
Factors Affecting Missed Nursing Care and its Relation to Nurses' Work Flow in General Medical and Surgical Units

Hala Gabr¹, Prof., Ahlam El-Shaer², Assist. Prof,
^{1,2}Nursing Administration, Faculty of Nursing, Mansoura University, Egypt.

Abstract: Nurses in a complicated healthcare system, offer nursing care to satisfy needs of patient that sometimes may decrease under desired standards. Overuse, underuse, and misuse considered as a dangerous problems in healthcare quality. Deletion of basic needed nursing care of patients is a missed nursing care, which affected by many complex factors such as availability of human and material resources, communication and so on. Work flow means as a work happiness and enjoyment, intrinsic motivation in work and satisfying absorption in the activity. The study aimed to identify the factors affecting missed nursing care and its relation to nurses' work flow in general medical and surgical units. A descriptive correlation design used in this study. All nurses (n=78) working in all general surgical units at Mansoura University Hospitals and medical units in Specialized Medical Hospital included in the study. Two tools were used, namely; MISSCARE Scale and Nurses' Work-Related Flow Inventory. A major finding of the present study revealed human resources, communication, and material resources are associate with all dimensions of missed care except interventions in individual needs dimension nursing care was not correlate with three factors. And a significant correlation between human resources, and communication factors with discharge planning and patient education missed care dimension. It was concluded that communication and human resources play important role in the missed care and nurses' work flow. Three dimensions of missed care were affected by communication and human resources factors namely; planning for discharge and education for patient, interventions of basic care, and continuing assessments with care interventions. Furthermore, communication factor is an important reason for missed nursing care and their work flow. It is recommended that when elements and reasons of nursing care missed were identified, the improvement is not impossible with focus on specific points, such as effective managing of personnel, policies of admissions, and proactive managing of supplies. As well strategies to prevent missed care should take into account these stated reasons, as hospitals continue to prevent complexity and enhance positive outcomes of patient.

Key words: Missed Nursing Care, Factors Missed Care, Nursing Work Environment, Patient Outcomes, Work Related Flow, Job Demands-Resources (JDR)

Date of Submission: 21-05-2020

Date of Acceptance: 08-06-2020

I. Introduction

Fast advanced technology in specialization, high costs, changes of demographic and altering in patient expectations need to update the healthcare systems continuously. Nurses stay long time with hospitalized patients more than other healthcare professionals and nurses more contact with patients compared to other health-care personnel in a hospital [1]. In the field of a complicated healthcare system, nurses offer nursing care to satisfy needs of patient that sometimes may decrease under desired standards. Restricting of budget and increasing time shortage in admission of hospital with excessive demands upon nursing time causing to miss or rationing nurses for giving care [2].

Nurses also played essential healthcare roles in their functions as schemers of care of patients, coordinators, givers, and monitors of care. In addition to, implementing many of procedures write by other providers of health care to treat illnesses and overcome complications to enhance health and control of responses to illness. So, most processes of care that give to patients passing first through nurses hands [3]. Missed nursing care means loss of any element of needed nursing care, gives a technique for interpreting how staff nurses affect the outcomes of patients in the model of missed nursing care [4].

Nurses as the chief providers of care in the hospital, likely nursing care omission or completion is to have a large effect on care experience of patient. The identification of the care missed allows providing valuable information to achieve high quality and safety of the nursing service. The care quality provided is the responsibility of nursing staff. So, determining care missing and elements that contributed to omissions allow carry out the suitable strategies needed in nursing services restructuring, to provide the solutions for problem of missed nursing care [5], which improves the patient care' quality and safety. Missed care is either part or

whole omitting care or delayed any aspect of needed patient care that has been mentioned in many places and countries and is related to the negative outcomes of patient [6].

Unfavorable and negative patient outcomes has been related of missed nursing care , that is linked to many causes related to environment of work, demands of patient care and issues related to staffing[7].Subsequently, in relation to patient care, three primary antecedents were associated with missed care; the availability and accessof material resources, human relationship and communication factors. In more recent years, it was clarified that environment of nursing work and its effect on missed care as a more specific factors affecting missed care. Missed nursing care also defined as rationing of care, care loss and forgetting it, and not do task, although it is not excessive, it is elevating due to a growing effects of nurse workload and levels of staffing on outcomes of patient that may be explaining partially as a mediating factors such as timely delivering appropriate nursing care [8].

Missed care affects the outcomes of patient through mediating the effects directly of hospital features on outcomes of patient and nurses [9]. Patient outcomes such as increase mortality, errors of medication, patients'falls, bed sores andnosocomial infections.And nurses outcomes such as low quality of work life of staff dissatisfaction in their job and burnout.There are some main causes for missed care as decrease numbers of staff, shortage of time needed to implement nursing interventions, bad using of available resources, poorly delegating of dutiesand unsuitablework environment [10].

Missed nursing care is loss of care during hospitalization of patients. Missed care was linked to many aspects in relation to communication and the resources of humanity. It should be observed that weak link was present between missing care and availability of material resources, but the factors of human are a main dimension that is effect directly on patient care. So, nursing management required to have, efficient, skillful and sufficient number nursing staff to meet demands of care effectively, in addition to enhance the communication between health and clinical profession staff involved in care effectively and contribute to hospital care quality and safety[11].

Balance between care quality and reduction of cost also affects the delivered nursing care complexity. This information adds more attention to develop and inspect strategies in nurse` environment of work that can help to element mistakes and improve indicators of quality of nursing and hospital. However, effect of missed care exceed the instant and potentially influence on patients which found High levels missed care have strong relation and force predictor of intention to leave by nurses along with missed work that self-reported.The understand of loss nursing care and the factors affecting gives a design for study by which researchers can identify processes of nursing work flow that reduce or cause to missed care[12].

Work flow is defined as a little-term peak experience described by absorption, work pleasure and intrinsic work motivation. Absorption refers to the full involved in and immersion in the tasks of work so that nurses do not realize what is happening around them and their time fly and fastspent. Work enjoyment reflects the happiness feeling during work that experienced by nurses. Intrinsic work motivation refers to accomplish the tasks of work to achieve experience pleasure and satisfaction [13]. Feeling of happiness; the enjoyment in performing the tasks; accomplishment of task consider itself as a reward instead of the focus on pay, promotion, and other fringe benefits, all of these are the nurses experiences of work-related flow. Similarly, nurses encountering flow at work said pleasant on absorption in the activity of work or task although it's requiring and challenging nature [14].

Work flow is a feeling of pleasure, internal stimulus and assimilation, which may include in high challenges events that need using high skill to do the tasks without any other incentive than the activity. Experiencing work-related flow in relation to model of demand-control, resources of job, relation of social and an innovative climate of learning.In this experience, personals have feeling of efficient in cognitive, incentive, and pleased [15].

Fostering the strategies that provide work affirmative expertise, so as to enhance motivation of work and nurses comfort is very important within the healthcare context. Therefore, defining and perceiving the aspects leading to the flow at work is critical to determine the elements enhancing motivation of work that provide a benefit in terms of good results for the organization and satisfaction and well-being for the nurses [16]. Research attention about work flow is increasing that produce a favorable addition to the classic approach of health psychology organizational, concentrating on adverse health outcomes. The experience of work-related flow can increase comfort, elevate the level of vigor and decrease fatigue and exhaustion at work , in addition it is positively associated to performance, and can be considered to have significant results for organizations [15].

Again image of the hospital, her productivity and quality of patient care are directly depending on nurses that are played critical role in healthcare system [17]. So, it is important for hospitals to focus on increase nurses' motivational levelsandexperience of work-related flow. In recent decades, nurses work environment and its connection with care quality has gained attention as an area of research. Nursing work environment refer to the working conditions, practice environment and job characteristics. It was influence on missed nursing care and may have effect for patients and nurses [18].

Working environment promote for understanding their nurses' needs, considering the organizational changes and redesigning the nurses' activities. On the other side, they could give additional resources, such as increase opportunities for training and staff professional development, evaluating the learning outcomes achievement and, therefore, favoring the establishment of the balance that leads to the flow experience[13].

Significant of the study

Over the past ten years especially in the complex hospital care setting the important of loss or late the care of nursing has become increasingly diffuse in attention of international nursing. Loss nursing service, or needed service that is not given, is considered as a main factor caused negative patient and nurses results. Evidence refers that missed nursing care, or care that undo is diffuse and the causes that lead to loss care are complex and numerous. Missed nursing care has unequivocally and repeatedly been associated with bad patient outcomes as increased length of hospital stay, and increase patient dissatisfaction with their hospital care experience and the association between nurses' reports of missed care and mortality. The consequence of inability to provide the quality of care that nurses believe their patients require has been shown to have a significant impact on nurses' level of job satisfaction, intent to stay in their job, burnout, and the quality with which nurses rate their personal lives[19].

Many complex factors have been shown to be effect of missed nursing care. The fact of incomplete care in the setting of practice cannot and should not be ignored. Moreover, understanding the dynamics that favor nurses' work flow could guide managers and organization to maintain more appropriate resources to promote healthy working environment. Missed nursing care is the needed nursing care that is unfinished, has been identified as a problem in hospitals. Therefore the present study is important in that it is one of the first studies to link hospital activity distribution with missed nursing care and its contributing factors and also effect on nurses' work flow at Mansoura university hospital.

Research questions

1. What is the type and recurrence of missed nursing care in study units?
2. What are the factors associated with missed care?
3. What is the Work Flow as perceived by study nurses?
4. Is there a relation between missed nursing care and associated factors?
5. Is there a relation between factors affecting missed nursing care and nurses' work flow in general medical and surgical units?

The study aim

To identify the factors affecting missed nursing care and its relation to nurses' work flow in general medical and surgical units.

II. Subjects and Methods

2.1 Design: A descriptive correlational design was used in the study.

2.2 Setting: The study was conducted in the 4 general surgical units at main Mansoura University hospital and 4 general medical units at Specialized Medical Hospital. These hospitals provide Delta Region with a broad series of health services.

2.3 Subjects: All nurses (78) working in all 4 general surgical units at Main University Hospital (n=45) and 4 general medical units at Specialized Medical Hospital (n=33) who have at least one year experience and available at data collection time, to express their opinion about factors affecting missed nursing care and its relation to their work flow.

2.4 Tools of data collection: Two tools were used; MISSCARE Scale and Nurses' Work-Related Flow Inventory.

2.4.1 MISSCARE Scale. It was developed by **Kalish & Williams [20]** and is aimed at assessing the type and frequency of missed nursing care, as well as associated factors for the missed nursing care as perceived by staff nurses in studied units. This questionnaire composed into three parts:-

Part I: Were described nurses' personal traits as, age, education and years of experience, units and marital status.

Part II: It had 24 items to measure the care omitted. These items was covered under four elements namely; interventions in individual needs (6 items), planning of discharge and education of patient (3 items), interventions of basic care (7 items), and continuing assessments with care interventions (8 items). Accordingly, Respondents were asked to assess frequently nursing care elements were missed, each response was assigned from a four-point scale, as always missed, frequently missed, occasionally missed, or rarely missed. The response alternatives are considered as dichotomous scale, in which always and frequently missed are referred to care missed, while occasionally and rarely missed are referred to care provided.

Part III: Was used to identify the factors that lead to care missed. It consists of 17 items categorized under three dimensions namely; human resources (5 items), communication (9 items), and material resources (3 items). Respondents were indicated the causes of missed nursing care. Items were scored on a four-point, Likert-type scale as (1) no reason, (2) lesser reason, (3) moderate reason and (4) significant reason.

2.4.2 Nurses' Work-Related Flow Inventory. It was adopted by Bakker, (2008)[21] to appraise experiential perceptions of flow. The sample was asked to point how often they had each of the experiences during the past week. The instrument consists of 13 items covering three aspects of flow namely; Absorption (4 items), Enjoyment of Work (4 items), and Intrinsic Work Motivation (5 items). Response was measured on 5-point rating scale ranging from 1 = *never* to 5 = *always* with high scores indicating higher experience of flow at work.

2.5 Methods:

- Ethical consideration: the research ethics committee of the Faculty of Nursing, Mansoura University, gave ethical approval for the study (Ref. No. P. 0206), and obtained the informed consent from the subjects after explaining the process of the study, participation in research was voluntary, and the right of withdrawal from the study was reserved, confidentiality and privacy of information was ascertained, and the results were used as component of necessary research as well as future publications and education.
- The tools were translated into Arabic, and tested for its content validity by five experts in the field was asked to evaluate the tools of this study. The experts were asked to evaluate individual items on the study tools in relation to its relevance and appropriateness and accordingly the necessary modification were done.
- The content validity of the study tools measured to evaluate each item as well as the entire instrument as being relevant and appropriate to test what they wanted to measure. Content validity index (CVI) MISSCARE Scale was (87%), and (92%) for Nurses' Work-Related Flow Inventory.
- Carrying out the pilot study on 10% of study subject and excluded from the total sample to test clarity of tools, its applicability and reliability. Responding time for sheet was (20 to 25) minutes.
- Reliability of the study tools tested using the same 10% subject to answer the same tools after 2 weeks. Test re-test reliability was computed by measuring Cronbach alpha reliability coefficient. Reliability was (0.839) for The MISSCARE Scale and (0.914) for Nurses' Work-Related Flow Inventory.
- Duration of data collection lasted one month from (12 / 9 to 14/ 10/ 2019).

2.6 Statistical Analysis

Research questions were answered using descriptive statistics number and percentage. Data was carried out through categorized, organized, tabulated and statistically analyzed using SPSS software statistical computer package version 15. Pearson's correlation coefficient was used to evaluate correlation between study variables. The threshold of significance was fixed at the $p < 0.05$, 0.01 level for interpretation of results of tests of significance.

III. Results

“Table 1” depicts that the most study subjects 52.56% were in the age group ranged from 30 to less than 40 years old, 53.7% were held a bachelor nursing program and 20.5% has technical institute. As for years of experience, 55.13% of study subjects had 10 to less than 20 years of experience, and (17.95%) had less than 10 years of experience. Most of study subjects were married and working in the surgical units at Mansoura university hospital.

“Table 2” shows number & percentage of missed nursing care as perceived by study subjects. This table revealed that 65.4%, for administering medications within 30 min and 46.2% for each performing skin/wound care, and documenting all necessary data were reported as occasionally missed by study subjects. While performing focused reassessment according to patient condition, setting up meals for patients, and teaching patient about illness, tests were reported as always missed 50.0%, 34.6%, and 33.3% respectively. On the other hand, most of the study subjects reported washing hands 30.8% was rarely missed and 7.7% for performing patient bathing/skin care. As well as it was observed 28.2% was reported as frequently missed for providing emotional support to patient & family, acting on PRN medication requests within 15min, assisting with toileting needs within 5 minutes of request, and turning patient every 2 hours.

“Fig. 1” shows percentage of missed and provided nursing care as perceived by study subjects. This figure revealed that the highest percentage of missed care was 80.8% reported for performing focused reassessment according to patient condition and followed by performing patient bathing/skin care and attending interdisciplinary care conferences 67.9% and 67.8% respectively. While the highest percentage of providing nursing care was 80.8% reported for administering medications within 30 min and followed by documenting all necessary data and performing skin/wound care 75.6% and 71.8% respectively.

“Table 3” shows number & percentage of factors of influencing missed nursing care as perceived by study subjects. The highest percentage of significant reason of missed nursing care was 43.6% reported to urgent patient situations and followed by 42.3% for medications not available when needed. While the highest percentage of lesser reason of missed nursing care was 35.9% reported to tension of communication breakdown with medical staff and followed by 34.6% for tension among nursing team and tension or communication breakdown with other ancillary/support departments. As regards for non-reason of missed care, it was observed that the highest percentage was 26.9% for assistants not communicating unmet needs and followed by tension of communication breakdown with medical staff and lack of backup support from team members 25.6% and 23.1% respectively.

“Fig. 2” shows means of factors influencing nursing care missed as perceived by study subjects. This figure revealed that the highest mean of factors influencing nursing care missed was 22.692 mean score. While the least mean was 9.41 mean score reported to material resources.

“Fig. 3” shows percentage of nurses' work flow as perceived by study nurses. This figure revealed that the highest percentage of nurses' work flow was 68.33% reported for work enjoyment and followed by 67.58% for intrinsic work motivation. While least percentage was 64.48% reported to absorption nursing behaviors.

“Table 4” shows relationship between study subjects' responses regarding missed nursing care and its associated factors in the selected settings. The results in this table revealed that there were a significant correlation between nurses' responses of missed care and its associated factors in the selected settings ($r = .228, p < 0.05$). The table also shows most of the dimension missed care was significantly correlated with associated factors except interventions in individual needs were not significantly correlated with associated factors. As well as, all dimension of missed care were correlated with communication factor except Interventions in individual needs was not significantly correlated. While material resources were not significantly correlated with all dimension of missed care.

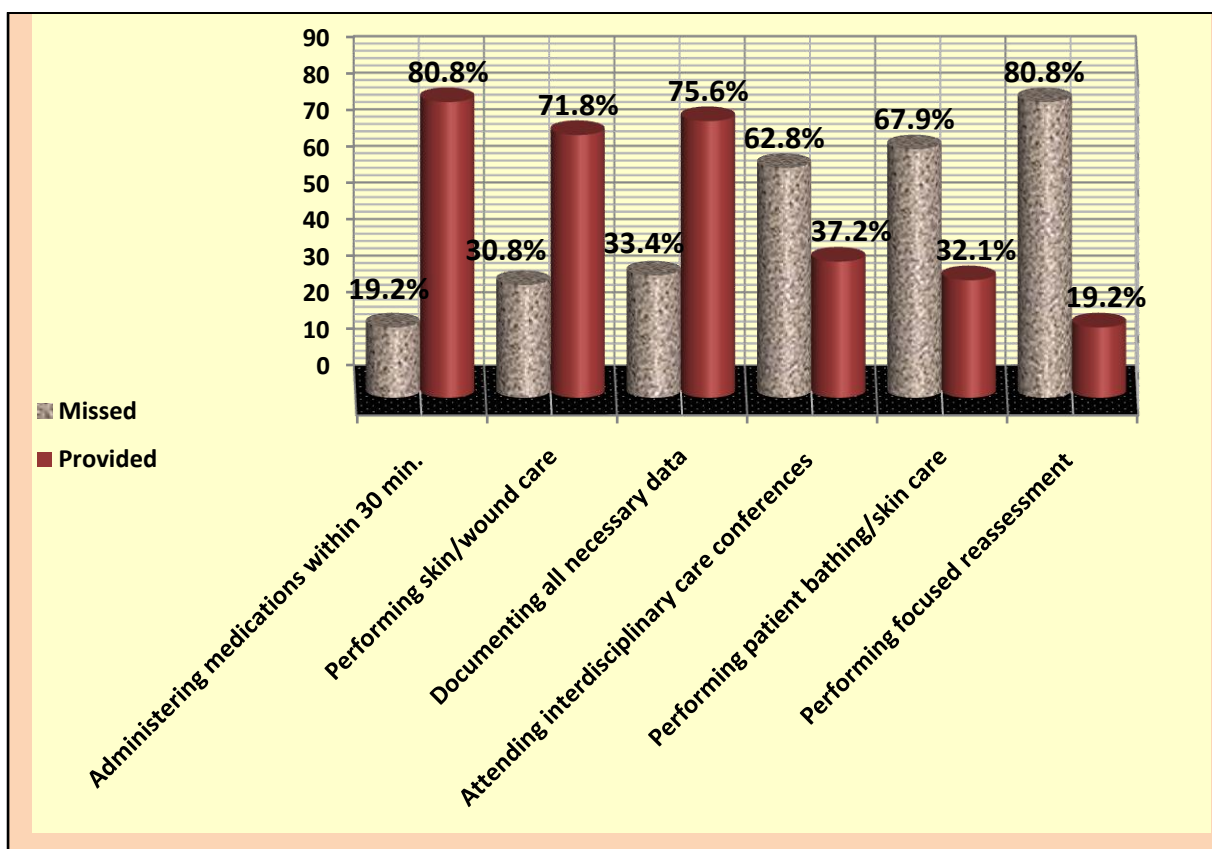
“Table 5” shows relationship between study nurses' responses regarding factors related to missed care and their work flow in the selected settings. The results in this table revealed that there were no significant correlation between responses associated factors of missed care and nurses' work flow in the selected settings. Also the absorption and intrinsic work motivation dimension of work flow were not significantly correlated with associated factors, while work enjoyment was significantly positive correlated with communication factor and with total associated factors ($r = .264, p < 0.05$ & $r = .308, p < 0.01$) respectively.

“Table 1” Personal data of the study subjects (n= 78).

Personal data	Study subjects	
	No	%
Age		
20-	25	32.05
30-	41	52.56
> 40	12	15.39
Mean ± S.D	30.782 ± 7.53	
Educational qualification		
Bachelor degree	42	53.7
Technical	16	20.5
Diploma degree	20	25.6
Years of experience		
<10	14	17.95
10-	43	55.13
>20	21	26.92
Mean ± S.D	12.807 ± 6.590	
Marital status		
Single	15	19.23
Married	63	80.77
Unit		
Medical	33	42.3
Surgical	45	57.7

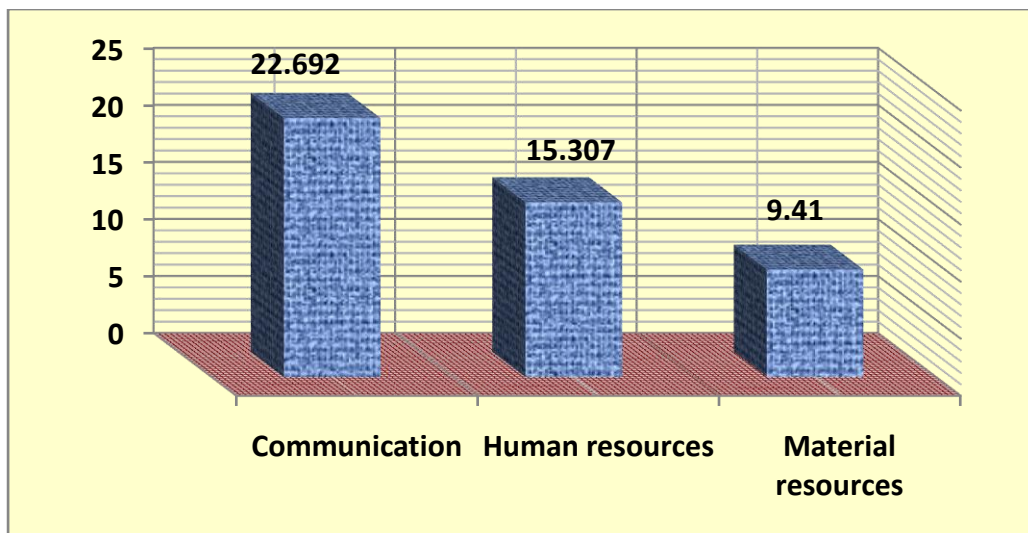
“Table 2” Number & percentage of missed nursing care as perceived by study subjects (n=78)

Items	Rarely missed	Occasionally missed	Frequently missed	Always missed
	n (%)	n (%)	n (%)	n (%)
Interventions in individual needs				
- Administering medications within 30 min.	12(15.4)	51(65.4)	7(8.9)	8(10.3)
- Providing emotional support to patient & family	13(16.7)	21(26.9)	22(28.2)	22(28.2)
- Responding to call light within 5 minutes	14(17.9)	20(25.6)	21(26.9)	23(29.5)
- Acting on PRN medication requests within 15min	19(24.4)	27(34.6)	22(28.2)	10(12.8)
- Assessing effectiveness of medications	12(15.4)	22(28.2)	19(24.4)	25(32.1)
- Assisting with toileting needs within 5 minutes of request	14(17.9)	22(28.2)	22(28.2)	20(25.6)
Discharge planning				
- Teaching patient about illness, tests, etc.	13(16.7)	23(29.5)	16(20.5)	26(33.3)
- Planning patient discharge and teaching	16(20.5)	18(23.1)	21(26.9)	23(29.5)
- Attending interdisciplinary care conferences	8(10.3)	21(26.9)	26(33.3)	23(29.5)
Basic care interventions				
- Ambulating 3 times/day or as ordered	13(16.7)	19(24.4)	23(29.5)	23(29.5)
- Turning patient every 2 hours	14(17.9)	20(25.6)	22(28.2)	22(28.2)
- Feeding patient when food is still warm	16(20.5)	20(25.6)	23(29.5)	19(24.4)
- Setting up meals for patients	13(16.7)	21(26.9)	17(21.8)	27(34.6)
- Performing patient bathing	6(7.7)	19(24.4)	32(41.0)	21(26.9)
- Performing mouth care	11(14.1)	15(19.2)	26(33.3)	26(33.3)
- Performing skin/wound care	18(23.1)	38(46.2)	17(21.8)	7(9.0)
Continuing assessments				
- Assessing vital signs as ordered	18(23.1)	35(44.9)	16(20.5)	9(11.5)
- Monitoring input/output	20(25.6)	32(41.0)	19(24.4)	7(9.0)
- Documenting all necessary data	23(29.5)	36(46.2)	15(19.2)	4(5.1)
- Washing hands	24(30.8)	28(35.9)	19(24.4)	7(9.0)
- Monitoring bedside glucose as ordered	16(20.5)	24(30.8)	23(29.5)	15(19.2)
- Assessing patient each shift	12(15.4)	20(25.6)	27(34.6)	19(24.4)
- Performing focused reassessment according to patient condition	6(7.7)	9(11.5)	24(30.8)	39(50.0)
- Performing intravenous/central line site care & assessments according to hospital policy	18(23.1)	34(43.6)	13(16.7)	13(16.7)

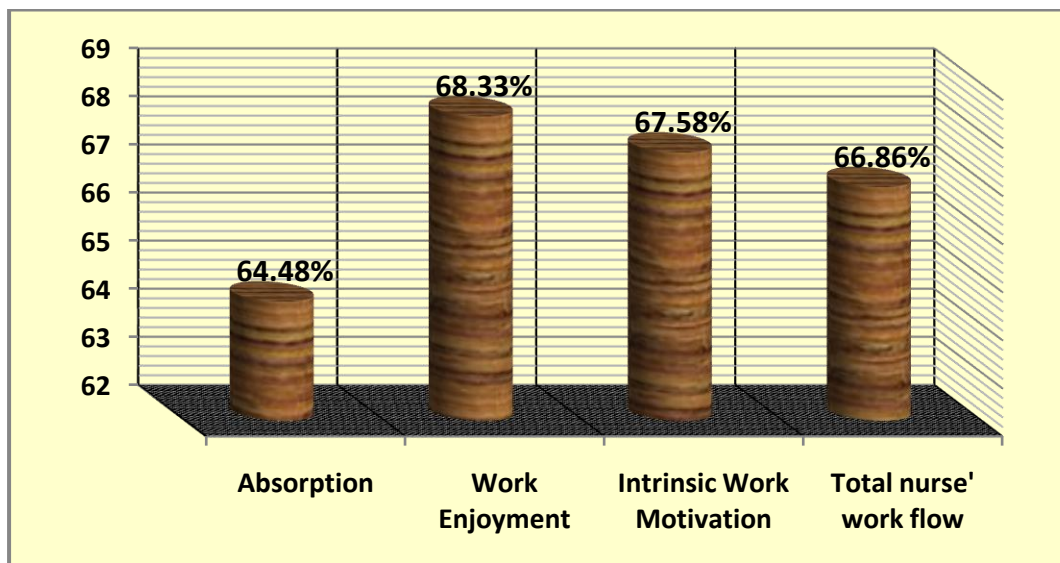


“Fig. 1” Percentage of missed and provided nursing care as perceived by study subjects (n=78)
 “Table 3” Number & percentage of Factors influencing missed nursing care as perceived by study subjects (n=78)

Factors associated with the care missed	No reason	Lesser reason	Moderate reason	Significant reason
Unexpected rise in volume/acuity	7(9.0)	13(16.7)	33(42.3)	25(32.1)
Urgent patient situations	1(1.3)	14(17.9)	29(37.2)	34(43.6)
Heavy admission/discharge activity	6(7.7)	13(16.7)	31(39.7)	28(35.9)
Inadequate number of staff	4(5.1)	12(15.4)	33(42.3)	23(37.2)
Inadequate number of assistive personnel	7(9.0)	7(9.0)	47(60.3)	17(21.8)
Tension among nursing team	14(17.9)	27(34.6)	25(32.1)	12(15.4)
Lack of backup support from team members	18(23.1)	25(32.1)	25(32.1)	10(12.8)
Assistants not communicating unmet needs	21(26.9)	24(30.8)	19(24.4)	14(17.9)
Tension of communication breakdown with medical staff	20(25.6)	28(35.9)	26(33.3)	4(5.1)
Tension or communication breakdown with other ancillary/support departments	14(17.9)	27(34.6)	34(43.6)	3(3.8)
Other departments did not provide care	13(16.7)	17(21.8)	32(41.0)	16(20.5)
Inadequate handoff from previous shift or sending unit	7(9.0)	23(29.5)	31(39.7)	17(21.8)
Unbalanced patient assignments	17(21.8)	19(24.4)	30(38.5)	12(15.4)
Caregiver off unit/unavailable	5(6.4)	5(6.4)	39(50.0)	29(37.2)
Supplies/equipment not available when needed	6(7.7)	11(14.1)	40(51.3)	21(26.9)
Supplies/equipment not functioning properly when needed	6(7.7)	6(7.7)	39(50.0)	27(34.6)
Medications not available when needed	2(2.6)	4(5.1)	39(50.0)	33(42.3)



“Fig. 2” Means of factors influencing nursing care missed as perceived by study subjects



* Percentages are calculated relative to maximum score.

“Fig.3”: Percentage of nurses' work flow as perceived by study nurses.

“Table 4” The relationship between study subjects responses regarding missed nursing care and its associated factors in the selected settings.

Dimension	Factors			Total
	Human resources	Communication	Material resources	
Interventions in individual needs	.014 904.	.151 187.	-.186 .102	.072 .532
Discharge planning and patient education	-.303** .007	-.279* 013.	-.171 .133	-.382** .001
Basic care interventions	-.059 .607	-.247* 029.	-.109 .344	-.228* .045
Care interventions with continuing assessments	.245* 031.	.237* 037.	.185 .106	.327** .003
Total missed	-.059 .607	-.247* .029	-.109 .344	-.228* .045

****Correlation is significant at the 0.01 level (2-tailed).**

***Correlation is significant at the 0.05 level (2-tailed).**

“Table 5” Relationship between study nurses' responses regarding factors related to missed care and their work flow in the selected settings

Work flow dimensions	Factors			Total factors
	Human resources	Communication	Material resources	
Absorption	-.047 .685	-.173 .131	.010 .930	-.142 .213
Work Enjoyment	.159 .165	.264* .020	.200 .080	.308** .006
Intrinsic Work Motivation	.184 .107	.029 .801	-.124 .278	.082 .478
Total work flow	.177 .121	.073 .528	.019 .866	.141 .218

****Correlation is significant at the 0.01 level (2-tailed).**

***Correlation is significant at the 0.05 level (2-tailed).**

IV. Discussion

In healthcare organization, efficiency, safety and quality are very important today at a time of cost containment. Overuse, underuse, and misuse have been classified as major quality problems in healthcare. Missed nursing care is loss of standard needed patients nursing care in hospitals. This means not completed any standard aspect and required nursing care [22]. This problem has been prevailed internationally and implications of quality connected with underuse of beneficial services of healthcare are warranted. Therefore, the current study confirms three factors as human resources, communication, and material resources that are contributed to missed nursing care [23].

The findings revealed human resources, communication, and material resources are associate with all dimensions of missed care except interventions in individual needs dimension nursing care was not correlate with three factors. There are some areas of missed nursing care related this dimension as providing emotional support to patient & family, assessing effectiveness of medications, and assisting with toileting needs. This is consistent with the results of Kalisch, et al., [5] who concluded emotional support is example of regularly missed nursing care. This is the same view of Knopp-Shiota et al., [24] that discovered loss care in aged care are being most commonly missed tasks at social and rehabilitative care deficits.

According to Henderson, et al., [25] explained that the time required for omission care execution, can be specific to other care that nursing consider more a priority, such as interventions assigned by physician. Findings of the present study revealed most nurses' report the greater percentage for giving medication for patient within 30 minutes and followed by acting on requests of medication within 15 minutes. This is supported by Zuniga et al., [26] who found social and emotional care, documentation and rehabilitation are more omission care and less priority than other by nurses and care workers.

Study findings revealed that a correlation significantly between human resources, and communication factors with planning of discharge and patient education missed care dimension. Regarding this dimension nurses allocated that deficiency of education of patient around the disease, check and diagnostic procedures and attending interdisciplinary care conferences. This may be due to nurse required more time to fulfill these tasks. This is agreed with Bragadottir et al., [27] who found nursing care that are regularly missed are ambulation, change the position, feeding, teaching of patient, planning for discharge, support for emotion, and hygiene. As well as Tubbs-Cooly et al. [9] pointed attention to basic physical care needs, and prepare patients and their families for discharge are more missed care.

The results show that bathing/ skin care, mouth care, and ambulating for patient 3 times/day were the top three missed care elements reported frequently which related to basic care intervention dimension. As well as results revealed a major mouth care omission and assist with three times walking a day. This at the same line with study conducted by Kalisch et al., [4] who show issues of workflow that can help nurses in finishing this care, is addressed as a major challenge among nurses and open the chances for investigators.

Findings of the present study revealed that a significant correlation between human resources, and communication factors with care interventions with continuing assessments missed care dimension. As well administering medications within 30 min, documenting all necessary data, performing wound care, monitoring input/output and assessing vital signs as ordered were the least frequently missed care elements. This may be for being able to be timed to perform these tasks with precision.

This is inconsistency with Henderson, et al., [25] who pointed to monitor blood glucose and IV lines maintenance as a complex health care tasks were less omission than with other complex tasks of health care missed more frequently. Therefore Schubert et al., [28] found nurses are more likely to accomplish those duties that are assigned by the doctor and have a direct effect on outcomes of patient.

Patients may loaded bad impact caused by missed nursing care. As Oflaz & Vural, [29] were examined missed care as a single measure related to not take medications on time and showed to be associated significantly with patients dissatisfied. In addition to Lake et al., [30] link between missed care and an intention to leave the jobs by nurses or even the profession of nursing due to physical and emotional exhaustion. As well as some studies done by Ausserhofer et al., [31] found missed care was shown to be a cause of job dissatisfaction and there was some suggestion that the emotional exhaustion described by nurses as a consequence of trying to minimize missed care was linked to moral distress.

A good work environment is described as an atmosphere where well trained nurses have the time and authority to practice to full professional competency [32]. Work flow are identified by nurses as not only a positive but also as optimal experiences, nurses happiness during these experiences increased and levels of happiness are higher when flow occurs during work [13]. The study findings stated that most nurses said the importance of work enjoyment and intrinsic work motivation for their work flow. This may be due to motivation and enjoyment experience occurs when there are some circumstances such as clear goals, concentration on a specific field, feedback, and control over the activity.

Work-related flow as pleasure, motivation intrinsically, and assimilation in work of one may facilitate by a high degree of job resources. This is opposing with Bakker, [21] who study the relation between job resources and demands, and work-related flow. Job Demands and Resources (JD-R) model give information toward association between the three dimensions of job demands and resources. According to Colombo & Zito [33] investigate the influence job demands and resources on the three elements of work flow as assimilation, work pleasure and intrinsic work motivation. Acceptable scores were found related to enjoyment of work and motivation in work intrinsically, especially pleasure of work. Although the high correlation between enjoyment of work and intrinsic work motivation.

Moreover, findings of the present study revealed the components of work-related flow as work absorption and enjoyment was practiced by nurses during activities. This may be due to flow is a full achieving of welfare which composed feelings of pleasure and delight, essential impulse, or wanting to accomplish the duties without any other rewards than the activity analysis and assimilation. This is the same view of Asakawa [34] who propose work flow and impulse intrinsically is facilitate positive feeling of personal internal locus of control and cognitive absorption, which provide creativity in work behaviors. Moreover, Zubair & Kamal, [35] concluded that creative work behaviors are positively predicted as a result of work-related flow.

Clear communication between nursing staff levels was an important component to an effective environment of work [32]. In the present study nurses considered communication factor such as ineffective communication between ancillary departments, medical staff and among team, are an important reason for missed nursing care and their work flow. This is agree with Winsett et al., [12] who pointed delayed or missed care are occurred if care system is not reacting to the excessive workload of the unit and has an implicitly hardness of communication.

At times of increased work demand the result of an unpredicted admission or actions attached to lack of resources coupled with inadequate staffing often are caused missed nursing care. Importantly, staffing decreased is considered as a more participative factor in explaining missed care. Elevating the awareness of nursing staff to the causes effecting on why nursing care is missed lead to better understand of the risks and hidden costs associated to missed care and allows obvious way to identify methods that could minimize their happen [36]. Therefore, Srulovici, & Drach-Zahavy, [37] recommended administrators should provide nurses with adequate resources to support them to deal with more severity patients, so posting message for nurses that liability in their ward is very important.

Again, finding of the present study revealed human resources was the second related factors lead to missed nursing care. Human resources considers for nurses are the second cause for care omission, which they

said staff shortage and the unpredicted increase patients number and / or increase workload are the more important factors. And also the current study revealed a significant correlation between most dimensions of missed nursing with human resources and not corrected with material resource. This is agreed with Hernández-Cruz et al.,[11] who mentioned that although human resources factors that available to deliver care such as communication with many specialties' of team and material resources are required to perform the activities of patient care.

According to Blackman et al.,[36] set out to examine whether missed care could be predicted and what the factors determining missed care were. They found eight variables availability of resources such as equipment and medications; workload predictability; workload intensity in terms of patient allocation, timing of the shift, intent to stay in the job, satisfaction with the current job, and communication issues were directly influenced missed care. In the study done by Marven,[32] emphasized the importance of adequate staffing, skill mix, nursing communication and team approaches, and appropriate utilization of nursing time to undertake nursing to minimize missed care. And McMullen, et al.[2] defined causes for nursing care missed included staff shortage, the long hours needed for an interference, ineffective use of human resources, unsuccessful delegation, acceptability culture of missed care, and denial coping mechanism.

For instance, result by Papastavrou et al.[7] pointed that missed care caused bad effects for both patients and nurses. These effects composed more falls, spread infections of nosocomial, increase patient dissatisfaction, and decrease nursing staff job satisfaction. So McMullen et al. [2] recommended making and implementing strategies to eliminate omission of nursing care. Educate nurses as strategy includes in structural sessions and simulations of role playing on teamwork and missed nursing care considered as an effective strategy to eliminate missed nursing care.

To implement any strategies to overcome missed care successfully, it is critical of identify the dangerous of missed care and a strong loyalty from management team, staff of nursing are available. Designing and performing good strategies will need creative advanced methods and teamwork from nursing staff at all level and organizational leaders[38]. Reducing missed care by adopting successful approaches will be benefit organizations of health care, patients, and staff. Finally, organization and unit culture is lead to identify, resolve, and learn from misses and omissions [10].

V. Conclusion & Recommendations

The present study highlights a number of factors that are perceived to causes missed care and its effect on nursing work related flow. Depend on the present results, it can be pointed that communication and human resources play a significant role in the missed care and nurses' work flow. Three dimensions of missed care were affected by communication and human resources factors namely; plan for discharge and patient health teaching, interventions of basic care, and continuing assessments with care interventions. As well as nurses considered communication as an important factor that effect on their work flows. Furthermore, most nurses' report the greater percentage for giving medication for patient within 30 minutes and followed by acting on PRN medication requests within 15 minutes. While that doing of bathing/ skin care for patient, doing of mouth care, and Ambulating 3 times/day as ordered were the top three frequently reported missed care elements which related to basic care intervention dimension.

The present study findings recommended that:-

1. Give attention to many specific aspects, such as human resources management, control of admissions number, and managing supplies more actively to overcome reasons of missed nursing care.
2. More responsive from nurses and managers to effective staffing allocations plan to prevent the reasons why nursing care is being missed.
3. Increases the awareness of nursing staff about the causes of missed nursing care and provides obvious way in recognize strategies that could decrease occurrence.
4. Hospitals should go on to prevent negative consequences and enhance positive outcome of patient as strategies to ameliorate missed care
5. More study that connects missed nursing care with outcomes is a step needed in assessing the priority of corrective actions needed.
6. Further research to study the effect of missed nursing care role as intermediating factor to the relation between environments of work and experiences of patient care

References

- [1]. Kol,E., Arıkan,F., İlaslan,E.,&Akıncı,M. A quality indicator for the evaluation of nursing care: determination of patient satisfaction and related factors at a university hospital in the Mediterranean Region in Turkey, *Collegian*, 2018, 25; 51–56.
- [2]. McMullen,S.,Kozik,A., Myers,G. et al. Improving Nursing Care: Examining Errors of Omission,*MEDSURG Nursing*,2017;26(1):9-19
- [3]. Jones,L., Hamilton,P.&Murry,N. Unfinished nursing care, missed care, and implicitly rationed care: State of the science review, *International Journal of Nursing Studies*,2015; 52 : 1121–1137.

- [4]. Kalisch, J., Tschannen, D., Lee, H. & Friese, R. Hospital variation in missed nursing care. *American Journal of Medical Quality*, 2011;26 (4), 291–299.
- [5]. Kalisch, J., Landstrom, L. & Hinshaw, S. Missed nursing care: a concept analysis. *Journal of Advanced Nursing*, 2009;65 (7), 1509–1517.
- [6]. Lake, E., Germack, D. & Viscardi, K. Missed nursing care is linked to patient satisfaction: a cross-sectional study of US hospitals. *BMJ Qual Saf*. 2016 July; 25(7): 535–543. doi:10.1136/bmjqs-2015-003961
- [7]. Papastavrou E, Andreou P, Tsangari H, et al. Rationing of nursing care within professional environmental constraints: a correlational study. *Clin Nurs Res*. 2013; 23:314–35. [PubMed: 23291314]
- [8]. Subirana M., Long A. & Greenhalgh J. A realist logic model of the links between nurse staffing and the outcomes of nursing. *Journal of Research in Nursing*, 2014; 19(1), 8–23. doi:10.1177/1744987113481782.
- [9]. Tubb-Cooly L., Pickler H., Younger et al. A descriptive study of nurse-reported missed care in neonatal intensive care units. *Journal of Advanced Nursing*, 2015; 71(4), 813–824. doi: 10.1111/jan.12578
- [10]. Ulrich, B. Missed Nursing Care – How Often Does It Happen in Your Unit?, *Nephrology Nursing Journal* July-August 2016, 43(4), 291, 350
- [11]. Hernández-Cruz R., Moreno-Monsiváis MG., Cheverría-Rivera S., Díaz-Oviedo A. Factors influencing the missed nursing care in patients from a private hospital. *Rev. Latino-Am. Enfermagem*. 2017;25. DOI: <http://dx.doi.org/10.1590/1518-8345.1227.2877>.
- [12]. Winsett, P., Rottet, K., Schmitt, A. et al. Medical surgical nurses describe missed nursing care tasks—Evaluating our work environment. *Applied Nursing Research*, 2016; 32 (2016) 128–133.
- [13]. Zito, M., Bakker, B., Colombo, L., et al. Two -Step Study For The Italian Adaptation Of The Work-Related Flow (WOLF) Inventory: The I-WOLF, *TPM*, 2015; 22(4): December, 553-570.
- [14]. Zubair, A., & Kamal, A. Perceived Authentic Leadership, Work-Related Flow, and Creative Work Behavior: Moderating Role of Organizational Structures, *Abasyn Journal of Social Sciences* – 2016; 9 – Issue 2, 426-441.
- [15]. Fagerlind, A., Gustavsson, M., Johansson, G., & Ekberg, K. Experience of work-related flow: Does high decision latitude enhance benefits gained from job resources?, *Journal of Vocational Behavior*, 2013; (83), 2: 161-170. <http://dx.doi.org/10.1016/j.jvb.2013.03.010>.
- [16]. Colombo, L. & Zito, M. Demands, Resources and the Three Dimensions of Flow at Work. A Study among Professional Nurses. *Open Journal of Nursing*, 2014; 4, 255-264. <http://dx.doi.org/10.4236/ojn.2014.44030>.
- [17]. Malik, N., Dhar, L. Authentic Leadership and its impact on extra role behavior of nurses- the mediating role of psychological capital and moderating role of autonomy, 2016, *Pers. Rev.* in press.
- [18]. Norman, R.M., & Sjetne, S. Measuring nurses' perception of work environment: a scoping review of questionnaires, *Norman and Sjetne BMC Nursing* (2017) 16:66, DOI 10.1186/s12912-017-0256-9...
- [19]. Russell, K. Perceptions of burnout, its prevention, and its effect on patient care as described by oncology nurses in the hospital setting. *Oncology Nursing Forum*, 2016; 43(1), 103-109. doi:10.1188/16.ONF.103-109
- [20]. Kalisch, J. & Williams, A. Development and psychometric testing of a tool to measure missed nursing care. *Journal of Nursing Administration*, 2009; 39 (5), 211–219.
- [21]. Bakker, A. The work-related flow inventory: construction and initial validation of the WOLF. *Journal of vocational behavior*, 2008; 75, 400-414.
- [22]. Jiang, H., Li, H., Ma, L., & Gu, Y. Nurses' roles in direct nursing care delivery in China. *Applied Nursing Research*, 2015; 28 : 132–136
- [23]. Jones, L., Hamilton, P. & Murry, N. Unfinished nursing care, missed care, and implicitly rationed care: State of the science review, *International Journal of Nursing Studies*, 2015; 52 : 1121–1137
- [24]. Knopp-Sihota, A., Niehaus, L. et al. Factors associated with rushed and missed resident care in western Canadian nursing homes: a cross-sectional survey of health care aides, *Journal of Clinical Nursing*, 2015; 24: 2815-2825.
- [25]. Henderson, J., Willis, E., Xiao, L. & Blackman, I. Missed care in residential aged care in Australia: An exploratory study, *Collegian*, 2017; 24 : 411–416
- [26]. Zuniga, F., Ausserhofer, D., Hamers, J. et al. The relationship of staffing and work environment with implicit rationing of nursing care in Swiss nursing homes: A cross-sectional study. *International Journal of Nursing Studies*, <http://dx.doi.org/10.1016/j.ijnurstu.2015.05.005>
- [27]. Bragadottir, H., Kalisch, J., Smaradottir, S., & Jonsdottir, H. Translation and psychometric testing of the Icelandic version of the MISSCARE Survey, *Scand J Caring Sci*; 2015; 29: 563– 572
- [28]. Schubert, M., Ausserhofer, D., Desmedt, M. et al. Levels and correlates of implicit rationing of nursing care in Swiss acute care hospitals—a cross sectional study. *Int. J. Nurs. Stud.* 2013; 50 (2), 230–239. <http://dx.doi.org/10.1016/j.ijnurstu.2012.09.016>
- [29]. Oflaz, F. & Vural, H. The evaluation of nurses and nursing activities through the perceptions of inpatients. *Int Nurs Rev*. 2010; 57:232–9. [PubMed: 20579159]
- [30]. Lake, E., Germack, D. & Viscardi, K. Missed nursing care is linked to patient satisfaction: a cross-sectional study of US hospitals. *BMJ Qual Saf*. 2016 July; 25(7): 535–543. doi:10.1136/bmjqs-2015-003961
- [31]. Ausserhofer, D., Zander, B., Busse, R., et al. Prevalence, patterns and predictors of nursing care left undone in European hospitals: Results from the multicounty cross-sectional RN4CAST study. *British Medical Journal Quality and Safety*, 2014; 23, 126-135. doi:10.1136/bmjqs-2013-002318
- [32]. Marven, C. Missed Nursing Care – A nurse s' Perspective. An Exploratory Study into the Who, What and Why of Missed Care, Submitted in partial fulfillment of the requirements of the degree of Master of Advanced Nursing Practice (minor thesis). Melbourne School of Health Sciences Department of Nursing Faculty of Medicine, Dentistry and Health Sciences The University of Melbourne, 2016; <http://orcid.org/0000-0003-1439-4410>.
- [33]. Colombo, L. & Zito, M. Demands, Resources and the Three Dimensions of Flow at Work. A Study among Professional Nurses. *Open Journal of Nursing*, 2014; 4, 255-264. <http://dx.doi.org/10.4236/ojn.2014.44030>.
- [34]. Asakawa, K. Flow experience, culture, and well-being: How do autotelic Japanese college students feel, behave, and think in their daily lives? *Journal of Happiness Studies*, 2010; 11, 205-223.
- [35]. Zubair, A., & Kamal, A. Perceived Authentic Leadership, Work-Related Flow, and Creative Work Behavior: Moderating Role of Organizational Structures, *Abasyn Journal of Social Sciences*, 2016; 9 – Issue 2, 426-441
- [36]. Blackman, I., Henderson, J., Willis, E., et al. Factors influencing why nursing care is missed. *Journal of Clinical Nursing*, 2014; 24, 47-56. doi:10.1111/jocn.12688.
- [37]. Srulovici, E. & Drach-Zahavy, E. Nurses' personal and ward accountability and missed nursing care: A cross-sectional Study, *International Journal of Nursing Studies*, 2017; 75 : 163–171.
- [38]. Maloney, S., Fend, J., & Hardin, S. Is Nursing Care Missed? A Comparative Study of Three North Carolina Hospitals, *MEDSURG nursing*. July-August 2015 , 24 (4): 229-235.