

## THE WORKLOAD PRESSURES EXPERIENCED BY NURSES AT PUBLIC SECTOR HOSPITALS, PESHAWAR

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### **ABSTRACT**

#### **OBJECTIVES**

*The study's objective was to assess that nurses working in in-patient wards were under workload stress.*

#### **METHODOLOGY**

*Descriptive observational research on nurses working in the in-patient ward of a public sector hospital in Peshawar was undertaken in November 2020. Workload Indicators of Staffing Need (WISN), a tool established by the World Health Organization (WHO) to anticipate the number of health staff needed to cope with workload pressure, was used to determine nurses' workload. To ensure the successful implementation of the WISN methodology, three tiers of committees were developed, including steering, technical, and expert committees. Data were also analyzed using the tool.*

#### **RESULTS**

*Nurses in the hospital's in-patient unit work 1966 hours per year. Health service activities, support, and other activities account for 47.92%, 33.33%, and 18.75% of all nurses' time, respectively, during this time. Four nurses were working in the hospital during the research study; however, WISN estimated that three nurses were needed to cope with the ward's workload pressure, and one nurse was overstaffed at the time. The WISN ratio calculated was 1.33.*

#### **CONCLUSION**

*The study concluded that there was no workload pressure on nurses (negative), and the ward had an extra nurse who could be accommodated in any other department with greater demand.*

**KEYWORDS:** *Workload, Staffing, Health, Workforce, Resources, Planning, Management*

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**INTRODUCTION**

Human resources are a critical pillar for access to health care services and universal health coverage, but they remain a persistent challenge for many countries due to disparities in their availability, composition, distribution, and productivity.<sup>1,2,3</sup> A robust workforce is required for every health system to perform well and accomplish its objectives. Human resources have traditionally been a system's most significant asset. A major chunk of the budget is consumed by human resources. Human resource planning guarantees that aptitudes are available.<sup>4,5</sup> Global health workforce challenges include shortages and unequal distribution, inadequate human resource planning, ill-informed policy decisions, and inadequate personnel.<sup>6,7</sup> Inequalities in health worker distribution have been significantly connected to a lack of access to effective health care and poor health indices.<sup>8</sup> Health care services rely significantly on healthcare personnel, and over 75 per cent of the health budget is spent on health workforce sustainability. In Pakistan, the health workforce accounts for 50-70 per cent of development investment and often more than 90 per cent of current expenditure.<sup>9</sup> A crucial component of every health system is the health workforce, including clinicians, allied health professionals, social health workers, health managers and support employees. According to WHO, Pakistan is one of 57 nations with a critical shortage of. Health workforce planning seeks to balance what is required to satisfy the population's health needs. The World Health Organization also anticipated improving equitable access to the health workforce would hasten progress toward meeting the Sustainable Development Goals (SDGs).<sup>10</sup> Globally, there is a significant lack of health personnel, particularly in low-income nations. The health workforce problem has profoundly impacted emerging countries<sup>11,12</sup> The shortage of health personnel

disproportionately affects developing nations such as Pakistan, and it is expected to impede Pakistan's accomplishment of the Millennium Development Goals (MDGs) and SDGs.<sup>13</sup> Most countries have expressed worry about the deterioration of nurse shortages. The association between nursing workloads and quality of patient care and safety is an established fact. Human resource inequality in healthcare facilities is a key factor in the allocation of resources, and it is one of the major challenge developing countries is facing in terms of health system management. Human resource planning estimates and forecasts the needed resources to accomplish organizational goals but is frequently overlooked. To address the global health workforce crisis, strategic information on human resources for health must be made available to help guide health policymaking. This implies that we needed information in order to determine the quantity of health personnel necessary. Workers in any organization face varying degrees of workload on a daily basis. If the workload changes for whatever reason, the stress level of the personnel as well as their perception of fairness in workload balance shift, especially if the adjustment is favorable. However, whether it is positive, as in the case of a rise in workload, or negative, as in the case of a decrease in workload, it has an effect; it has consequences on staff job satisfaction and eventually their performance. Whereas a positive change in workload may elicit unpleasant sentiments among the staff members, a negative change may limit their ability to utilize knowledge and abilities, resulting in inefficiency on the side of such workers.<sup>14</sup> Determining the number and composition of human health resources has been difficult because of the various methods used to define job title terms, professional categories, and worker characteristics.<sup>15</sup> Some measures, such as the design and execution of norm estimates of human resources, have previously proven effective in avoiding the unfair distribution of healthcare practitioners. WHO designed the Workload Indicator Staffing Need (WISN) tool in 1998 to ascertain the actual number of people required based on workload distribution. It is chosen by health practitioners since it is simple to use, technical, and accurate in determining provider workload. Many countries have used this method to improve health workforce planning.<sup>16,17</sup>

WISN findings can be utilized in a variety of ways. Depending on the workload, fine-tune the personnel numbers at a health institution.<sup>18</sup> Locate healthcare institutions that are overstaffed but

underutilized. Identifying understaffed facilities and locations and creative techniques for filling empty positions. To give more exact statistics for local, provincial, and national workforce projections. The study was conducted to determine the workload pressure experienced by nurses working in the in-patient ward of a public sector hospital in Peshawar, Pakistan.

## METHODOLOGY

This descriptive observational research was conducted in a public sector hospital in Peshawar in November 2020. Khyber Medical University Peshawar approved this study's Institutional Ethical Review Board (IERB). We used the Workload Indicators of Staffing Need (WISN) approach. For this study, the already available service statistics were obtained from Peshawar's public sector hospital. After discussing with the hospital's management, it was agreed to conduct the study in the surgery in-patient ward of a public sector hospital in Peshawar, which was staffed with four nurses to oversee the ward's activities. The reason behind choosing the ward was that the management had received feedback that the nurses in the ward were overburdened. Inclusion criteria were nurses working in the surgery ward of the public sector hospital. To ensure the successful implementation of the WISN methodology, three tiers of committees were established, including steering, technical, and expert committees which established the primary workload components and activity standards for all three activities, such as health services, support, and additional activities. Following are the key definitions of terminologies used in the paper. The WISN manual has further information on all these processes and calculates. Term definitions:<sup>2</sup> Activity standard; Time needed for a trained, talented and motivated employee to execute work to professional standards at a specific location. Activity standards are service standards; These are activity standards for health care services. (Annual statistics for these activities are obtained regularly). Allowance standard; These are activity standards for support and additional activities. (Annual statistics for these activities are not gathered regularly). Allowance standards are classified into two types: Category allowance standard (CAS); Allowance standard for all workers of a staff category who conduct support activities. Individual allowance standard (IAS); Allowance standard for additional activities conducted by some (but not all) members of a staff category. Allowance factor; factor used to account

for the personnel requirements of activities for which yearly figures are not obtained regularly. Allowance considerations are classified into two types: Category allowance factor (CAF); The multiplier calculates the number of health professionals needed for health services and support activities. Individual allowance factor (IAF); Staff requirement to cover additional activities of some cadre members. IAF is added to staff requirements of health service and support activities. Available working time (AWT); Time available to a health professional in one year to perform their duties, including permitted and unauthorized absences. Standard workload; The quantity of work that one health professional may perform in a year as part of a health service workload component (if the total working time were to be spent on this activity only).<sup>2</sup> Workload component; One of the primary work tasks consumes most of a health worker's daily working time. Workload components are classified into three types: Health service activity; Health-related activities carried out by all staff members and for which yearly statistics are collected regularly. Support activity; Significant tasks that improve the healthcare delivery are carried out by all staff group members but for which annual statistics are not collected regularly. Additional activity; Activities performed only by a subset (but not all) of the staff group for whom yearly statistics are not collected regularly. The obtained data were entered and analyzed in the World Health Organization's (WHO) WISN software to make all of the statistics easier to compute.

## RESULT

Our study found that the four nurses worked eight hours a day, six days a week, in the surgical in-patient section. As indicated in table 1, the average number of available working days in a year is 312 days, and the average number of working hours estimated is 1966 hours. Nurses were not required to work for 66.25 days out of the year. These days include public holidays, annual leaves, sick leaves, and other leaves, as mentioned in table 1. Table 2 describes the workload on the nurses in the in-patient ward and the service standards of the nurses in the in-patient ward of the hospital, i.e., unit time or rate of working for each service activity. Based on these figures, the category allowance standards were calculated, and the CAS% for support activities of all nurses came out to be 33.33%. The annual Individual Allowance Standard (IAS) for additional activities of some nurses was found to be 368.63 hours in a year. Using the WISN

methodology, the total staff required for health service activities was 1.55. The category allowance factor for support activities of all the nurses was calculated to be 1.50. The individual allowance factor for additional activities of some nurses was calculated to be 0.37. As a result, the total needed number of nurses in the hospital's in-patient ward based on WISN was three. During the study, four nurses were employed in the in-patient ward of the

hospital. The analysis of WISN results, as given in table 3, shows that the required number of nurses based on WISN was 3, which means that there was no workload pressure, and one nurse was surplus in the in-patient ward of the hospital.

$$\text{Workload pressure} = 1 - \text{WISN ratio} \times 100$$

$$\text{Workload pressure} = 1 - 1.33 \times 100$$

$$\text{Workload pressure} = -33\%$$

**Table 1: The Annual Available Working Time of Nurses Working in the Ward**

Total number of possible working days in a year (A)	52 x 6 = 312
Total number of weeks in a year	52
Available working days in a week	6
Total number of days not worked (B+C+D+E)	66.25
Days not worked due to public holidays (B)	15
Days not worked due to annual leaves (C)	24
Days not worked due to sick leaves (D)	14
Days not worked due to other leaves (E)	13.25
Available working days in a year (A-(B+C+D+E))	312 - 66.25 = 245.75
Average available working hours in a day	8
Available working time (in hours) in a year (AWT)	245.75 x 8 = 1966

**Table 2: Determining Nurses' Requirements in Surgery In-Patient Ward Based on WISN**

AWT = 1966 hours				
Health service activities of all doctors	Workload component	Annual workload	Standard workload	Required number of doctors
	Patient Admissions	1953	5903	0.33
	Patient Medication	1953	5903	0.33
	Patient Investigations	1953	7864	0.25
	Dressings of Post-op Patients	667	5903	0.11
	Medication of Accident & Emergency Patients	1872	3932	0.48
	Patients Referral	578	11772	0.05
<b>A. Total required staff for health service activities</b>				<b>1.55</b>
Support activities for all doctors	Workload component	CAS (Annual working time)		CAS (Percentage working time)
	Ward Rounds	1 Hour / Day		12.5%
	Recording & Reporting	1 Hour / Day		12.5%
	Giving & Taking Charge	0.5 Hour / Day		6.25%
	Participate in Meetings	1 Hour / Week		2.083%
	Journal club	0.6 hours per week		0.86%
	Training Medical Officers (TMOs) presentations	4 hours per month		1.47%
	Weekly Obstetric emergency drill	6 hours per week		8.57%
Prepare birth certificates/ evaluations/ disease statistics etc.	6 hours per week		8.57%	
<b>Total CAS percentage</b>				<b>33.33%</b>
<b>B. Category allowance factor: <math>\{1 / [1 - (\text{total CAS percentage} / 100)]\}</math></b>				<b>1.92</b>
Additional activities of certain doctors	Workload component	Number of doctors performing the work	IAS (Actual working time per doctor)	Annual IAS (for all doctors performing the activity)
	Duty Roster	1	2 Hours / Week	81.92 Hours
	Supervision & Management	2	1 Hour / Day	491.5 Hours
	Requisition of Supplies	2	2 Hours / Week	163.83 Hours
<b>Total IAS in a year</b>				<b>737 Hours</b>
<b>C. Individual allowance factor (Annual total IAS/ AWT)</b>				<b>0.37</b>
<b>D. Total required number of staffs based on WISN: (A x B + C)</b>				<b>2.7 = 3</b>

Table 3: Nurses' Requirements in the In-Patient Ward in Public Sector Hospital

Staff Category:						
Health Facility	Current Number of Staff	Required Number Based On Wisn	Shortage/ Excess	Workforce Problem	Wisn Ratio	Workload Pressure
In-Patient Ward of Public Sector Hospital	4	3	+1	Surplus	1.33	None

## DISCUSSION

The WISN approach, used to assess the number of people needed in a certain facility, is based on the amount of work needed. Many countries adopted and implemented the concept to improve human resources and ensure an equitable workload distribution.<sup>19, 20</sup> According to the results of our research, there was a discrepancy between the number of nurses required and the number of nurses on the ward. Three nurses were required to manage the ward's workload, with the fourth nurse being assigned to another area with a higher need. Workload pressure was also negative in the study (no pressure). This strategy is predicated on routinely stored data about the experts under consideration.<sup>1</sup> The hospital's management must assess the workload pressures of other units and adjust the staff accordingly. These efforts will contribute to the district hospitals' optimal performance in terms of service delivery. In Indonesian research, midwives said the strategy was effective because it helped them focus their work time on vital duties and examine their own work conditions.<sup>1</sup> The WISN data from research in Namibia also revealed that nurses were dispersed unequally throughout various services and obviously deviated to hospitals.<sup>1</sup> The application of WISN has also proved excesses in staffing levels in other countries. In a study in Uganda, one health facility had more staff than those needed to accomplish essential and support activities.<sup>11</sup> Likewise, in Burkina Faso, a study found that the current staff was adequate to handle the maternity services in the facility.<sup>11</sup> When tailored to local settings, the WISN tool enhances the allocation of healthcare personnel across services, assists in identifying facilities with surplus/shortage, and contributes to successful human resource planning.<sup>1,8,11,16</sup> Although the WISN approach is used worldwide to determine workload, it has some constraints, such as the fact that the findings cannot be generalized because certain factors such as terrain, demography, and environment play a significant role in determining staff requirements. Although the method is extensively used to determine workload, it has several shortcomings.

Because topography and population are factors in deciding personnel requirements, it can't be generalized.<sup>21</sup>

## LIMITATION

The WISN technique relies on the data like workload and is thus impacted by its quality, timeliness and accuracy. WISN measures workloads using annual service statistics. The WISN method's precision is thus governed by the accuracy of the statistics themselves. WISN findings will be incorrect if a health facility keeps inadequate records. Mostly, the inaccuracies support under-recording the workload, resulting in an overestimation of the facility's staffing needs.

## CONCLUSION

According to the study, three nurses were needed to manage the ward's workload, and the fourth nurse might be reassigned to another area with greater demand. The study also found that workload pressure is negative (no pressure). Appropriate health workforce management and planning could substantially impact the productivity and efficiency of the healthcare industry. In low- and middle-income nations, the WISN technique could be extremely valuable for hospital administrators in estimating staffing demands and predicting the impact of their actions on staffing. Now that hospitals have decision-making autonomy, the hospital director should measure workload stress to recruit HRH cadres based on evidence.

## DISCLAIMER

The views expressed in this paper do not reflect the views of the institutions with which the authors worked or were affiliated. Also, it is pertinent to mention that a preliminary abstract was published in a conference proceeding, and the paper abstract in this manuscript has been revised to avoid potential conflict with published conference proceedings.

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