DO HEALTHCARE PROFESSIONALS CROSS THE BORDER TO SERVE RURAL POPULATION?

G.N. Sumathi¹, T.J. Kamalanabhan² and M. Thenmozhi³

¹Business School, Vellore Institute of Technology University, Vellore, India
E-mail: sumathi.gn@vit.ac.in

^{2,3}Department of Management Studies, Indian Institute of Technology Madras, India
E-mail: ²tjk@iitm.ac.in, ³mtm@iitm.ac.in

Abstract

In the era of health for all, the performance of health care professionals is critical in determining the quality of health care services. Amidst the shortage of health workforce, these professionals carry out activities outside the job described ones. This paper attempts to group the activities carried by the medical officers and staff nurses working in Primary Health Centres (PHC) located in the state of Tamil Nadu. A survey is conducted among 149 respondents using questionnaires to understand job performance. The results of factor analysis indicate that the in-role activities and extra role activities group into five categories such as information sharing, maintenance of medical standards, medical service to patients, helping supervisors and co-workers and helping in functioning of PHC. The results highlight that the health care professionals working in the rural public health care sector stretch an extra mile in serving the patients. These professionals exhibit altruism towards supervisors, co-workers and patients and show organizational spontaneity by considering it as an integral part of their job routine.

Keywords:

Extra Role Performance, In- Role Performance, Medical Officers, Primary Health Centres, Staff Nurses

1. INTRODUCTION

The healthcare professionals and their performance are critical to the quality of service received by the patients. They face a lot of challenges due to the shortage of health workforce and lack of infrastructure in the health system. They involve in activities that are not part of their job role to meet the demands placed before them. The health care services are offered at three levels: primary care, secondary care and tertiary care. The primary care service to 72% of rural population is met through Primary Health Centres (PHC) and Health Sub Centres (HSC). PHCs provide antenatal care, deliveries, immunization, family planning services and treatment for TB, leprosy, dog and snake bites. One PHC is established for every 30,000 population in plain area and one HSC for every 5000 population in plain area. All the activities in a PHC are taken care by medical officers, staff nurses, laboratory assistant, pharmacist and other health workers. This study considers the medical officers' and staff nurses' as health care professionals. This study is specific to the PHCs located in the state of Tamil Nadu (TN), one of the southern states of India. The Director of Public Health & Preventive Medicine, (DPH & PM)TN is the governing body that provides preventive, promotive and curative health care services through a network of 1539 PHCs and 8706 HSCs[1].

Moreover, at the PHC level, the group performance of health care professionals is measured based on PHC performance using

parameters like number of deliveries conducted, number of inpatients, number of out-patients, immunization coverage, number of referrals and number of scans done. But the performances of healthcare professionals who are involved in carrying out extrarole duties are not found to be accounted. Studies have measured the performance of healthcare professionals is a challenging task. Due to the fact that performance of health care professionals are measured using general parameters than using specific measures, there need to be studies on job performance of healthcare professionals serving the rural sector.

1.1 OBJECTIVE OF THE STUDY

The study measures the job performance of healthcare professionals working in PHCs. The study is aimed to identify and group various in-role and extra role activities carried by healthcare professionals in completing their PHC duties into various dimensions. The study also measures the level of various dimensions of job performance.

2. MEASURING JOB PERFORMANCE

The measure of job performance includes in-role performance and extra role performance. The in-role performance includes the activities that are prescribed in the job description and that are mandated, appraised and rewarded by the employing organization [2]. Research has reported that the extra role performance is quite close to Organization Citizenship Behaviour (OCB)[3]. OCB is expressed using six main categories: helping, sportsmanship, organizational loyalty, organizational compliance, individual initiative and selfdevelopment [4], [5], [6]. The extra role performance includes contributions that benefits co- workers, supervisors, customers and the organization as a whole, described as pro-social behaviour. Studies on job performance include both the objective and subjective measures. Monthly reports of driving under influence of alcohol or drugs (DUI) arrests and speeding citations are used to measure performance of police patrol officers of the U.S. state police department [7]. The job performance of insurance agents in Taiwan is measured as the natural logarithm of the fourth quarter sales of employees and it is also measured through supervisor's rating on job performance [8]. The job performance is also measured using supervisory rating and self-rating on job performance.

2.1 SUPERVISOR RATED JOB PERFORMANCE STUDIES

The subjective measure of job performance is measured using self-reporting measure and using supervisor rating measure. The

job performance of non-management lower level employees in a division of Dutch energy supplier is measured using supervisor's ratings [9]. Supervisors working in manufacturing and service companies in China rated the subordinates performance using four items to measure in-role performance and boosterism, altruism and conscientiousness to measure OCB [10]. Job performance of retail sales representatives and customer service employees in the U.S. is measured with six items - finding creative solutions, adapting to changes, ownership for quality personal performance, meeting deadlines, encouraging coworkers and creating effective working relationship using supervisor rating [11]. The supervisors rated the effectiveness of telemarketing sales representatives in eight performance areas such as generating sales, quality of work, accuracy, length of telephone calls, availability to take calls, customer satisfaction. retaining customers and following procedures [12]. The Director of San Diego Veterans Affairs Medical Center evaluated the performance of registered nurses in areas such as: knowledge of procedures, interaction with co-workers, dedication to work, quality of care provided to patients and overall rating of job performance [13]. The OCB of employees belonging to family based home appliances manufacturing or service industries in China, is rated by their immediate supervisors based on their subordinates' behaviour in exhibiting altruism, voice and contentiousness [14].

2.2 SELF-REPORTED JOB PERFORMANCE STUDIES

The job performance of managers working in public and private sector manufacturing industries located in India scale is measured using seven items including taking decision, meeting deadlines, producing satisfactory quantity of work, planning and organizing work, facing conflict situations and feeling confident to handle the job [15]. The in- role performance among nurses working in a large hospital and police officers working in department of police force is assessed with three items to indicate the extent to which the respondents found each of the statement are the characteristics of themselves [16]. Registered nurses in San Diego Veterans Affairs Medical Center evaluated their current levels of job performance using indicators such as knowledge of procedures, interaction with co-workers, dedication to work, quality of care provided to patients and overall rating of job performance [10]. Hourly, supervisory, managerial and salaried/ professional employees working in a large company in the leisure and hospitality industry reported the overall rating they received at their last performance review [17]. Civil servants of Eritrean ministry compared their performance with that of other employees in the ministries to report the perceived performance [18]. The college students in Northern Israel, who are permanent employees in their respective organization, rated their performance on various dimensions comprising helping, sportsmanship, organizational loyalty, organizational compliance, individual initiative and self-development which is considered as a better measure than their supervisor rated measure of their OCB [19]. Nursing staff at London based NHS trust hospital rated the extent to which they involve in altruistic behaviour and in service quality behaviour [20]. Front line employees in private and public sector banks in Greece assessed their pro-social behaviour using three dimensions: role- prescribed customer

service, co-operation and extra role behaviour [21]. Using the multitrait- multimethod approach; it is found that peer ratings explained more variance in task performance while self- ratings explain more variance in contextual performance among employees in varied sectors [22]. From the literature it is found that the job performance are measured through varied dimensions such as in-role performance, extra role performance towards organization, customers and other individuals like supervisor and co-workers. But, there are limited studies on job performance in health care sector. This study attempts to meet that gap, by identifying various dimensions to measure job performance among health care professionals.

3. METHOD

This study adopts an exploratory and descriptive research design. The exploratory research design is used to discover the items to measure job performance of healthcare professionals in the PHC context. This design involves generation of items to measure job performance. The descriptive research design is used to understand the grouping of the job performance items. This design includes the factor analysis to validate the job performance items generated during the exploratory phase.

3.1 ITEM GENERATION

For the purpose of generating items to measure job performance of healthcare professionals, personal interview is conducted among 20 healthcare professionals. The item generation process is described below:

3.1.1 Sample:

The sample consisted of 8 medical officers and 12 staff nurses working in Primary Health Centres located in the state of Tamil Nadu. This sample had an average age of 35 years with basic medical education, and work experience in the medical field of 3.5 years. Nearly half of the respondents are permanent employees and 75% of them are female (50% of medical officers considered in this sample are female and all the staff nurses are female).

3.1.2 Procedure:

The researcher asked each respondent in a face- to- interview, to list the activities that they carry out in the PHC. About 47 statements describing various activities in which the respondents are involved are obtained. The statements are then documented within 24 hours. Then, the job duties stated in Indian Public Health Standards are analyzed to generate scale items representative of major job duties carried within the PHC premises. Finally all the items are screened for repetition and 21 items are listed that measures job performance. To ensure content validity items of OCB scale are added to the existing items, which totalled to 34-item scale. Then the items are grouped into five categories based on the common content domain: 1) preparing reports and maintaining records, 2) maintaining medical standards, 3) medical duties towards patients, 4) helping supervisors and co-workers and 5) overall PHC functioning.

Preparing reports and maintaining records include updating stock register, conducting / attending staff meetings, maintenance records at PHC level, sending reports to higher authority, maintaining financial records, completing regular administrative

duties and displaying health information charts inside PHC premises. Maintaining medical standards at PHC include ensuring cleanliness in and around PHC premises, ensuring the working condition of all equipments, ensuring adequate supply and storage of drugs, vaccine. Carrying out clinical duties considers issues such as addressing the needs of in-patients and out-patients, extension of OP duty hours to see all the out-patients, doing follow- ups of patient's health condition, advising patients, making suggestion to improve patient care.

Helping supervisors and co-workers includes sharing personal property to help others, accepting additional responsibility when supervisor is absent and reporting work related information to supervisor and the efforts taken to help co-workers in sharing their work load, carrying out co-workers duty when they are absent, orienting newly joined co-workers, helping co-workers in solving work related problems. Overall activities benefiting PHC includes coming to work on time, giving prior notice and making alternate arrangements for smooth PHC functioning, involving in PHC related activities, learning advancements in medical field and prioritizing duties to staff members/ following allotted duties.

All the items in the scale are measured using a 5- point Likert scale. The responses on in-role performance items are measured to know self rated performance rating from 1- Very poor; 2-Poor; 3- Average; 4- Good and 5- Very Good. The responses on extra role performance are measured to find out how often the healthcare professionals involved in the given activities on a scale from 1-Never; 2-Rarely; 3-Sometimes; 4-Often and 5-Always.

3.2 VALIDATION OF THE JOB PERFORMANCE SCALE

3.2.1 Sample:

The population for the study includes all medical officers and staff nurses working in 1539 PHCs of Tamil Nadu [1]. The sample includes Medical Officers (MO) and Staff Nurses (SN) working in Vellore Health Unit District (HUD), Saidapet HUD, Kanchipuram HUD and Tiruvannamalai HUD. These four HUDs have been selected because the researcher has been permitted to undertake survey in those PHCs. About 140 PHCs are functioning in these four HUDs: Vellore with 37 PHCs, Saidapet with 27 PHCs, Kanchipuram with 28 PHCs, and Tiruvannamalai with 48 PHCs. Under each HUD, a random sampling is adopted to select PHCs for the study. Random sampling is adopted to select MOs and SNs working in each PHCs. As each PHC has a minimum of two MOs and three SNs, the present study considers a sample size of 149 with 62 MOs and 87 SNs. MOs possess an average age of 34 years, work tenure of 2.7 years in the current primary health center and total work tenure of 5.8 years. Staff nurses possess an average age of 25 years, work tenure of 2.1 years in the current primary health center and total work tenure of 2.7 years. The study includes 15 primary health centers from Vellore HUD, 8 from Saidapet HUD, 5 from Kanchipuram HUD, and 19 from Tiruvannamalai HUD. The study covers 9 main PHCs and 38 additional PHCs.

Questionnaire is used to collect primary data from MOs and SNs using survey method. Assurances are made that all responses would be confidential. The respondents are asked to

rate their own "current performance" on the previously discussed items by evaluating how well they perform(ed) in that area compared with an average medical officer or staff nurse working in a similar setting. The content validity is established by consulting a panel of experts comprising academicians and supervisors of medical officers and staff nurses. In order to test the reliability of the performance scale, Cronbach alpha is used. The alpha values of five sub scales are found be meet the standards say, information handling and sharing (0.78), maintaining medical standards at PHC (0.71), meeting patient's needs (0.87), helping supervisors and co-workers(0.70) and overall PHC functioning (0.73).

The data have been analysed using SPSS 15.0 (Statistical Packages for the Social Sciences). Factor analysis is used to understand the grouping of job performance items.

4. FACTOR ANALYSIS

The ratings of healthcare professionals on 34 items of job performance are subjected to principal component analysis (Table.1). The measure of sampling adequacy is found to be 0.75 indicating the adequacy of sample to carry out factor analysis. The initial factor analysis resulted in five factors accounting for 61% of the total variance. In order to arrive at meaningful factors, three criteria are applied to screen items. First, the item must have a minimal loading of 0.40 or greater on a factor. Secondly, the item must have low cross loading on other factors. Thirdly, the content of the items retained must be consistent with those of the other items loaded on the same factor. An item was retained if it met one or more of the three criteria. Using this procedure, 31 items for the scale accounting for 62% of the total variance over five factors are retained (refer Table.1). The factor loading of the items are shown in the Table.2. The mean values of the factors generated from factor analysis are provided in Table.3.

Table.1. Total Variance explained for principal component analysis factoring for job performance items

	Initial Eigen values			Extractions sums of squared loading		
Factor	Total	% of Variance	Cumulative %	Total	% of variance	Cumulative %
1	4.89	24.68	24.68	4.89	24.68	24.68
2	3.08	16.20	40.88	3.08	16.20	40.88
3	2.61	13.71	54.59	2.61	13.71	54.59
4	1.29	6.09	59.43	1.29	6.09	59.43
5	1.13	6.79	62.35	1.83	6.79	62.35
6	0.88	4.68	72.07			
7	0.74	3.87	80.44			
8	0.61	3.21	83.66			
9	0.48	2.52	89.27			
10	0.36	1.88	93.52			
11	0.22	1.14	97.69			
12	0.07	0.39	100.00			

Table.2. Results of factor analysis showing grouping of performance items

Updating stock register Conducting/ attending staff meetings Maintenance records at PHC level Sending reports to higher authority Maintaining financial records Completing regular administrative duties Displaying health information charts inside PHC premises Performance items Ensuring cleanliness in and around PHC premises Ensuring the working condition of all equipment Ensuring adequate supply of drugs, vaccine Ensuring proper storage of drugs, vaccine Ensuring proper storage of drugs, vaccine Ensuring out deliveries Component 3 Addressing the needs of in- patients Corsport 3 Addressing out-patients Extending OP duty hours to see all the out-patients Doing follow- ups of patient's health condition Advice patients Making suggestion to improve patient care Performance items Helping co-workers in sharing their work load Carrying out co-workers duty when they are absent Orienting newly joined co-workers Helping co-workers in solving work related problems Sharing personal property to help others Accepting additional responsibility when supervisor. Performance items Component 5 Component 5 Component 6 Component 7 Component 9 Component 5 Coming to work on time Giving prior notice Making necessary arrangements for smooth PHC functioning Involving in PHC related activities voluntarily Learning advancements in medical field Perioritizing duties to staff	Performance items	Component 1
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Helping co-workers in solving work related problems Sharing personal property to help others Accepting additional responsibility when supervisor is absent Reporting work related information to supervisor. Performance items Component 5 Coming to work on time 0.73 Giving prior notice Making necessary arrangements for smooth PHC functioning Involving in PHC related activities voluntarily Learning advancements in medical field Prioritizing duties to staff		0.62
related problems Sharing personal property to help others Accepting additional responsibility when supervisor is absent Reporting work related information to supervisor. Performance items Component 5 Coming to work on time 0.73 Giving prior notice Making necessary arrangements for smooth PHC functioning Involving in PHC related activities voluntarily Learning advancements in medical field Prioritizing duties to staff	Orienting newly joined co-workers	0.54
Sharing personal property to help others Accepting additional responsibility when supervisor is absent Reporting work related information to supervisor. Performance items Component 5 Coming to work on time 0.73 Giving prior notice Making necessary arrangements for smooth PHC functioning Involving in PHC related activities voluntarily Learning advancements in medical field Prioritizing duties to staff		0.68
Accepting additional responsibility when supervisor is absent Reporting work related information to supervisor. Performance items Coming to work on time 0.73 Giving prior notice Making necessary arrangements for smooth PHC functioning Involving in PHC related activities voluntarily Learning advancements in medical field Prioritizing duties to staff	Sharing personal property to help others	0.45
Reporting work related information to supervisor. Performance items Component 5 Coming to work on time 0.73 Giving prior notice 0.68 Making necessary arrangements for smooth PHC functioning Involving in PHC related activities voluntarily Learning advancements in medical field Prioritizing duties to staff	Accepting additional responsibility when	
Performance items Component 5 Coming to work on time 0.73 Giving prior notice Making necessary arrangements for smooth PHC functioning Involving in PHC related activities voluntarily Learning advancements in medical field Prioritizing duties to staff	Reporting work related information to	0.61
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Giving prior notice 0.68 Making necessary arrangements for smooth PHC functioning Involving in PHC related activities voluntarily Learning advancements in medical field 0.70 Prioritizing duties to staff		-
Making necessary arrangements for smooth PHC functioning Involving in PHC related activities voluntarily Learning advancements in medical field Prioritizing duties to staff		0.73
smooth PHC functioning Involving in PHC related activities voluntarily Learning advancements in medical field Prioritizing duties to staff	Giving prior notice	0.68
Involving in PHC related activities voluntarily Learning advancements in medical field Prioritizing duties to staff		0.87
Learning advancements in medical field 0.70 Prioritizing duties to staff	Involving in PHC related activities	0.85
Prioritizing duties to staff	•	0.70
members/following allotted duties	Prioritizing duties to staff	0.55

Table.3. Factors naming and their mean values

Factor No.	Factor Name	Mean Value
1	Information handling and sharing	4.25
2	Maintaining medical standard at PHC	4.34
3	Meeting patient's needs	4.37
4	Helping supervisors and co-workers	4.41
5	Overall PHC functioning	4.35

4.1 INTERPRETATION OF RESULTS

4.1.1 Factor Loadings:

The results of factor analysis as represented in Table.1 indicates loading of different items on different factors. The loadings range between 0.45- 0.87. The magnitude of factor loading indicates the strength of correlation between the item and the factor. The five distinct factors or dimensions have emerged out of factor analysis. The factors are labelled and interpreted as follows:

Factor 1: Information handling and sharing

The items grouped under in this factor emphasise the need to maintain records on patients history, ward details, regular recording of in-patients and out- patients, number of deliveries conducted per month, immunization coverage and sharing this information during staff meeting conducted at the block level and communicating it to the office of Deputy Director of Health Services. All these activities are clearly mentioned in the job duties of a medical officer working in a PHC. Therefore the paper works related to PHC are role prescribed duties.

Factor 2: Maintaining medical standards at PHC

The activities that are necessary to keep the PHC clean and neat, equipping PHC with necessary and adequate quantity of drugs and vaccine and proper of storage of medicines and maintenance of equipments in working condition ensures the medical standards at PHC. All these activities are purely role prescribed activities.

Factor 3: Meeting patient's needs

The items that have grouped under this factor bring out both role prescribed duties and extra role duties carried out by healthcare professionals. The completion of regular clinical duties involves extending duty hours and paying extra efforts. Moreover the care and attention is given to the patients through motivational talks and through advice. Therefore, the healthcare professionals extend beyond their role prescribed duties to meet the patients' need.

Factor 4: Helping supervisors and co-workers

This factor is a true picture of co-operative environment prevailing at PHCs. Moreover it is mandatory for effective delivery of PHC services. These activities are the extra role activities that benefits supervisors and co-workers which ultimately enables in competing job duties.

Factor 5: Overall PHC functioning

This factor includes the items that benefit the PHC as a whole. At the outset, healthcare professional involve these

activities that lead to smooth functioning of PHC. These activities are extra role activities targeting organization.

4.1.2 Mean Values of Factors:

The mean values of all the five factors are found to be high (above 4.25) indicating a high level of performance of healthcare professionals. Out of the five factors, the healthcare professionals showed the highest rating for all kind of help they provide to their supervisors and co-workers (4.41) followed by meeting patients' need (4.37). From the mean values of the factors, it is found that the mean values of factors relating to inrole performance (4.25 and 4.34) are less than the mean values of factors relating to extra-role performance (4.35 and 4.37).

While the factor named meeting patient's need is part of both in- role and extra role performance shows a mean value (4.37) above the mean values of factors indicating in-role performance (4.25 and 4.34). In contrast to the results of this study, the in- role performance has scored high compared to innovative performance [9]. In similar lines of this study results, the OCB dimensions such as boosterism and conscientiousness have scored higher compared to in- role performance [10]. The in- role performance of nurses is found to be comparatively lower than the in- role performance of police officers [16].

5. CONCLUSION

In the present study, factor analysis is used to study the grouping of various items of job performance. The results indicated that the various activities carried out by healthcare professionals fall into five factors such as information handling and sharing, maintaining medical standards at PHC, meeting patient's needs, helping supervisors and co-workers and overall PHC functioning. More interestingly, some of the items under extra role activities are grouped with in-role activities. This indicates that when providing services to rural patients, the healthcare professionals consider the extra role activities as part of their in-role activities. As the PHCs provide primary care to the public where the major importance is given to maternal health and child health, the healthcare professionals feel it's their responsibility to improve the health status and help in effective running of PHC through empowerment.

The results of this study can be utilized to understand the degree of performance of health care professionals. The public health system could motivate health care professionals through rewards and recognition so that they perform better. It is possible to sustain good performance of doctors through appraisal, training, continuing professional development and revalidation [23]. The various performance dimensions used in this study can be used as a preliminary tool to measure performance of healthcare professionals benefitting supervisors, co-workers, patients and PHC as a whole. The job performance is considered as an important outcome of healthcare professionals' work place experiences [24] and their perception of support from public health system [25].

Overall, the results of the study would be informative to the Directorate of Public Health by providing them information on various performance dimensions of healthcare professional. The

findings of the study not only have implications for health policy but also contribute to the existing body of knowledge on job performance and also to OCB literature. In the service context especially at the health care delivery at the rural set up, the health care professionals consider the extra role performance towards patients as part of their in-role performance. This could also be attributed to the personal dispositional factors.

ACKNOWLEDGMENTS

The authors would like to thank the anonymous reviewers for their valuable comments and suggestions that helped to improve the quality of the paper. They also thank the Government of Tamil Nadu for permitting to conduct survey in the districts of Tamil Nadu.

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