Optimal Nurse Staffing to Improve Quality of Care and Patient Outcomes; the Impact of Shortage of RNs (Registered Nurses) on Nursing Care among Postnatal Patients

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Abstract

This paper discusses the implications of shortages RNs Registered Nurses on the postnatal patients and on the other patients. The aim of this study is to create awareness in people regarding the shortage of nurses, the impact of this shortage on patient care and the measures that may help to improve this shortage. The region is facing an acute shortage of nurses. The nurses are more important part of health care agencies so that nurse's shortage leading so many problems of patient care not only in postnatal patient but for all patients came into care unit. Appropriate nurse staffing is associated with improved patient outcomes there are several reasons behind this shortage of nurses. Several studies have conducted in the past but much is required to be done in this regard. Ninety-two percent 92% of all emergency departments including Obs and gynae departments have reported the problem of overcrowding, This is a quantitative study type and cross sectional study design. Sample is derived by using Solvin's formula. The target population is Jinnah Hospital,Lahore.The questionnaire was adopted. The data was analyzed by using SPSS(version 21).The results indicated that shortage of nurses and postnatal patient care are inversely proportional. When the shortage of nurses is high there will be poor postnatal patient care. Shortage of nurses cause increased patient's complaints about nursing care agreed on 31.2%. As nurses comprise the largest clinical subgroup in

hospitals, a common reaction to cost containment pressures is to reduce professional nurse labor hours and their associated costs. This strategy, however, is shortsighted as appropriate nurse staffing levels are essential to optimizing quality of care and patient outcomes in this era of value-based healthcare. This professional development can create a sense of loyalty, which can go a long way in tackling the problem of high turnover of nurses and nursing care. It is evident that the nursing shortage will impact the quality of care patients receive in Postnatal care unit and other departments. Only a comprehensive strategy consisting of immediate and long-term measures can ensure that the patients don't continue to suffer due to lack of adequate RNs.

Key words: nurse staffing, shortage of RNs, postnatal patients

INTRODUCTION:

Nursing is an act of serving and helping the humanity. Nurses are personnel that aid in the achievement of high quality of health. Nurses are the heart of health care system. Now a days, hospitals are facing an acute shortage of nurses .Due to shortage of nurses the postnatal patients are suffering from serious complications associated with low staffing. When the shortage of nurses is high ,there will be high mortality and other studies show no relation between these (Aiken, Clarke et al. 2002).

For understanding the impact of nurse shortage and its consequences especially on the postnatal unit and overall situation in the hospitals is very much exclusive to elaboration world wild. Nurses are a critical part of healthcare and make up the largest section of the health profession. According to the World Health Statistics Report (WHO, 2013), there are approximately 29 million nurses and midwives in the world, with 3.9 million of those individuals in the United States.

Estimates of upwards of one million additional nurses will be needed by 2020 (WHO, 2013).

According to The American Nurses Association (ANA) (2018), there will be more registered nurse jobs available through 2022 than any other profession in the United States. The US Bureau of Labor Statistics (2018) projects 1.1 million additional nurses are needed to avoid a further shortage. Employment opportunities for nurses are projected to grow at a faster rate (15%) than all other occupations from 2016 through 2026 (US Bureau of Labor Statistics, 2018).

Postnatal patients require greater care as several physiological changes are taking place and the body of the patient return to its original state so, low staffing may end in to fatal consequences such as postpartum hemorrhage, stroke, anemia and sepsis. Two factors are responsible for all the situations that is inadequate staff to patient ratio and no separate care for mother and her baby(Riley, Davey et al. 2005). After the delivery of a baby, a nurse is a only person that provide essential care in the hospital. In Pakistan, there is only one nurse that is responsible for providing care to dozens of patients at a time. Due to work load a nurse is unable to pay attention to every patient, would lead to inadequate and poor quality of care. In addition, the birth of the baby after pregnancy is the most common reason for hospitalization in our country. In our country women are satisfied with antenatal and intrapartem care but less satisfied with the postnatal care.(Davey, Brown et al. 2001).

However, reasons behind low staffing includes low wages, long duty hours, heavy workload, no respect and other barriers faced by a nurse. Very little has been done in the past to rule out the cause of nurses shortage and implement strategies to improve this grave condition. It is the need of the hour to enhance the number of nurses in our country by providing attractive and sufficient salaries ,reduce the duration

of duty hours and by paying respect ,so that quality of care provided to postnatal patients could be improved**.**

Impact on Patient care

Apart from the financial costs, lack of adequate nurses has an inevitable negative impact on the quality of care received by the patients.

There is a direct correlation between patient mortality (i.e., risk of death) and shortage of nurses. An increase of one full-time RN per 1,000 inpatient days contributes to a 4.3 percent decline in death of patients. Conversely, hospitals with fewer nurses witnessed a 2–7 percent increase in mortality.

Secondly, lack of nurses is one of the biggest reasons behind the problem of overcrowding of emergency rooms. Ninety-two percent 92% of all emergency departments including Obs and gyne Departments have reported the problem of overcrowding, which can lead to an increase in the duration of hospitalization, performance of additional procedures, permanent disability or even death.

Shortage of nurses leads to an increase in the workload of the existing workforce, which results in a predictable increase in medication errors, post deliver care, lack in providing postnatal care effectively. Close to half of all nurses employed have admitted to committing a medication error in the past year. Errors may range from infusing medicines at the wrong rate (most common) to giving the wrong medicine or mixing up medicines between patients, or postnatal lack in nurse observation which easily can result in fatal consequences. Worryingly, inadequate education and training is the most common reason for medication errors and other problems relation to natal care while fatigue is the second-most common reason.

Published studies show that appropriate nurse staffing helps achieve clinical and economic improvements in patient

care, including: – Improvements in patient satisfaction and health-related quality of life

Staffing and care after delivery are interlinked i.e the provision of nursing care and organization of care have effect on quantity of staffs that are in need. In the same way, a health care organization decides what sort of care should be provided soon after delivery that may have effect on number of staffs in need.(Davey, Brown et al. 2001)

The aim of this study is to create awareness in people regarding the shortage of nurses, the impact of this shortage on patient care and the measures that may help to improve this shortage(Davy, Brown et al.2001).

LITERATURE REVIEW:

The number of patients receiving medical care is increasing day by day due to increase in the awareness level of people regarding health care facilities. In the past, people are unaware of the health care facilities available in their states. As a result a number of patients were died of acute and chronic illnesses. Today, health care system is revolutionized according to advancement in science and technology. Due to increase in the number of patients receiving medical care, the number of health care professionals and especially nurses should be increased in the same proportion so that the patients receive quality health care. In the hospitals like Jinnah Hospital Lahore and Myo Hospital Lahore the nurse to patient ratio is approximately 1:25 as a result a nurse has to do all the chores of the patients from monitoring vital signs and medications to the beddings. However, postnatal patients need extra care because of risk of complications.

There are a lot of reasons behind this shortage of nursing. Some of these are long duty hours, low wages, lack of education, lack of respect etc. A number of researches have

been done to rule out the causes of low staffing and their impact on patient car. According to Institute of Medicine(IOM),1996 a report concluded that there is no any sort of evidence regarding shortage of nurses and their impact on patients outcomes belonging to acute care hospitals and little evidence of its impact on long term care outcomes.(Aiken, Clarke et al. 2002).

Several studies have done to find the relation between shortage of nurses and patient mortality. Some studies have showed the relation between shortage of nurses and high mortality as well as higher rates of other adverse outcomes resulting from shortage of nurses (Boston,2009).

Staffing and care after delivery are interlinked i.e the provision of nursing care and organization of care have effect on quantity of staffs that are in need. In the same way health care organization decides what sort of care should be provided soon after delivery that may have effect on number of staffs in need.(Davey, Brown et al. 2001).

Currently, researchers are working to find out the impact of shortage of nurses on nursing care among postnatal patients and the measures that can help to eradicate this acute shortage of nurses.

An insufficient supply of essential personnel, such as RNs, is a critical stressor for caring in postnatal care unit. Although many other departments of the hospitals are struggling with a nurse shortage. The shortage resulted from a combination of factors, including rising demand, little growth in RN wages, demographic changes in the RN workforce that decreased the supply of working RNs, and a stressful hospital workplace environment. A growing body of research, based primarily on state and hospital administrative data, has established a relationship between inadequate hospital nurse staffing and increased risk of adverse patient outcomes, including mortality. [2]Prolonged shortages also might reduce the quantity of patient care in the postnatal care unit, increase

operating and labor costs, and decrease the efficiency and effectiveness of care provided. Peter I. Buerhaus, Karen Donelan Beth T. Ulrich, Linda Norman,Catherine Des Roche , and Robert Dittus (PUBLISHED:MAY/JUNE 2007Free Access https://doi.org/10.1377/hlthaff.26.3.853)

Staffing Ratios

Bedside nurse ratio on to the post natal case is 1:5 ,1:10 in general ward ,1:1 in ICU unit cases actually deciding acceptable nurse-patient ratios, need more nurses to meet theses ratio accordingly , instead of managers, will lead to better job satisfaction, higher retention rates, and less desire to leave one's chosen profession. Appropriate staffing levels will decrease errors, increase patient satisfaction, and improve nurse retention rates.

Nursing shortages lead to errors, higher morbidity and mortality rates (Nurse Stand, 2016; Stead, 2016). In hospitals with high patient-to-nurse ratios, nurses experience burnout, dissatisfaction, and the patient's experienced higher mortality and failure-to-rescue rates when compared to lower patient-to-nurse ratios (Aiken, Clarke & Sloane, 2002). Some states have begun to pass legislation to limit patient-to-nurse ratios. Despite this, when staffing is short, ratios go up to meet the need.

Research Hypothesis

There exists no negative impact between nurse shortage and nursing care
The shortage of shortage of nurses on postnatal patient.

Purposes

To find the impact of shortage of RNs on nursing care in postnatal care unit.

To identify the relationship between nurse shortage and patient care.

The aim of this study

The aim of the study is to create awareness in people regarding the shortage of nurses, the impact of this shortage on patient care and the measures that may help to improve this shortage.

Methodology:

It was a quantitative study type. In this cross-sectional study design, sample is derived by Solvin's formula 156 staff nurses who work in different gynae wards, labour room and gynae operation theater of Jinnah Hospital, Lahore were selected through convenient sampling technique.

The instrument used in this research design: was a questionnaire that was adopted. The questionnaire was divided in to three sections. First section consists of demographic information such as age, gender, marital status, stay in organization, designation and qualification. Second section consists of questions related to impact of shortage of nurses(8 items including: current shortage will lead to lower quality care for patients, shortage of nurses cause delayed nurse response to calls, shortage of nurses cause increased patient's complaints about nursing care, increased staff communication problems, increased physician work load, shortage of nurses lead to discontinued patient care programmes, current shortage will lead to higher pay for nurses, shortage of nurses need to have other staff perform some nursing patient care activities (Halpern, Asch, Shaked, Stock, & Blumberg, 2005).

The third section consists of questions regarding impact of shortage of nurses on postnatal patient care(10 items including: nurses are skillful in performing nursing care, nurses render nursing services without delay, nurses treat me

with respect, nurses are caring, nurses explain nursing procedure clearly before performing it, On time medicine and Infusions, Post natal check monitoring for postnatal bleeding properly It can take my own decision when being cared by nurses, nurses give encouragement to me, nurses involve my family in hospital care, I have been given privacy from nurses, received useful information during discharge planning from nurses(Cox, 1982).

Nurses were asked to answer in a 5 point- likert scale rating: strongly disagree, disagree, neutral, agree and strongly agree. Before collecting data, informed consent from staff nurses were obtained and confidentiality was ensured. The questionnaire was distributed and collected after 3 days.

The tests applied in this study are descriptive statistics, correlation and simple regression to ensure reliability and validity. The SPSS (version 21) software was used for data analysis. The error significance level was 0.05.

Inclusion Criteria:
The Inclusion criteria were the staff nurses, medical staff patients and different departments of the hospital gynae wards, labour room; etc. as well who were in contact with nursing work in

Exclusion Criteria:
Exclusion criteria were irrelevant person or kind of leaves were not the part of this study

Ethical Consideration:
Authorization to carry out the study was obtained from Lahore University, school of nursing. Moreover, a verbal informed consent and confidentiality was assured for all participants. While conducting this study, the research principles, which

were, obey are Beneficence so in which study had to balance the risks and benefits and gave no harm to participants.

Data Analysis:

The data was analyzed by using the Statistical Package for Social Sciences (SPSS) (version 21.0).Descriptive statistics for all major study variables were computed as well as reliability estimates and Pearson correlation. The hypothesis was also analyzed. All of observer variables exhibited multivariate normality

RESULTS AND INTERPRETATION:

Demographic Characteristics:

Table: 1 Summary of demographic characteristics

Demographic Characteristics	Sample size =N=156	Percentage=100%
Gender:		
Male	Nil	Nil
Female	154	100
Qualification:		
Nursing Diploma	73	46.8
MBBS	64	41.0
Surgical Diploma	9	5.8
Other	10	6.4
Marital Status :		
Single	51	32.7
Married	105	67.3
Age Group:		
18- 25	64	41.0
25-35	90	57.7
35-50	2	1.3
50+	Nil	Nil
Stay in organization:		
Less than 1 year	81	51.9
1-5 years	68	43.6
6-10 years	4	2.6
more than 10 years	3	1.9

Table: 1 summarizes the characteristics of respondent (n=156) on the basis of their gender (Male or Female),Marital status(Single or Married), age(18-25,25-35,35-50 and Above 50), Qualification(Nursing diploma, MBBS, Surgical diploma and Others) stay in organization(less than 1 year,1-5 years,6-10 years and Above 10 years. The table 1 depicts that the whole proportion of sample size comprised on female nursing staff working in public hospitals as employees (n=156,100%). Majority of nurses were married 67.3 %(n=105) only 32.7% (n=51) nurses were single. About 41.0% (n=64)of the respondents were between 18-25 years, 57.7 %(n=90) were between 25-35 years, 1.3% (n=2) were between 35-50 years of age and none of the respondent was above 50 years.

Most of the employees had nursing diploma (n=73, 46.8%),41.0%(n=64) had MBBS, about 5.8%(n=9) had surgical diploma and 6.4%(n=10)

Most of the nurses were having 1-5 years stay in organization(n=62,59.6%),22.1%(n=23) were having less than 1 year stay,13.5%(n=14) were having 5-10 years stay in organization while only 4.8%(n=5) were having more than 10 years stay in the organization.

Add remaining FD of Questions

Frequency Table
Current shortage will lead to lower quality care for patients.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	24	15.4	15.4	15.4
	disagree	64	41.0	41.0	56.4
	neutral	33	21.2	21.2	77.6
	agree	29	18.6	18.6	96.2
	strongly agree	6	3.8	3.8	100.0
	Total	156	100.0	100.0	

Shortage of nurses cause delayed nurse response to calls

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	17	10.9	10.9	10.9
	disagree	51	32.7	32.7	43.6
	neutral	29	18.6	18.6	62.2
	agree	33	21.2	21.2	83.3
	strongly agree	26	16.7	16.7	100.0
	Total	156	100.0	100.0	

Shortage of nurses cause increased patient's complaints about nursing care.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	22	14.1	14.1	14.1
	disagree	44	28.2	28.2	42.3
	neutral	27	17.3	17.3	59.6
	agree	50	32.1	32.1	91.7
	strongly agree	13	8.3	8.3	100.0
	Total	156	100.0	100.0	

Increased staff communication problems.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	14	9.0	9.0	9.0
	disagree	55	35.3	35.3	44.2
	neutral	30	19.2	19.2	63.5
	agree	39	25.0	25.0	88.5
	strongly agree	18	11.5	11.5	100.0
	Total	156	100.0	100.0	

Increased physician work load.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	7	4.5	4.5	4.5
	disagree	26	16.7	16.7	21.2
	neutral	31	19.9	19.9	41.0
	agree	67	42.9	42.9	84.0
	strongly agree	25	16.0	16.0	100.0
	Total	156	100.0	100.0	

Shortage of nurses lead to discontinued patient care programme.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	6	3.8	3.8	3.8
	disagree	47	30.1	30.1	34.0
	neutral	42	26.9	26.9	60.9
	agree	48	30.8	30.8	91.7
	strongly agree	13	8.3	8.3	100.0
	Total	156	100.0	100.0	

Current shortage will lead to higher pay for nurses.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	11	7.1	7.1	7.1
	disagree	62	39.7	39.7	46.8
	neutral	26	16.7	16.7	63.5
	agree	40	25.6	25.6	89.1
	strongly agree	17	10.9	10.9	100.0
	Total	156	100.0	100.0	

The shortage of nurses need to have other staff Performa some nursing patient care activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	22	8.1	14.1	14.1
	disagree	44	27.2	28.2	42.3
	neutral	27	19.23	17.3	59.6
	agree	50	33.97	32.1	91.7
	strongly agree	13	10.26	8.3	100.0
	Total	156	100.0	100.0	

Nurses are skillful in performing nursing care

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	23	14.7	14.7	14.7
	disagree	31	19.9	19.9	34.6
	neutral	26	16.7	16.7	51.3
	agree	55	35.3	35.3	86.5
	strongly agree	21	13.5	13.5	100.0
	Total	156	100.0	100.0	

Nurses render nursing services without delay

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	7	4.5	4.5	4.5
	disagree	18	11.5	11.5	16.0
	neutral	26	16.7	16.7	32.7
	agree	59	37.8	37.8	70.5
	strongly agree	46	29.5	29.5	100.0
	Total	156	100.0	100.0	

Nurses treat me with respect

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	13	8.3	8.3	8.3
	disagree	35	22.4	22.4	30.8
	neutral	18	11.5	11.5	42.3
	agree	50	32.1	32.1	74.4
	strongly agree	40	25.6	25.6	100.0
	Total	156	100.0	100.0	

Nurses are caring

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	9	5.8	5.8	5.8
	disagree	39	25.0	25.0	30.8
	neutral	23	14.7	14.7	45.5
	agree	56	35.9	35.9	81.4
	strongly agree	29	18.6	18.6	100.0
	Total	156	100.0	100.0	

Nurses explain nursing procedure clearly before performing it

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	24	15.4	15.4	15.4
	disagree	40	25.6	25.6	41.0
	neutral	28	17.9	17.9	59.0
	agree	47	30.1	30.1	89.1
	strongly agree	17	10.9	10.9	100.0
	Total	156	100.0	100.0	

I can take my own decision when being cared by nurses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	5	3.2	3.2	3.2
	disagree	22	14.1	14.1	17.3
	neutral	24	15.4	15.4	32.7
	agree	66	42.3	42.3	75.0
	strongly agree	39	25.0	25.0	100.0
	Total	156	100.0	100.0	

Nurses give encouragement to me

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	2	1.3	1.3	1.3
	disagree	28	17.9	17.9	19.2
	neutral	18	11.5	11.5	30.8
	agree	66	42.3	42.3	73.1
	strongly agree	42	26.9	26.9	100.0
	Total	156	100.0	100.0	

Nurses involve my family in hospital care

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	11	7.1	7.1	7.1
	disagree	20	12.8	12.8	19.9
	neutral	21	13.5	13.5	33.3
	agree	75	48.1	48.1	81.4
	strongly agree	29	18.6	18.6	100.0
	Total	156	100.0	100.0	

I have been given privacy from nurses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	8	5.1	5.1	5.1
	disagree	20	12.8	12.8	17.9
	neutral	19	12.2	12.2	30.1
	agree	62	39.7	39.7	69.9
	strongly agree	47	30.1	30.1	100.0
	Total	156	100.0	100.0	

I receive useful information during discharge planning from nurses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	7	4.5	4.5	4.5
	disagree	24	15.4	15.4	19.9
	neutral	20	12.8	12.8	32.7
	agree	58	37.2	37.2	69.9
	strongly agree	47	30.1	30.1	100.0
	Total	156	100.0	100.0	

Bar Chart
Question No 1.
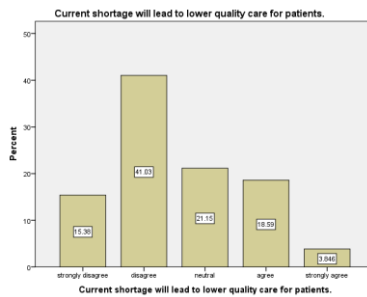
Analysis :

41.03 % disagree with this statement; Current shortage will lead to lower quality care for patients.

Question No 2.
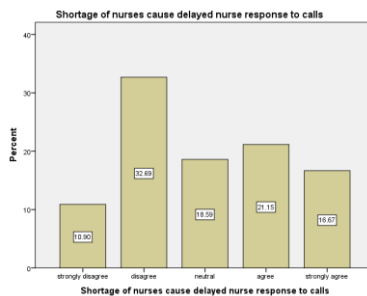
Analysis:

32.69 % disagree with this statement, Shortage of nurses cause delayed nurse response to calls.

Question No 3.

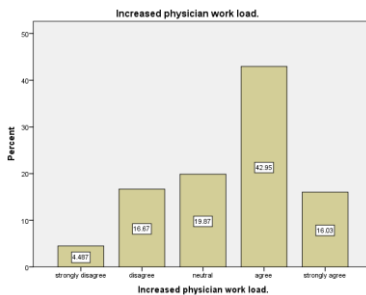Shortage of nurses cause increased patient's complaints about nursing care.
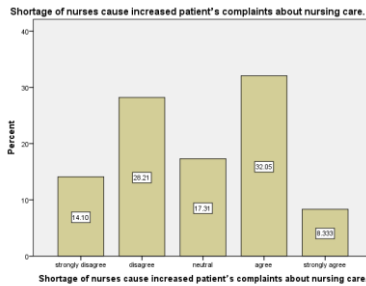
Analysis:

32.05% agree on Shortage of nurses cause increased patient's complaints about nursing care.

Question No 4.

Increased staff communication problems.
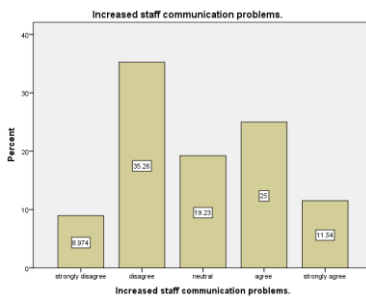
Analysis:

35% disagree on this statement, increased staff communication problems.
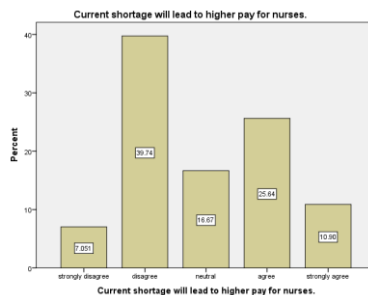
Question No 5.

Increased physician work load.

Analysis:

42.95% agree on: increased physician work load.

Question No 6.

Shoreage of nurses lead to discontinued patient care programme.
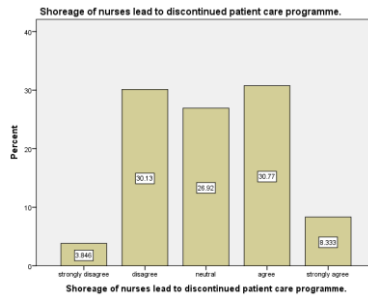
Analysis:

30.77% agree on: Shortage of nurses lead to discontinued patient care programme.

Question No 7.

Current shortage will lead to higher pay for nurses.

Analysis:

39.74% disagree on: Current shortage will lead to higher pay for nurses.

Question No 8.

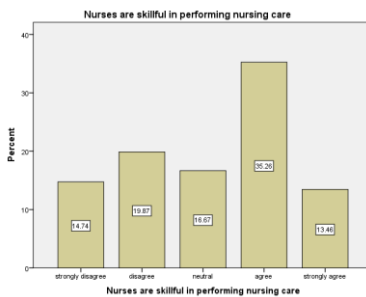Shortage of nurses need to have other staff perform some nursing patient care activities.
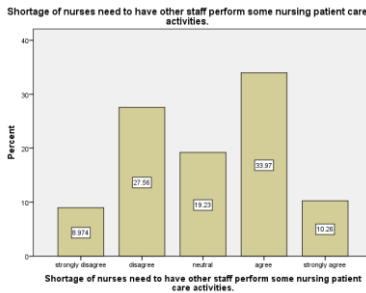
Analysis:

33.97% agree on: The shortage of nurses needs to have other staff Performa some nursing patient care activities

Question No 9.
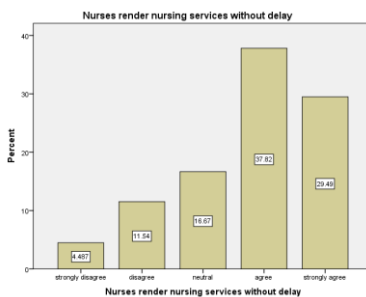

Nurses are skillful in performing nursing care

Analysis:

35.26% agree on: Nurses are skillful in performing nursing care
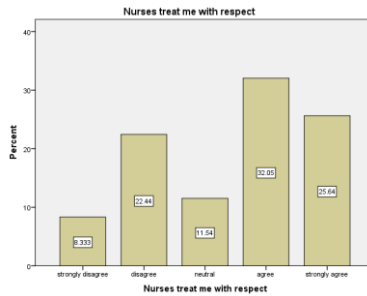
Question No 10.

Nurses render nursing services without delay

Analysis:

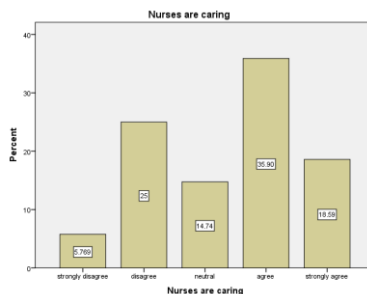37.82% agree: Nurses render nursing services without delay

Question No 11.

Analysis:

32.05% agree on: Nurses treat me with respect
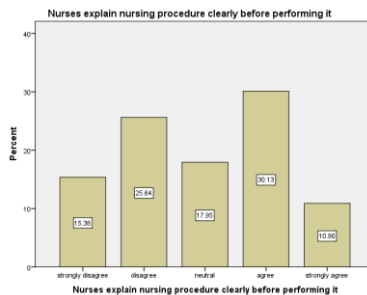
Question No 12.

Analysis:

35.90% agree on: Nurses are caring

Question No 13.

Analysis:

30.13% agree on :Nurses explain nursing procedure clearly before performing it
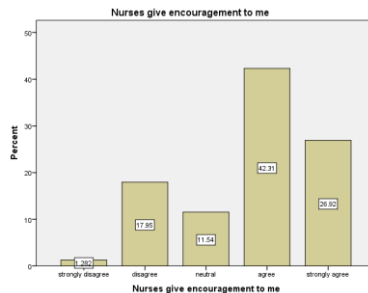
Question No 14.

Analysis:

42.31% agree on: I can take my own decision when being cared by nurses

Question No 15.

Analysis;

42.31%: Nurses give encouragement to me

Question No 16.

Nurses involve my family in hospital care
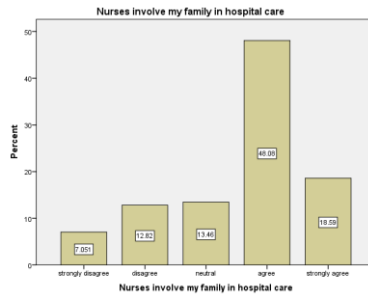
Analysis:

48.08%: Nurses involve my family in hospital care

Question No 17.

I have been given privacy from nurses
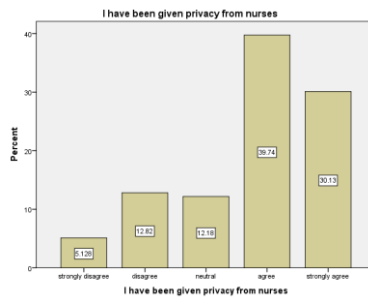
Analysis:

39.74 % agree on: I have been given privacy by Nurses

Question No 18.

I receive useful information during discharge planning from nurses
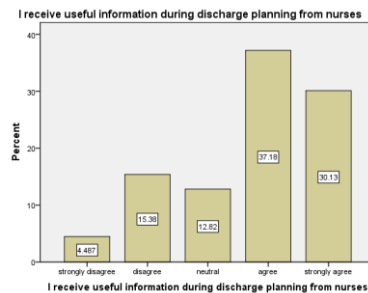
Analysis: 37.18% agree on: I receive useful information during discharge planning from nurses

Descriptive and Normality Statistics:

Normality tests:

Table 2   Skewness and Kurtosis results:

	Shortage of Nurses	Postnatal Care
Skewness	.266	-.771
S.E	.194	.194
Kurtosis	-.388	.576
S.E	.386	.386

At first data was analyzed for missing values and other typing errors were also analyzed so that errors could rectify. Normality was analyzed through skewness, kurtosis and bar charts. Table :2 depicts that the scores of shortage of nurses and postnatal care were normally distributed and were in range +1 to-1 more over two scores of both skewness and kurtosis were well in the range of +1.96 and -1.96 hence finding indicated the normality of data.

Descriptive Analysis:

Dependent variable:

Postnatal Care:

Table 3 Descriptive Analysis

Variable	Range	S.D	Mean	Median
Shortage of nurses	1-4	.753	3.0	2.87
Postnatal care	1-4	.384	3.59	3.60

Summed scores were used to calculate mean, median, range and standard deviation with the purpose of conducting descriptive analysis of postnatal care. Sample of 156 nurses was used for analysis purpose. Table :3 depicts that the range of score was 1-4 as our mean and standard deviation are (M=3.5212, SD=.71193).

Independent variable:

Shortage of nurses:

In table: 3 summed score were used to calculate mean, median, range and standard deviation with the purpose of conducting descriptive analysis of shortage of nurses. Sample of 156 nurses was used for analysis purpose. Range of score was 1-4 as our mean and standard deviation are (M=3.0, SD=.753).

Validity and Reliability Assessment:

Table:4 Reliability analysis

Variable	Cronbach alpha
Shortage of nurses	.804
Postnatal care	.801

Table: 4 present Cronbach's alpha for the scale used in the study. Cronbach alpha is the most commonly used measure of scale reliability. Cronbach alpha above .50 is considered to be the acceptable indicator of internal consistency reliability. The alpha values for shortage of nurses and postnatal care were above .5 which is acceptable.

Validity:

Table 5 KMO Bartlett's assumptions

Variable	KMO	Bartelett's test		
		Approx	Df	Sig
Shortage of nurses	.762	475.478	28	.000
Postnatal care	.801	708.007	45	.000

At start complete instrument was consisted on total 18 items. Instrument was consisting of 1 independent and 1 dependent variable. All assumptions of factor analysis was fulfilled. Assumptions imply that KMO value must be above .50 and Bartelett's test must be significant so that whole set criteria was fulfilled.

Correlation:

Table: 6 Correlation Matrix

Variable	Pearson Correlation
Shortage of nurses	-.254**
Postnatal care	-.254**

** indicate correlation is significant at 0.01level(2-tailed)

The correlation method was adopted in this study. Table: 6 shows that shortage of nurses has a significant negative correlation with postnatal care.

Results showed that the two variables are significant negatively correlated (r=-.254, p<0.05).

Hypothesis Testing:

Regression analysis:

Table: 7 Regression Analysis for shortage of nurses with postnatal care:

	B	S.E	Beta	P
Constant(SON)	4.242	.228		
Postnatal care	-.240	.074	-.254	.001
R Square=.254				
Adjusted R square=.058				

Regression analysis was conducted to examine the relationship between variables. To examine the indirect effect of shortage of nurses on postnatal care, multiple regression was used to examine the hypothesized relationship. Value of r square was used to explain the amount of variance. Same thing is explained by adjusted r square but in a more accurate way. Table 7 presents the results of main effects of shortage of nurses on postnatal care.

A result of simple regression are displayed in (Table no 7).Result revealed that the postnatal care significantly predicted shortage of nurses with beta value-.254 (p=.001) showing significant negative relationship between shortage of nurses and postnatal care. Whereas value of adjusted R square showing .058(p<.001) of variance contributed by independent

variable (shortage of nurses) in dependent variable (postnatal care).

DISCUSSION:

The study was carried out to demonstrate the Optimal Nurse Staffing to Improve Quality of Care and Patient Outcomes; the Impact of Shortage of RNs (Registered Nurses) on Nursing Care among Postnatal Patients. The study findings reveal that all of the respondents were females belonging to diversity of age group. By profession they were doctors, nurses and un-licensed assistive personnels. The study findings reveal the significant negative correlation between shortage of nurses and postnatal care.

The shortage of nurses is significant negatively correlated with the postnatal care. The results show that shortage of nurses and postnatal patient care are inversely proportional to one another. It means that when shortage of nurses is high then postnatal care will be declined and vice versa. As the data was collected from Jinnah Hospital Lahore so, study findings predict that Jinnah Hospital is facing an acute shortage of nurses. By virtue of this shortage postnatal patients in gynae wards are at increased risk of complications associated with pregnancy due to inadequate care they received.

Hypothesis was tested in this study. It was found that null hypothesis is not true in this case so alternate hypothesis is applicable as relationship exists between shortage of nurses and postnatal care. Considering the fact that demand for RNs is high with limited supply, it is surprising that just half of RNs have indicated being satisfied with their salaries. Dealing with this fact of shortage of nurses in the postnatal unit and the results of this issue to be resolved.

CONCLUSION:

This study is conducted to determine Optimal Nurse Staffing to Improve Quality of Care and Patient Outcomes; the Impact of Shortage of RNs (Registered Nurses) on Nursing Care among Postnatal Patients. To conclude, there is relationship exist between shortage of nurses and postnatal care. So, it is the need of the hour to increase the number of staff nursing in Jinnah hospital Lahore as it is the only way to improve postnatal care. It has been tried to find out the causes of shortage of nurses but much is required to be done by future researcher in this context.

To conclude, appropriate nurse staffing is associated with improved patient outcomes. With the increased focus on value-based care, optimal nurse staffing will be essential to delivering high-quality, cost-effective care. Implementation of a legislative model will help set basic staffing standards, and encourage transparency of action through public reporting and imposing penalties on institutions that fail to comply with minimal standards.

Optimal staffing is essential to providing professional nursing value. Existing nurse staffing systems are often antiquated and inflexible. Greater benefit can be derived from staffing models that consider the number of nurses and/or the nurse-to-patient ratios and can be adjusted to account for unit and shift level factors. Factors that influence nurse staffing needs include: patient complexity, acuity, or stability; number of admissions, discharges, and transfers; professional nursing and other staff skill level and expertise; physical space and layout of the nursing unit; and availability of or proximity to technological support or other resources.

Optimal Nurse Staffing to Improve Quality of Care and Patient Outcomes not only for the postnatal patient but for every patient admitted in the hospital.

RECOMMENDATIONS

Providing insight of the solution of this problem better training and education will help create more opportunities for those individuals already in the existing pool of RNs seeking better growth in their field. This professional development can create a sense of loyalty, which can go a long way in tackling the problem of high turnover of nurses and nursing care.

Finally, hospitals could opt for seasonal hiring of temporary nurses during the Postnatal cases in hospital admissions. People don't fall ill at the same rate throughout the year, which may create a situation when there seems to be a dearth of nurses when simply hiring more people for a short period of time may reduce patient care delays and resolve the issue.

It is necessity to hire more Professional, loyal, ethical built-up and skillful nurses to retain and work for the communities with best possible care.

Adding more RNs to the workforce will require a more strategic approach that goes beyond higher pay and seasonal demand-supply tweaks. A very important step would be to focus on the pay of nurse educators. One-third of facilities that educate nurses described their salaries as uncompetitive. It will be impossible for quality nurses to be educated in high numbers unless top talent is attracted to field of nurse education, as well. Higher salaries and additional incentives, monetary as well as non-monetary, can help retain existing talent and attract better teachers into the profession

It is evident that the nursing shortage will impact the quality of care patients receive in postnatal care unit and other departments. Only a comprehensive strategy consisting of immediate and long-term measures can ensure that the patients don't continue to suffer due to lack of adequate RNs. –

Improvements in patient satisfaction and health-related quality of life – Reduction/decrease in:

- Medical and medication errors
  - Postnatal Complications early detections and management
- Patient mortality, hospital readmissions, and length of stay
  - Number of preventable events such as patient falls, pressure ulcers, central line infections, healthcare-associated infections (HAIs), and other complications related to hospitalizations
  - · Patient care costs through avoidance of unplanned readmissions · Nurse fatigue, thus promoting nursing safety, nurse retention, and job satisfaction, which all contribute to safer patient

LIMITATIONS

In addition to sampling and non sampling error that affect all surveys, as noted earlier, acknowledge the difficulty in achieving a high response rate in the employees and the Patients as well survey with the consequence of not obtaining the views of all of those who had been selected for inclusion. Most importantly, these measures of people's attitudes and experiences; therefore, we cannot validate whether some problems reported do, in fact, exist in the hospitals where respondents were employed

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APPENDIX: I

Permission letter

Permission for conduction of a research study at Jinnah Hospital Lahore

Respected authority

It is stated the am student of Nursing profession. Conducting research on **"Optimal Nurse Staffing to Improve Quality of Care and Patient Outcomes; the Impact of Shortage of RNs (Registered Nurses) on Nursing Care among Postnatal Patients."** The purpose of our research study is to find the impact of shortage of RNs on nursing care in postnatal care unit

To identify the relationship between nurse shortage and patient care . For this purpose will distribute a questionnaire among Population. The questionnaire will take approximately 15-20 Minutes. Participant's information will be kept confidential.

Kindly allow me to conduct this study. I shall be very thankful to you for this favour.

Yours Obediently
Reeba Saleem
 Student

_____

Reeba Saleem, Muhammad Hussain, Muhammad Afzal, Dyed Amir Glani- **Optimal
Nurse Staffing to Improve Quality of Care and Patient Outcomes; the Impact
of Shortage of RNs (Registered Nurses) on Nursing Care among Postnatal
Patients**

APPENDIX: II

Informed consent:
Informed Consent

Dear participants,

Conducting a research on "**Optimal Nurse Staffing to
Improve Quality of Care and Patient Outcomes; the
Impact of Shortage of RNs (Registered Nurses) on
Nursing Care among Postnatal Patients**". The purpose of
our research study is to find the impact of shortage of RNs on
nursing care in postnatal care unit

To identify the relationship between nurse shortage and patient
care. A questionnaire will be distributed for data collection, for
which we need your cooperation. The questionnaire will take
about 15-20 minutes to complete. Your participation will be
helpful to in better health care delivery through nurses. The
responses you give us will be kept confidential. You are fully
allowed to withdraw at any time from research study.

I have read all the terms and voluntarily consent to participate
in the research study.
Signature:………………………..
 Date………………………….

APPENDIX: III

Questionnaire:

Questionnaire form

Topic: Optimal Nurse Staffing to Improve Quality of Care and Patient Outcomes; the Impact of Shortage of RNs (Registered Nurses) on Nursing Care among Postnatal Patients

Age,_____

Gender,_____

Marital Status,_____

Stay In Organization_____

Designation And Qualification_____

Please provide your response if you agree or disagree with the given statements.

Key: 5-point likert scale

1=strongly agree

2=agree

3=Neutral

4=disagree

5=strongly disagree

Sr.no	Statements	1	2	3	4	5
1	Current shortage will lead to lower quality care for patients.					
2	Shortage of nurses cause delayed nurse response to calls					
3	Shortage of nurses' cause increased patient's complaints about nursing care.					
4	Increased staff communication problems.					
5	Increased physician work load.					
6	Shortage of nurses leads to discontinued patient care programme.					
7	Current shortage will lead to higher pay for nurses.					
8	The shortage of nurses need to have other staff Performa some nursing patient care activities					
9	Nurses are skillful in performing nursing care					
1	Nurses render nursing services without delay					
1	Nurses treat me with respect					
1	Nurses are caring					
1	Nurses explain nursing procedure clearly before performing it					

1	I can take my own decision when being cared by nurses					
1	Nurses give encouragement to me					
1	Nurses involve my family in hospital care					
1	I have been given privacy by Nurses					
1	I receive useful information during discharge planning from nurses					