urgent care is an outpatient setting and part of medical center that provides primary care office visits as well as some specialty services, it does not have orthopedic specialty offices. It is a walk-in clinic that provides services to patients of all demographics with acute conditions that are not serious or non-life threatening. Minor injuries such as sprains, strains or fractures are commonly seen and treated in the urgent care. Care given to treat this injury is immobilization through orthopedic procedures such as splints and crutch training to patients. These orthopedic procedures are carried out by the nursing staff, who are predominately composed of registered nurses and licensed vocational nurses. Micro assessment of the work flow of unit showed that only a few members of the staff do most these procedures indicating that there is a disparity of the workload among the nurses. The result of a self-assessment survey conducted among the nursing staff regarding their knowledge and experience splint procedures and crutch training revealed that the a primary cause of this disparity is a gap in knowledge and skill. The data complied supports that this gap can be addressed through the implementation educational training sessions

The initial format of the educational training sessions was to have them be scheduled on non- working hours with the capacity to have eight nurses participate per session. A competency checklist was used to assess and measure the baseline knowledge and skill as well as to measure improvements after training sessions have been completed. Subsequently, the initial format of the training sessions was changed prior to implementation. The training sessions was done during the working hours of the staff with only one to two staff members being able to participate as a learner per session. The training session is composed of pre-intervention assessment, training/teaching by the pre-designated teacher, hands- on practice to be done by the learner. The materials used as a reference to confirm standards of care are the organization's policy and procedures of splint applications and crutch training for patients, the organization's education training manual of orthopedic procedures and crutch training, written after-care splint instructions for patients used in the unit, manufacture instructions sheets of splint materials, picture posters and signage sheets posted on each room of the unit as visual aids.

Evaluation

The nurse manager, nurse supervisor and charge nurse provided support by making verbal announcements of the upcoming training sessions and encouraging the nurses to participate during the morning and mid- shift huddles prior to and each day the training sessions were held. The total number of nursing staff that is licensed as either LVN or RN is eighteen. Of total number of licensed staff, three are only scheduled once a month or sporadically, hence were not available to participate in the project. The other fifteen nurses are employed as full time, part-time and per diem, but is regularly scheduled to work at least 2 days a week. From this number, seven participated as learners and completed the training sessions. Six nurses declined to participate, one nurse was on sick leave and another nurse was on vacation. Five of the six nurses who had chosen to decline participation stated that they routinely do these procedures. These five nurses have been employed in the unit for at least five years. The sixth nurse who declined did not give a reason but had been employed in the unit for a least two years.

All the training sessions held were completed within the allotted time frames. For the first three days, one training session was completed one participant involved in each of those days. While in the last two days. training sessions were with two participants in each of those days. All the training sessions were completed without deviation from the format of the design. At least one or both pre -designated teachers were present and had taught in the training sessions. Results from the data collected from the competency checklist during pre- intervention assessment revealed that all seven participants have minimal knowledge in neurovascular assessment, common indications for splints, and common type of splints based on anatomy but with all seven participants demonstrating some knowledge and skill in providing after- care splint instructions and performing crutch training to patients , however there is a gap of knowledge

and skill on the actual application of splint procedures among this group . This is attributed to the differing degrees of knowledge and skill on each specific types of splints among five nurses and minimal knowledge and lack of skill among two nurses of all types of splints as listed in the competency checklist. (Appendix K).

Post intervention assessments was done in the following week after training sessions were completed. During this assessment, the participants verbally and physical demonstrated what they had learned from the training sessions. Their level of improvement was measured by using the competency checklist and was then compared with their individual measurements from the competency checklist completed during pre-interventional assessment. Results of the post intervention assessment showed that all the learners had increased their level of competency, where they have improved from their baseline level in all of the objectives listed in the checklist. . However, the individual degree of improvement from their own baseline varies among the different objectives in the checklist (Appendix L) .While five participants could verbalize, and demonstrate that they gained greater knowledge and skill by performing the following objectives independently; neurovascular assessment, indications of splints and common type of splints based on anatomy, two participants showed only some improvement in their knowledge and performance of neurovascular assessment, indicating that they need some guidance and correction. The two learners who previously had lacked the knowledge and skill on all listed procedures in the checklist, demonstrated some level of improvement in applying actual splints, but they still required some guidance and correction. The other five learners have also demonstrated some improvement from their baseline level of splint application where they previously had deficits on specific types of splints, but have not yet gained complete mastery. All seven learners had increased their level of improvement by independently demonstrating crutch

training and splint after care instructions without guidance. These results revealed there is a new gap of knowledge and performance in neurovascular assessment while the previous gap of knowledge and skill in splints applications has narrowed since all participants have improvements in this area but they all are still unable perform these procedures independently and is therefore, considered to be on the same level of competency. (Appendix L).

The implication derived from comparing the level of competency among the participants before and after the completed training is that there is an overall increased level of competency among the participants. Thus, the overall goal of the e training sessions project has been met However, the nurse participation of 46% and the differing levels of improvements within the specific areas that involve the principals and skill of these orthopedic procedure indicate that aim of the project of where all the participants can independently and safely practice these procedures on actual patients, thus, closing the performance gap among nurses in the unit has yet to be met.

Conclusion

It is recognized that for these nursing procedures to be safely given to patients, these participants not only require theoretical knowledge but continued training and time needed to gain practical skill and experience. Therefore, to achieve this goal, it recommended that the project should be sustained by its continuation to the next phase. The next phase of the project will allow these participants to continue their training by partnering up with the two pre-designated teachers who will act as mentors to guide, supervise and monitor their progress as they continue to practice for three months using the checklist to measure there process until they are able demonstrate that they can provide this care competently and safely to patients.

These recommendations were shared with the nurse manager, nurse supervisor, charge nurse, participants and pre-designated teachers. Along with results from the training sessions and the responses from the post -interventional self - assessment participant survey, feedback was also given to provide to provide supportive points to allow for continuation of this project to the next phase and for it's in -cooperation as interdepartmental educational activity The responses from the post training self-assessment survey showed that all of the participants felt that the training sessions improved their knowledge and skill , self-confidence , increased their interest in splint procedures and crutch training with the belief that continued hands on training a mentor will be effective in promoting their development and competency (Appendix M). The continuation of the next phase was openly supported by everyone involved and by the nursing administration. However, the nurse manager would like to have this mentorship to be done informally, where the progress and competency of the learner is evaluated and endorsed by the mentor verbally, a competency checklist would not be needed. The nurse manager also stated that the suggestion of in-cooperating the training sessions as a educational activity will be taken

into consideration and is open to have similar training session for other skills such as port-o-cath care be done.

The success of implementation of this project is dependent on numerous factors. The primary factor is the in-depth understanding of the clinical site. As an RN who has worked in an urgent care setting for at least eight years, it has given me the advantage of understanding the function of this site, but also the patient population and work culture. It has also enabled me to communicate and relate to my colleagues and peers. However, looking at this setting as a complex adaptive system rather than just a workplace has given me the perspective of how the workings of this unit can be improved. I had thought in terms of identifying the sources and causes that may promote or hinder patient safety , patient satisfaction and better work environment. This perspective has also given me the opportunity of how the he principals of clinical nurse leader can be applied to make improvements despite the ever-changing nature of healthcare.

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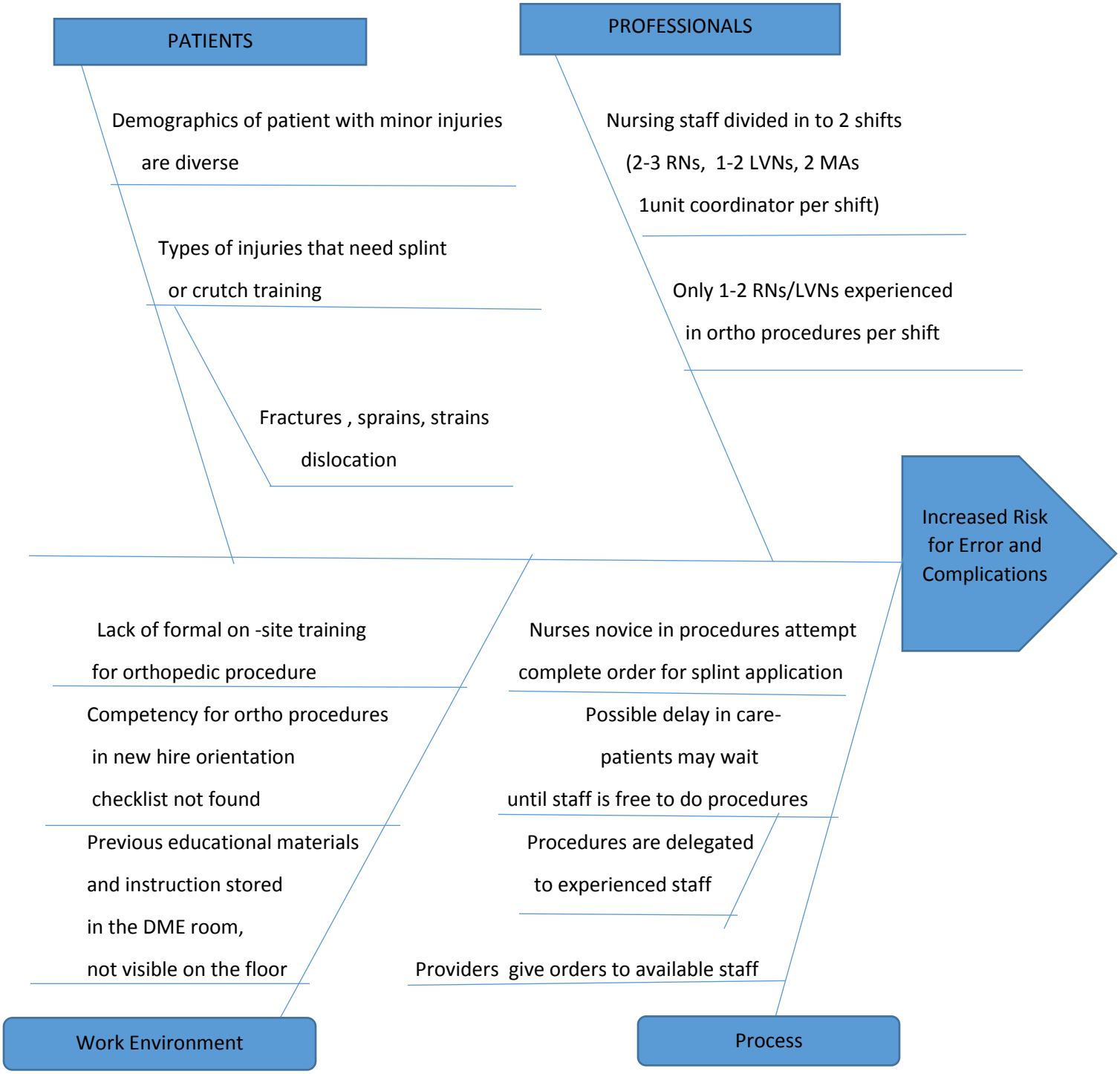
Appendix A

FISHBONE DIAGRAM : DISCREPENCY OF KNOWLEDGE AND EXPERIENCE AMONG THE NURSING STAFF FOR SPLINT APPLICATIONS AND GAIT TRAINING.



Appendix B

Self -Assessment Survey on Splint Procedures and Crutch Training Among the Nursing Staff In Urgent Care

Good Day,

This is a **self -assessment survey of common orthopedic procedures done in the unit.** *(PLEASE NOTE THIS SURVEY WILL BE USED ONLY FOR EDUCATIONAL PURPOSES , BUT AS DATA TO REFLECT THE NEEDS OF THE UNIT)*

Thank you for your time and feedback- Aidalyn Carino, RN, CNL-Student USF.

PLEASE CIRCLE THE FOLLOWING ANSWER TO THE QUESTION THAT BEST DESCRIBES YOU

1) **WHEN DOING SPLINT PROCEDURES DO YOU FEEL:**

   A) I HAVE DONE IT ENOUGH EXPERIENCE THAT IT JUST PART OF MY ROUTINE WORK TASKS

   B) HAVE DONE IT BUT IT BUT STILL NEED ASSISTANCE AND ADVISE FROM THE EXPERTS IN THE UNIT.

   C) I KNOW HOW TO DO IT, BUT I RARELY DO IT AND WILL NEED ALOT OF HELP OR WILL NEED TO ASK ANOTHER PERSON TO DO IT FOR ME

   D) I AM NOT FAMILIAR OR BEEN EXPOSED TO THE SUBJECT OF SPLINT PROCEDURES

2) **WHEN YOU ARE ASKED TO DO PROVIDE CRUTCHES TO THE PATIENT AND GIVE INSTRUCTIONS, DO YOU FEEL** :

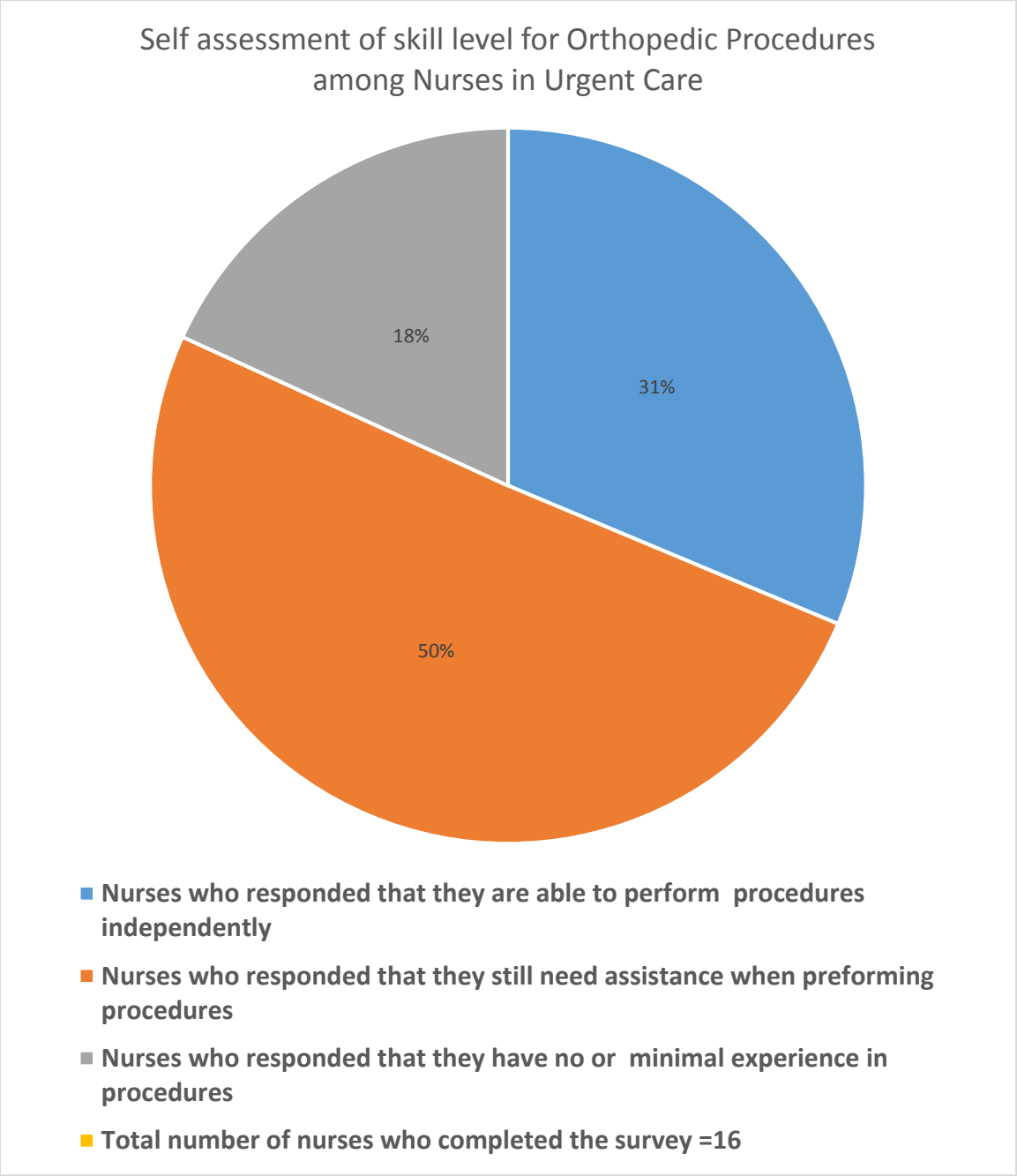
   A) I HAVE DONE IT ENOUGH TIMES THAT IT IS NOW JUST PART OF MY ROUTINE WORK TASKS

   B) I HAVE DONE IT BUT IT BUT STILL NEED ASSISTANCE AND ADVISE FROM THE “EXPERTS” IN THE UNIT.

   C) I KNOW HOW TO DO IT , BUT I RARELY DO IT AND WILL NEED ALOT OF HELP OR WILL NEED TO ASK ANOTHER PERSON TO DO IT FOR ME

   D) I AM NOT FAMILIAR WITH THIS CARE

Appendix C


Self assessment of skill level for Orthopedic Procedures among Nurses in Urgent Care
18%
31%
50%
Nurses who responded that they are able to perform procedures independently
Nurses who responded that they still need assistance when preforming procedures
Nurses who responded that they have no or minimal experience in procedures
Total number of nurses who completed the survey =16

Appendix D

Cost of Staff In- Service Training per Hour		Cost of Hiring New Staff Members
CNL Facilitator	N/A	
LVN Staff Lecturer	$24.60 per hour	
RN Staff Lecturer	$ 45.25 per hour	
RN Staff Learner x seven	316.75 per hour	
LVN Staff Learner x seven	172.20 per hour	
Classroom	N/A- On site at the project's clinical setting	
Materials	N/A -Splint materials for practice and demonstration used from items provided and ordered in bulk by the unit. Paper for written instructions, educational materials provided by facilitator	
Total Cost of In-Service Training per Hour	$ 558.80	Average yearly wage of LVN= $51,170 Average yearly wage of RN= $ 94,120 .00

Appendix E

Nursing Survey on Implementing a Training Program for Ortho Procedures in the Urgent Care

Below are questions on how you feel about implementing a skill building program for splint application and crutch training within the unit. Your feedback is important and I would appreciate it very much- Aidalyn Carino, RN, CNL student of USF.

1) **Which one of the possible benefits below do you think can be a result all nursing staff being able to competently apply splints and teach crutch training to patients?:**

   a) Will improve the flow of the unit and decrease any delay of treatment
   b) Reduce possible errors and improve patient outcomes
   c) Improve patient satisfaction

2) **Which one of the possible benefits below do you believe that is a result of all nursing staff to be able to competently apply splints and teach crutch training to patient will ? :**

   a) Enhance individual nursing practice and career as it builds new skills and or gain mastery of ones previously learned.
   b) Ensure job security and work satisfaction
   c) Strengthen working relationships within the unit and decrease work frustration

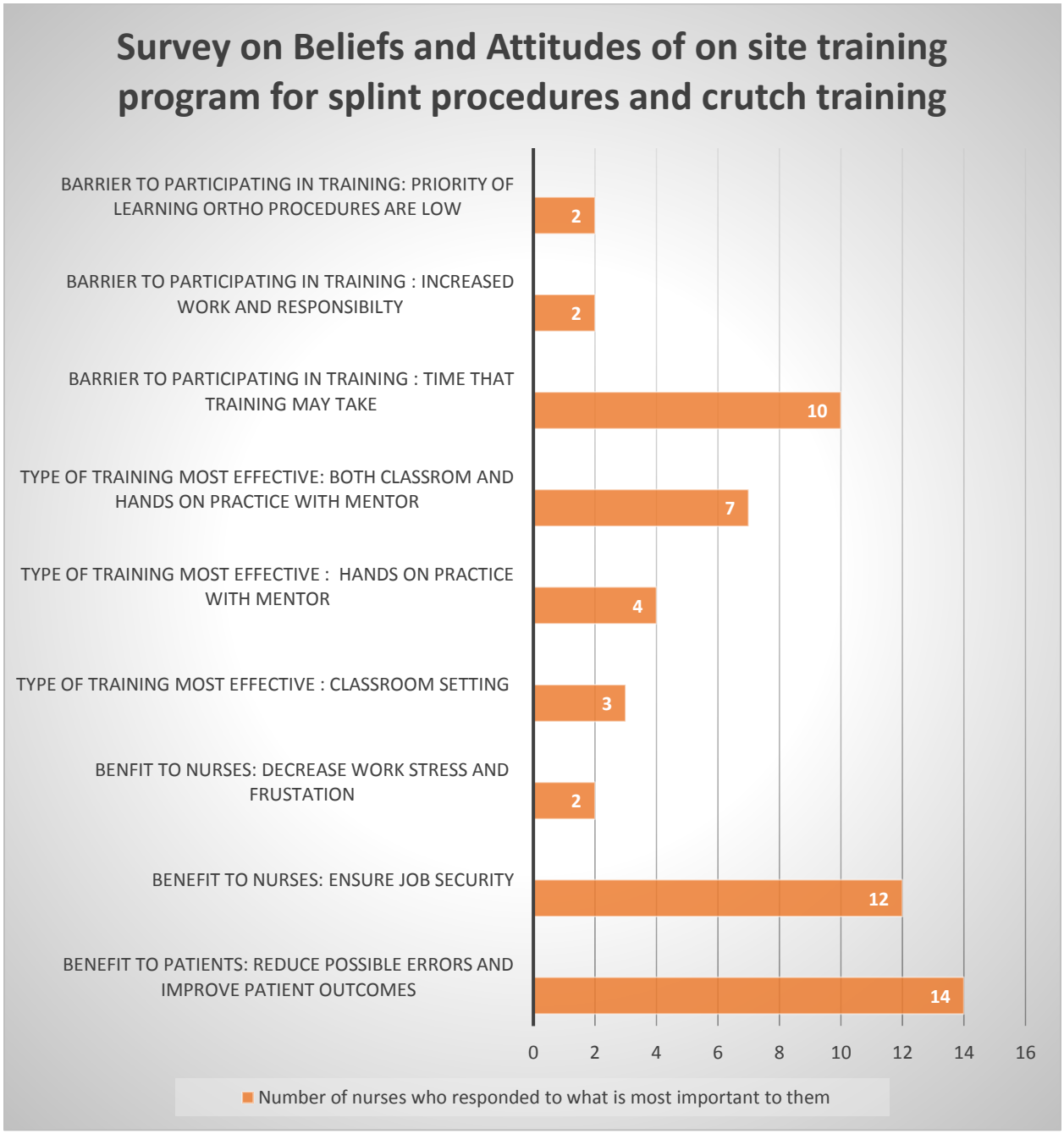
3) **Do you believe that in-service training session in a classroom format on non -working hours will be most effective to learn?**
   a) Yes,
   b) No, will need other styles and methods

4) **Do you believe that doing both an in-service training session on non-working hours in addition to hands on practice with a mentor during working hours is the most effective to learn ?**
   a) Yes
   b) No, will need other styles and methods.

5) **Do you believe that hands on training during working hours with a mentor is the most effective way to learn?**
   a) Yes
   b) No, will need other styles and method

6) **What are the possible barriers for not participating in a training program within the unit (check all that apply?)**
   a) Time that training it may take
   b) Increased work responsibility and workload
   c) Priority of learning ortho procedures are low

Appendix F


Survey on Beliefs and Attitudes of on site training program for splint procedures and crutch training
BARRIER TO PARTICIPATING IN TRAINING: PRIORITY OF LEARNING ORTHO PROCEDURES ARE LOW
2
BARRIER TO PARTICIPATING IN TRAINING : INCREASED WORK AND RESPONSIBILTY
2
BARRIER TO PARTICIPATING IN TRAINING : TIME THAT TRAINING MAY TAKE
10
TYPE OF TRAINING MOST EFFECTIVE: BOTH CLASSROM AND HANDS ON PRACTICE WITH MENTOR
7
TYPE OF TRAINING MOST EFFECTIVE : HANDS ON PRACTICE WITH MENTOR
4
TYPE OF TRAINING MOST EFFECTIVE : CLASSROOM SETTING
3
BENFIT TO NURSES: DECREASE WORK STRESS AND FRUSTATION
2
BENEFIT TO NURSES: ENSURE JOB SECURITY
12
BENEFIT TO PATIENTS: REDUCE POSSIBLE ERRORS AND IMPROVE PATIENT OUTCOMES
14
0 2 4 6 8 10 12 14 16
Number of nurses who responded to what is most important to them

Appendix G

Competency Checklist for Training Session on Splint Procedures and Crutch Training

Name of Learner: Date:

Name of Facilitator Pre-Intervention Assessment (please circle)

Name of Teacher: Post -Intervention Assessment (please circle)

Categories of objectives to be assessed by verbalization and demonstration of the learner by anatomic location.	***Limited knowledge and skill:*** ***Will benefit from orientation and hands on practice with preceptor***	***Some knowledge and skill*** ***Will benefit from review and hands on practice with preceptor***	***Have knowledge and perform to standards of care Independently***
Fingers Neurovascular assessment	☐	☐	☐
Common Indications for splint	☐	☐	☐
Buddy Tape Frog/Popsicle Splint/ Ulnar splint	☐	☐	☐
After care patient instructions	☐	☐	☐
Thumb Neurovascular assessment	☐	☐	☐
Common Indications for splint	☐	☐	☐
Pre-fab Spica/ Spica w Fiberglass	☐	☐	☐
After care patient instructions	☐	☐	☐

Appendix G(continued)

Hand			
Neurovascular assessment	☐	☐	☐
Common Indications for splint	☐	☐	☐
Short Arm Splint	☐	☐	☐
After care patient instructions	☐	☐	☐
Wrist			
Neurovascular assessment	☐	☐	☐
Common Indications for splint	☐	☐	☐
Pre-fab Colles/ Short Arm Splint	☐	☐	☐
After care patient instructions	☐	☐	☐
Forearm			
Neurovascular assessment	☐	☐	☐
Common Indications for splint	☐	☐	☐
Short Arm Splint	☐	☐	☐
Long Arm Splint	☐	☐	☐
After care patient instructions	☐	☐	☐

Appendix G (continued)

Clavicle Neurovascular assessment	☐	☐	☐
Common Indications for splint	☐	☐	☐
Figure 8 Splint/arm sling	☐	☐	☐
After care patient instructions	☐	☐	☐
Neck Neurovascular assessment	☐	☐	☐
Common Indications for splint	☐	☐	☐
Cervical Collar	☐	☐	☐
After care patient instructions	☐	☐	☐
Knee Neurovascular assessment	☐	☐	☐
Common Indications for splint/immobilization	☐	☐	☐
Knee Immobilizer	☐	☐	☐
After care patient instructions	☐	☐	☐

Appendix G (continued)

Leg Neurovascular assessment Common Indications for splint Posterior Splint After care patient instructions	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
Ankle Neurovascular assessment Common Indications for splint Posterior Splint After care patient instructions	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
Foot Neurovascular assessment Common Indications for splint Posterior Splint After care patient instructions	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
Toes Neurovascular assessment Common Indications for splint Buddy Tape After care patient instructions	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐

Appendix H

Competency Checklist for Training Session on Splint Procedures and Crutch Training

Name of Learner: Date:

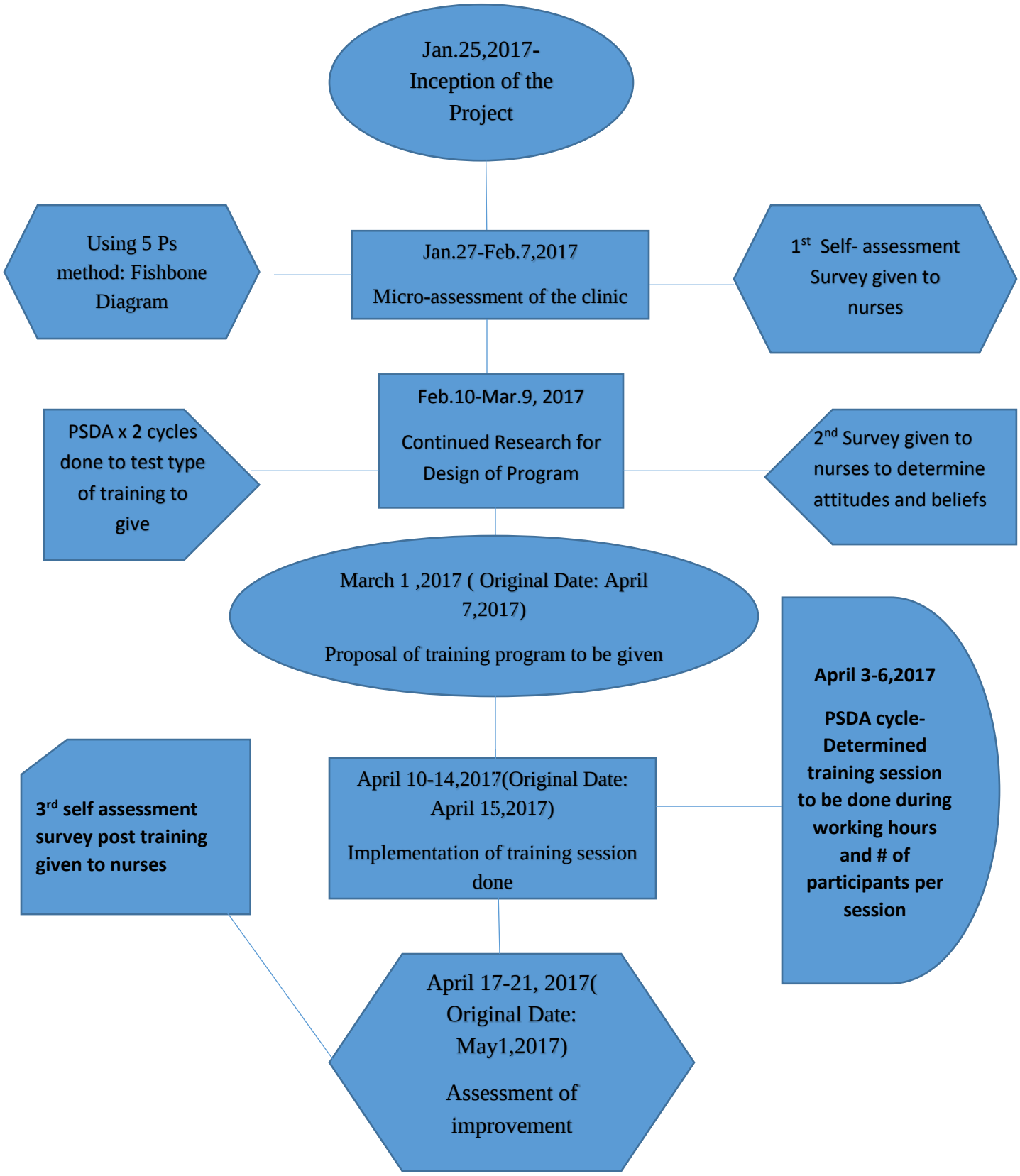
Name of Facilitator : Pre-Intervention Assessment (please circle)

Name of Teacher: Post -Intervention Assessment (please circle)

CRUTCH TRAINING TO BE GIVEN TO PATIENTS	***Limited knowledge and skill*** ***Will benefit from orientation and hands on practice with preceptor***	***Some knowledge and skill*** ***Will benefit from review and hands on practice with preceptor***	***Have knowledge and perform to standards of care Independently***
TOTAL NON-WEIGHT BEARING Neurovascular assessment/common indications Patient care instructions	☐ ☐	☐ ☐	☐ ☐
PARTIAL WEIGHT BEARING Neurovascular Assessment/common indications Patient care instructions	☐ ☐	☐ ☐	☐ ☐

Appendix I

Timeline of the Project



Appendix J

TRAINING SESSION IS TO ENHANCE INDIVIDUAL SKILL AND KNOWLEDGE OF SPLINT PROCEDURES AND CRUTCH TRAINING. THE CHECKLIST AND POST ASSESSMENT SURVEY IS USED ONLY AS A TRAINING TOOL FOR INDIVIDUAL ENRICHEMENT AND DATA EVALUTION FOR THE PROJECT.

WITH SINCERE APPRECITTION,

AIDALYN CARINO, RN, USF MSN-CNL STUDENT

SELF ASSESSMENT SURVEY AFTER PARTICIPATON IN THE TRAINING SESSION FOR SPLINT PROCEDURES AND CRUTCH TRAINING.

PLEASE PROVIDE YOUR BEST ANSWER FOR THE QUESTIONS BELOW.

1) ***D0 YOU FEEL THAT AFTER PARTICIPATION IN THE SESSION IT HAS IMPROVED YOUR SKILLS AND KNOWLEDGE OF SPLINT PROCEDURES AND CRUTCH TRAINING :***
   A) GREATLY
   B) MODERATELY
   C) MINIMALLY

2) ***D0 YOU FEEL THAT AFTER PARTICIPATION IN THE SESSION IT HAS INCREASED YOUR CONFINDENCE IN YOUR SKILLS AND KNOWLEDGE OF SPLINT PROCEDURES AND CRUTCH TRAINING:***
   A) GREATLY
   B) MODERATELY
   C) MINIMALLY

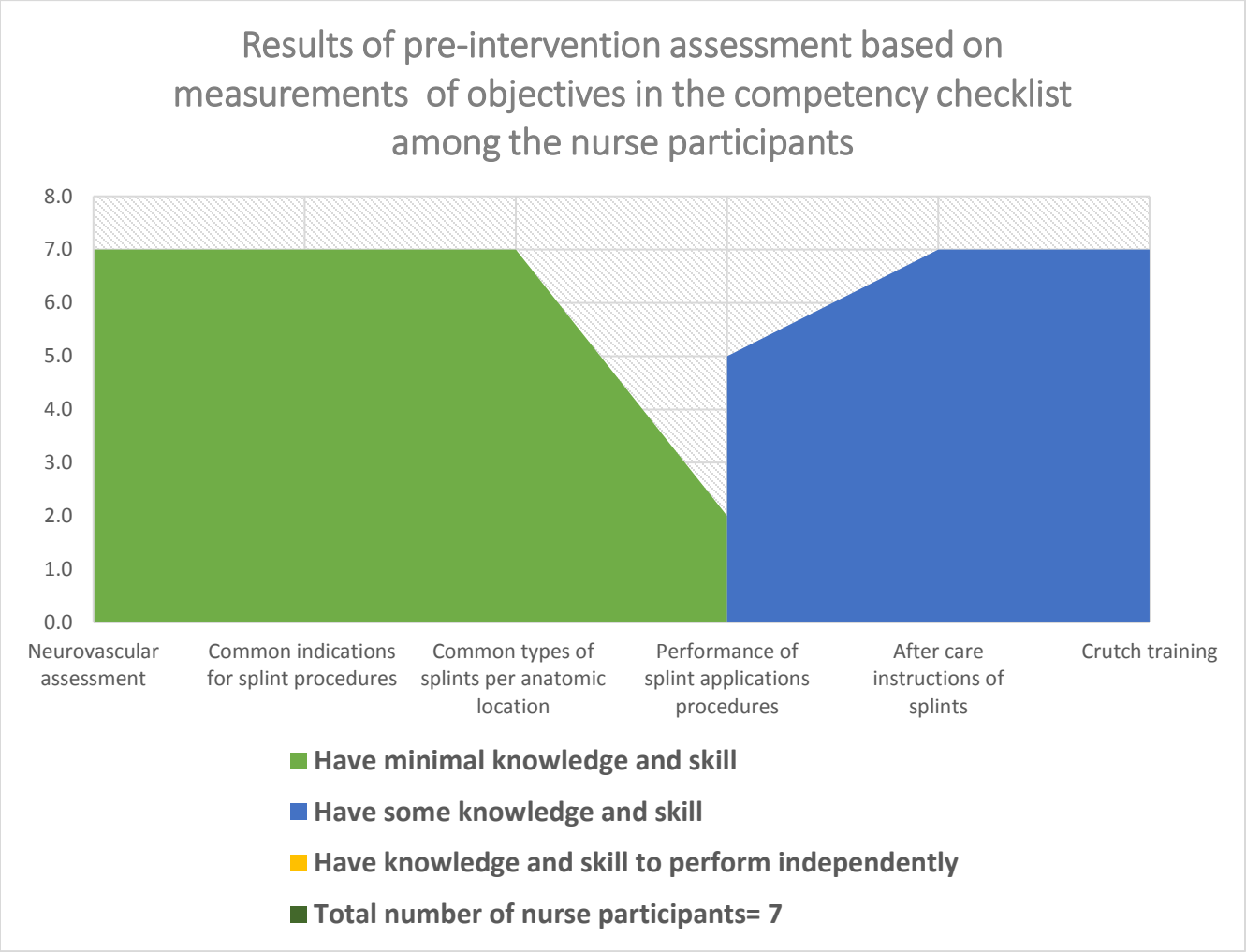
3) ***D0 YOU FEEL THAT AFTER PARTICIPATION IN THE SESSION IT HAS INCREASED YOUR INTEREST IN SPLINT PROCEDURES AND CRUTCH TRAINING:***

   A) GREATLY
   B) MODERATELY
   C) MINIMALLY

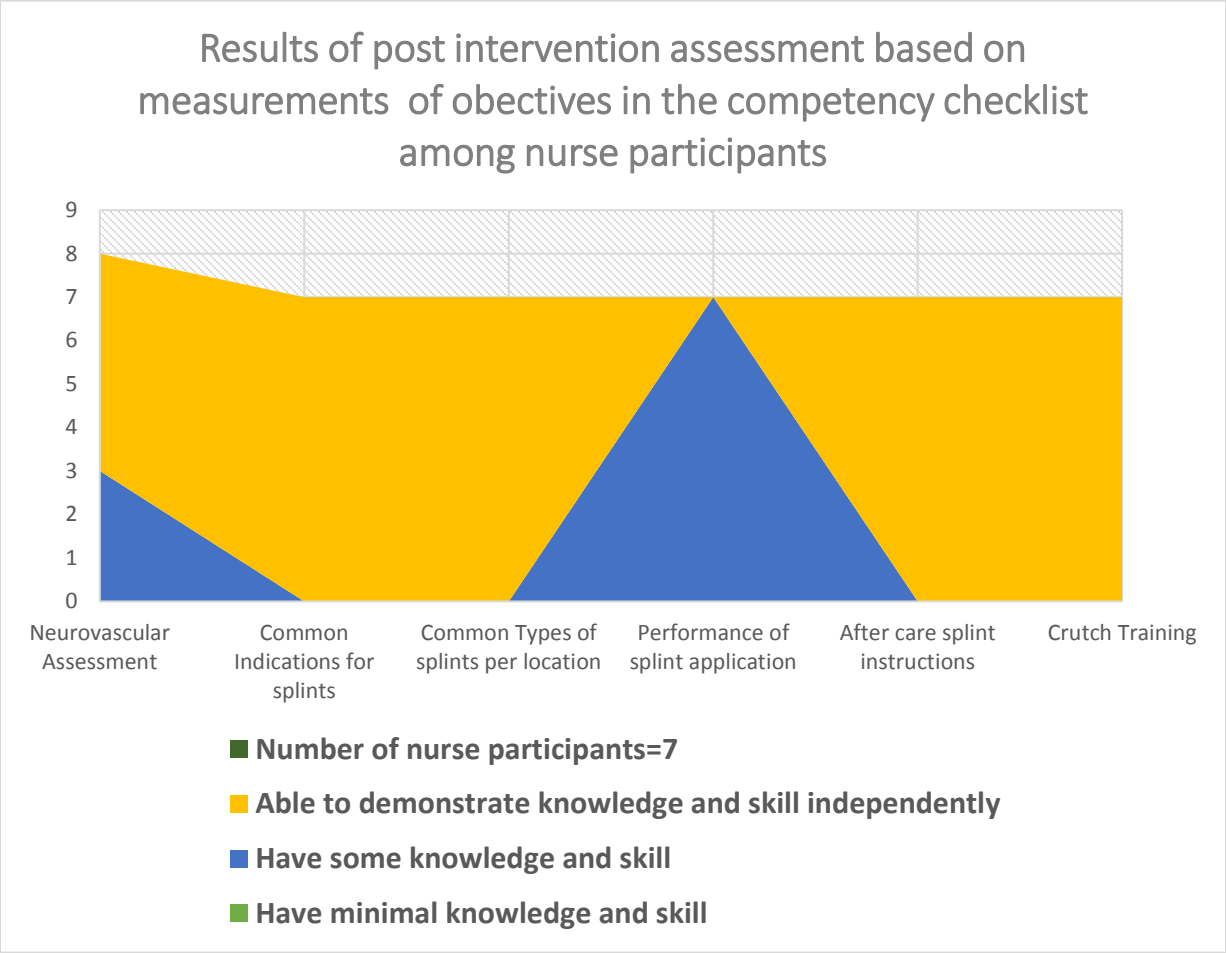
4) ***DO YOU FEEL THAT AFTER PARTICIPATION IN THE SESSION A CONTINUED "HANDS ON TRAINING" WITH A MENTOR WILL BE EFFECTIVE IN PROMOTING YOUR COMPENTENCY IN SPLINT PROCEDURES AND CRUTCH TRAINING?***

   A) GREATLY
   B) MODERATELY
   C) MINIMALLY

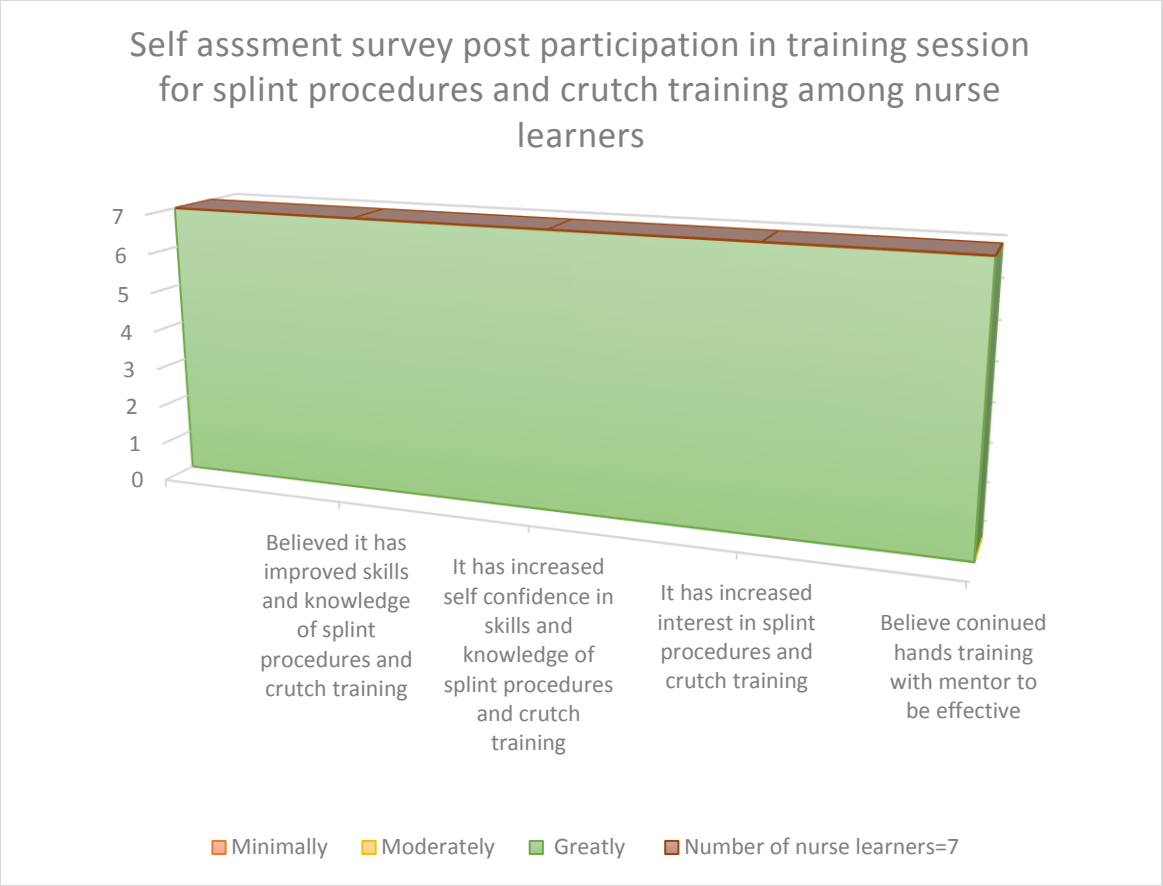
Appendix K


Results of pre-intervention assessment based on measurements of objectives in the competency checklist among the nurse participants
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Neurovascular assessment
Common indications for splint procedures
Common types of splints per anatomic location
Performance of splint applications procedures
After care instructions of splints
Crutch training
Have minimal knowledge and skill
Have some knowledge and skill
Have knowledge and skill to perform independently
Total number of nurse participants= 7

Appendix L


Results of post intervention assessment based on measurements of obectives in the competency checklist among nurse participants
9
8
7
6
5
4
3
2
1
0
Neurovascular Assessment
Common Indications for splints
Common Types of splints per location
Performance of splint application
After care splint instructions
Crutch Training
Number of nurse participants=7
Able to demonstrate knowledge and skill independently
Have some knowledge and skill
Have minimal knowledge and skill

Appendix M


Self asssment survey post participation in training session for splint procedures and crutch training among nurse learners
7
6
5
4
3
2
1
0
Believed it has improved skills and knowledge of splint procedures and crutch training
It has increased self confidence in skills and knowledge of splint procedures and crutch training
It has increased interest in splint procedures and crutch training
Believe coninued hands training with mentor to be effective
Minimally
Moderately
Greatly
Number of nurse learners=7