

Factors Associated with the Motivation and De-motivation of Health Workforce in Nepal

Ghimire J,¹ Gupta RP,¹ Kumal AB,¹ Mahato RK,¹ Bhandari RM,¹ Thapa N¹

¹Save the Children, Country Office, Teku, Kathmandu, Nepal.

ABSTRACT

Background: Health workforce plays an important role in improving the health of people but its shortage is a major problem facing Nepal. This is further compounded by prolonged absence, low motivation, and improper distribution. The objective of the study is to find out the factors determining motivation of health workforce in the public sector.

Methods: A cross sectional study was conducted during September, 2012 to February, 2013. The health facilities were selected proportionately representing all the Illakas and then a simple random sampling was done to select individual facilities. Data was collected using questionnaire. The collected data was entered and analyzed in SPSS. Ethical approval was taken from the Nepal Health Research Council.

Results: More than a half (55%) of the health workers were satisfied with their current jobs and the financial benefits they acquired. The results revealed that higher age, higher education (OR:2.6; CI:1.414-4.660) and lower service duration (OR:2.567; CI:1.193-3.306) were significant factors for the motivation of health workers along with financial rewards (OR:4.706; CI:2.961-7.478), working environment (OR:2.344; CI:1.507-3.648) and opportunity for capacity development (OR:5.437; CI:3.344-8.840). The major de-motivational factors were: low remuneration (OR:3.215; CI:2.049-5.045), limited capacity development opportunity (OR:4.269; CI:2.672-6.821), poor working environment (OR:4.062; CI:2.528-6.526), non-recognition of performance (OR: 2.157; CI:1.389-3.350), and political interferences (OR:2.752; CI:1.754-4.320).

Conclusions: Motivation of health workers is an important factor for smooth functioning of health intuitions and increased access to quality services. The good working environment, salary and other financial benefits matter greatly for enhanced performance of health workers along with additional factors.

Keywords: health; motivation; workforce.

INTRODUCTION

Health workforce is one of the cornerstones of health system.^{1,2} Having sufficient number of motivated health workforce is key to providing quality health services.^{1,3,4} Motivation can be defined as an individual's degree of willingness to exert and maintain an effort towards organizational goal that is consistent with the individual goal.^{4,6} The health workforce is motivated only when the organization and the individual goals are aligned. Motivation of human resources is affected by individual, societal, and organizational factors.

In Nepal, absenteeism, low motivation, and improper distribution further compounded the problems of the health sector.⁷ The existing health workforce is responding to their problems through different coping strategies, i.e. dual practice, or holding multiple jobs,² which reduce their contribution in public sector.

The purpose of the study is to find out the factors responsible for motivation of health workforce in public sector with special focus on three districts of Nepal and provide evidence based recommendations.

Correspondence: Jagadishwor Ghimire, Save the Children Nepal Country Office, Kathmandu, Nepal, Contact:9851078839, jagughimire@gmail.com.

METHODS

An operational research, using both qualitative and quantitative research methods was conducted to obtain factors for motivation of Human Resources for Health (HRH). Of the 75 districts in Nepal, 3 districts (Sirha, Bardiya and Doti) were selected purposively. Then, 86 out of 196 health institutions were selected using probability proportionate sampling method, based on the size of health institution by available HRH representing all Ilakas. A total of 335 health workers, including doctors, nurses, other paramedics and administrative staff were selected for the collection of information by using the pretested questionnaire. The quantitative data was entered in SPSS 17. In order to validate the data entered, 10% of data was randomly crosschecked. The data was analyzed in terms of percentage, mean, odds ratio, and p-value.

Ethical approval for this study was obtained from Nepal Health Research Council (NHRC), and the researchers concerned adhered to the national NHRC standard operating procedures and ethical guidelines for health research. Informed consent was obtained from each respondent, and confidentiality maintained in terms of information disclosed and identity of respondents.

RESULTS

A total of 335 participants were selected for the study from different levels of health institutions of Nepal. More of the respondents were males i.e. 208 (62.1%). The results also revealed that majority of health workers interviewed were between 20-40 years old 183 (55%) with the mean age of 38 years (SD=10.6, minimum=18 yrs and maximum=59 yrs). Looking at the ethnicity, there were 152 (45.37%) Brahmins/Chhetris. The participation of Muslims and Dalits was very low as compared to other ethnic groups. The education status of health workers showed that 171 (50%) health workers had intermediate or higher level of education. Permanent employees were 248 (74%). The health workers who had attended the training of more than three days in the last 12 months preceding the survey were 212 (64%). The respondents revealed that more than a third (117) health workers had worked five years or less (Mean: 14 yrs; SD: 10 yrs; minimum: 1 yr; and maximum: 39 yrs) (Table 1).

Table 1. Demographic characteristics of the heal.

| Variable | N (%) |
|----------|------------|
| District | |
| Siraha | 147 (43.9) |
| Bardiya | 95 (28.4) |
| Doti | 93 (27.8) |
| Sex | |
| Male | 208 (62.1) |

| | |
|---|-------------|
| Female | 127 (37.9) |
| Age Group | |
| < 20 | 9 (2.7) |
| 20-29 | 76 (22.7) |
| 30-39 | 107 (31.9) |
| 40-49 | 77 (23.0) |
| >50 | 66 (19.7) |
| Ethnicity | |
| Brahman/Chhetri | 152 (45.37) |
| Tarai castes | 100 (29.9) |
| Janajati | 62 (18.51) |
| Dalit | 14 (4.18) |
| Newar | 4 (1.19) |
| Muslim | 3 (0.90) |
| Types of health workers | |
| Doctor | 3 (0.9) |
| Nurse | 8 (2.4) |
| Paramedic | 290 (86.6) |
| Others | 34 (10.1) |
| Education | |
| Under SLC | 32 (9.6) |
| SLC | 132 (39.4) |
| Intermediate | 115 (34.3) |
| Bachelor's Degree | 43 (12.8) |
| Master's Degree | 13 (3.9) |
| Type of contract | |
| Permanent | 248 (74.0) |
| Temporary | 10 (3.0) |
| Contract | 77 (23.0) |
| Received training in the last 12 months | |
| No | 123 (36.7) |
| Yes | 212 (63.3) |
| Service Duration | |
| Less or equal to 5 year | 117 (34.9) |
| 6-15 years | 75 (22.4) |
| 16-25 years | 88 (26.3) |
| More than 25 years | 55 (16.4) |

The study findings revealed that the working environment was one of the most important factors for motivating health workers i.e. 189 (56.4%) followed by financial reward, praise and acknowledgement and others as presented in table 2. The health facility-wise disaggregated findings revealed that financial reward as an important motivating factor for 35 (62.5%) health workers working at district level followed by working environment and opportunity for capacity development. At the primary health care centre (PHCC) level, 32 (66.7%) health workers said financial reward as an important motivating factor followed by praise and acknowledgement and public recognition. For health posts and sub health posts, the working environment was the most important factor followed by financial rewards (Table 2).

The low remuneration was one of the important de-motivating factors for 159 (47.4%) health workers. The other important factors were the non recognition by institution, limited opportunity for career development,

interference by political parties. The result also revealed that few of the health workers did not get opportunity for transfer at the areas of their choice and were doing the tasks beyond their skills (Table 3).

Table 2. Factors motivating health workers by health facilities in percentage (n=335).

| Motivating Factors | Total (%) | DHO/DH (n=56) | PHCC (n=48) | HP (n=134) | SHP (n=89) | AHF (n=8) |
|--------------------------------------|------------|------------------|----------------|---------------|---------------|--------------|
| Working environment | 189(56.4) | 48.2 | 52.1 | 61.9 | 55.1 | 62.5 |
| Financial reward | 183(54.6) | 62.5 | 66.7 | 56.0 | 46.1 | 25.0 |
| Praise and acknowledgement | 161(48.1) | 37.5 | 60.4 | 44.0 | 53.9 | 50.0 |
| Opportunity for career development | 144(43.0) | 41.1 | 31.3 | 52.2 | 34.8 | 62.5 |
| Public recognition | 137 (40.9) | 28.6 | 60.4 | 36.6 | 43.8 | 50.0 |
| Job security | 93(27.8) | 17.9 | 41.7 | 24.6 | 31.5 | 25.0 |
| Institutional recognition | 79(23.6) | 30.4 | 25.0 | 22.4 | 18.0 | 50.0 |
| Work in private clinic in extra time | 36(10.7) | 8.9 | 4.2 | 10.4 | 16.9 | 0.0 |
| Room for accommodation | 22(6.6) | 7.1 | 4.2 | 9.7 | 3.4 | 0.0 |

Table 3. Factors de-motivating health workers (n=335).

| De-motivating factors | Total (%) | DHO/DH (n=56) | PHCC (n=48) | HP (n=134) | SHP (n=89) | Aurvedic HF (n=8) |
|---|-----------|------------------|----------------|------------|------------|----------------------|
| Low remuneration | 159(47.4) | 41.1 | 60.4 | 51.5 | 46.1 | 12.5 |
| No institutional recognition | 155(46.2) | 50.0 | 33.3 | 49.3 | 49.4 | 62.5 |
| Limited opportunity for carrier development | 145(43.3) | 41.1 | 52.1 | 45.5 | 39.3 | 62.5 |
| Dominant by political party | 145(43.3) | 41.1 | 18.8 | 53.0 | 48.3 | 37.5 |
| Poor working environment | 135(40.4) | 39.3 | 52.1 | 39.6 | 40.4 | 37.5 |
| Infrastructure is very poor | 115(34.3) | 35.7 | 14.6 | 38.8 | 40.4 | 37.5 |
| No security in community | 81(24.1) | 41.1 | 10.4 | 25.4 | 22.5 | 12.5 |
| Heavy work lode | 76(22.7) | 10.7 | 35.4 | 20.9 | 30.3 | 0.0 |
| Frequent transfer | 70(20.9) | 23.2 | 18.8 | 21.6 | 18.0 | 62.5 |
| Skill not related to work | 45(13.4) | 14.3 | 14.6 | 14.9 | 11.2 | 12.5 |
| Never transferred | 38(11.3) | 16.1 | 6.3 | 11.9 | 12.4 | 0.0 |

The bi-variate logistics regression analysis of the socio-demographic factors and motivation of health workers revealed that health workers of age 40 years and above were more motivated than the health workers of less than 40 years of age (OR-2.872; p-value-0.000). The education level (OR-2.567; p-value-0.002), service duration (OR- 1.986; p-value-0.008) of the health workers were also significant factors for the motivation of health workers (Table 4).

The bi-variate analysis of the motivation status and different factors showed that few factors had a significant role for the motivation of health workers. Financial reward (OR - 4.706; p value 0.000) was significantly

associated with the motivation of health workers. The work environment (OR - 2.344; p value 0.000) and the opportunity for capacity development (OR - 5.437; p value 0.000) were also statistically significant (Table 5).

The bi-variate analysis of de-motivational factors revealed that low remuneration (OR 3.215; p value - 0.000), limited opportunities for career development (OR - 4.269; p value - 0.000), poor working environment (OR- 4.062; p value - 0.000) and interference by political parties (OR - 2.752; p value- 0.000) were few important and significant factors for the low motivation of health workers at the work place (Table 6).

Table 4. Association of different socio-demographic factors and motivation of health workers.

| Variables | Motivation of HWs | | Odds Ratio | CI | | P value |
|-------------------------------|-------------------|------------|------------|-------|-------|---------|
| | Yes | No | | Lower | Upper | |
| Age group | | | | | | |
| < 40 years | 92 (45.1) | 112 (54.9) | | | | |
| ≥ 40 years | 92 (70.2) | 39 (29.8) | 2.872 | 1.804 | 4.572 | 0.000 |
| Permanent address | | | | | | |
| Local | 112 (53.8) | 96 (46.2) | | | | |
| Non local | 72 (56.7) | 55 (43.3) | .891 | .571 | 1.390 | 0.611 |
| Sex | | | | | | |
| Female | 119 (57.2) | 89 (42.8) | | | | |
| Male | 65 (51.2) | 62 (48.8) | 1.275 | 0.819 | 1.987 | 0.309 |
| Education | | | | | | |
| PCL and below | 164 (58.8) | 115 (41.2) | | | | |
| Bachelor's and above | 20 (35.7) | 36 (64.3) | 2.567 | 1.414 | 4.660 | .002 |
| Marital status | | | | | | |
| Married | 163 (56.2) | 127 (43.8) | | | | |
| Unmarried | 21 (46.7) | 24 (53.3) | 1.467 | .781 | 2.754 | .233 |
| Spouse living together | | | | | | |
| Yes | 121 (57.1) | 91 (42.9) | | | | |
| No | 42 (53.8) | 36 (46.2) | 1.140 | .676 | 1.920 | .623 |
| Type of contract | | | | | | |
| Permanent | 95 (57.2) | 71 (42.8) | | | | |
| Temporary | 89 (52.7) | 80 (47.3) | 1.203 | .782 | 1.851 | .401 |
| Service duration | | | | | | |
| More than 20 years | 59 (67.0) | 29 (33.0) | | | | |
| ≤ 20 years | 125 (50.6) | 122 (49.4) | 1.986 | 1.193 | 3.306 | .008 |

Table 5. Bi-variate analysis of motivational factors.

| Variables | Motivation of HWs | | Odds Ratio | CI | | P-value |
|---|-------------------|------------|------------|-------|-------|---------|
| | No (%) | Yes (%) | | Lower | Upper | |
| Financial reward | | | | | | |
| No | 99 (65.1) | 53 (34.9) | | | | |
| Yes | 52 (28.4) | 131(71.6) | 4.706 | 2.961 | 7.478 | .000 |
| Praise and acknowledgement | | | | | | |
| No | 72 (41.4) | 102(58.6) | | | | |
| Yes | 79 (49.1) | 82 (50.9) | .733 | .476 | 1.128 | .158 |
| Public recognition | | | | | | |
| No | 93 (47.0) | 105 (53.0) | | | | |
| Yes | 58 (42.3) | 79 (57.7) | 1.206 | .778 | 1.871 | .402 |
| Job security | | | | | | |
| No | 110 (45.5) | 132 (54.5) | | | | |
| Yes | 41 (44.1) | 52 (55.9) | 1.057 | .653 | 1.710 | .822 |
| Working environment | | | | | | |
| No | 83 (56.8) | 63 (43.2) | | | | |
| Yes | 68 (36.0) | 121(64.0) | 2.344 | 1.507 | 3.648 | .000 |
| Opportunity for career development | | | | | | |
| No | 118 (61.8) | 73 (38.2) | | | | |
| Yes | 33 (22.9) | 111 (77.1) | 5.437 | 3.344 | 8.840 | .000 |
| Work in private clinic in extra time | | | | | | |
| No | 134 (44.8) | 165 (55.2) | | | | |
| Yes | 17(47.2) | 19(52.8) | .908 | .454 | 1.815 | .784 |
| Institutional recognition | | | | | | |
| No | 110 (43.0) | 146 (57.0) | | | | |
| Yes | 41 (51.9) | 38 (48.1) | .698 | .421 | 1.158 | .164 |
| Room for accommodation | | | | | | |
| No | 142 (45.4) | 171(54.6) | | | | |
| Yes | 9 (40.9) | 13 (59.1) | 1.199 | .498 | 2.888 | .685 |

Table 6. Bi-variate analysis of de-motivational factors.

| Variables | Motivation of HWS | | Odds ratio | CI | | P-Value |
|---|-------------------|------------|------------|-------|-------|---------|
| | No(%) | Yes(%) | | Lower | Upper | |
| Low remuneration | | | | | | |
| No | 101 (58.7) | 71 (41.3) | | | | |
| Yes | 50 (30.7) | 113 (69.3) | 3.215 | 2.049 | 5.045 | .000 |
| Limited opportunity for career development | | | | | | |
| No | 112 (60.2) | 74 (39.8) | | | | |
| Yes | 39 (26.2) | 110 (73.8) | 4.269 | 2.672 | 6.821 | .000 |
| Heavy work load | | | | | | |
| No | 114 (44.4) | 143 (55.6) | | | | |
| Yes | 37 (47.4) | 41(52.6) | .883 | .532 | 1.468 | .632 |
| Poor working environment | | | | | | |
| No | 115 (58.7) | 81(41.3) | | | | |
| Yes | 36 (25.9) | 103 (74.1) | 4.062 | 2.528 | 6.526 | .000 |
| Non related work with the skill | | | | | | |
| No | 130 (45.0) | 159 (55.0) | | | | |
| Yes | 21 (45.7) | 25 (54.3) | .973 | .521 | 1.818 | .932 |
| Frequent transfer | | | | | | |
| No | 117 (44.5) | 146 (55.5) | | | | |
| Yes | 34 (47.2) | 38 (52.8) | .896 | .531 | 1.511 | .679 |
| Never transferred | | | | | | |
| No | 133 (44.9) | 163 (55.1) | | | | |
| Yes | 18 (46.2) | 21 (53.8) | .952 | .487 | 1.860 | .885 |
| No institutional recognition | | | | | | |
| No | 95 (54.0) | 81 (46.0) | | | | |
| Yes | 56 (35.2) | 103 (64.8) | 2.157 | 1.389 | 3.350 | .001 |
| No security in community | | | | | | |
| No | 110 (43.7) | 142 (56.3) | | | | |
| Yes | 41(46.4) | 42 (50.6) | .794 | .483 | 1.305 | .362 |
| Infrastructure is very poor | | | | | | |
| No | 96 (44.2) | 121 (55.8) | | | | |
| Yes | 55 (46.6) | 63 (53.4) | .909 | .579 | 1.425 | .677 |
| Interference by political parties | | | | | | |
| No | 104 (55.9) | 82 (44.1) | | | | |
| Yes | 47 (31.5) | 102 (68.5) | 2.752 | 1.754 | 4.320 | .000 |

DISCUSSION

This finding shows that the average age of health workers is 38 years (SD: 10 years). The findings from bi-variate analysis reveal that there was low motivation amongst younger health workers. This may be linked with other motivational factors like the opportunity for career development, higher education, and other personnel development factors. Another study conducted in Zambia also revealed that age is one of the motivational factors on uni-variate analysis.⁹

The result is also significant in terms of education of the respondents: the higher the education of health workers, the higher is the motivation level. This points to the need for giving opportunities for further education for enhancing the motivation of health workers working at the peripheral level.

The issue of transfer of health workers is also another important dimension of the motivation of health workers. Transparency in the decision taken during transfer of staff must be considered for the motivation of the health workers as there is a practice of ad-hoc transfer which is creating problems in a few health workers because of frequent transfers and non transfer, though it is not significant in bi-variate analysis.

The service duration has also an important role in motivation of health workers. The less the service duration, the more the motivation of health workers is observed in this study. A study conducted in India supports this study finding. The Indian study reveals that the health workers having less than 10 years of service duration are more motivated and satisfied in their jobs as compared to those who had service duration of more than 10 years.¹⁰

The bi-variate analysis result demonstrated that the result of the study is consistent with earlier studies on motivating factors. The financial benefits become one of the important motivating and de-motivating factors along with other factors from this study. Salary and other financial benefits (OR: 4.706) have been important motivating/de-motivating factors for health workers especially for those who are working in poor and underpaid countries in the world. This might be one of the reasons for the high level of migration of health workforce from developing countries to developed countries.^{2,11,12} For community level health workers, financial incentives are an important part for the motivation of health workers.¹³

The opportunity for career and capacity development is one of the most important motivational factors as it motivates health workers by more than 5 times. Similar findings have been found out in other developing countries.^{3,14} A randomized control trial on interventions to improve motivation and retention of health workers also revealed that training and other skilled development activities are the factors for motivation and retention of community health workers.^{10,13} A study conducted in India, by using self reporting instrument also reveals that training opportunities for health workers (92%) is a more important factor of motivation than the financial factors (72%).¹⁵ Different studies in different parts of the world reveal that financial incentives alone are not enough to motivate health workers in public health system of the country.^{12,16}

The working environment is also one of the significant factors for the motivation of health workers in Nepal according to the findings of this study. This finding suggests that health workforce retention and motivation can only be achieved by setting proper working environment, such as availability of adequate physical spaces, instrument and equipment, other logistics support at health facilities. At higher level health facilities like primary health care centers, the availability of other diagnostics facilities like laboratory services is also important especially to motivate and retain medical officers. Several other studies conducted in the past also identified the working environment/ conditions as one of the important motivational factors as revealed in this study.¹⁰

A systematic review also shows that financial rewards, career development, continuing education, hospital infrastructure, resource availability, hospital management, recognition, and appreciation are key motivators for health workers.¹⁴ Research findings from the Asia-Pacific region also indicate that salaries and benefits, together with working conditions, environment, education and training opportunities are important

determinants for health workers' motivation as revealed in this study.^{2,15,17} Similarly, a study conducted in Nepal in 2009 identified opportunities for training and further study, salary and incentives, personal factors, leadership and management, staff quarters, supportive community, recruitment conditions and career development opportunities, good working environment, team work and supportive staff, appreciation and recognition of work, and supportive supervision as important motivating factors.⁸ The findings from this study are also in line with the findings from that study.

The other variables like praise and acknowledgements, public and institutional recognition, job security, private practice, and room for accommodations were not significant in this study, though they have critical role for the motivation of health workers. It might be due to the smaller sample size of the study.

Similarly, there are different factors for the de-motivation of the workforce. The mismatch between the organizational and the individual goals is one of the important factors for the dissatisfaction of health workers.⁵ These de-motivational factors are multi-factorial in origin. As the finding reveals in this study, limited opportunities for career development, poor working environment, low remuneration, non-recognition by institution they are working at and interference by political parties are significant factors. This findings suggest that the limited opportunity for career development and poor working environment are important de-motivational factors and are stronger than poor remunerations to health workers. This indicates that financial benefits are not only sufficient to motivate health workers towards their work. Other studies also suggested that limited opportunity for career development,^{3,12,18,19} poor working environment,^{3,10,12} low remuneration,^{3,11-13,19} non-recognition by institutions,¹⁵ and political instability in the country resulting in interference^{12,15} at workplace are important de-motivational factors.

Thus, considering the findings, the study recommends that the policy maker should also focus on other factors along with the financial factor to motivate and retain health workforce.

CONCLUSIONS

Motivation of the health workers is an important factor for the smooth functioning of the health intuitions and increased access to quality health services. This study showed that there are many factors for motivating and de-motivating health workers. The socio-demographic factors of motivation include the age of health workers, educational level, and service duration. The other

factors are career development opportunities for health workers, salary and other financial benefits, working environment, institutional recognition and influence of political parties at the workplace.

The important lessons learnt from this study is that though salary and other financial benefits matter, other factors also play a crucial role for the motivation and performance of health workers. MoHP thus should give due consideration to strengthening the working environment, enhancing capacity development opportunities among others while planning and policy formulation in the health sector for motivating health workers in the short and the long terms.

ACKNOWLEDGEMENTS

Preparation of this research article is supported by the HRH project of Save the Children funded by the European Union (EU). The views expressed herein are of authors and do not necessarily reflect the views of Save the Children and the EU. We would like to thank all respondents, Research team, Development Resource Centre, Dr. Neena Khadka, Ms. Khusbu Agrawal and Mr. Deepak Kumar Bishwakarma for their support.

REFERENCES

- World Health Organization. The World Health Report 2006: working together for health [Internet]. Geneva, Switzerland: WHO2006 [cited 2012 Jul 27]. Available from: www.who.int/whr/2006/whr06_en.pdf.
- Henderson LN, Tulloch J. Incentives for retaining and motivating health workers in the Pacific and Asian countries. *Hum Resour Health*. 2008;6:18.
- Dieleman M, Toonen J, Toure H, Martineau T. The match between motivation and performance management of health sector workers in Mali. *Hum Resour Health*. 2006;4:2.
- Franco LM, Bennett S, Kanfer R. Health sector reform and public sector health worker motivation: a conceptual framework. *Soc Sci Med*. 2002 Apr;54(8):1255-66.
- Bennet S, Franco LM. Public Sector Health Workers Motivation and Health Sector Reform: A Conceptual Framework. Bethesda, Maryland, USA. PHR, Abt Associates Inc; 1999 Jan.
- Willis-Shattuck M, Bidwell P, Thomas S, Wyness L, Blaauw D, Ditlopo P. Motivation and retention of health workers in developing countries: a systematic review. *BMC Health Serv Res*. 2008;8:247.
- Ministry of Health and Population. National Strategic Plan on Human Resource for Health 2011-2015. In: MoHP HRDaFMD, editor. Kathmandu 2013.
- RTI International. Human Resource Strategy Option for Safe Delivery Research Triangle Park, NC, USA: Research Training Institute; 2009 Jan. Report No.: 2.11-01-09.
- Mutale W, Ayles H, Bond V, Mwanamwenge MT, Balabanova D. Measuring health workers' motivation in rural health facilities: baseline results from three study districts in Zambia. *Hum Resour Health*. 2013;11:8.
- Lakra GJ, Kadam S, Hussain MA, Pati S, Sharma K, Zodpey S. Motivation and job satisfaction among multipurpose health workers in hilly and non-hilly areas of Jashpur District, Chhattisgarh: an exploratory study. *Southeast Asian J Trop Med Public Health*. 2012 Sep;43(5):1262-72.
- Wibulpolprasert S, Pengpaibon P. Integrated strategies to tackle the inequitable distribution of doctors in Thailand: four decades of experience. *Hum Resour Health*. 2003 Nov 25;1(1):12.
- World Health Organization. The migration of skilled health personnel in the Pacific Region: WHO Western Pacific Region 2004.
- Strachan DL, Kallander K, Ten Asbroek AH, Kirkwood B, Meek SR, Benton L, et al. Interventions to Improve Motivation and Retention of Community Health Workers Delivering Integrated Community Case Management (iCCM): Stakeholder Perceptions and Priorities. *Am J Trop Med Hyg*. 2012 Nov;87(5 Suppl):111-9.
- Mathauer I, Imhoff I. Health worker motivation in Africa: the role of non-financial incentives and human resource management tools. *Hum Resour Health*. 2006;4:24.
- Peters DH, Chakraborty S, Mahapatra P, Steinhardt L. Job satisfaction and motivation of health workers in public and private sectors: cross-sectional analysis from two Indian states. *Hum Resour Health*. 2010;8:27.
- Vujicic M, Zurn P, Diallo K, Adams O, Dal Poz MR. The role of wages in the migration of health care professionals from developing countries. *Hum Resour Health*. 2004 Apr 28;2(1):3.
- Shankar PR. Attracting and retaining doctors in rural Nepal. *Rural Remote Health* [serial on the Internet]. 2010 May 21 2013; 10(3): Available from: <http://www.rrh.org.au/articles/subviewnew.asp?ArticleID=1420>.
- Dieleman M, Cuong PV, Anh LV, Martineau T. Identifying factors for job motivation of rural health workers in North Viet Nam. *Hum Resour Health*. 2003 Nov 5;1(1):10.
- Leshabari MT, Muhondwa EP, Mwangi MA, Mbembati NA. Motivation of health care workers in Tanzania: a case study of Muhimbili National Hospital. *East Afr J Public Health*. 2008 Apr;5(1):32-7.