

Original Research Article

Association between nursing teamwork and missed nursing care by nurses at university teaching and referral hospital of Kigali.

Abstract

Introduction: Nurses serve as a bridge between doctors, patients, and the hospital in their roles and thus effective teamwork and collaboration is mandatory for better service delivery to patients. Focusing on identifying the link between nursing teamwork and missed nursing care will assist healthcare providers in improving the quality of services provided to patients.

Objective: This study aimed to determine the association between level of nursing teamwork and missed nursing care by nurses at the University Teaching and Referral Hospital of Kigali in Rwanda.

Material and methods: The study was cross-sectional descriptive and correlation design conducted from November November-December 2021. This study utilized the census method to obtain participants. The researcher used the Nursing Teamwork survey (NTS) and MISSCARE survey questionnaires for data collection. The data was analyzed using SPSS version 26.0.

Results: The majority of the nurses (58.70%) perceive that the level of nursing teamwork is moderate. The top three elements of nursing teamwork that the nurses perceived to have never occurred were during break staff rarely takes extra time (47.3%), the team rarely ignores the error of team member instead of having a discussion (42.8%), and there is a plan to deal with sudden workload (39.3). The level of missed nursing was perceived as moderate by 46.73% of participating nurses.

Discussion: The level of missed nursing care was perceived as moderate by 46.73% of participating nurses. The majority, 58.7% perceived nursing teamwork as moderate. This study highlighted the top five never occurring nursing teamwork and finally, it showed marital status, years of experience, Satisfaction with position, satisfaction with incentives, departmental ward staffing, and Level of bed capacity were statistically associated with the level of nursing teamwork.

Conclusions: The study found that the level of nursing teamwork and missed nursing care were perceived as moderate. There was a strong association between nursing teamwork and missed nursing care.

Recommendation: The management of the study setting should consider the improvement of the element of nursing teamwork that has been perceived as never occurring.

Keywords: Nursing teamwork, nursing team, determinants of teamwork.

Introduction

Nurses' teamwork is among the reported reasons for MNC. A quasi-experimental investigation conducted by Ahmed et al. (1) involved 48 nurses working in intensive medical units. The findings confirmed that Nurse's teamwork training affected MNC. The study found that an increase in nursing teamwork training resulted in decreasing MNC. In addition, the study found a negative association between nursing teamwork dimensions and total MNC dimensions ($r: -0.21, p < 0.06$); however, the team orientation dimension was positively associated with total MNC ($r: +0.44, p < 0.01$) post-implementation. Ineffective teamwork reflects in the units when nurses are not communicating among themselves during their shifts. Kalisch described some scenarios which reflect ineffective nursing teamwork; she argued that when there is a new patient brought in the service unit and the nurse who received the patient did not report to the nurse assigned to that unit until when the patient calls for help due to intense pain (2). This also happens when a patient with a long-standing controlled chronic illness under medication is admitted for different acute conditions. The primary nurses did not report the patient's drugs to be considered by their fellow nurses. According

to Nelson (3) teamwork was inversely associated with MNC, meaning that an increase in teamwork results in a reduction of MNC. These high levels of teamwork reduced the association between workload and MNC. Research on determining whether nursing teamwork affected MNC reported an association between MNC and overall teamwork scores ($r: -0.37, p < 0.1$) and the teamwork subscale significantly influenced MNC ($p < 0.01$) were trust ($r: -0.31$), backup ($r: -0.31$), team orientation ($r: -0.28$), shared mental model ($r: -0.32$), and team management ($r: -0.29$). The study findings concluded that an increase in nursing teamwork reduces MNC (2). According to Mohamed & Abed (4) nursing teamwork was perceived as high, but there was no association between overall teamwork and MNC. However, one-third of study participants reported high MNC.

In addition, the findings from different studies conducted in Egypt were congruent with other researches. They reported that missed nursing care were associated with inadequate staffing, material resources, ineffective teamwork, and communication factors (5, 6). Another similar study conducted in Tigray, northern Ethiopia, which included 422 nurses from 16 general hospitals, found at least one Missed Nursing

Care at each shift and was associated with communication, labor, material resources, and teamwork factors (7). A study conducted in Ethiopia, which included 422 nurses and midwives, also revealed that 74.6% of respondents missed at least one nursing care. The reasons given were material resources with 90%, teamwork with 91%, labor resources, 96.3%, and 85.3% for communication while also the level of education, nursing shifts, and nurses intention to quit the job was associated with missed nursing (activities) care (8).

Methods

Study setting and data collection

This research was conducted at the University Teaching and Referral Hospital of Kigali in Rwanda, also known on its French name as "*Centre Hospitalier Universitaire de Kigali*" (CHUK). This study adopted MISSCARE survey and Nursing Teamwork Survey (NTS) to gather the data from the sample population. The MISSCARE survey was comprised of one part having 24 questions regarding MNC grouped into nine (9) areas: 1) assessment with five (5) subjects, 2) drug administration with four(4) subjects, 3) patient health education with three (3) elements 4) patient feeding with three (3) items, 5) hygiene with

three elements, 6) patient mobility with two (2) subjects, 7) responding to patient inquiries with two (2) elements 8) attending interdisciplinary meetings one (1) element and 9) documenting all necessary data with one(1) element (9). The rating was on 5 points Likert scales as 1= never missed, 2=rarely missed, and 3 = sometimes missed, 4= frequently missed and 5= always missed (3). Therefore 1 and 2 were regarded as nursing care never missed, three as sometimes missed, and 4,5 was considered as nursing care that is always missed (5,10). Nurses' teamwork survey (NTS) was mainly invented to assess the perception of teamwork among nursing staff. It has 33 items which are classified into five domains: domain one Trust (7 elements), domain two: Team orientation (7 elements), the third domain: Backup (6 elements), the fourth domain: Shared mental model (7elements), and a fifth domain: Team leadership (4 elements). The responses for NTS will be (1) Never occurred 5= Always occurred. Therefore 1, and 2 will be regarded as never occurred, 3 as neutral and 4,5 will be always occurred (6, 4).

Study objectives

1. To assess the common occurring elements of nursing teamwork among nurses working

at University Teaching and Referral Hospital of Kigali.

2. To determine the level of nursing teamwork by nurses working at University Teaching and Referral Hospital of Kigali.

3. To determine the relationship between nursing teamwork and Missed Nursing Care activities by nurses working at University Teaching and Referral Hospital of Kigali.

Inclusion and exclusion criteria

The study included nurses who were six months and above working experience in the clinical setting in the selected hospital units. Nurses providing direct care to inpatients in selected hospital units and it excluded nurses in administrative positions and nurses who were on their leave in the period of data collection. During data collection, the researcher utilized a self-report method of data collection using a self-administered MISSCARE and NTS surveys. The departments were visited in different shifts to maximize accessibility to participants; then, the researcher invited the participants

and explained the study's objectives. After this explanation, each participant signed informed consent for participation and started filling questionnaires.

Statistical analysis

The data were analysed using SPSS version 26.0. The analysis was comprised of descriptive and inferential statistics at the significance level of ($P \leq 0.05$).

Results

Demographic information of the respondents

Two hundred and one (201) nurses working in different departments at the hospital took part in this study in response to various metric variables being examined. The nurses who took part in this study work in different hospital ward departments with majority of them (80) 39.8% working in the surgical ward, (50) 24.9% of them work in the medical ward whereas (44) 21.9% work in accident and emergency ward. A relatively small percentage of nurses (27) 13.4% work in intensive care unit as it is seen in figure 1.

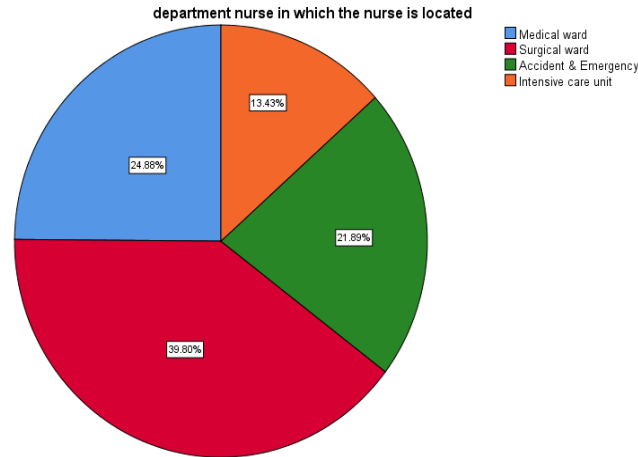


Figure 1: Percentage distribution of nurses in departmental wards

In this study, female nurse respondents working at the hospital were the majority accounting to 56.7%. The percentage of male respondents who took part in this study was 46.3%. Majority of the nurses working at the hospital were aged between 31-40 years which represents 47.3%. It is followed by those aged between 21-30 years which represents 26.9%. Those aged between 41-50 years account for 25.9% of the entire study population.

The level of education among respondents was assessed. 54.2% had a Diploma, 42.3%

had a Bachelor degree and 3.5% have a master's degree. From the study, a vast majority of nurses were married accounting for 75.6%. Those who are single represent 18.9%. The respondents who were not married (Divorced, Widowed) were the minority in this category representing only 5.5%. Among the nurses who took part in this study on average have 13 years of experience in the nursing profession and 7 years of working experience in the current unit. Table 1 presents participants characteristics and their relationship with level of missed nursing care.

Table 1: Participants demographic characteristics

Demographic characteristic	Level of nursing team work					
	Low		Moderate		High	
	No	%	No	%	No	%
Age						
21-30 years	3	5.9	28	54.9	20	39.2
31-40 years	2	2.4	51	60.0	32	37.6
41-50 years	1	2.1	29	60.4	18	37.5
Gender						
Male	4	5.3	47	62.7	24	32.0
Female	2	1.8	61	56.0	46	46.2
Marital status						
Married	2	1.4	78	56.1	59	42.4
Single	3	8.8	22	64.7	9	26.5
Not married (widow, divorced)	1	9.1	8	72.7	2	18.2
Education level						
Diploma, A1	2	2.0	55	55.6	42	42.4
Bachelor's degree	4	4.7	53	62.4	28	32.9
Experience in nursing profession						
0-5 years	1	4.8	12	57.1	8	38.1
5-10 years	4	6.9	33	56.9	21	36.2
>10 years	1	1.0	63	60.0	41	39.0
Experience in the current unit						
0-5 years	2	2.9	47	67.1	21	30.0
5-10 years	4	5.7	31	44.3	35	50.0
10-20 years	0	0.0	30	68.2	14	31.8

Levels of missed nursing care at the hospital

At the University Teaching and Referral Hospital (CHUK) of Kigali, the level of missed nursing was perceived as moderate by 46.73% of participated nurses. 29.65% of them perceive the level of missed nursing care activities to be high whereas 23.62% perceive that there was low level of missed nursing care activities by nurses working at the hospital, further analysis on missed nursing were described by Ntezimana et al., (11)

Elements of nursing teamwork that are always occurring

In this study various variables of nursing team work were examined to determine the frequency in which they occur. That is, how often certain aspects of nursing teamwork occur among the studied nurses. The goal was to determine which aspects of nursing teamwork occur most frequently. From the study, the top ten that are always occurring aspects of nursing team work are: team members recognize their task throughout the shift, 72.1%, the nurses comprehend each other's duties, 62.7%, the end of shift report contains all the needed information for continuity of patient care, 61.2%, team members understand that their commitment

inspire others, 60.7%, in-charge team leader monitors the progress of the team, 60.7%, team members understand that working as a team results in quality job accomplishment, 57.7%, ideas and information is shared readily among team members, 57.2%, there is some sense of respect among team members, 53.7%, in-charge team leader balances the workload fairly among the team, 52.7% and there is clear communication among team members 48.8%, this can be seen in table 2.

Elements of nursing teamwork that have never occurred

The top five elements of nursing teamwork that the nurses perceived to have never occurred were: during break staff rarely takes extra time, 47.3%, team rarely ignores the error of team member instead of having discussion, 42.8%, there is plan to deal with sudden workload, 39.3%, oncoming staff do not complain of uncompleted work by previous shifts, 37.8% and instead of cooperating to attain entire team outcomes, teammates focus on their individual task this can be seen in table 2.

Table 1: Association between nursing teamwork and the level of missed nursing care activities.

Elements of nursing teamwork	Never occurred		Sometimes Occurred		Always Occurred		χ^2	P-Value
	No	%	No	%	No	%		
Team rarely ignores the errors of team member instead of having discussion	86	42.8	83	41.3	32	15.9	3.95	0.420
Oncoming staff do not complain of uncompleted work by previous shift	76	37.8	67	33.3	58	28.9	5.54	0.237
During break staff rarely takes extra time	95	47.3	62	30.8	44	21.9	4.89	0.299
Team welcomes criticism on area of improvement	52	25.9	57	28.4	92	45.8	2.31	0.680
Team mates with stronger personalities dominate decisions	74	36.8	72	35.8	55	27.4	1.00	0.910
When conflicts arise, most team members deal with them instead of avoiding them	66	32.8	69	34.3	66	32.8	5.98	0.201
There is frequent and non-judgmental feedback from the team	59	29.4	75	37.3	67	33.3	17.44	0.002*
Instead of cooperating to attain entire team outcome, teammates focus on their individual task	74	36.8	56	27.9	71	35.3	19.54	0.001*
Clear communication among team members	41	20.4	62	30.8	98	48.8	14.12	0.007*
Ideas and information shared readily among team members	43	21.4	43	21.4	115	57.2	27.74	0.001*
Passing information clearly as it was intended to team members	36	17.9	70	34.8	95	47.3	26.38	0.001*
Teammate seek and provide constructive feedback	48	23.9	60	29.9	93	46.3	23.84	0.001*
When staff is absent, their task are fairly distributed among the remaining members	65	32.3	46	22.9	90	44.8	10.63	0.031*
Teammates trust each other	51	25.4	69	34.3	81	40.3	8.24	0.083
Team members engage in professional development to develop themselves and adopt new methods of practice	65	32.3	56	27.9	80	39.8	25.81	0.001*
In charge team leader monitor progress of team	25	12.4	54	26.9	122	60.7	21.67	0.001*
There is plan to deal with sudden workload increase	79	39.3	38	18.9	84	41.8	22.61	0.001*
In charge team leader balance, the workload fairly among team	31	15.4	64	31.8	106	52.7	6.82	0.146
In-charge/team leader provides clear and relevant directions on what is needed	52	25.9	54	26.9	95	47.3	19.45	0.001*
When teammate need support, members recognize that before being asked	57	28.4	53	26.4	91	45.3	25.83	0.001*
When team members is lagging behind in work, team members can realize it	32	15.9	85	42.3	84	41.8	17.98	0.001*
In heavy workload scenario, team members cooperate to get the work done	32	15.9	85	42.3	84	41.8	17.98	0.001*
In the team nurses monitor each other without lagging in their individual task	55	27.4	53	26.4	93	46.3	27.09	0.001*
Regardless of workload, team members attend to another patient's inquiries when colleagues are busy/overloaded	38	18.9	60	29.9	103	51.2	21.08	0.001*
In-charge team member is willing to support team members throughout the shift	43	21.4	54	26.9	104	51.7	27.74	0.001*
Team members recognize their task throughout the shift	26	12.9	30	14.9	145	72.1	17.21	0.002*
Team members understand that their commitment inspire others	27	13.4	52	25.9	122	60.7	22.39	0.001*
Team members understand that working as a team result in quality job accomplishment	45	22.4	40	19.9	116	57.7	34.26	0.001*
The end of shift reports contains all the needed information for continuity of patient care	28	13.9	50	24.9	123	61.2	41.01	0.001*
There is sense of respect among team members	40	19.9	53	26.4	108	53.7	29.31	0.001*
Team members recognize strengths and weakness of their members and work with them frequently	32	15.9	65	32.3	104	51.7	11.61	0.020*
There is comprehension of each other duties among team members	32	15.9	43	21.4	126	62.7	15.66	0.004*

(*) statistically significant at 0.05 level of significance

Level of nursing teamwork at the hospital

The level of nursing teamwork at the hospital was analyzed and the research findings revealed that there was moderate level of nursing teamwork at the hospital.

Majority of the nurses, 58.70% perceive that the level of nursing teamwork was moderate. A very low percentage of nurses, 3.26% are of the view that the level of nursing teamwork was low whereas 38.04% were of

the opinion that the level of nursing teamwork was high as it is shown in figured 1.

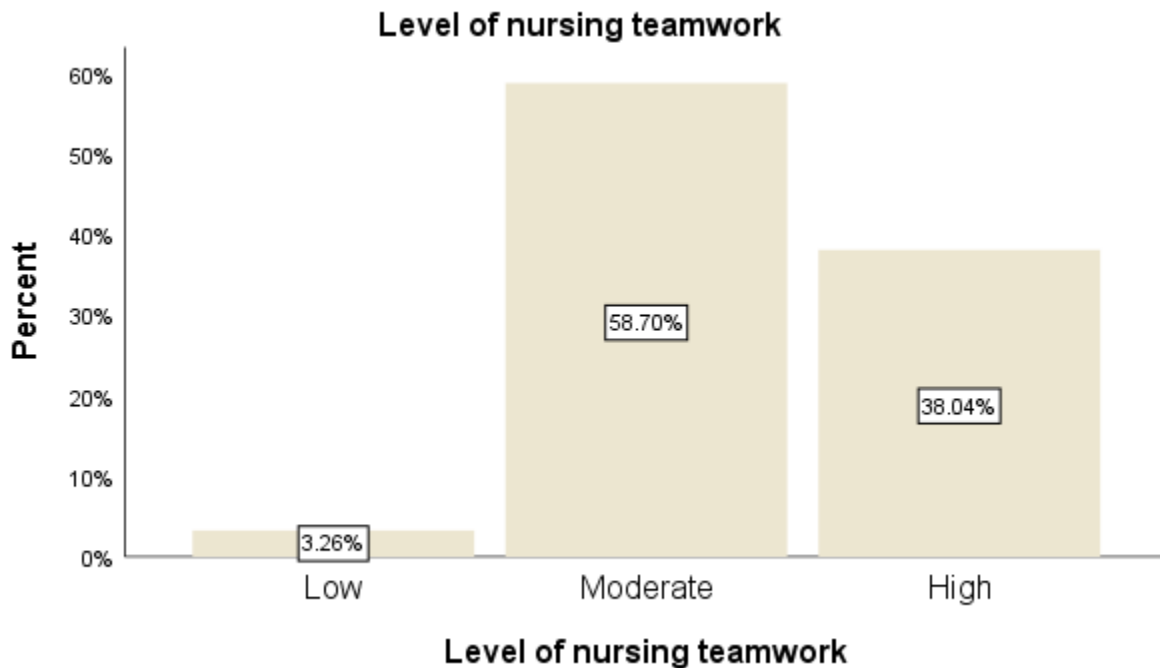


Figure 2: Level of nursing teamwork

Relationship between level of nursing teamwork and level of missed nursing care activities

Chi-square cross-tabulation was done to establish if there was any relationship between level of nursing team work and level of missed nursing care activities at the hospital. The result, $\chi^2 (4, N=201) = 44.18$, $p \leq 0.001$ revealed that the association is statistically significant. That also agreed with descriptive results in table 3. that showed that there was a relationship

between the level of nursing teamwork and level of missed nursing care activities at the hospital. From table 3, the nurses who had high level of nursing teamwork had low level of missed nursing care activities. 83.3% of nurses who had low level of nursing teamwork and 50.9% of nurses who had moderate level of nursing teamwork had moderate level of missed nursing care activities. 50% of nurses who had high level of nursing teamwork had low level of missed nursing care activities.

Table 2: Relationship between level of nursing teamwork and level of missed nursing care activities

*Level of nursing teamwork * level of missed nursing care
Crosstabulation*

		level of missed nursing care		
		Low	Moderate	High
Level of nursing teamwork	Low	0 0.0%	5 83.3%	1 16.7%
	Moderate	10 9.3%	55 50.9%	43 39.8%
	High	34 50.0%	25 36.8%	9 13.2%

Logistic regression was also computed to analyse the effects of nursing teamwork on missed nursing care, the findings revealed that nurses who are of the opinion that nursing teamwork is a factor are 1.840 times more likely to have low level of missed nursing care compared to the reference category. For every one unit increase in nursing teamwork there is 6.294 increase in the log odds for nurses to have low level of missed nursing care. Nursing teamwork is not significant factor ($p>0.05$). Nurses who are of the opinion that nursing teamwork is a factor are 0.506 times more likely to have moderate level of missed nursing care compared to the reference category. For every one unit increase in nursing teamwork there is 1.659 increase in the log. odds for

nurses to have moderate level of missed nursing care.

Discussions

The study findings agreed with previous study that found that the level of missed nursing care was perceived as moderate by the majority of participants (5). The analysis also found that nursing teamwork was also perceived as moderate by the majority. In addition, the researcher sought to find out the commonly occurring elements of nursing teamwork both in positive and negative way, the findings showed the elements that are always occurring were team members recognize their task throughout the shift, the nurses comprehend each other's duties, the end of shift report contains all the needed information for continuity of patient care,

team members understand that their commitment inspires others, in-charge team leader monitors the progress of the team, team members understand that working as a team results in quality job accomplishment, ideas and information is shared readily among team members, there is some sense of respect among team members, in-charge team leader balances the workload fairly among the team, and there is clear communication among team members. These are the significant elements that play a role in increasing the level of teamwork among nurses which eventually positively impact the level of missed nursing care activities. However, the researcher sought to find out those elements that are never occurring among the participants, the findings showed the top five elements of nursing teamwork that the nurses perceived to have never occurred were: during break staff rarely takes extra, team rarely ignores the error of team member instead of having discussion, there is a plan to deal with sudden workload, oncoming staff do not complain of uncompleted work by previous shifts, and instead of cooperating to attain entire team outcomes, teammates focus on their individual task. The elements negatively affect both the level of nursing teamwork and the level of missed nursing care.

Furthermore, the researcher was curious to find if there was any relationship between nursing teamwork and level of missed nursing care, the results showed that there was a statistically significant relationship between the two variables, this study's findings contradicted with (4) which found no association between overall scores of nursing teamwork and missed nursing care. The nurses who had a high level of nursing teamwork had a low level of missed nursing care activities. Nurses who had a low level of nursing teamwork and nurses who had a moderate level of nursing teamwork had a moderate level of missed nursing care activities while nurses who had a high level of nursing teamwork had a low level of missed nursing care activities. This was consistent with (3). In conclusion, logistic regression was computed for these two variables, and the results showed that nurses who are of the opinion that nursing teamwork is a factor are 1.840 times more likely to have a low level of missed nursing care compared to the reference category. For every one unit increase in nursing teamwork there is a 6.294 increase in the log odds for nurses to have a low level of missed nursing care. Nursing teamwork is not a significant factor ($p > 0.05$). Nurses who are of the opinion that nursing teamwork is a factor are 0.506 times more

likely to have moderate level of missed nursing care compared to the reference category. For every one unit increase in nursing teamwork there is 1.659 increase in the log. odds for nurses to have moderate level of missed nursing care.

Conclusions

From the findings of this study, both the level of nursing teamwork and level of missed nursing care were moderate and statistically associated. This study revealed the elements of nursing teamwork that were playing role in increasing the level of teamwork among nurses and indirectly influence missed nursing care positively.

Declarations

Ethical approval and consent to participate.

Before starting data collection, the researcher sought clearance from the Institution Ethical Review board at Mount Kenya University (MKU-IERB). The researcher submitted this copy from MKU ethical clearance to CHUK -ethical review committees and was granted the permission to conduct the research. Finally, the research acquired an informed consent from the participants. The researcher followed all guidelines and protocols as stipulated in the ethical approvals.

The study results also established those that were never occurring and negatively affecting both the level of nursing teamwork and level of missed nursing care. Finally, the findings showed that increasing the level of nursing teamwork, increases the odds of improving the level of missed nursing care.

Recommendations

The study recommends that institution should invest in nursing teamwork as means for mitigating missed nursing care.

Further study should be conducted in various settings and multidisciplinary professionals.

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