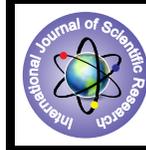


Gap Analysis in Staffing Using Workload Indicators of Staffing Need Method in A Tertiary Care Teaching Hospital



Medical Science

KEYWORDS : Workload Indicators of Staffing Need (WISN), Health workforce, Workload, Operation Theatre.

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ABSTRACT

The Workload Indicators of Staffing Need (WISN) method is a human resource management tool that determine show many health workers of a particular type are required to cope with the workload of a given health facility and assess the workload pressure of the health workers in that facilities. The study is conducted in Emergency Operation theatre of Nizam's Institute of Medical Sciences, a tertiary care teaching hospital in Hyderabad, India, where the current staff is assessed against required staff using WISN method. The study suggested that there was shortage in staff of EOT resulting in high workload pressure. The study also emphasises in usefulness of the method in determining staffing requirements and reorganization of staff in health care sectors.

INTRODUCTION:

Health service administrators around the world are facing increasing challenges in health care delivery. Resources to respond to their populations' demand for services are often inadequate. The distribution of human resources is generally poorly balanced between urban and rural areas and between primary, secondary and tertiary levels of care. As with most countries, India, with limitations on funding of its public health service, must seek to meet these demands with new, more efficient and more radical approaches to health and health care provision. This must include a more effective use of its resources, especially human resource.¹

Traditional methods to determine staffing requirements include calculating population to staff ratios and facility-based staffing standards. These methods have serious disadvantages and above all, they fail to take into account both the wide local variations in the demand for services and the work that health workers actually do.³ Health managers need a better, systematic way to make staffing decisions, if they are to manage their valuable human resources well. The Workload Indicators of Staffing Need (WISN) is such a method.²

The WISN method is a versatile human resource management tool developed and later revised by the World Health Organization (WHO).⁴ It has been used in a number of different settings and a variety of countries.⁵⁻⁸

The present study focuses on methodology of calculation of staffing needs based on WISN method in Nizam's Institute of Medical Sciences, a well known tertiary care teaching hospital in Hyderabad, India which caters its services mainly to the states of Telangana and Andhra Pradesh and to parts of Karnataka, Maharashtra, Madhya Pradesh, Orissa and Tamil Nadu. The study is used to assess the gap in staffing in Emergency Operation Theatre, where the services provided are crucial round the clock to meet emergency needs of the population.

AIM OF THE STUDY:

To calculate and assess work load among anaesthesiologists and nurses in Emergency Operation Theatre (EOT) based on WISN (Workload Indicators of Staffing Need) method prescribed and published by WHO.⁹

METHODOLOGY:

The study is a cross sectional study done in EOT of the institute where the existing staff in the month of September, 2013 are assessed based on WISN method. The required data was collected retrospectively from the registers and then by interviewing the anaesthesiologists and nurses of EOT regarding their work pattern. The required data for calculating staffing needs thus obtained was administered to WISN method for assessing workload among the health care workers.

Workload Indicators of Staffing Need (WISN) method:⁹ Required staff of health workers of a particular type to cope with the workload of a given health facility is determined using the following formula.

Total required number of staff based on WISN = (Total required staff for health service activities X Category allowance factor) + Individual allowance factor

Available working time (AWT) is calculated as the time a health worker has available in one year to do his or her work, taking into account authorized and unauthorized absences. Workload components of the cadre is determined in hours by taking account of the work activities that take up most of the health worker's daily working time. Standard time required for each activity is determined and summed up to get standard workload for individual. Total workload for a cadre is divided by standard workload for individual to get total required staff for that health service activities. There are two types of allowance standards. Category allowance standards (CAS) are determined for support activities that all members of a staff category perform. Individual allowance standards (IAS) are set for additional activities that only certain cadre members perform. The category allowance factor (CAF) is a multiplier that is used to calculate the total number of health workers, required for both health service and support activities ($CAF = 1 / [1 - (Total\ CAS / 100)]$). The individual allowance factor (IAF) is the staff requirement to cover additional activities of certain cadre members ($IAF = IAS / AWT$).

Then the workload pressure of the health workers in that facility is assessed by differences and ratio of current staff with required staff. The health facilities that are defined relatively understaffed or overstaffed by comparing the difference between current and

required staffing levels. The work pressure that health workers experience in their daily work in a health facility can be assessed by using the WISN ratio as a proxy measure.

WISN ratio = Current staff / Required staffing levels

RESULTS AND DISCUSSION:

The current staff of EOT in the institute includes 4 Anaesthesiologists and 11 Nurses. The staff workload is identified using registers and interviewing them regarding their work pattern. The workload is measured and calculated and converted into common unit of hours for easy calculation and to avoid confusion. Based on the WISN method it was determined that the required staff of anaesthesiologists and nurses in Emergency Operation Theatre (EOT) was 5 and 18 respectively. (Table -1).

Then the required staff is compared to current staff existing in EOT. Based on the differences in staff required and existed, it can be inferred that both anaesthesiologists and nurses are understaffed in EOT. As per WISN Ratio in both groups, which is higher than 1, it can be inferred that work load pressure experienced in daily work is high in both anaesthesiologists and nurses (Table – 2). Staff deficit of 1 anaesthesiologist and 7 nurses was identified with high workload pressure in both doctors and nurses.

Table – 1: Calculation of required staff:

Parameter (Per Annum)	Anesthesiologist	Nurse
Available working days in a year (AWT)	365 days	267 days
Available working hours in a year	4380 hours	1813 hours
Annual workload (AW)	8760 hours	8760 hours
Standard workload (SW) SW = Σ (AWT/Unit time to perform task)	2196 hours	584 hours
Required number of staff members (n) n = AW/SW	4	15
Category Allowance Standards (CAS)	19%	15%
Category Allowance Factor (CAF) CAF = 1 / [1 - (CAS / 100)]	1.23	1.17
Individual Allowance Standards (IAS)	994 hours	1335 hours
Individual Allowance Factor (IAF) IAF = IAS / AWT	0.12	0.73
Total required number of staff based on WISN (N) N = (n X CAF) + IAF	5.04 ≈ 5	18.28 ≈ 18

Table – 2: Workload in EOT:

Staff	Current level (C)	Required level as per WISN (N)	Shortage or excess (N - C)	Workforce problem	WISN Ratio (N/C)	Workload pressure
Anesthesiologists	4	5	- 1	Shortage	1.25	High
Nurses	11	18	- 7	Shortage	1.65	High

The WISN method of determining institutional staff requirements based on the amount and type of work that the institution undertakes has the potential to reduce costs. It does so by quantifying what staff are needed and how many to undertake the likely workload. The impact of the WISN method can be well demonstrated through the results of the study applied to two fifty-bed hospitals in the Turkish health system.¹⁰ Similarly, the method found its usefulness in other countries also.⁵⁻⁸

WISN results not only help in determining, how best to improve your current staffing situation, but also the best way to allocate new functions and transfer existing functions to different health worker categories. WISN calculations are based on current professional standards for performing a particular component of work. Thus they allow identify the facilities in which the current professional performance is low in comparison with other facilities. WISN method can be helpful to plan future staffing of health facilities. The method can also be used to examine the impact of different conditions of employment on staff requirements. They include changes in the length of the working week, increased vacation or different in-service training policies, for example.³

Though the method is widely used and accepted, it has few limitations. WISN uses annual service statistics to assess workloads. The accuracy of the WISN method is thus determined by the accuracy of the statistics themselves. Recordkeeping is likely to improve and the errors may even move in the direction of over reporting. The level of detail in the service statistics affects the precision of WISN results. More precise WISN calculations would need separate service statistics for first and subsequent visits. Similarly, if service statistics give a single figure for activities of two different staff categories (e.g. registered nurses and auxiliary nurses), the WISN method can produce only a combined staff requirement of both categories.

The WISN method uses the previous year's service statistics. It thus calculates retrospectively what the staffing levels should have been last year. A percentage correction can be made in the uncommon situations where the workload has increased noticeably in the current year.

Based on the study, it can be suggested that policymakers and facility managers can use the WISN method to estimate health worker requirements for a range of needs and scenarios, including making staff adjustments in response to implementation of new services, decentralization, or reconfiguration of health care services.

CONCLUSION:

The WISN method is a dynamic and useful tool that offers credible workload-based support to national, regional, and local policy-makers and facility managers to improve the equity and distribution of health workers within a region or across similar types of facilities nationwide. The study suggests that the method is a feasible method and that the administrators can use the method in view of limitations to improving staffing and reorganizing the staff in health care and hospital sectors.

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