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Perception of Teamwork and Missed Nursing Care among nurses in Intensive Care Units at South Valley University Hospitals

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Abstract:
Background: *It is true and there is no doubt,* ***,*** *Teamwork has emerged in recent times as one of the most important facilitators in achieving positive, cost-effective outcomes in various settings through offering greater adaptability, productivity and creativity than individual work and in addition reducing of missed nursing care,* **Aim** *The aim of this study was to examine the relation between the perceptions of teamwork and missed nursing care among nurses in the intensive care units at South Valley University Hospitals. It was hypothesized that a higher perception of teamwork is associated with less missed nursing care, i.e. they are negatively correlated.*
Sample*: The study sample consisted of 58 nurses with a majority of females, aged less than 25 years.*
Setting: *The study was conducted in the Intensive Care Units (ICUs) of the Emergency Sector belonging to South Valley University Hospitals.*
Research Design*: An analytic cross-sectional design was utilized*
Tool: *the following tools were used I: the teamwork perception scale was developed by* ***Kalisch et al (2010) II:*** *The missed nursing care questionnaire was developed by*
(Kalisch, and William, 2009) Results & Conclusion*: the study results indicate that high perception of teamwork among the nurses working in the study settings, but about one-third of them reported high missed nursing care. There is a lack of significant relation between teamwork perception and missed nursing care, which could be attributed to the study limitation of small sample size. Therefore,*
Recommendations: *it is recommended to replicate the study on a larger sample size. Moreover, the teamwork domains of team orientation and trust need to be fostered among these nurses. They also need training in the identified areas of missed care such as patient education, ambulation, and feeding.*
Keywords: *Teamwork, Missed nursing care, Nurses, Intensive Care Units*

I. Introduction

Focus on the quality of care without staff teamwork is not possible ***(Dehghan-Nayeri et al., 2015)***. Teamwork has emerged in recent times as one of the most important facilitators in achieving positive, cost-effective outcomes in various settings through offering greater adaptability, productivity and creativity than individual work ***(Xyrichis and Ream, 2008)***. It is the process of achieving one common objective as one unified group of people ***(O'Leary et al. 2011 and Marks et al., 2013)***. It includes planning, goal formulation, coordination, monitoring, and interpersonal processes for favorable team climate ***(Welp and Manser, 2016)***. Each member in the team has a unique position and personality that affect team performance ***(Awuor et al., 2013)***.Teamwork is particularly important in healthcare where the division of labor among medical, nursing and allied health practitioners means that no single professional can deliver a complete episode of healthcare ***(Leggat, 2007)***. Thus, a teamwork-oriented culture has been suggested as a promising approach in improving healthcare processes ***(Bader, 2015)***. However, teamwork varies over time depending on the level of the required team activities. Hence, different knowledge, skills and attitudes are required during team process ***(Fernandez et al., 2008)***. Moreover, teams may face some problems including the possibility of wasting more time and energy, making bad decisions, being destructive through conflicts, frustrating other team members, and having low productivity ***(Shapiro et al., 2010)***.

In intensive and cardiac care units, seriously ill patients are cared for by specially trained multidisciplinary staff ***(Arthur, 2011)***, with nurses having a pivotal role in ensuring that these critically ill patients and families receive optimal care ***(American Association of Critical-Care Nurses, 2011)***.. These members work together in one way of improving patient care and safety. Having the teams trained improves the quality of the work and lessens the errors made ***(Despins et al., 2009)***. The quality of care may be threatened when the care needed by the patient is omitted, as occurs when nursing interventions are left undone or unfinished. The omitted care is significantly associated with patient safety issues such as medication errors and falls with injuries ***(Sochalski, 2004)***. Moreover, the errors of omission are more difficult to recognize than errors of commission, and thus are likely to represent a larger problem ***(Kalisch et al., 2011)***. Conceptually, missed nursing care is considered an error of omission and is defined as any aspect of required patient care that

is omitted either partially or totally, or is significantly delayed ***(Kalisch, 2009)***. The factors that may contribute to missed nursing care include human resources, material resources, and communication ***(Wakefield, 2014)***. Nonetheless, most studies have focused on errors of commission and have given little relevance to errors of omission, which are directly associated with the quality of care and the safety of the patient, as well as with health outcomes ***(Moreno and Interial, 2012)***.Previous studies have shown that missed nursing care is a significant problem in acute care hospitals. Since teamwork is a critical element in assuring patient safety and quality of care, this study is an attempt to explore the relation between nursing teamwork and missed nursing care. The study will also contribute to identification of the areas with high missed nursing care, which could help in designing strategies to reduce care omissions.

Aim of the Study

The aim of this study was to examine the relation between the perceptions of teamwork and missed nursing care among the nurses in the intensive care units at South Valley University Hospitals. It was hypothesized that a higher perception of teamwork is associated with less missed nursing care, i.e. they are negatively correlated.

II. Subjects And Methods

Research design and setting: The study was conducted in the Intensive Care Units (ICUs) of the Emergency Sector belonging to South Valley University Hospitals. An analytic cross-sectional design was utilized where both study variables, teamwork perception (independent) and missed nursing care (dependent) were measured at the same point in time.

Subjects: The study included a sample of convenience of all available nurses from the abovementioned. The only inclusion criterion was that of being responsible for provision of direct nursing care to patients. A total number of 58 eligible nurses agreed to participate. This sample size was large enough to demonstrate a correlation coefficient of 0.4 or higher with 80% power and at a 95% level of confidence between the scores of perception of teamwork and missed nursing care, using the sample size equation for correlation ***(Stanton and Glantz, 1992)***, accounting for a non-response rate of about 20%.

Data Collection Tool: Data were collected using a self-administered questionnaire, which included a teamwork perception scale, and a missed nursing care scale, in addition to a section for nurse's personal and job characteristics as age, qualification, experience, shift work, etc.

The teamwork perception scale was developed by ***Kalisch et al (2010)*** to measure the opinion of nurses regarding teamwork in ICUs. It consists of 32 items grouped under five domains: 1) Trust (7 items), 2) team orientation (9 items), 3) backup (6 items), 4) shared mental model (7 items), and 5) team leadership (3 items). The responses are on a 5-point Likert scale ranging from "never" to "always." The tool has high reliability with Cronbach alpha coefficients 0.94 for the total scale, and from 0.74 to 0.85 for the subscales. For scoring, the responses to the items from always to never were scored from 5 to 1 respectively. The scoring was reversed for negative items. For each domain, the scores of the items were summed-up and the total divided by the number of items, giving a mean score for the part. These scores were converted into percent scores. The nurse's perception for each domain and for the total scale was considered high if the percent score was 60% or more, and low if less than 60% ***(Kalisch et al, 2010)***.

The missed nursing care questionnaire was developed by ***(Kalisch, and William, 2009)*** to identify how frequently the elements of nursing care are missed from nurse's opinion. It includes 24 items with response on a 5-point Likert scale from "never missed" to "always missed." grouped under 9 domains. These are 1) patient assessment (6 items), 2) medication administration (4 items), 3) patient education (3 items), 4) feeding (2 items), 5) hygiene (3 items), 6) patient mobilization (2 items), 7) response to patient needs (6 items), 8) attend interdisciplinary care conferences whenever held (1 item), and 9) documentation of all necessary data (1 item). The responses are on a 5-point Likert scale ranging from "never" to "always." The tool has high reliability with Cronbach alpha coefficients from 0.76 to 0.93 ***(Kalisch and William, 2009)***. For scoring, the responses to the items from always to never were scored from 5 to 1 respectively so that a higher score indicates higher miss. For each domain of missed nursing care the scores of the items were summed-up and the total divided by the number of the items, giving a mean score for the part. These scores were converted into percent scores. The domain was considered to have "high: miss if the percent score was 60% or more and "low" if less than 60%.

The tools were rigorously reviewed by a panel of experts: professors from Nursing Administration Department at the Faculty of Nursing, Cairo University, and professors of Nursing Administration Department at the Faculty of Nursing, Ain Shams University, and a professor of Nursing Administration Department at the Faculty of Nursing, Zagazig University. They were asked to examine the questionnaires for their content coverage, clarity, length, wording, format, and overall appearance. Based on experts, comment and recommendations some changes had been made at the data collection tools.

Pilot study: A pilot study was carried out to test the questionnaire feasibility and clarity, and to estimate the time consumed for filling in the forms. It included 10 staff nurses from different ICUs. Necessary modifications to

some items were done prior to finalization of the tool. These subjects were not included in the main study sample. The pilot study also served to assess the reliability of the scales. They demonstrated high reliability with Cronbach's Alpha coefficients 0.859 for the teamwork scale and 0.888 for the missed care scale.

Fieldwork: Upon securing necessary permission, the fieldwork was started in July 2014, and was completed by the end of October 2014. The researchers met the nurses in each unit during the morning and afternoon shifts after finishing their work. They explained to them the aim and procedures of the study to obtain their verbal consent to participate. They were handed the data collection forms after having a full instruction in how to fill them in. Each individual nurse took from 20 to 30 minutes to complete the form. The researchers were present all the time for any needed clarifications. The filled forms were collected and revised to check for any missing data.

Administration design and ethical consideration: Before starting work, an official letter was issued from the Dean of the Faculty of Nursing to the Director of South Valley University Hospitals to request permission to conduct the study. Moreover, an oral permission was obtained from the matron of the hospital and from units' head nurses to gain their cooperation. Prior to recruitment of nurses, the researchers provided a verbal explanation of the nature and the aim of the study to staff nurses to get their informed consent to participate. They were informed about their rights to refuse or to withdraw from the study at any time without giving any reason. They were also reassured that the information would be confidential and used for the research purpose only.

***Statistical analysis*:** Data entry and statistical analysis were done using the Statistical Package for Social Sciences (SPSS) version 20.0. Cronbach alpha test was used to assess the reliability of the scales. Categorical variables were compared using chi-square test. Wherever the expected values in one or more of the cells in a 2 x2 tables was less than 5, Fisher exact test was used instead. Spearman rang correlation was used for ranked variables. Statistical significance was considered at $p<0.05$.

III. Results

The study sample consisted of 58 nurses with a majority of females (94.8%), aged less than 25 years (70.7%) as described in Table 1. Only 13.8% of them were having a bachelor degree, and 34.5% were specialists. Their experience ranged between less than one and 35 years, with median 2 years. The weekly work hours were mostly more than 30 (72.4%), and the majority had shift work (79.3%). Table 2a demonstrates that the scores of all items of the trust domain of teamwork were high, with all medians 4.00 to 5.00. The highest mean score (4.50) was for the item of clarifying with one another what was said to be sure of the intended message. Conversely, the lowest mean score (3.98) was for the item concerning constructive feedback. As regards the team orientation domain, the scores were low for positive items with most medians 2.00. The positive with the highest score - Feedback from team members is often helpful not judgmental - had a very high median (5.00) indicating strong agree. On the other hand, the only negative item of "team members more focused on their own work than working together" had a median score 4.00.As regards the backup domain of teamwork, Table 2b points to high scores in all items, with medians 4.00 to 5.00. The only exception was related to the item of working together to get the work done when the workload becomes extremely heavy, which had a median of 3.00. Meanwhile, all items of the domain of shared mental model had medians of 5.00. As the last domain of team leadership, the items had high scores with the lowest being for the item of making a plan to deal with changes in the workload, which had a median of 4.00.

Table 3 shows that the missed nursing care in patient assessment was low, and all the items had median scores of 1.00 to 2.00. The lowest means were concerning monitoring glucose and vital signs. The medication administration area had similarly low medians for all items, with the only exception concerning IV central line care, which had a median of 3.00. The scores of the patient education area were also low except for the item of teaching patients about illness and tests, which had a median 3.00. As regards the feeding area, the item of feeding patient when food is still warm had a higher median score of 3.00. The area of hygiene had low medians, especially concerning hand washing for nurses (1.00). Meanwhile, the areas of mobilization and response to patient needs had average scores, with the highest medians (3.00) for the items of ambulation three times per day or as ordered. Overall, as illustrated in Table 4, 81.0% of the nurses in the study sample were having high perception of teamwork. The highest perception was for the shared mental model domain (94.8%), whereas the lowest was that of team orientation (17.2%). As for the missed nursing care, the table indicates that almost one-third reported high miss (32.8%). The highest area of missed nursing care was that of patient education (51.7%), whereas the lowest was that of patient assessment (20.7%). Table 5 demonstrates that the only relation of statistical significance between nurses' perception of teamwork and their personal characteristics was with their experience years ($p=0.01$). It is evident that the nurses with five or more years of experience had higher perception of teamwork. Although more diploma nurses had such higher perception compared with bachelor nurses, the difference was not of statistical significance ($p=0.17$).

As Table 6 illustrates, no relations of statistical significance could be revealed between nurses' perception of missed nursing care and their personal characteristics. Although more nurses in the younger age group had high perception of missed nursing care compared with older ones, the difference was not statistically significant (p=0.33). Concerning the correlations between the scores of teamwork domains and of the areas of missed nursing care, Table 7 indicates a statistically significant weak negative correlation between the trust domain of teamwork and the area of missed care related to response to patient needs (r=-0.33). Meanwhile, no statistically significant correlation could be demonstrated between the total scores of teamwork and missed nursing care (r=0.12).

IV. Discussion

Ineffective teamwork has been recognized as a major factor contributing to decreased patient safety. Thus, strengthening teamwork worldwide is crucial for enhancing patient safety and reduces medical errors ***(Hendrich and Needleman, 2016)***. The present study points to generally high perception of teamwork among the staff nurses in the ICUs at South Valley University Hospitals, along with relatively low missed nursing care. However, they were not correlated. The high perception of teamwork is in agreement with ***Rochman (2010)*** whose study in five Hospitals in USA found high perception of teamwork among nurses. On the other hand, a study in New Zealand hospitals reported low perception of teamwork among nurses ***(Finlayson, 2012)***. The differences could be attributed to the use of various tools for assessment of teamwork perception. According to the present study findings, a majority of the participating staff nurses had high perception of teamwork. This was particularly evident in the domain of shared mental model, which had the highest scores of perception. From the Researcher point of view, this is an expected finding since the work in ICUs is usually very organized with every nurse being fully aware of own and other colleagues' responsibilities and duties. This would lead streamlining of work under a shared model, with less conflict, mutual respect, and more commitment.

Conversely, the staff nurses in the present study had low perception of team orientation or vision. This might be attributed to the mingling personal relations and emotions with work matters, which is often seen in oriental cultures and developing communities. This makes nurses avoid dealing with conflicts and discussing the mistakes of peers for fear of losing good relations with them. This could also lead them to restrain from giving feedback, although most of them perceived it was often helpful and not judgmental. Our finding of low perception of team orientation is in disagreement with ***Attia (2014)*** whose study in Egypt revealed it as the domain with highest perception among nurses. The discrepancy could be due to differences in the study settings, given that the present study was carried out in a remote site in Upper Egypt and in a new University Hospital.

Although the domain of trust was perceived high by the majority of the nurses in the current study, it ranked second low among the domains of teamwork. This was mainly due to the relatively low perception of the value of constructive feedback as the study findings indicated. This again points to the importance of improving this area of deficiency in teamwork. Nonetheless, the high perception of this domain in our study is in congruence with the results of ***Castner et al (2013)*** who found that nurses' perception of the trust dimension of teamwork was high . The teamwork domains of backup and leadership were also highly perceived by the nurses in the present study. These results point to the importance of the role of the leader in keeping members together and supporting them to work towards unified goals. A number of previous studies demonstrated the importance of the role of leadership and administrative support in the success of teamwork ***(Ann, 2009; Kalisch et al., 2010)***. The present study findings revealed that the nurses with longer experience years had a higher perception of teamwork, compared with those with fewer years of experience. This could be attributed to the accumulation of work proficiencies and skills in addition to maturation, which make them more able to tolerate others and work with them. The finding is in congruence with ***Brunette (2012)*** who demonstrated statistically significant associations between nurses' perception of teamwork and their job characteristics and experience. Meanwhile, and in agreement with our results, ***Attia (2014)*** found no statistically significant associations between nurses' perception of teamwork and their personal characteristics. Concerning the missed nursing care, the present study revealed that approximately one-third of the participating nurses reported high misses. This should not be considered as a low percentage since it should approach zero in quality care and given its untoward consequences ***(Schubert et al., 2008; Kalisch et al, 2012)***. Moreover, in some of the areas, the missed care was around 50% such as the areas of patient education, feeding, mobilization, and response to patient needs. The high misses in these areas might be explained by the false belief that they are not genuine nursing tasks as those of patient assessment and medication administration, which showed the lowest percentages of missed nursing care. In congruence with this explanation, ***Moreno-Monsiváis et al (2015)*** highlighted that the elements of nursing care that are missed or omitted are related to basic care interventions, followed by interventions to satisfy patient and family needs. Moreover, ***Ausserhofer et al (2014)*** highlighted that the care items, which may be perceived as less serious such as mouth care, and those that often require teamwork such as ambulation, are more likely to be missed. On the same line, previous studies reported common areas of missed care as mouth care, bathing, and ambulation ***(Kalisch et al. 2014)***, comfort and talking with patients ***(Ball et al., 2014)***, and

pressure area assessment and intervention ***(Sving et al., 2014)***. Moreover, the missed care had no significant associations with any of the nurses' characteristics in the current study. Nonetheless, studies of missed nursing care reveal wide discrepancies, being high in some ***(Monsiváis et al, 2015)*** and low in others ***(Attia, 2014)***. This could be explained by the fact that most studies depend on self-reporting, which could be biased by personal and job characteristics. In this respect, ***Castner (2012)*** found that nurses with more years of experience and education are more likely informants of higher level of missed nursing care. Furthermore, overtime work ***(Chapman et al., 2016)*** and long working long hours with unpredictable schedule ***(Kalisch and Williams, 2009; Hu et al., 2010)*** have been related to more missed nursing care.

The present study hypothesized that a better teamwork would be associated with less missed nursing care. The study findings could not demonstrate a significant association or correlation between the scores of teamwork perception and those of missed nursing care, which would lead to rejection of this hypothesis. This could be due to the small sample size, which is a main limitation of the study. However, it could not be overcome given the small number of nurses in the study setting given its recent start. Another possible explanation could be the potential bias in nurses' self-reporting of missed nursing care for fear of any possible disciplinary actions although they were reassured about the confidentiality and anonymity of any obtained information. In agreement with this, the failure to report missed care has been identified as one of the typically adopted escape strategies for fear of legal complications, or loss of own position within the system or with confirmation by colleagues and patients ***(Mohammadnejad, 2013)***.

V. Conclusion and Recommendations

The study results indicate high perception of teamwork among the nurses working in the study settings, but about one-third of them reported high missed nursing care. There is a lack of significant relation between teamwork perception and missed nursing care, which could be attributed to the study limitation of small sample size. Therefore, it is recommended to replicate the study on a larger sample size. Moreover, the teamwork domains of team orientation and trust need to be fostered among these nurses. They also need training in the identified areas of missed care such as patient education, ambulation, and feeding.

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Table 1: Socio-demographic characteristics of nurses in the study sample (N=58)

	Frequency	Percent
Gender:		
Male	3	5.2
Female	55	94.8
Age:		
<25	41	70.7
25+	17	29.3
Nursing qualification:		
Diploma	50	86.2
Bachelor	8	13.8
Experience years:		
<5	38	65.5
5+	20	34.5
Range	<1.0-35.0	
Mean±SD	5.2±7.5	
Median	2.0	
Job position:		
Nurse specialist	20	34.5
Nurse	38	65.5
Weekly work hours:		
<=30	16	27.6
>30	42	72.4
Work in shifts:		
No	12	20.7
Yes	46	79.3

Table 2a: Perception of team work among nurses in the study sample (N=58)

Team work	Score (max=5)				
	Mean	SD	Median	Quartiles	
				1st	3rd
TRUST:					
▪ Team members communicate clearly their expectations of others	4.28	0.91	4.00	4.00	5.00
▪ Team members readily share ideas and information with each other	4.19	1.02	4.00	4.00	5.00
▪ Team members clarify with one another what was said to be sure that what was heard is the same as the intended message	4.50	0.78	5.00	4.00	5.00
▪ Team members value, seek and give each other constructive feedback	3.98	1.08	4.00	4.00	5.00
▪ When someone does not report to work or is pulled to another unit, responsibilities are reallocated fairly among remaining members	4.33	0.91	5.00	4.00	5.00
▪ Team members trust each other	4.10	1.12	4.00	4.00	5.00
▪ My team readily engages in changes in order to make improvements and new methods of practice	4.00	1.32	4.00	4.00	5.00
TEAM ORIENTATION:					
▪ Team members seldom ignore mistakes and annoying behavior of teammates rather than discussing these with them	2.98	1.50	2.00	2.00	5.00
▪ If the staff on one shift is unable to complete their work, the staff on the oncoming shift do not complain about it	2.50	1.52	2.00	1.00	4.00
▪ Team members seldom spend extra time on breaks	2.84	1.48	3.00	1.25	4.00
▪ When a team member points out to another team member an area for improvement, the response is often welcomed	2.26	1.13	2.00	1.00	3.00
▪ Staff members with strong personalities do not dominate decisions	2.03	1.28	2.00	1.00	3.00
▪ Most team members tend to deal with conflict rather than avoid it	2.52	1.25	2.00	2.00	3.00
▪ Nursing assistants and nurses work well together as a team	2.47	1.29	2.00	1.00	4.00
▪ Feedback from team members is often helpful not judgmental	4.59	0.82	5.00	5.00	5.00
▪ Team members are more focused on their own work than working together to achieve the total work of the team	3.90	1.15	4.00	3.00	5.00

Table 2b: Perception of team work among nurses in the study sample (N=58)

Team work	Score (max=5)				
	Mean	SD	Median	Quartiles	
				1st	3rd
BACKUP:					
▪ Team members frequently know when another team member needs assistance before that person asks for it	4.45	0.88	5.00	4.00	5.00
▪ Team members notice when a member is falling behind in work	4.57	0.73	5.00	4.00	5.00
▪ When the workload becomes extremely heavy, team members pitch in and work together to get the work done	2.97	1.31	3.00	2.00	4.00
▪ Within our team, members are able to keep an eye out for each other without falling behind in our own individual work	4.19	1.10	5.00	4.00	5.00
▪ Team members willingly respond to patients other than their own when other team members are busy or over loaded	3.97	1.21	4.00	4.00	5.00
▪ The nurses who serve as charge nurses or team leaders are available and willing to assist team members throughout the shift	4.79	0.64	5.00	5.00	5.00
SHARED MENTAL MODEL:					
▪ Team members understand their responsibilities throughout the shift	4.55	0.90	5.00	4.25	5.00
▪ Team members know that other members of their team follow through on their commitment	4.43	0.99	5.00	4.00	5.00
▪ Team believes that to do a quality job, members need to work together	4.24	1.20	5.00	4.00	5.00
▪ Shift change reports contain the information needed to care for patients	4.38	0.83	5.00	4.00	5.00
▪ Team members respect one another	4.21	0.99	5.00	3.00	5.00
▪ Team members are aware of the strengths and weaknesses of members they work with most often	4.45	0.90	5.00	4.00	5.00
▪ Team members understand each other role and responsibilities	4.24	1.08	5.00	4.00	5.00
TEAM LEADERSHIP:					
▪ When changes in the workload occur during the shift, a plan is made to deal with these changes	4.10	0.91	4.00	4.00	5.00
▪ Charge nurses or team leaders balance workload within the team	4.29	1.08	5.00	4.00	5.00
▪ Charge nurses or team leaders give clear and relevant directions as to what needs to be done and how to do it	4.05	1.32	5.00	4.00	5.00

Table 4: Missed nursing care as reported by nurses in the study sample (N=58)

Missed care	Score (max=5)				
	Mean	SD	Median	Quartiles	
				1st	3rd
PATIENT ASSESSMENT					
▪ Vital signs assessed as ordered	1.60	1.01	1.00	1.00	2.00
▪ Monitoring intake/output	1.84	1.14	1.50	1.00	2.00
▪ Monitoring glucose level as ordered	1.59	0.97	1.00	1.00	2.00
▪ Patient assessments performed each shift	2.10	1.24	2.00	1.00	3.00
▪ Focused reassessments according to patient condition	2.28	1.28	2.00	1.00	3.00
▪ Assessment of wound condition	1.86	1.03	2.00	1.00	2.00
MEDICATION ADMINISTRATION					
▪ Medications administered within scheduled time	1.79	1.14	1.00	1.00	2.00
▪ IV/central line site care according to hospital policy	2.91	1.27	3.00	2.00	4.00
▪ Medication requests acted on within 15 minutes	2.60	1.27	2.00	2.00	3.75
▪ Assess effectiveness of medications	2.09	1.03	2.00	1.00	3.00
PATIENT EDUCATION					
▪ Health education to patient family	2.86	1.37	2.00	2.00	4.00
▪ Patient discharge teaching	2.59	1.41	2.00	1.00	4.00
▪ Patient teaching about illness, tests, and diagnostic studies	2.90	1.42	3.00	2.00	4.00
FEEDING					
▪ Setting up meals for patient who feeds by oral or Ryle	1.95	1.23	1.00	1.00	3.00
▪ Feeding patient when the food is still warm (oral/Ryle)	3.16	1.42	3.00	2.00	4.00
HYGIENE					
▪ Patient bathing/skin care	2.14	1.30	2.00	1.00	3.00
▪ Mouth care for patient	2.60	1.46	2.00	1.00	4.00
▪ Hand washing for nurses	1.81	1.18	1.00	1.00	2.00
MOBILIZATION					
▪ Ambulation three times per day or as ordered	3.02	1.48	3.00	2.00	4.00
▪ Turning patient every 2 hours	2.45	1.34	2.00	1.00	3.00
RESPONSE TO PATIENT NEEDS					
▪ Response to patient needs through call light/alarm within 5 min	2.14	1.18	2.00	1.00	3.00
▪ Assist with toileting needs within 5 min of request	2.50	1.40	2.00	1.00	4.00
ATTEND INTERDISCIPLINARY CARE CONFERENCES WHENEVER HELD	3.00	1.51	3.00	2.00	4.75
DOCUMENTATION OF ALL NECESSARY DATA	2.60	1.50	2.00	1.00	4.00

Table 4: Total perception of team work and missed nursing care among nurses in the study sample (N=58)

	Frequency	Percent
High perception of team work regarding:		
Trust	47	81.0
Team orientation	10	17.2
Backup	51	87.9
Shared mental model	55	94.8
Team leadership	51	87.9
Total team work perception:		
High (60%+)	47	81.0
Low (<60%)	11	19.0
High missed nursing care regarding:		
Patient assessment	12	20.7
Medication administration	16	27.6
Patient education	30	51.7
Feeding	26	44.8
Hygiene	20	34.5
Patient mobilization	28	48.3
Response to patient needs	29	50.0
Attend interdisciplinary care conferences whenever held	23	39.7
Documentation of all necessary data	19	32.8
Total missed nursing care:		
High miss (<60%)	19	32.8
Low miss (60%+)	39	67.2

Table 5: Relation between nurses' perception of teamwork and their personal characteristics

	Team work perception				X^2 test	p-value
	High		Low			
	No.	%	No.	%		
Age:						
<25	32	78.0	9	22.0		
25+	15	88.2	2	11.8	Fisher	0.48
Job position:						
Nurse specialist	15	75.0	5	25.0		
Nurse	32	84.2	6	15.8	Fisher	0.49
Gender:						
Male	2	66.7	1	33.3		
Female	45	81.8	10	18.2	Fisher	0.47
Nursing qualification:						
Diploma	42	84.0	8	16.0		
Bachelor	5	62.5	3	37.5	Fisher	0.17
Weekly work hours:						
<=30	13	81.3	3	18.8		
>30	34	81.0	8	19.0	Fisher	1.00
Work shifts:						
No	10	83.3	2	16.7		
Yes	37	80.4	9	19.6	Fisher	1.00
Experience years:						
<5	27	71.1	11	28.9		
5+	20	100.0	0	0.0	Fisher	0.01*

(*) Statistically significant at p<0.05

Table 6: Relation between nurses' perception of missed nursing care and their personal characteristics

	Missed nursing care				X^2 test	p-value
	High		Low			
	No.	%	No.	%		
Age:						
<25	15	36.6	26	63.4		
25+	4	23.5	13	76.5	0.93	0.33
Job position:						
Nurse specialist	6	30.0	14	70.0		
Nurse	13	34.2	25	65.8	0.11	0.75
Gender:						
Male	1	33.3	2	66.7		
Female	18	32.7	37	67.3	Fisher	1.00
Nursing qualification:						
Diploma	17	34.0	33	66.0		
Bachelor	2	25.0	6	75.0	Fisher	1.00
Weekly work hours:						
<=30	4	25.0	12	75.0		
>30	15	35.7	27	64.3	0.60	0.44
Work shifts:						
No	3	25.0	9	75.0		
Yes	16	34.8	30	65.2	Fisher	0.73
Experience years:						
<5	13	34.2	25	65.8		
5+	6	30.0	14	70.0	0.11	0.75

Table 7: Correlation matrix of nurses' perception of teamwork and their reported missed nursing care

Teamwork	Spearman's rank correlation coefficient					
	Missed care					
	Patient assessment	Patient education	Hygiene	Patient mobilization	Response to patient needs	Total Missed Care
Trust	0.01	0.03	0.10	0.05	-0.33*	-0.04
Team vision	0.07	0.05	-0.04	0.10	0.06	0.07
Precaution	0.14	0.06	0.20	0.22	-0.13	0.17
Shared mental model	0.06	0.14	0.19	0.12	-0.17	0.11
Team leadership	-0.02	0.19	0.00	-0.04	-0.16	0.01
Total teamwork	0.08	0.16	0.12	0.21	-0.18	0.12