



An Empirical Study on Determining Factors Affecting the Performance of Health Service Providers in Eritrea

Fitsum Ghebregiorgis Ph.D.

Department of Business Management and Public Administration, College of Business and Social Sciences, Eritrea

Abstract

This study focuses on determining the factors that affect the performance of professional nurses (health service providers). It integrates management and organisational behaviour studies to develop an ability, clarity, help, incentive, evaluation, and environment (ACHIEVE) model for investigating the relationship between ability, clarity, help, incentive, evaluation, validity, environment and employee performance. A survey was conducted among 191 health service providers from two national referral hospitals. The survey research design was employed using a self-administered questionnaire as the data collection instrument. The items measuring the constructs were adapted from the extant literature. Data was analysed using regression test. The findings of this study reveal that ability, clarity, help, incentive, evaluation, and environment affect the performance of health service providers. However, no evidence was found that rule validity influence employees' performance.

Keywords: Health service; Health service providers; Performance; Eritrea.

1. Introduction

Human capital is not a new term in economics or organizational performance assessment and has its roots in Smith's economic theories of the eighteenth century and other economists, which focused on human contributions to the organization more as faceless commodities to be utilized until no longer of value (White, 2007). Human capital is described as the knowledge, skills, competencies, and other attributes embodied in individuals that are relevant to economic activity, which embodies an outlook of human capital being a source of investment and production more than a source of use (Heath, 1988). The most important knowledge capital of an organization is human resource. Knowledge investment of staff is the influence components on organizational performance (Abeysekera and Guthrie, 2004). Increasing staff capabilities has direct impact on improving financial results to the organization (Becker and Huselid, 2001). That is why human resources can be the most important infrastructure of intellectual capital (Castro *et al.*, 2010). Over the last decades a great deal of attention has been devoted to examining the links between human resources management and organizational performance (Wright *et al.*, 2005). As stated by Fisher *et al.* (2006), the factor most likely to provide potential competitive advantage is human resources and how these resources are managed.

At present, all organizations, but especially those in the health-care industry, face unprecedented challenges and competitive pressures. The rising costs of health care, escalating technology, an aging society with diverse needs and care requirements, and new types of illnesses and other ailments have placed ever-higher demands on hospitals and their employees (Business Wire, 2005). Improving health workers performance is vital for achieving the millennium development goals (Dieleman, 2009). The human resources crisis in the health sector in low and middle income countries is receiving increased global attention (World Health Organization, 2006). On the front lines of this difficult and dynamic landscape are the health professionals and managers who must deal with increased calls for efficiency gains, cost-cutting, and improved patient care, while at the same time coping with workplace stress, fatigue, and burnout (Business Wire, 2005).

In most health care organizations, health professionals in general, and nurses in particular are the largest work group and play a major role in the organization's success. Hence, nurses' and other health professionals' productivity affects an organization's success by influencing on productivity (Eastaugh, 2002). Health care organizations cannot succeed without productive health service provider staff (Helmer, 1988). Health service providers are the largest human resource element of health care systems, have a major role in providing ongoing, high-quality care to patients (Nayeri *et al.*, 2005). However, studies suggest that health service providers no longer feel their work is valued and are concerned with their productivity (Hall, 2003).

In the past, staff performance was often perceived as a function of skills and knowledge. In recent years, it has been recognized that performance is influenced by additional factors (World Health Organization, 2006). If staff members are to perform to their full capacity, it is not only staffing issues that must be addressed, but also systems and facility issues. The performance of health workers depends not only on their competence (knowledge, skills) but also on their availability (retention and presence), their motivation and job satisfaction, as well as the availability of infrastructure, equipment and support systems, such as the management, information systems, resources and accountability systems that are in place (Zurn *et al.*, 2005).

It is evident that poor health systems, with a lack of equipment, supplies and poor management structures, lead to poor productivity, limited competences and poor responsiveness. The root causes that result in suboptimal

performance in these areas consist of a complex set of factors, which are interrelated. For instance, low salaries can lead to increased absence to earn extra income and also to decreased motivation to be willing to provide quality of care. At the same time, motivation is influenced by a lack of equipment, supplies, management support and supervision (Dieleman and Hernmeijer, 2006).

Improving the productivity and performance of health workers to ensure that health interventions are efficiently delivered continues to be a major challenge for African countries (Awases *et al.*, 2004). Developing capable and motivated health workers is essential for overcoming bottlenecks to achieve national and global health goals. At the heart of every health system, the work force is central to improving health. The performance of a health organization depends on the knowledge, skills, and motivation of individuals (Nguse, 2010). It is; therefore, important to provide suitable working conditions to ensure that the performances of employees meet the desired standards.

The government's priority since independence was the development of skilled human resource for health, reconstruction of the health infrastructure, instituting health systems (Ministry of Health National Health Policy, 2010). Nurses constitute the largest human resource element in the healthcare sector, and contribute significantly to the overall healthcare of the nation. Identifying the factors that affect the performance of health workers in health centres is essential to promote the health wellbeing of the society. This study aims at exploring the factors that affect (positively and negatively) the performance of professional nurses. Therefore, studying employee performance and the effective factors on it is a topic that can be investigated. Hence, we have focused our study on major referral hospitals in order to examine their performance towards providing quality service to the satisfaction of patients.

2. Empirical Literature

Various studies have been conducted in order to improve health output by focusing on health personnel like (doctors, nurses...etc.). These studies specifically focus on the factors affecting nurses' performance. A study conducted in Ethiopia by Lindelow *et al.* (2005), found that the factors that affect the performance of health workers include inadequate remuneration, poor working condition (facilities and equipment), which leads to internal brain drain from the public to private health centres, migration of skilled health personnel, and increasing the health worker's frustration resulting in poor performance of workers. Also as Kamati *et al.* (2014) put it lack of adequate equipment at hospital in Namibia and delays in the delivery of medical supplies were the major contributing factors resulting in nurses having to attend to many frustrated patients at once, which is the cause of poor performance.

Similarly, two separate studies (using the same frameworks) conducted by Awases *et al.* (2013) in Nguse (2010) in Ethiopia found that lack of employee's recognition who are performing well, an absence of a formal performance appraisal system, poor working conditions, lack of sufficient skills and competencies, and poor remuneration affects the performance of nurses negatively. In fact, Awases *et al.* (2013) argued that among the various factors that influence the performance positively and negatively include knowledge and skills; performance appraisal and utilisation thereof; remuneration, benefits, reward and recognition; staffing and work schedules; staff development; workspace and environment; organizational mission and goals; commitment and satisfaction; aspects related to leadership and management style; and implications for nursing management.

According to Ferri *et al.* (2016), the working shift of nurses' also affects their performance. They stated that the nurses engaged in rotating night shifts were statistically significantly younger, more frequently single, and had Bachelors and Masters degrees in nursing. They reported the lowest mean score in the items of job satisfaction, quality and quantity of sleep, with more frequent chronic fatigue, psychological, and cardiovascular symptoms in comparison with the day shift workers, in a statistically significant way.

A study by Saleem *et al.* (2015) in Palestine also indicated that selected organizational factors such as workload, available recourses, and manager support as factors affecting nurse's performance in northern region of the West Bank. The findings of study revealed that excessive workloads due to inadequate health personnel, poor working condition and less management support which affect nurses' performance negatively. In addition, it stated that nurses' level of performance can be affected by the following but not limited to, organizational factors such as work load, night shift work, availability of resources, education and training development and manager support which ultimately affects patient's satisfaction, organizational vision and mission and the health care situation in a country.

Furthermore, according to Tesfaye *et al.* (2015), job satisfaction, organizational commitment, level of education, experience, nurses' morale, work-related stress and burnout, support from co-workers, supportive supervision and feedback, training on clinical tools, recognition, job expectations, work environment, motivation, incentives, knowledge, skills, promotion, remuneration and competency level are among the several factors that influence the performance of nurses.

There are also other studies which indicate that poor performance is a result of insufficient number of nurses (Dieleman and Hernmeijer, 2006; Kamati *et al.*, 2014; Khaliq *et al.*, 2010; O'Brien and Gostin, 2011). These studies showed that due to critical shortages of health workers which is very low than average forced nurses to carry a huge workload which is above the optimal levels resulting in poor health centres performance, a higher chance of nurses making medical errors increase due to fatigue, not providing care according to standards, and not being responsive to the needs of the community and patients.

Despite the fact that there is health worker's shortage worldwide which affects the existed health personnel performance by excessive workloads and work stress, over staffing also have its own impact. Over staffing may create staff redundancies, uncomfortable working environment (due to different people's behavior), indolence (that is, expecting others to perform one's duty), lack of accountability and unnecessary expenses of reward payment. So

it is advisable to manage the existed human resource properly and efficiently by focusing on other factors that affect the performance of nurses than on claiming just increasing the number of health workers.

The issue of factors affecting performance has been decades back. For instance, a few studies also present different factors that affect the performance of health managers and health service providers. For instance, Mehr (2003) stated that equal rights and benefits, promoting a culture of organization, ergonomic, comfortable and decent working environment with good facilities, friendly and intimate partners, promotion, and upgrading improve human resources performance. Maleki (2003), study also show that physical condition, motivation, organizational structure, training job skills, tend to raise employees awareness and supervision improve the performance of human resources. Furthermore, some researchers reported that employees with higher levels of job satisfaction and job skills had significantly higher productivity (Varca and Valutis, 1995).

A number of studies on the performance of health managers and health service providers have been conducted by replicating or adopting Hersey *et al.* (2001) ACHIEVE model (Haghi and Bohloli, 2011; Nayeri *et al.*, 2005). Haghi and Bohloli (2011), indicated that the three most effective factors affecting human resources productivity are—motivation, performance feedback (evaluation), and organizational support. Ability is the most important factor and evaluation is the less important factor. The study also revealed that there is a meaningful correlation between ability, clarity, help, incentive, evaluation, validity, environment with gradation of productivity. Porsadegh (2003) also expressed numerous factors effective on the manpower productivity, the most important ones are: motivation, education, human resources communication, management and workplace management.

There are various methods to evaluate employee performance, but recognising which method is the best for organisation will depend on the purpose of organisation, and usually to evaluate employee performance more than one method may be needed Dehaghi and Rouhani (2014). Hence, in the present study, Hersey *et al.* (2008) ACHIEVE model appears to be more relevant because it provides specific prescriptions as commonly understood which is much more comfortable for practitioners. The model consists of seven variables related to effective performance management. Moreover, the ACHIEVE model is useful to an organisation that is going through different performance issues in its employees, but the main problem stemming from lack of motivation (Hersey *et al.*, 2008). A common problem that occurs in the management process is that many managers tend to be effective in letting followers know what performance problems exist but they are not as effective in helping followers determine why these problems exist.

Therefore, based on the aforementioned reviews and discussions we propose the following hypotheses. The hypotheses are based upon organisational behaviour studies. We identified the factors that will affect the performance of nurses. Thus, we propose a relationship between the ACHIEVE factors and performance. Description of this model is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + e \quad (1)$$

Performance = Constant + ability + clarity + help + incentive + evaluation + validity + environment

Where

Y = is the dependent variable (Performance)

X1...X7 = is the seven independent variables, that is ability, clarity, help, incentive, evaluation, validity, and environment.

β_i (i=1,2,3,4) are the parameters associated with the corresponding independent variable that are part of the regression coefficients

β_0 is the intercept

e is the error term

Thus,

Hypothesis 1: Ability positively influences nurses' performance.

Hypothesis 2: Job's clarity positively influences nurses' performance.

Hypothesis 3: Organisational help positively influences nurses' performance.

Hypothesis 4: Worker's incentive positively influences nurses' performance.

Hypothesis 5: Worker's performance evaluation positively influences nurses' performance.

Hypothesis 6: Rules validity positively influences nurses' performance.

Hypothesis 7: Environment positively influences nurses' performance.

3. Methodology

3.1. Sample and Procedures

This study is mainly quantitative in nature. The study examines the factors affecting the performance of professional nurses. The unit of response in our study are nurses in hospitals (healthcare services). The survey was administered by enumerators and they were carefully trained by the researcher before they were sent for the survey.

The research design involves the accumulation of both primary and secondary data. Data for the measurement of performance required primary data to be collected using a highly structured self-administered questionnaire. Questionnaires have the advantage of capturing a large proportion of a study population cost-effectively while respondents can complete the questionnaires at their own convenience (Sekaran, 1992). In determining the factors that affect the performance of employees, the research involved a survey of nurses in two national referral hospitals. We distributed 200 questionnaires to randomly selected nurses in the above mentioned hospitals. Out of the total distributed questionnaire, researchers obtained 191 usable questionnaires, which contributed 95.5% response rate.

In this study, regression analysis was used to test the hypotheses. The ACHIEVE model factors were regressed as independent variables against the dependent variable of 'performance' as measured in terms of 'task accomplishment' and 'job stress levels.'

A set of Likert-type scales was used to measure pertinent constructs. Each of 'ability,' 'clarity,' 'help,' 'incentive,' 'evaluation,' 'validity,' and 'environment' category was answered using a four-point scale, where 1= strongly disagree and 4= strongly agree. Thus, a total of seven (7) variables consisting of twenty-two (22) items have been employed to measure the factors affecting the performance of nurses. A reliability test was run to determine the extent to which a construct of performance of nurses was being measured. To measure the reliability of the gathered data, Cronbach's alpha was used. An alpha coefficient of 0.70 or higher indicates that the collected data is reliable as it has a relatively high internal consistency and can be generalized to reflect opinions of all respondents in the target population (Zinbarg, 2005). Table 1 shows Cronbach's alpha of all indicators. Cronbach's alpha results in the component column were computed using the results of all indicators.

Table-1. Cronbach's alpha test results

Item	Component	Cronbach alpha overall
		0.829
Ability	0.448	
Clarity	0.725	
Help	0.797	
Incentive	0.623	
Evaluation	0.558	
Validity	0.619	
Environment	0.723	

As can be seen from table 1, the test results show that Cronbach's alpha result of all performance indicators was 0.829. This implies that data collected using all the performance indicator values were reliable since the Cronbach's alpha value was above 0.70. The alpha for the 'ability' and 'evaluation' is relatively low. However, generally the survey as a whole was consistently measuring performance of nurses towards an underlying construct.

4. Results

4.1. Demographic Characteristics

The demographic profile of the respondents' is presented in Table 2. Out of the total respondents, 66 (34.6%) are male, while 125 (65.4%) are females. In terms of education, the distribution among certificates and diplomas is more or less equally distributed as 41.1% has received certificate education, while 55% are diploma graduates. Degree graduates constitute only 3.7%. Marital status show that most of the respondents' are single (63.4%), 30.9% married, 4.7% single, and 1% are widowed.

Table-2. Respondents' background (n=191)

Gender	Frequency	Percent
Male	66	34.6
Female	125	65.4
Education		
Certificate	79	41.4
Diploma	105	55
Junior	33	6.1
Degree	7	3.7
Marital status		
Single	121	63.4
Married	59	30.9
Divorced	9	4.7
Widowed	2	1

Regarding age, the mean age of respondents was about 32 years old with the youngest being 20 years old, while the oldest age is 60 years old. As far as work experience is concerned, the minimum work experience the respondents had was one year and the maximum experience they had was 42 years. The mean score was 10.27 and this result indicates that the majority of the respondents had almost 10 years of work experience. Table 3 below provides the result.

Table-3. Respondents' age and work experience

Item	Minimum	Maximum	Mean
Age	20	60	32.05
Work experience	1	42	10.27

Descriptive statistics were used to describe the basic features of the data in the study. They provide simple summaries of the sample and measures. Thus, to measure the independent variables (ACHIEVE), using a twenty-two item questionnaire related to the variables ('ability,' 'clarity,' 'help,' 'incentive,' 'evaluation,' 'validity,' and 'environment'), which possibly influence performance of nurses has been presented in Table 4. The mean indicates to what extent the respondents agree or disagree with the different statements. The higher the mean, the more likelihood the respondents agree with the statement; while the lower the mean, indicated the respondents disagree with the statement.

Table-4. Means and standard deviations of ACHIEVE

Item	Mean	Std. Deviation
Ability	2.65	0.747
Clarity	3.04	0.743
Help	2.40	0.853
Incentive	1.64	0.786
Evaluation	3.02	0.857
Validity	2.73	0.798
Environment	2.27	0.754
Overall	2.54	0.791

As can be seen from table 4, respondents believe that six of the seven variables presented affect their performance if they are provided by their respective hospitals in comparison to the required standards—ability (mean = 2.65; sd. = 0.747); clarity (mean = 3.04; sd. = 0.743); help (mean = 2.40; sd. = 0.853); evaluation (mean = 3.02; sd. = 0.857); validity (mean = 2.73; sd. = 0.798); and environment (mean = 2.27; sd. = 0.754). Besides, respondents disagree (low means) with provision of incentives (mean = 1.64; sd. = 0.786). Perhaps the disagreement with 'incentives' could be due to the fact that currently there are no any incentives provided. Generally, respondents agree that the seven variables affect their performances while working at hospitals.

After observing the results using descriptive statistics, we also conducted further bivariate Pearson correlations for all the research variables used in the regression equations. As table 5 below shows, all of the variables ($p < .01$ 2-tailed values) are related to 'performance.' Although it indicates that there is a relationship among the independent variables, there are no collinearity problems as checked in the regression models.

Table-5. Correlations for all variables

	1	2	3	4	5	6	7	8
Performance	1							
Ability	.198**	1						
Clarity	.224**	.247**	1					
Help	.402**	.303**	.446**	1				
Motivation	.245**	.195**	.022	.271**	1			
Evaluation	.304**	.241**	.302**	.387**	.263**	1		
Validity	.402**	.103	.463**	.503**	.208**	.370**	1	
Environment	.405**	.206**	.330**	.581**	.262**	.367**	.567**	1

Notes: ** $p < 0.01$ in two-tailed tests (Pearson's correlations)

Regression analysis was used to test how ability, clarity, help, motivation, evaluation, validity, and environment variables significantly affect performance of nurses. Table 6 shows the results of our regression across the two performance measures of task accomplishment and job stress levels. As can be seen from Table 6, the significance value of less than 0.05 and F-values and R^2 values for all the variables shows that the model is significant enough to measure the relationship between variables. Hypothesis 1 states that ability positively influences performance of nurses. The regression outcome shows that ability was positively and significantly related to task accomplishment (beta = .052, $p < .05$), but significantly and negatively related to job stress level (beta = -.010, $p < .05$). Hypothesis 2 indicates that job clarity positively influences performance. The results show that clarity was negatively and significantly related to task accomplishment (beta = -.014, $p < .05$) and job stress level (beta = -.027, $p < .05$).

Hypothesis 3 states that organisational help positively influences performance. The results reveal that organisational help is positively and significantly related to task accomplishment (beta = .036, $p < .05$), but no support was found for job stress level (beta = .106, $p < .05$). Perhaps in this case, the stress that the nurses have in their jobs could be related more to external factors rather than the internal factors. In addition, we hypothesise that employee's incentive policy positively influences performance (hypothesis 4). The regression result indicates that incentive positively and significantly affect task accomplishment (beta = .053, $p < .05$), and job stress level (beta = .012, $p < .05$). Thus, the more incentive they get the higher the task accomplishment and the lower the job stress level.

Hypothesis 5 indicates that employees' performance evaluation positively influences their performance. The regression outcome shows performance evaluation was positively and significantly related to task accomplishment (beta = .052, $p < .05$) and negatively and significantly related to job stress level (beta = -.014, $p < .05$). It was also hypothesised that rules validity (hypothesis 6) positively influences performance. The regressions results indicates that no support was found for task accomplishment (beta = .091, $p < .05$) and job stress levels (beta = .095, $p < .05$).

Finally, we hypothesise that environment (hypothesis 7) positively influences nurses' performance. The results of our regression shows that although environment is positively and significantly related to job stress level ($\beta = .029, p < .05$), no support was found regarding task accomplishment ($\beta = .064, p < .05$).

Table-6. Regression results for dependent variables

Variable	Task accomplishment		Job stress	
	R ² change	β	R ² change	β
Ability	.253	.052*	.098	-.010*
Clarity		-.014*		-.027*
Help		.036*		.106
Incentive		.053*		.012*
Evaluation		.052*		-.014*
Validity		.091		.095
Environment		.064		.029*
N		191		191
F- value	8.866*		2.831*	

Note: * $p < .05$

5. Discussions and Conclusions

The objective of this study is identifying the factors that influence the performance of professional nurses. The study adopted the ACHIEVE model using seven variables—namely ability, clarity, help, incentive, evaluation, validity, and environment to establish if a relationship exists with performance of nurses. The results of this study offered considerable empirical support for the existence of a relationship between performance and the variables used in the regression model. Generally, 'ability' indicates that the respondents have received adequate college training to enhance their knowledge and possess adequate experience to perform their duties effectively.

Job clarity refers to supervisor's and doctor's clarity of instructions. However, the positive relationships between clarity and performance didn't hold true. The negative relationship indicates that even if clear instruction is provided it is not enhancing employees' task accomplishment or not helpful in reducing workers' job stress levels. Normally, one would expect that since clear instructions avoid confusion on the side of employees thereby minimising their job stress level, but it is not the case here.

Regarding organisational help, there was strong support that it enhances employees' task accomplishment, but no support was found to the assertion that the more help the employees get the less job stress level they had. However, it can be concluded from the results as well that the provision of necessary facilities to help staff to facilitate effective working condition by the hospital management and the advise and moral support of supervisors and doctors positively affect their performance.

The study found out that there is a strong positive relationship between 'incentive' and task accomplishment and relatively a weak positive relationship between 'incentive' and job stress level. Incentive is an essential component to motivate staffs to perform their duties effectively. Thus, the provisions of reward packages, overtime fees, and scholarship opportunities for further studies positively affect the performance of nurses.

Evaluation here constitutes relevancy of staff appraisal, availability of objective staff evaluation and feedback. The study revealed that although there is a strong positive relationship between worker's performance evaluation and task accomplishment, there is a weak and negative relationship with job stress levels. Thus, it can be said that staff appraisal is relevant to meet the objectives of the hospital, and the availability of objective staff evaluation and feedback of evaluation can positively affect the performance of staff positively, while their absence may result in negative staff performance resulting in reduced work accomplishment and an increased job stress.

Furthermore, the study did not find any significant relationship between 'validity' and performance. Validity refers to the perception of staffs towards the appropriateness of decision of the management in light of laws, social practice and hospital policies as well as discrimination of staffs that could affect the performance of nurses. However, there was no evidence to support the argument that the nurses are happy with the decisions and it positively affects their performance.

Also the study revealed that although there is a weak positive relationship between the environment (internal and external) and job stress, no evidence was found in relation to task accomplishment. In this regard, it seems plausible to conclude that the more stable and conducive is the environment the less stress they had. The fact that there was no significant relationship with task accomplishment could be either due to lack of awareness of staffs about hospital policies as well as government rules and regulations or it could be internal factors such as lack of enough necessary facilities and unavailability of adequate drugs.

Finally, this paper contributes to our understanding of the factors influencing performance of professional nurses. The results presented are mixed where some have significant influence, while others do not influence performance as expected. The findings of the present study offer important academic implications that merit further study. Why ability had negative effect on reducing job stress or providing help to employees is not related at all to job stress? Why clarity of instructions is negatively related to performance? Why there is no any relationship at all between rule validity and performance?

References

- Abeysekera, I. and Guthrie, J. (2004). Human capital reporting in a developing nation. *The British Accounting Review*, 36(3): 251–68.
- Awases, Bezuidenhout, M. C. and Roos, J. H. (2013). Factors affecting the performance of professional nurses in Namibia. *Curationis*, 36(1): 108, 8. Available: <http://dx.doi.org/10.4102/curationis.v36i1.10>
- Awases, Gbary, A., Nyoni, J. and Chatora, R. (2004). *Migration of health personnel in six countries: a synthesis report*. World Health Organization Regional Office for Africa: Brazzaville.
- Becker, B. E. and Huselid, M. A. (2001). *The HR scorecard*. Ulrich D.: Harvard Business Scholl Press: Massachusetts.
- Business Wire (2005). Business wire, recruitment launches projected healthcare to meet recruiting challenges in the severely competitive healthcare market.
- Castro, G. M., Verde, M., Saez, P. L. and Lopez, J. E. (2010). *Technological innovation: An intellectual capital-based view*. Palgrave Macmillan.
- Dehaghi, M. R. and Rouhani, A. (2014). Studying the Relationship between the Effective Factors on Employees' Performance in Iran's University and the Students' Satisfaction with Regards to Employee Satisfaction. *Procedia - Social and Behavioral Sciences*, 141(2014): 903-08.
- Dieleman, M. (2009). Human resource management interventions to improve health workers performance in low and middle income countries: a realist review. *Health Resource Policy Systems*, 7(7): 1–13.
- Dieleman, M. and Hernmeijer, J. W. (2006). *Improving health worker performance: In search of promising practices*. WHO: Geneva.
- Eastaugh, S. R. (2002). Hospital nurse productivity. *Journal of Health Care Finance*, 29(1): 14–22.
- Ferri, P., Guadi, M., Marcheselli, L., Balduzzi, S., Magnani, D. and Lorenzo, R. (2016). The impact of shift work on the psychological and physical health of nurses in a general hospital: a comparison between rotating night shifts and day shifts. *Risk Management and Healthcare Policy*, 14(9): 203-11.
- Fisher, C. D., Schoenfeldt, L. F., Shaw, J. B. and Boston, M. A. (2006). *Advanced human resource management*. Houghton Mifflin Customer Publishing.
- Haghi, M. and Bohlooli, N. (2011). Study and prioritizing effective factors on human resource productivity by achieve model and topsis method. *World Applied Sciences Journal*, 16(7): 961-70.
- Hall, L. M. (2003). Nursing Intellectual Capital: A theoretical approach for analysing nursing productivity. *Nursing Economics*, 21(1): 14–99.
- Heath, J. A. (1988). *Human capital investment: An international comparison. Organisation for economic co-operation and development*. Centre for Educational Research and Innovation, OECD: Paris.
- Helmer, F. (1988). Pictures of performance: The key to improved nursing productivity. *Health Care Management Review*, 13(4): 65-70.
- Hersey, P., Blanchard, K. and Johnson, D. (2001). *Management of organizational behaviour: Leading human resources*. Prentice-Hall: New Jersey.
- Hersey, P., Blanchard, K. and Johnson, D. (2008). *Management of organizational behaviour: Leading human resources*. Prentice-Hall: New Jersey.
- Kamati, S. K., Cassim, N. and Karodia, A. M. (2014). An evaluation of the factors influencing the performance of registered nurses at the National Referral Hospital in Namibia. *Australian Journal of Business and Management Research*, 4(2): 47-62.
- Khaliq, J., Muhammad, Zia-ur-Rehman and Majed, R. (2010). *The role of human resource management and nurses' job satisfaction in medical service organizations Islamabad*. Pakistan Allama Iqbal Open University.
- Lindelow, M., Pieter, S. S. and Teigist, L. (2005). The performance of health workers in Ethiopia: results from qualitative research. CSAE WPS/2005-06.
- Maleki, M. (2003). *Recognize and compare human resource productivity increasing methods*. Medical University of Semnan: Semnan.
- Mehr, H. S. (2003). *Human resource development in health sector. First conference on resource management in hospital*. Iran University of Medical Sciences: Tehran.
- Ministry of Health National Health Policy (2010).
- Nayeri, N. D., Nazari, A., M., S. and Ahmadi (2005). Iranian staff nurses' views of their productivity and human resource factors improving and impeding it: A qualitative study. *Human Resource Health*, (3): 9-15. Available: <https://human-resources-health.biomedcentral.com/articles/10.1186/1478-4491-3-9>
- Nguse, N. (2010). *An analysis of factors affecting nurse's performance*. Addis Ababa university.
- O'Brien, P. and Gostin (2011). LHealth worker shortages and global justice. Melbourne Legal Studies Research Paper. 2011; No. 569.
- Porsadegh, N. (2003). *Role of human resource education in on organizational productivity, first conference on resource management in hospital*. Iran University of Medical Sciences: Tehran.
- Saleem, A., Thulth, R. and Sayei, S. (2015). Selected organizational factors affecting performance of professional nurses in North West Bank Governmental Hospitals. *Journal of Education and Practice*, 6(7): 100-10.
- Sekaran, V. (1992). *Research methods for business: A skilled building approach*. 2nd ed. edn: John Wiley and Sons, Inc.: Toronto.
- Tesfaye, T., Abera, A., Balcha, F., Nemera, G. and Belina, S. (2015). *Assessment of factors affecting performance of nurses working at. Jimma University Specialized Hospital in Jimma Town, Oromia Region, South-west Ethiopia*.

- Varca, P. M. and Valutis, M. (1995). The relationship of ability and satisfaction to job performance. *Applied Psychology*, 42(2): 265–75.
- White, L. N. (2007). A kaleidoscope of possibilities: Strategies for assessing human capital in libraries. *The Bottom Line*, 20(3): 109–15. Available: <https://doi.org/10.1108/08880450710825815>
- World Health Organization (2006). World health organization: Working together for health.
- Wright, P. M., Gardner, T. M., Moynihan, L. M. and Allen, M. R. (2005). The relationship between human resources practices and firm performance: examining causal order. *Personal Psychology*, 58(2): 409–46. Available: <https://doi.org/10.1111/j.1744-6570.2005.00487.x>
- Zinbarg, M. (2005). *Research Methods*. 2nd ed. ednPearson Publishers.
- Zurn, P., Dolea, C. and Stilwell, B. (2005). *Nurse retention and recruitment: Developing a motivated workforce*. Geneva: WHO.