

NURSING ROUND IMPROVEMENT STRATEGY AND ITS EFFECT ON HEAD NURSES' WORK PRACTICE ENVIRONMENT

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Abstract

Background: Nursing rounds are generally used to improve the use of evidence in nurses' practice, they provide a forum to maintain currency, competence, leadership and foster their clinical decision-making. **Aim:** This study was aimed at determining the effect of nursing round improvement strategy on head nurses work practice environment. **Research design:** A one group open label quasi-experimental design with pre-post-follow-up assessment was used in conducting this study. **Study setting:** at Arab Contractors Medical Center, Cairo, Egypt. **Study subjects:** all available head nurses their number was (42). **Tools:** three tools were used in data collection included knowledge questionnaire, nursing round observational checklist, and work practice environment scale for head nurses. **Results:** The study revealed that, the head nurses age ranged between 30 and 58 years, median 40.1 years, with great majority of them (97.6) being females and having a diploma degree in nursing. None of the head nurses had satisfactory total knowledge at the pre-intervention phase. These increased to 100% at both post and follow-up ($p < 0.001$) phases. (28.6) of head nurses had adequate total practice in the pre-intervention phase, reached 100% at post and follow-up phase. All (100.0%) of the head nurses had low total perception of work practice environment at the pre-intervention phase, this significantly improved reaching (100%) of high perception at both post-intervention and follow-up ($p < 0.001$) phases. The study intervention was the main statistically significant independent positive predictor of head nurses practice score, in addition to age and perception score. Conversely, the experience years were a negative predictor. The model explains 92% of the variation in this score. **Conclusion:** the implementation of the training as round improvement strategy program is effective in improving their knowledge, practice of nursing round and perception of practice environment among the head nurses. Moreover, the scores of these three domains are strongly and positive correlated, and thus the study hypothesis is accepted. **Recommendations:** the study recommends improvement of the head nurses performance through in-service training program, and more frequent meeting with supervisors. Scheduling fixed times for rounds. Further research is proposed to evaluate the long term positive impact of the nursing round improvement strategy revealed in the present study, and to explore the effectiveness of the nursing round strategy in other organizations, as well as on head nurses and patients' outcomes.

Keywords: Head Nurses, Nursing Round, Work Practice Environment.

INTRODUCTION:

Nursing are a dominant number among the health profession, providing constant and continuous 24-hour service to patients and are therefore, the most important human

resource in the hospital (**Rahmawati, 2021**). Nurses perform their role through communication, nurse-patient interaction is the mainstay of the nursing work, and the effective communication between patients and nurses are critical for quality nursing care (**Afriyie, 2020**). The quality of nurse-patient interactions as well as how patients perceive care relate to nurse's capability to timely achieve the physical and clinical needs of the patient and to provide a comforting presence (**Molina-Mula, & Gallo-Estrada, 2020**).

Nursing rounds involve a diverse range of participants, most frequently nurses. The content most frequently discussed included clinical issues where nurses decided on nursing care actions to address these issues. Knowledge translation is the most known outcome of the nursing rounds. These were perceived to positively influence application of evidence in practice, identification of areas for practice improvement and ability to communicate clinical information (**Tobiano et al., 2019**).

The environment of health care organizations has been identified as a determinant for the wellbeing of health professionals and for achievement of patient safety (**Dos Santos Alves et al., (2017)**). The nursing practice environment is defined as "the organizational characteristics of a work setting that facilitate or constrain professional nursing practice". The literature reports that workload factors affect nurses' ability to fully engage in continuing professional development. Hence the work environment in health care calls for approaches to achieve continuous development of nursing practice and work satisfaction. Clinical rounds have been used in many settings as an education and practice improvement strategy (**Ambani et al., 2020**). Furthermore, a practice environment can be described as the system that support nurses' control over the delivery of nursing care and the environment in which care is delivered and the characteristics of an organization that facilitate or constrain professional nursing practice (**Lee and shin, 2021**).

Positive practice environments are characterized by Occupational health, safety and wellness policies that address workplace hazards, discrimination, physical and psychological violence and issues pertaining to personal security; Fair and manageable workloads and job demands; Organizational climate reflective of effective management and leadership practices, good peer support, worker participation in decision-making, shared values; healthy work-life balance; equal opportunity; professional identity; autonomy and control over practice; career advancement; job security; decent pay and benefit; open communication and transparency; recognition; and access to adequate equipment, supplies and support staff (**Mihdawi et al., 2020**).

Work environments have the potential to prevent and mitigate errors inherent in human operations and activities. Patient outcomes that are sensitive to nursing care include both quality-related outcomes (e.g., patient satisfaction) and patient safety outcomes (e.g., falls, infections, medication errors) (**Park et al., 2018**). Meanwhile, increased nursing hours and a richer skill mix improve patient outcomes (**Lamming et al., 2021**). Nursing rounds are essential activities in nurses' daily work. They help in proper decision-making

and application of evidence-based practice for better patient care. This would foster nurses' perception of the practice environment (**Tobiano et al., 2019**).

Significance of the study:

Nursing round are not performed effectively by head nurses at Arab Contractors Medical Center (ACMC), Cairo, Egypt. Therefore, the head nurses need to improve their knowledge and practice regarding nursing round; this improvement can improve head nurses' autonomy, involvement in decision making, relationships with other health care professionals and use of evidence in practice as well. This may lead to improvement of their perceptions of the practice environment as a setting for professional nursing practice.

AIM OF THE STUDY:

The aim of this study is to determining the effect of nursing round improvement strategy on head nurses work practice environment.

SUBJECTS AND METHODS:

Research design:

A one group open label quasi-experimental design with pre-post-follow-up assessment was used in conducting this study.

Setting:

The study was conducted at 42 medical and surgical departments and units at Arab Contractors Medical Center, Cairo, Egypt.

Study subjects:

All available head nurses their number was (42).

Tools for data collection:

Data for this study was collected by using three tools:

1- Knowledge questionnaire:

It consists of two parts:

Part (1): It was concerned with personal and job characteristics of the head nurses which including: age, gender, marital status, qualifications level, and years of experience, attendance of training courses.

Part (2): It includes multiple choice questions (MCQs), it contains 20 questions covering the nursing round definition, goals, activities, process, head nurse role, and influencing factors.

Scoring: For the knowledge items, a correct response was scored 1 and the incorrect zero. For each area of knowledge and for the total questionnaire the scores of the items

were summed-up and the total divided by the number of the items, giving mean scores. These scores were converted into percent score and means and standard deviations and medians were computed. Knowledge was considered satisfactory if the percent score was 60% or more and unsatisfactory if less than 60%.

2- Nursing round observational checklist for head nurses:

It consists of two parts:

Part (1): This part was for the identification data of head nurses.

Part (2): This was intended to assess the performance of head nurses during the nursing round, it covered three stages of nursing round process, preparatory stage (27 items), implementation stage (23 items), and termination stage (9 items).

Scoring: In the observation checklists, the items “not done” and “done” were scored “0” and “1”, respectively. The items “not applicable” were not scored and were discounted from the totals. For each area and for the total checklist, the scores of the items were summed-up and the total divided by the number of the items, giving mean scores. These were converted into a percent scores, and means and standard deviations and medians were computed. The practice was considered adequate if the percent score was 60% or more and inadequate if less than 60%.

3- Work practice environment scale:

It was used in the assessment of the perception of head nurses regarding the work practice environment

It consists of two parts:

Part (1): This was for the identification data of head nurses.

Part (2): This was used to assess head nurses perception of work practice environment. It includes eight dimensions as follows: participation in hospital administration (9 items), support (9 items), nursing foundation of quality care (19 items), communication practices (6 items), resources sufficiency (3 items), nurse-physician relationships (6 items), nursing leadership (3 items), and control (3 items).

Scoring: The responses “strongly agree”, “agree”, “uncertain”, “strongly disagree”, and “disagree” were respectively scored 5, 4, 3, 2, and 1. The scoring was reversed for negative statements. The scores of the items of each domain and of the total scale were summed-up and the total divided by the number of the items giving mean scores. These were converted into percent scores, and means and standard deviations and medians were computed. The perception was considered high if the percent score was 60% or more and low if less than 60%.

Validity and Reliability of the data collection tools:

To achieve the criteria of trustworthiness of the tool of data collection in the study, they were evaluated by a jury group consisting of five professors specialized in Nursing

Administration. These were two professors from Ain-Shams University, two from Cairo University, and one from Modern University for Technology and Information (MTI). Their opinions were solicited to ascertain the relevance, clarity, and comprehensiveness of the tools. The tools were modified according to their relevant comments and suggestions.

Pilot study:

A pilot study was performed after an official permission was granted from the general manager of the hospital. It was carried out on a number of head nurses representing about 10% of the main study sample. The purpose was to examine the feasibility, simplicity, understandability, validity, legibility and clarity of the language, and applicability of the tools. It also helped identify any possible potential problems that might face the researcher in the fieldwork. Since no modifications were needed in the tools, these participants were included in the main study sample.

Field work:

The actual field work of the study started on the beginning on August 2020 and ended on May 2021. It included preliminary assessment, planning, implementation, and evaluation phases.

Phase I (preliminary assessment): After securing official permissions to conduct the fieldwork, the researcher met with head nurses to explain the purpose and nature of the study and get their consent to participate. Those who gave their informed consent to participate were given the data collection forms. It took about 30-45 minutes for each head nurse to fill the knowledge and perception tools. The filled forms were handed back to the researcher to check the completeness. Then, researchers were set with the nursing director to plan observations. Each head nurse was observed by the researchers using the observation checklist. This phase lasted from the beginning of August 2020 and end on October 2020.

Phase II (program planning): an analysis of the obtained information was performed in order to identify all the areas of strength and weakness in head nurses knowledge and practice of nursing rounds. All the comments noticed by the researchers during data collection were also taken into account. It was aimed to improve knowledge and practice of head nurses regarding nursing round. Different instructional strategies and media were selected to suit participants needs and achieve the objectives and contents of the training program. It took one month (November 2020).

Phase III (program implementation): The training program was implemented to the head nurses in a small groups. The program was implemented for eight weeks per small group, 2-3 hours/day, and three days per week to various small groups. The teaching methods used included mini-lectures, small group discussion, and practical sessions with role playing and demonstration-re-demonstration. Various educational media were used as power-point presentation using data show, whiteboard, posters, and flipchart. Handouts prepared by the researchers were also distributed to participants for reference.

Participant's feedback was solicited at the beginning of each session about the previous one. Beginning on December 2020 and ended on January 2021.

Phase IV (post-program evaluation):

The effect of the training program on head nurses' knowledge and practice of the nursing round, as well as on their work practice environment was evaluated through a post-test carried out after the end of the program implementation. This was done using the same data collection forms as in pre-test. It was immediately for knowledge, and one month later head nurses practice and perception was assessed, ended at the end of March 2021. The evaluation of the effect of the program was repeated through a follow-up test three months after the post-test assessment using the same data collection forms, ended at the end of May 2021.

Administrative design:

An official letter was issued from dean of faculty of nursing, Ain-Shams University, to the directors of Arab Contractors Medical Center to take their approval about the conduction of the research. Then, the researcher met the center directors after explaining the study aims and seeks their support and to obtain their approval.

Ethical consideration:

The study protocol was approved by the Scientific Research Ethics Committee of the faculty of nursing, Ain-Shams University. Before asking any subject for participating in the study, the researcher explaining the aim and procedures of the study to participants with emphasis on the confidentiality of any obtained information. The questionnaire forms were anonymous. An oral informed consent was obtained from each participant in the research. The study maneuvers could not lead to any actual or potential harm to the participants. The study beneficence was clear in the improvement of head nurses performance of nursing round, which would be reflected positively on their work practice environment.

Statistical design:

Data entry and statistical analysis were done using SPSS 20.0 statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations and medians for quantitative variables. Guttman Split-Half and Cronbach alpha coefficient was calculated to assess the reliability of the practice and perception scales through their internal consistency. Quantitative continuous data were compared using the non-parametric Mann-Whitney or Kruskal-Wallis tests. Qualitative categorical variables were compared using chi-square test. Whenever the expected values in one or more of the cells in a 2x2 tables was less than 5, Fisher exact test was used instead. In larger than 2x2 cross-tables, no test could be applied whenever the expected value in 10% or more of the cells was less than 5. Spearman rank correlation was used for assessment of the inter-relationships among quantitative variables and ranked ones. In order to identify the

independent predictors of the scores of knowledge, practice, and perception, multiple linear regression analysis was used and analysis of variance for the full regression models was done. Statistical significance was considered at p -value <0.05 .

RESULTS

Table 1: Reveals that, the study sample of head nurses consisted of 42 age ranged between 30 and 58 years, median 40.1 years, the great majority (97.6) being females and having a diploma degree in nursing. The great majority was married (92.9). Their experience ranged between 9 and 35 years with median 21.0.

Table (2): Shows that, none of the head nurses (0.0%) had satisfactory knowledge in any areas pertaining to nursing round at the pre-intervention phase. Statistically significant improvement were revealed at the post- intervention phase ($p<0.001$) in all areas reaching 100.0% in many of them. Slight declines were demonstrated at the follow-up phase, But the levels remained significantly higher in comparison with the baseline ($p<0.001$).

Figure (1): Shows that, none of the head nurses (0.0%) had satisfactory total knowledge of nursing round at the pre-intervention phase. These increased to 100.0% at both post-intervention and follow-up ($p<0.001$) phases.

Table (3): Demonstrates that, the pre-intervention adequate practice of the three stages of the nursing round observed among the head nurses in the study sample was very low for the preparation (16.7%) and termination (11.9%) stages, while the majority (83.3%) had adequate practice of the implementation stage. At the post- intervention and follow-up phases of the study, there was statistically significant improvement in all three stages of the nursing round reaching 100.0% adequacy.

Figure (2): Illustrate that, 28.6% of the head nurses had adequate total practice of nursing rounds at the pre-intervention phase. This rose to 100.0% at both post-intervention and follow-up ($p<0.001$) phases.

Figure (3): Shows that, none (0.0%) of the head nurses had high total perception of work practice environment at the pre- intervention phase. This significantly improved reaching (100%) at both post-intervention and follow-up ($p<0.001$) phases.

Table (4): Demonstrates that, a statistically significant strong positive correlation among head nurses scores of knowledge, practice, and perception of nursing round. The strongest being between their knowledge and practice ($r=0.898$). Meanwhile, no statistically significant correlations could be revealed with any of their characteristics.

Table (5): Shows that, the study intervention was the only statistically significant predictor of head nurses knowledge score. It explains 94% of the variation in this score. None of the other characteristics had a significant influence on the knowledge score.

Table (6): Clarifies that, the knowledge score was its only statistically significant independent positive predictor. It explains 96% of the variation in this score. None of the

other characteristics or the study intervention had a significant influence on the perception score.

Table (7): Describes that, the study intervention was the main statistically significant independent positive predictor of head nurses practice score, in addition to age and perception score. Conversely, the experience years were a negative predictor. The model explains 92% of the variation in this score.

Table 1: Demographic characteristics of head nurses in the study sample (n=42).

| | Frequency | Percent |
|----------------------------|-----------|---------|
| Age: | | |
| <40 | 16 | 38.1 |
| 40+ | 26 | 61.9 |
| Range | 30-58 | |
| Mean±SD | 42.4±8.4 | |
| Median | 41.0 | |
| Gender: | | |
| Male | 1 | 2.4 |
| Female | 41 | 97.6 |
| Marital status: | | |
| Unmarried | 3 | 7.1 |
| Married | 39 | 92.9 |
| Nursing qualification: | | |
| Nursing school diploma | 41 | 97.6 |
| Bachelor | 1 | 2.4 |
| Experience: | | |
| <20 | 16 | 38.1 |
| 20+ | 26 | 61.9 |
| Range | 9-35 | |
| Mean±SD | 21.4±7.1 | |
| Median | 21.0 | |
| Courses in administration: | | |
| No | 2 | 4.8 |
| Yes | 40 | 95.2 |

Table 2: Knowledge of head nurses related to nursing rounds dimensions throughout intervention phases (n=42)

| Satisfactory (60%+) knowledge of nursing rounds: | Time | | | | | | X ² (p-value) Pre-post | X ² (p-value) Pre-FU |
|--|------|-----|------|-------|-----|-------|-----------------------------------|---------------------------------|
| | Pre | | Post | | FU | | | |
| | No. | % | No. | % | No. | % | | |
| Definition | 0 | 0.0 | 37 | 88.1 | 29 | 69.0 | 66.13 (<0.001*) | 44.29 (<0.001*) |
| Goals | 0 | 0.0 | 42 | 100.0 | 27 | 64.3 | 84.00 (<0.001*) | 39.79 (<0.001*) |
| Process | 0 | 0.0 | 42 | 100.0 | 42 | 100.0 | 84.00 (<0.001*) | 84.00 (<0.001*) |
| Head nurse role | 0 | 0.0 | 41 | 97.6 | 20 | 47.6 | 80.09 (<0.001*) | 26.25 (<0.001*) |
| Staff nurse role | 0 | 0.0 | 40 | 95.2 | 28 | 66.7 | 76.36 (<0.001*) | 42.00 (<0.001*) |
| Influencing factors | 0 | 0.0 | 42 | 100.0 | 34 | 81.0 | 84.00 (<0.001*) | 57.12 (<0.001*) |

Figure 1: Total knowledge of nursing rounds among head nurses throughout intervention phases

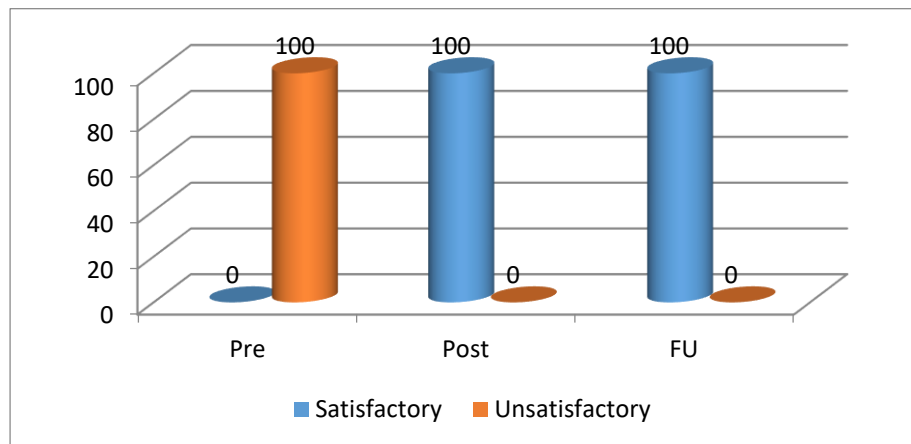


Table 3: Practice of nursing rounds stages as observed among head nurses throughout intervention phases (n=42)

| Adequate (60%+) practice of nursing rounds: | Time | | | | | | X ² (p-value) Pre-post | X ² (p-value) Pre-FU |
|---|------|------|------|-------|-----|-------|-----------------------------------|---------------------------------|
| | Pre | | Post | | FU | | | |
| | No. | % | No. | % | No. | % | | |
| Preparation | 7 | 16.7 | 42 | 100.0 | 42 | 100.0 | 60.00 (<0.001*) | 60.00 (<0.001*) |
| Implementation | 35 | 83.3 | 42 | 100.0 | 42 | 100.0 | Fisher (0.01*) | Fisher (0.01*) |
| Termination | 5 | 11.9 | 42 | 100.0 | 42 | 100.0 | 66.13 (<0.001*) | 66.13 (<0.001*) |

Figure 2: Total practice of nursing rounds as observed among head nurses throughout intervention phases

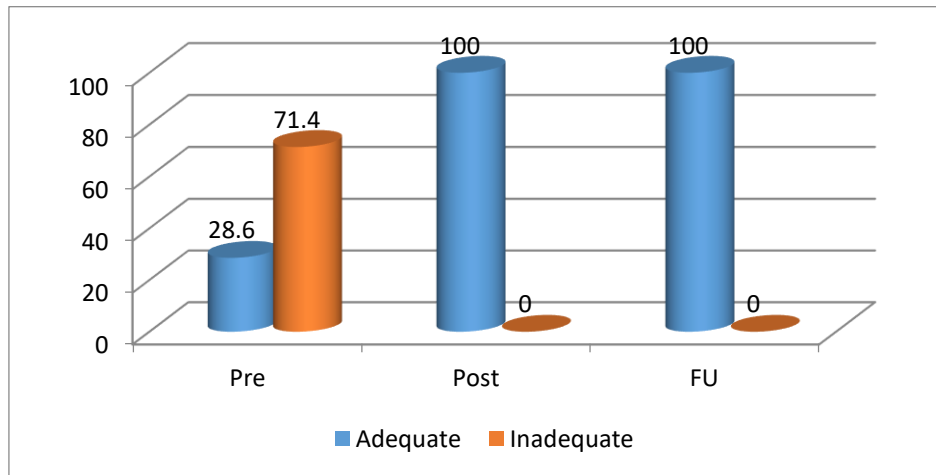


Figure 3: Total perception of work practice environment as reported by head nurses throughout intervention phases

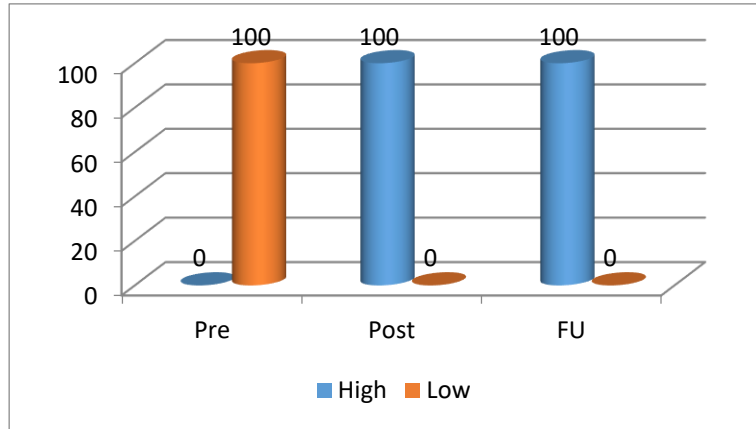


Table 4: Correlation matrix of head nurses' overall scores of knowledge, practice, and perception of rounds and their characteristics (n=42)

| | Spearman's rank correlation coefficient | | |
|---------------------|---|----------|------------|
| | Knowledge | Practice | Perception |
| Knowledge | 1.000 | | |
| Practice | .898** | 1.000 | |
| Perception | .897** | .884** | 1.000 |
| Age | -.007 | .021 | .047 |
| Qualification level | -.007 | .012 | -.006 |
| Experience years | -.010 | .006 | .041 |

Table 5: Best fitting multiple linear regression model for the knowledge score.

| | Unstandardized Coefficients | | Standardized Coefficients | t-test | p-value | 95% Confidence Interval for B | |
|--------------|-----------------------------|------------|---------------------------|--------|---------|-------------------------------|-------|
| | B | Std. Error | | | | Lower | Upper |
| Constant | 9.76 | 1.39 | | 7.024 | <0.001 | 7.01 | 12.51 |
| Intervention | 78.15 | 1.70 | 0.97 | 45.919 | <0.001 | 74.79 | 81.52 |

Table 6: Best fitting multiple linear regression model for the perception score

| | Unstandardized Coefficients | | Standardized Coefficients | t-test | p-value | 95% Confidence Interval for B | |
|-----------------|-----------------------------|------------|---------------------------|--------|---------|-------------------------------|-------|
| | B | Std. Error | | | | Lower | Upper |
| Constant | 37.05 | 0.79 | | 47.08 | <0.001 | 35.49 | 38.61 |
| Knowledge score | 0.58 | 0.01 | 0.98 | 53.74 | <0.001 | 0.56 | 0.60 |

Table 7: Best fitting multiple linear regression model for the practice score

| | Unstandardized Coefficients | | Standardized Coefficients | t-test | p-value | 95% Confidence Interval for B | |
|------------------|-----------------------------|------------|---------------------------|--------|---------|-------------------------------|-------|
| | B | Std. Error | | | | Lower | Upper |
| Constant | 32.25 | 4.74 | | 6.799 | <0.001 | 22.86 | 41.64 |
| Intervention | 25.37 | 2.98 | 0.65 | 8.511 | <0.001 | 19.47 | 31.27 |
| Age | 0.68 | 0.20 | 0.30 | 3.392 | 0.001 | 0.28 | 1.07 |
| Experience years | -0.80 | 0.24 | -0.30 | 3.390 | 0.001 | -1.26 | -0.33 |
| Perception score | 0.26 | 0.06 | 0.32 | 4.250 | <0.001 | 0.14 | 0.39 |

DISCUSSION:

Nursing rounds are essential activities in nursing daily work. They help in proper decision-making and application of evidence-based practice for better patient care. This would foster nurses' perception of practice environment (**Tobiano et al., 2019**). Nursing rounds also have been associated with better patient satisfaction given their positive impact on the quality of care provided as well as on patient satisfaction (**Jun et al., 2020**). It was even effective in dealing with difficult unresolved nursing problems with acute patients (**Rahmawati et al., 2021**). This study was aimed at determining the effect of nursing round improvement strategy on head nurses work practice environment. Its research hypothesis was that nursing round improvement strategy would positively affect head nurses work practice environment. The results indicate significant improvements in knowledge, practice, and perception of head nurses after implementation of the training program. Moreover, the scores of these three domains are strongly and positively correlated, and the knowledge scores are positive predictors of the perception scores, thus leading to acceptance of the set research hypothesis. According to the present study, less than two thirds of head nurses had age ranged between 30-58 years old, the majority of them were females. This result might be due to the head nurses had a sense of obligation and loyalty for remaining in the hospital. **Cohen, (2013)** was described a commitment as "the work behavior of individuals, guided by a sense of duty, obligation and loyalty towards the organization". Employees with strong commitment contribute more to the accomplishment of organization goals and are less likely to leave the organization (**Brown, 2012**).

More than two thirds of them were married. The majority of them had nursing school diploma, might be due to the nursing in the past did not have a culture of higher education, and they were most interested in working immediately after graduating from the diploma degree.

More than half of head nurses ranged from 9-35 years of experience, the head nurses had feeling of experience due to many years of experience in the hospital, the employee's perception of their willingness to work over their energy in order to succeed the hospital

to achieve its goals (**Bass, 2004**). And majority of them had attended courses in administration, might be due to the organization interest in improving performance and supporting their employees to provide the best service. According to the present study results, the pre-intervention assessment of the knowledge of nursing rounds among head nurses demonstrated that none of them had satisfactory knowledge in any areas tested. This might be attributed to the common misconception among nurses that the rounds are essentially physicians' rather than nurses task. This finding is congruent with what **Abo El Ata (2021)** reported, where the head nurses had deficient knowledge about the nursing round methods and procedures.

After implementation of the present study training program, there were significant improvement in the knowledge of the head nurses. This was noticed in all six knowledge areas as well as in the total knowledge. The improvement was retained at the follow-up phase despite some minimal declines indicating less recall. However the knowledge level were still significantly higher compared to pre-intervention knowledge. In agreement with this, a study in China demonstrated a significant improvement in nurse interns' knowledge about the nursing rounds after implementation of a training program (**Zhang et al., 2021**). Overall, the present study results demonstrated that the main deficiency in the head nurses practice of the nursing round before the intervention was related to the preparation and termination stages. Conversely, the implementation stage of the nursing round was adequately performed by the majority of them. This implies that they give more importance to the implementation of the round although a good preparation and proper termination are essential in its success. The finding might be explained to a lack of time, high workload, and shortage of staff. Similar barriers that may impede the effectiveness of nursing rounds were reported according to (**Tobiano et al., 2019**). After the implementation of the present study training intervention, statistically significant improvements were found in the practice of nursing rounds as observed among the head nurses. The improvement was noticed in all three stages of the nursing rounds, thus indicating the success of the training intervention. Overall, the present study findings showed that none of the head nurses had high total perception of work practice environment at the pre-intervention phase. The implementation of the training intervention led to significant improvement in their perception both at the post-intervention and follow-up phases. However, the multivariate analysis indicated that this positive effect of the training was indirect through improvement of their knowledge since the knowledge score was its only significant independent positive predictor. Moreover, it explained 96% of the variation in the perception score, thus indicating its almost full contribution to the perception score improvement. In agreement with this, a study in Tunisia reported improved nurses' perceptions following a training intervention (**Tlili et al., 2022**). The current study has also demonstrated significant strong positive correlations among head nurses scores of follow-up knowledge, practice, and perception of nursing round. The finding provides further confirmation of the positive effect of the knowledge and practice of the head nurses on their perception of the work practice environment. This forgoing improvement in the knowledge of the head nurses in the current study could certainly be

attributed to the positive effect of the training program, as well as the handout provided to them at the end of the training. In fact, the multivariate analysis identified the study intervention is the only significant independent positive predictor of the knowledge score. Moreover, it could explain as much as 94% of the variation in this score, thus it might be considered as the only factor affecting their knowledge score regardless any of their characteristics. In congruence with this, a study of the effectiveness of nursing rounds in Australia demonstrated its positive impact on nurses' knowledge (**Tobiano et al., 2019**).

Furthermore, the multivariate analysis of the present study results identified the training intervention as the main significant positive predictor of head nurses practice score. The regression model explained 92% of the variation in the practice score, thus confirming that the training intervention was the main contributor in the improvement of the practice score. The success of the training program might be attributed to its relevant content as well as the process of its administration with hands-on training as emphasized by (**Liu et al. 2022**) in a study in a china.

CONCLUSION:

The study findings indicate generally deficient knowledge, practice, and perception of nursing rounds among the head nurses. The implementation of the strategy program is effective in improving their knowledge, practice and perception. Moreover, the scores of these three domains are strongly and positively correlated. The knowledge scores positively predict the perception scores, and thus the study hypothesis is accepted.

RECOMMENDATIONS:

The study recommends improvement of the head nurses performance through in-service training program, and more frequent meeting with supervisors. Scheduling fixed times for rounds. Further research is proposed to evaluate the long term positive impact of the nursing round strategy revealed in the present study, and to explore the effectiveness of the nursing round strategy in other organizations, as well as on nurses and patients' outcomes.

References:

- ❖ **Abo El Ata A.B., Ibrahim N.M.I., Mahmoud A.A. (2021).** Nurses' Knowledge and Practice Regarding Nursing Care of Patients with Liver Cirrhosis. Port Said Scientific Journal of Nursing, 8(2): 223-246.
- ❖ **Afriyie, D. (2020).** Effective communication between nurses and patients: an evolutionary concept analysis. British Journal of Community Nursing, 25(9), 438-445.
- ❖ **Ambani, Z., Kutney-Lee, A., & Lake, E.T. (2020).** The nursing practice environment and nurse job outcomes: A path analysis of survey data. Journal of clinical nursing, 29(13-14), 2602-2614.
- ❖ **Bass, B. (2004).** Supervisory and engineering success associated with self, interaction, and task orientation scores. Personnel Psychology, 16, 13-22.
- ❖ **Brown, F. (2012):** Rally the troops of make the trains run on time: The relative importance and interaction of contingent reward and transformational leadership. Leadership and Organizational Development, 20(6), 291-299.

- ❖ **Cohen, A. (2013).** Organizational commitment and turnover: A meta-analysis. *Academy of Management Journal*, 36, 1140-1157.
- ❖ **Dos Santos Alves, D.F., da Silva, D., & de Brito Guirardello, E. (2017).** Nursing practice environment, job outcomes and safety climate: a structural equation modelling analysis. *Journal of nursing management*, 25(1), 46-55.
- ❖ **Jun, J., Stern, K., & Djukic, M. (2020).** Integrative review of the interventions for improving patients' experiences revealed in quality improvement projects. *Journal of Patient Experience*, 7(6), 882-892.
- ❖ **Lamming, L., Montague, J., Crosswaite, K., Faisal, M., McDonach, E., Mohammed, M.A., Cracknell, A., Lovatt, A., & Slater, B. (2021).** Fidelity and the impact of patient safety huddles on teamwork and safety culture: An evaluation of the huddle up for safer healthcare (HUSH) project. *BMC Health Services research*. 21(1), 1-11.
- ❖ **Lee, J., Cho, H.S., & Shin, S.R. (2021).** Nursing strategies for the post-COVID-19 era. *Int Nurs Rev.*; 68(2):149–52.
- ❖ **Liu, K., You, L.M., Chen, S.X., Hao, Y.T., Zhu, X.W., Zhang, L.F., et al. (2022):** The relationship between hospital work environment and nurse outcomes in Guangdong, China: a nurse questionnaire survey. *J Clin Nurs*; 21(9-10):1476–85.
- ❖ **Mihdawi, M., Al-Amer, R., Darwish, R. Randoll, S., & Afaneh. T. (2020).** The influence of Nursing Work Environment on Patient Safety. *Workplace Health and Safety. Workplace health & safety*, 68(8), 384-390.
- ❖ **Molina-Mula, J., & Gallo-Estrada, J. (2020).** Impact of nurse-patient relationship on quality of care and patient autonomy in decision-making. *International journal of environmental research and public health*, 17(3), 835.
- ❖ **Park, S.H., Hanchett, M., & Ma, C. (2018).** Practice environment characteristics associated with missed nursing care. *J Nurs Scholarsh.*; 50(6):722–30.
- ❖ **Rahmawati, I.N. (2021).** Implementing nursing round to deal with unresolved nursing problem on patient with acute pain: A case report. *Journal of Public Health Research*, 10(2), jphr-2021.
- ❖ **Tlili, M. A., Aouicha, W., Tarchoune, S., Sahli, J., Ben Dhiab, M., Chelbi, S., & Mallouli, M. (2022).** Predictors of evidence-based practice competency among Tunisian nursing students. *BMC Medical Education*, 22(1), 1-9.
- ❖ **Tobiano, G. Murphy, N., Grealish, L., Hervey, L., Aitken, L.M. (2019):** 'Effectiveness of nursing rounds in the Intensive Care Unit on workplace learning', *Intensive and Critical Care Nursing*. Elsevier Ltd, 53, pp. 92–99. doi:10.1016/j.iccn.2019.03.003.
- ❖ **Zhang, X.J., Ling, T.A.N. G., ZHANG, J., & Yue, T.A.N.G. (2021).** Discussion on optimizing nursing rounds model based on the inheritance of traditional Chinese medicine nursing. *Journal of Integrative Nursing*, 3(2), 53.