

Nursing Students' Intention to Work in Rural Areas after Graduation: A Mixed Approach Study

Selina Siwakoti¹, Nanda Ram Gahatraj¹, Niranjana Shrestha¹

¹School of Health and Allied Sciences, Pokhara University, Kaski, Nepal

Corresponding author:

Selina Siwakoti, Email: celina.siwakoti@gmail.com

ABSTRACT

Background: A key issue of Human Resources for Health and constraint to Universal Health Coverage is an inequitable distribution of healthcare workers between rural and urban areas. The accessibility to health services has been found difficult in rural areas due to shortage of health workers. As final-year nursing students are the prospective human resource for health, this study aimed to assess the intention of nursing students to work in rural areas and identify the motivating and discouraging factors associated with their intention.

Methods: A cross-sectional study with mixed methods was conducted among final-year bachelor-level nursing students of Pokhara, Nepal from December 2019 to July 2020. A census method using a self-administered questionnaire was used for the quantitative method and in-depth interviews were conducted for the qualitative method. Descriptive and inferential statistics for quantitative and content analysis for the qualitative method were performed.

Results: One-third (33.3%) of the participants had the intention to work in rural areas. The motivating factors were an opportunity for career advancement (AOR: 3.8; 95% CI: 1.35-10.77), locating near to family (AOR: 3.58, 95% CI: 1.36-9.45), high salary/incentives, and high healthcare needs in rural areas; whereas discouraging factors were isolation from family and friends (AOR 4.10, 95% CI 1.34-12.52), less availability of recreational facilities (AOR 3.68, 95% CI 1.11-12.21), inadequate salary/incentives, lack of equipment and resources, low utilization of skills and knowledge and low self-perceived competency.

Conclusion: Only one-third of the participants had the intention to work in rural areas. The participants preferred to work staying with or nearby their family. The enrollment of students of rural origin/residence or background in a nursing program should be ensured. Various motivating factors like training, attractive incentives, infrastructures, and facilities should be offered to make rural jobs more attractive.

Keywords: Career intention; Job location preferences; Nursing students; Rural area

INTRODUCTION

Intention to work in rural areas is a mental state or attitude that reflects a desire or willingness to work in geographically remote areas, lack modern amenities, and are often characterized by small or isolated communities.^{1,2} According to WHO, human resource for health is defined as "all people engaged in actions whose primary intent is to enhance health". Human resources for health are the most important pillar of the healthcare system because the quality of health services is highly dependent upon the performance of healthcare providers.³ A key barrier to universal health coverage is the shortage of healthcare workers in rural areas which have been a growing concern for

public health experts around the world.⁴ The people living in remote and rural areas tend to have more health care needs but it has been found difficult to attract and retain the health workers in those areas.⁵ This disparity exists not only in developing countries but is a global, longstanding, and serious issue for healthcare system.^{5,6} Nepal's human resource system is characterized by an atypical circumstance i.e. there is a mismatch between the demand and supply of health workers. On one hand, there is an overabundance of health workers graduating from various medical and nursing schools, while on the other hand, health workers are scarce, particularly in rural areas with a low health worker-to-population ratio.⁶ The Nepal Nursing Council (NNC) had registered 85,042 Nepali Nurses (PCL and above 53,278 and

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ANM 31,764) and 842 foreign nurses till 2018 January.⁷ Though there is high production of nurses every year, Nepal experiences a critical shortage of nurses in most rural areas.

The health policymakers are in search of strategies to attract and retain health care providers in rural areas. As intention drives future action, this study aimed to assess the intention of final-year nursing students to work in rural areas after graduation and identify the factors associated with their intention.

METHODS

A mixed method with a cross-sectional design was used. The study was conducted among the final year B.Sc. Nursing, BN and BNS students of nursing colleges of Pokhara Metropolitan from December 2019 to July 2020. To collect the quantitative data, a self-administered questionnaire through online Google forms was used and for qualitative data, in-depth interviews (IDIs) using IDI guidelines were conducted through zoom meetings. During the development of the tool, five-point Likert scale was developed through an extensive literature search and expert suggestions to measure the intention to work in rural areas. Pretesting was done among 20 final-year BN students of Nepal Polytechnic Institute of Bharatpur, Chitwan. All students who met the inclusion criteria i.e. complete enumeration was used for the quantitative method. The total number of final year bachelor-level nursing students from 6 colleges was 213. The non-response rate was 10%. So, the total sample size for the quantitative method was 192. For IDI, 4 participants (2 each from B.Sc. Nursing and BN/BNS) were selected purposively. The data collected through Google forms were exported to a spreadsheet and then to Statistical Package for Social Sciences version 20 for statistical analysis. Content analysis of qualitative data was done manually through a thorough analysis of verbatim details. The findings of quantitative and qualitative data were triangulated. A Chi-square test with 5% level of significance was applied to find out the association of the dependent variable with the independent variables. Spearman's correlation was used to find the relationship between motivating and discouraging factors with the intention to work in rural areas. In multivariate analysis, the tested variables were those which showed association in bivariate analysis, and binary logistic regression was used.

Ethical approval was obtained from the Ethical Review Board of the Nepal Health Research Council (NHRC) (Ref no.: 2284). Permission was taken from all the nursing colleges in which the study was conducted. Informed consent was obtained from each participant.

RESULTS

More than half (56.8%) participants were born in urban area. Maximum (77.1%) participants had completed secondary-level schooling in an urban area. Only 28.6% of the participants had exposure to a rural area during the study period (Table 1).

The participants tended to agree (3.05) with the statement 'If I don't get a job in urban areas, then only I prefer to work in rural areas'. The statement "Working in rural areas will be my first option" was obtained as tended towards disagree (2.59) (Table 2).

The participants with an intention score >18 were categorized as having an intention to work in rural areas

whereas intention score ≤18 were categorized as having no intention to work in rural areas. (Figure 1)

Table 1: Socio-demographic characteristics of the participants (n=192)

Characteristics	Frequency(n)	Percent (%)
Age in years		
<25	130	67.7
25-30	55	28.7
>30	7	3.6
(Median age=23 years, Min=21, Max=44)		
Birthplace		
Urban	109	56.8
Rural	83	43.2
Years spent in rural areas (n=121)		
≤10 years		
75	62.0	
>10 years	46	38.0
(Median=6 years, Min.=1, Max.=25)		
Secondary level schooling		
Urban	148	77.1
Rural	44	22.9
Current family residence		
Urban	162	84.4
Rural	30	15.6
Exposure in rural area during study period		
No	137	71.4
Yes	55	28.6

Table 2: Intention to work in rural areas (n=192)

Statements	Weighted mean
I prefer to work in rural areas after graduation.	3.04
If I don't get a job in urban areas, then only I prefer to work in rural areas. †	3.05
If I have a job choice in rural or urban area both, I will choose the job in rural area.	2.72
Working in rural areas will be my first option.	2.59
I would like to work in rural areas for at least 3 years.	2.77
I am willing to work in rural areas in the context of existing salary and facilities	3.07

†Negative statement

About 66% of the participants agreed on the opportunity to practice a variety of skills or work autonomy and about 70% of the participants agreed on attractive incentives as the motivating factors to work in rural areas. The participants tend to strongly agree on high healthcare needs (4.01) as the motivating factor (table 3).

In IDI, almost all participants expressed that there is more opportunity for career development in rural areas

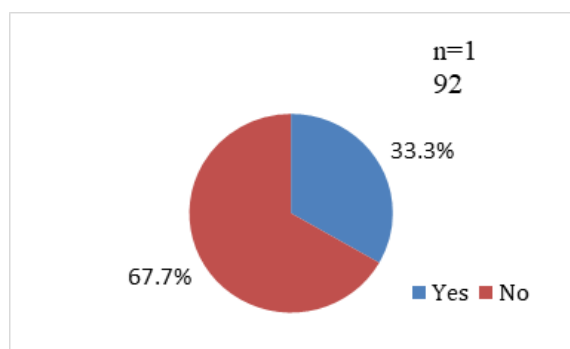


Figure 1: Intention to work in rural areas

as there is more chance of receiving training, study leave, and opportunity to learn and practice new skills if they work in rural areas.

"I have a friend who is working in a rural area. She receives training repeatedly, sometimes even 2 times a month, and also receives additional training incentives..."-P4

The participants explored that the nurses will be motivated if the salary is high and will receive additional incentives to work in a rural area.

"The main thing the nurses will be ready to go to

The participants pointed out that there is a lack of various infrastructures like transportation, communication, electricity, internet facilities, and quarters for the health workers in rural areas, and inadequate salaries, and incentives which discourage them to work in rural areas.

"The rural areas are not so advance in terms of electricity, transportation, internet facilities... umm I think we cannot live without internet in these days which may not be available in rural areas (laughsP2)."-

Results showed that the motivating factors had a low degree of positive correlation ($r=0.239$, $p=0.001$) and the discouraging factors had a low degree of negative correlation ($r=-0.235$, $p=0.001$) with the intention to work in rural areas (Table 5).

The bivariate analysis showed that the socio-demographic variables like birthplace ($p=0.004$), years spent in rural areas ($p=0.002$), secondary level schooling ($p<0.001$), current family residence ($p<0.001$), and exposure to rural areas ($p=0.02$) were found to be significantly associated with the intention to work in rural areas after their graduation (Table 6).

In IDI, the participants expressed that they would like to work in their place where they were born and spent their years. They also want to serve the people of their place.

Table 3: Motivating factors to work in rural areas (n=192)

Variables	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Weighted mean
Opportunity to practice variety of skills or work autonomy	10 (5.2%)	25 (13.0%)	30 (15.6%)	95 (49.5%)	32 (16.7%)	3.59
Better opportunity for employment	13 (6.8%)	52 (27.1%)	47 (24.5%)	59 (30.7%)	21 (10.9%)	3.12
Opportunity for career advancement	5 (2.6%)	57 (29.7%)	60 (31.3%)	56 (29.2%)	14 (7.3%)	3.09
Located near to familySW	22 (11.5%)	55 (28.6%)	46 (24.0%)	56 (29.2%)	13 (6.8%)	2.91
High health care needs of rural area	2 (1.0%)	9 (4.7%)	21 (10.9%)	113 (58.9%)	47 (24.5%)	4.01
Attractive incentives	5 (2.6%)	19 (9.9%)	35 (18.2%)	96 (50.0%)	37 (19.3%)	3.73
High prestige of the profession	5 (2.6%)	22 (11.5%)	28 (14.6%)	81 (42.2%)	56 (29.2%)	3.84
Higher preference in admission for further studies	4 (2.1%)	23 (12.0%)	50 (26.0%)	79 (41.1%)	36 (18.8%)	3.63

work in a rural area is that the income of the nurses should be good."-P2

The participants felt that there are more health care needs and fewer health care services in the rural areas as compared to the urban areas.

"The people of my village are compelled to come to Pokhara which takes about 3 hours in a bus for the treatment of minor diseases/disorders. So, if we can provide treatment of such minor disorders, my village people will be more facilitated."-P3

Majority (86.5%) of the participants agreed that poor accessibility of essential infrastructures in rural areas is the discouraging factor. Similarly, about 85% of the participants agreed that the low availability of equipment and lab facilities as the discouraging factor. The participants tend to agree on all the statements as discouraging factors (Table 4).

"I am planning to work in my place after completing my study... I would like to serve the people of my village."-P3

"First of all, I was born in an urban area. I have never spent my time in rural areas and I am not familiar with rural places... So, I never think of working in rural area"-P2

On binary logistic regression, among the motivating factors, an opportunity for career advancement (AOR: 3.8; 95% CI: 1.35-10.77) and location near to family (AOR: 3.58; 95% CI: 1.36-9.45) made the participants more likely to have the intention to work in rural areas. The participants who agreed that locating near to family as the motivating factor were 3.58 times more likely to have a rural career intention than those who disagreed. In addition, regarding discouraging factors, isolation from family and friends (AOR:

4.10; 95% CI: 1.34-12.52) and less availability of recreational facilities (AOR: 3.68; 95% CI: 1.11-12.21) made the participants less likely to have the intention to work in rural areas (Table 7).

Table 4: Discouraging factors to work in rural areas (n=192)

Variables	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Weighted mean
Poor accessibility of essential infrastructures	4 (2.1%)	13 (6.8%)	9 (4.7%)	109 (56.8%)	57 (29.7%)	4.05
Low availability of equipment and lab facilities	2 (1.0%)	10 (5.2%)	12 (6.3%)	104 (54.2%)	64 (33.3%)	4.14
Inadequacy of financial incentives	4 (2.1%)	31 (16.1%)	57 (29.7%)	76 (39.6%)	24 (12.5%)	3.44
Difficult to develop skills-	-	32 (16.7%)	34 (17.7%)	78 (40.6%)	48 (25.0%)	3.74
Isolation from family and friends	3 (1.6%)	24 (12.5%)	26 (13.5%)	92 (47.9%)	47 (24.5%)	3.81
Less availability of recreation facilities and technologies	5 (2.6%)	26 (13.5%)	36 (18.8%)	89 (46.4%)	36 (18.8%)	3.65
Few opportunities to continue education	3 (1.6%)	29 (15.1%)	44 (22.9%)	93 (48.4%)	23 (12.0%)	3.54
Safety and security problems	5 (2.6%)	24 (12.5%)	37 (19.3%)	79 (41.1%)	47 (24.5%)	3.72

Table 5: Spearman's correlation between motivating and discouraging factors with the intention to work in rural areas

	Correlation coefficient	p-value
Motivating factors	0.239	0.001**
Discouraging factors	-0.235	0.001**

**Correlation is significant at p-value <0.01

Table 6: Relationship between intention to work in rural areas with socio-demographic variables by using binary logistic

Variables	Unadjusted		Adjusted	
	UOR(95% CI)	p-value	AOR(95% CI)	p-value
Birthplace	2.44 (1.32-4.51)	0.004*	2.43 (0.82-7.15)	0.10
Rural				
Urban				
Years spent in rural areas	3.34 (1.54-7.22)	0.002*	0.92 (0.27-3.12)	0.90
> 10 years				
≤ 10 years				
Secondary level schooling	4.76 (2.33-9.70)	<0.001**	2.36 (0.63-8.75)	0.197
Rural				
Urban				
Current family residence	4.49 (1.98-10.17)	<0.001**	1.94 (0.61-6.15)	0.258
Rural				
Urban				
Exposure in rural areas during study period	2.09 (1.09-4.00)	0.02*	0.83 (0.28-2.43)	0.74
Yes				
No				

Table 7: Relationship between intention to work in rural areas with motivating and discouraging factors by using binary logistic

Variables	Unadjusted		Adjusted	
	UOR (95% CI)	p-value	AOR (95% CI)	p-value
Opportunity to practice variety of skills or work autonomy				
Disagree	1.00			
Neutral	0.61 (0.16-2.34)	0.47	0.193 (0.03-1.08)	0.06
Agree	2.86 (1.16-7.04)	0.02*	1.01 (0.30-3.35)	0.98
Opportunity for career advancement				
Disagree	1.00			
Neutral	1.931 (0.84-4.44)	0.12	1.48 (0.51-4.32)	0.46
Agree	3.716 (1.69-8.15)	0.001**	3.8 (1.35-10.77)	0.01*
Locating near family				
Disagree	1.00			
Neutral	0.94 (0.41-2.15)	0.88	1.02 (0.31-3.33)	0.96
Agree	2.17 (1.09-4.34)	0.02*	3.58 (1.36-9.45)	0.01*
Low availability of equipment in rural areas				
Disagree	4.46 (1.28-15.47)	0.01*	1.91 (0.32-11.24)	0.47
Neutral	1.11 (0.32-3.87)	0.86	0.25 (0.03-1.75)	0.16
Agree		1.00		
Inadequacy of financial incentives				
Disagree	2.98 (1.32-6.75)	0.009*	2.51 (0.86-7.29)	0.09
Neutral	2.97 (1.47-6.01)	0.002*	1.65 (0.63-4.31)	0.30
Agree		1.00		
Difficult to develop skills				
Disagree	2.6 (1.17-5.75)	0.01*	1.84 (0.56-5.99)	0.30
Neutral	1.6 (0.72-3.56)	0.24	1.02 (0.33-3.11)	0.96
Agree		1.00		
Isolation from family and friends				
Disagree	1.50 (0.63-3.58)	0.35	1.28 (0.34-4.80)	0.70
Neutral	3.49 (1.47-8.27)	0.004*	4.10 (1.34-12.52)	0.01*
Agree		1.00		
Less availability of recreational facilities				
Disagree	2.6 (1.16-5.86)	0.02*	1.48 (0.42-5.20)	0.53
Neutral	2.23 (1.03-4.80)	0.04*	3.68 (1.11-12.21)	0.03*
Agree		1.00		

DISCUSSION

The study revealed that only one-third (33.3%) of the participants had the intention to work in rural areas after graduation. In contrast to these findings, a study conducted in Australia revealed that the majority (60.2%) of the participants had the intention to work in rural areas.⁸ This might be because the rural areas in Australia are more developed than that in Nepal. A cross-sectional survey conducted in selected countries of Asia and Africa showed that only a fourth (24%) of nursing students anticipated having a rural career which is less than one third, the finding of this study.⁹

The bivariate analysis showed an association between birthplace ($p=0.004$) and secondary-level schooling ($p<0.001$) with the intention to work in rural areas. The study conducted in medical colleges of Nepal also showed a significant association between the intention and being

born in a village (AOR: 5.2; 95% CI: 1.7– 15.5).¹⁰ Likewise, a study conducted in South Africa, Mali, and Indonesia also showed similar findings.¹¹⁻¹³ The significant association between exposure in rural areas during the study period and intention to work in rural areas from our study is found to be similar to the studies conducted in Tasmania and New Mexico which also showed that the intention to work in rural setting increased after the rural placement or exposure to rural practicum.^{14,15}

A significant association was found between career advancement as the motivating factor and the intention to work in rural areas (AOR: 3.8; 95% CI: 1.35-10.77). It was also supported by the qualitative analysis in this study as participants expressed that they will get an opportunity for career advancement if they work in rural areas. A similar finding was reported in a study conducted in Ethiopia.¹⁶ However, a study from Indonesia

showed that opportunity for career advancement made the participants less likely to choose a rural career.¹⁷ This could be because the health workers working in rural areas of Nepal get more opportunities for training, further studies which might not be in Indonesia. Locating near to the family as a motivating factor (AOR: 3.58; 95% CI: 1.36-9.45) and isolation from family and friends (AOR: 4.10; 95% CI: 1.34-12.52) as a discouraging factor both were found to be significantly associated with the intention to work in rural. It was also supported by the qualitative findings that the participants preferred to work staying with or nearby to their family. However, a study from Ethiopia showed no association between locating near family and rural job intentions.¹⁶

This study showed that the low availability of recreational facilities had a significant association with the intention to work in rural areas (AOR: 3.68; 95% CI: 1.11-12.21). A study conducted in Nepal also revealed that about 62% of participants reported the reason they were unwilling to serve in rural areas was the lack of adequate facilities.¹⁸

The study has some limitations. Due to the COVID-19 pandemic, all the students couldn't be included in the study as few of them were out of internet access. This study explored only the intention of working in rural areas among nursing students, further studies may be required to assess their decision to settle in rural areas.

CONCLUSION

One-third of the participants had the intention to work in rural areas after graduation. The motivating factors to work in rural areas were: opportunity for career advancement, locating near to family, high salary and incentives, high health care needs in a rural area, high prestige, and work autonomy whereas the discouraging factors were isolation from family and friends, less availability of recreational facilities, lack of essential infrastructures, inadequate salary and incentives, lack of equipment and resources, low utilization of skills and knowledge and low self-perceived competency. Maximum exposure to rural area during study period might increase the intention to work in rural parts of the country. Various training, study leave, further education opportunities should be provided to the nurses working in rural areas.

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