

## Research Article

# Job Intentions of Nurses Trained in Public and Private Institutions in Tamil Nadu, India: A Cross-Sectional Study

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### Abstract

**Background and Aim:** Over the past decade, there has been a significant increase in the number of nurse training institutions in Tamil Nadu (TN). Despite the high production of nurses, state experiences acute shortage in absorbing them back to the health system. This paper compares the characteristics and job intentions of nurses trained in public, private, and mission institutions in TN and analyze its associated factors. **Methods:** A cross-sectional survey of 758 final year nursing students was conducted in 2014 in TN. Stratified random sampling was used to select institutions. Self-administered questionnaires were used to collect information. Chi-square, ANOVA, and logistic regressions were used for data analysis. **Results:** Multivariate analysis showed that female nurses (odds ratio [OR]: 4.38, [95% confidence interval [CI]: 1.99–9.65]), and students from lower castes (OR: 2.63, [95% CI: 1.48–4.67]), those educated in their mother tongue in high school (OR: 1.68, [95% CI: 1.15–2.46]), and who were motivated by helping others (OR: 1.66, [95% CI: 1.10–2.48]) were more likely to take up a job within TN. Students showed a strong preference to work in public sector regardless of the type of training institution. Lower caste students (OR: 2.76, [95% CI: 1.50–5.07]), students educated in their mother tongue in high school (OR: 1.92, [95% CI: 1.30–2.80]) were more likely to intend working in public sector. **Conclusion:** Given the high preference for public sector jobs and low absorption of nurses in public sector, government should regulate the rapid growth in nurse training institutions and develop necessary policy to enhance employment opportunities for nurses in the state.

**Key words:** India, job intentions, job market, nursing students

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## Background

Nurses form an essential component of the health-care system of a country. The 2006 World Health Report highlighted the critical shortage of both nurses and nursing faculty in 57 countries, including India.<sup>[1]</sup> In India, the 12<sup>th</sup> 5-year plan document highlights the scarcity of nurses and midwifery at the country level.<sup>[2]</sup> While this observation is correct at the

country level, the four southern states, namely, Tamil Nadu (TN), Kerala, Karnataka, and Andhra Pradesh account for 78% of nursing institutions offering Bachelor and Master of Science in Nursing (BSc.[N]) in India.<sup>[3]</sup> In the past 5 years, TN has witnessed a significant increase in the number of private institutions for training nurses and midwives. There were 40 private nursing colleges offering BSc.(N) degree in 2006. By 2014, there were 165 private colleges – these include both for-profit and missionary hospitals (which are non-profit oriented). In the meantime, the public sector has not been growing as quickly, increasing from two colleges in 2006 to four colleges in 2014. It should be noted that excess production of nurses in the state does not mean that there is no shortage of nurses (as per official norms) in public or private facilities<sup>a</sup>. Acute shortage of human resources, particularly paramedical staff, in public facilities continues to constrain the effective functioning of public health system across the country.

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<sup>a</sup> This paper does not go into the reasons for shortage of nursing staff in public sector. But suffice to say here that acute and prolonged vacancies in public sector are not uncommon in India.

In addition to nurses who complete the BSc.(N) degree in 4 years, there are also diploma holders who are trained for 3.5 years and compete for similar job opportunities. By 2014, TN had the capacity to produce 14,330 nurses per year (including BSc.[N] and diploma holders)<sup>b</sup> through public and private institutions.<sup>[4]</sup> Assuming about 10% of the capacity is not filled; the state produces nearly about 13,000 nurses<sup>c</sup>. Evidently, there is no shortage in the production of nurses in the state of TN.

It is widely accepted (among policymakers) that a large number of nurses trained in TN migrate to other states of India, and later to other countries as well, due to lack of employment opportunities within the state. They share the view that the nursing institutions in southern states (TN in particular) fill in the “need for nurses” in parts of India where there is an acute shortage of nurses.<sup>d</sup>

## Scope and Specific Objectives of the Study

Given the above scenario of the nursing market in TN, this study throws light on the following questions: What are the expectations of the nursing students trained in TN? To put it differently, what are the job-preferences, where would they like to work, and what motivates them to enter the nursing profession as a career?

The present study looks at the job-intentions and also examines the factors influencing their intentions and decisions to enter the nursing profession. The specific objectives of this study are: (a) Compare the personal characteristics, work intentions of nurses trained in public and private institutions, and (b) analyze the various factors that influence their job-preferences and career as nurses in the context of TN.

The rest of the paper is presented as follows. Section 2 presents the methods used in this study. Section 3 presents the results of the survey. Section 4 draws conclusions from the results, and Section 5 concludes with policy choices for exploring job opportunities for nursing professionals in the state of TN and India in general and highlights the need for extending the scope of this study.

## Methods

### Selection of training institutions

A total of 17 nursing training institutions were sampled from 165 private and four government nursing colleges offering the

- <sup>b</sup> The primary difference between the BSc. and Diploma holders are in the nature of training that they receive. The former will have more “theoretical” inputs/courses on nursing care than the latter. The latter (Diploma holders) are supposed to be having more practical experience. Diploma-holders account for nearly 70% of all nurses trained every year in the state of TN.
- <sup>c</sup> Many private colleges find it difficult to attract adequate students, as there are several competing colleges. In many of the colleges we visited during this study more than 10% seats remained vacant. The proportion of vacant seats is much higher at the post-graduate (MSc.(N)) level.
- <sup>d</sup> Based on interviews with several officials in Tamil Nadu government.

**Table 1:** Number of nursing colleges in Tamil Nadu (2014)

Number of nursing Institutions	Public	Private		Total	
		Private-trust	Mission Deemed		
Number of nursing institutions	4	149	16	7	176
Number of institutions approached	4	12	12	7	35
Number of institutions that agreed	2	8	3	4	17

B.Sc.(N) degree across the various regions of the state of TN. The 32 districts in TN were categorized into high, medium, and low based on their human development index values.<sup>[5]</sup> Stratified random sampling was then used to randomly select four private institutions and four missionary institutions from each of the three categories of districts. In addition, we chose four government colleges and seven deemed universities offering B.Sc.(N) courses<sup>e</sup>. A letter briefing the main aim of the study and invitation was sent to all the selected nursing institutions to take part in the study. Eventually, two public institutions, three missionary, and 12 private institutions agreed to participate in the study. The details are provided in Table 1.

### Baseline survey – process

In each institution surveyed, a prior meeting was held with college officials to brief them on study objectives. All final year B.Sc. students in the study institutions were invited to take part in the study. The nature and scope of the study were explained to them in detail. Consent was obtained from students stating that their participation was purely voluntary and they could withdraw from the study at any point of time. They were also assured that the information provided by them will be confidential and their names will be kept anonymous. Table 2 shows the total number of enrolled students, number of students who were present on the day of survey, and numbers that agreed to participate. It was encouraging that, among those that were present, everyone volunteered to participate in the baseline survey.

### Data collection

Self-administered questionnaires were distributed to students. Information collected included respondents’ general socio-demographic characteristics and educational background; preferences for job location (rural or urban, within or outside TN), job sector (private or public), and type of facility (hospitals, academic institutions). Finally, the questionnaire included Likert-scale questions to estimate the importance of various factors influencing their job choices.

- <sup>e</sup> There are only 4 govt colleges offering BSc course. And there are 7 private deemed medical universities offering BSc courses. These are different from private nursing colleges which are attached directly by the Directorate of Medical Education of Government of Tamil Nadu.

The research team assisted and clarified questions while students filled in the questionnaire.

**Table 2:** Response rate during the baseline survey in different types of nursing institutions

Number of students	Public	Private	Mission	Total
Number of students enrolled	98	582	147	827
Number of students present on the day of the survey	93	527	138	758
Number of students who volunteered to participate in the baseline survey	93	527	138	758
Response rate (Percent of students volunteered to those who were present on the day of survey)	100%	100%	100%	100%

## Data analysis

Survey data were entered into EpiData (version 3.1). Chi-square and ANOVA were used to compare proportions and mean scores, respectively, across the three groups of institutions. The variables that were significant at 5% levels ( $P < 0.05$ ) in the bivariate analysis were included in the final model. Logistic regressions were used to analyze the determinants of job intentions to work in the public sector and within TN state.

## Results

### Socio-economic characteristics

A total of 758 students participated in the survey carried out in 17 institutions.

Table 3 presents the socio-demographic characteristics of the nursing students trained in public, mission, and private nursing institutions. Overall, most participants (94.5%) were female students. A larger proportion of the

**Table 3:** Sample characteristics of the graduating nursing students stratified by institute type

Variables	Public n=93 (%)	Mission n=138 (%)	Private n=527 (%)	Total n=758 (%)	P-value*
Sex					
Male	9 (9.7)	4 (3.0)	29 (5.5)	42 (5.5)	0.08
Female	84 (90.3)	134 (97.0)	498 (94.5)	716 (94.5)	
Age (in years)					
Mean±SD	21.47±1.0	21.36±0.9	21.44±1.02	21.43±0.99	0.63
Social class					
Sc/St <sup>§</sup>	23 (24.7)	20 (14.7)	85 (16.9)	128 (17.5)	<0.01
Lower class	69 (74.2)	104 (76.5)	275 (54.8)	448 (61.3)	
Upper class	1 (1.1)	12 (8.8)	142 (28.3)	155 (21.2)	
Birthplace					
Village	45 (48.4)	78 (56.5)	196 (37.5)	319 (42.3)	<0.01
Small town	31 (33.3)	52 (37.7)	215 (41.1)	298 (39.5)	
City	17 (18.3)	8 (5.8)	112 (21.4)	137 (18.2)	
Language of education in high school					
English	12 (13.3)	32 (23.5)	184 (36.4)	228 (30.9)	<0.01
Mother tongue	78 (86.7)	104 (76.5)	327 (63.6)	509 (69.1)	
Mean high school score ( in percentage)					
Mean±SD	83.24±5.78	72.81±6.83	70.15±8.16	72.3±8.76	<0.01
Funding					
Only from family	52 (55.9)	46 (33.3)	223 (42.3)	321 (42.3)	<0.01
Only from bank loan	16 (17.2)	54 (39.1)	204 (38.7)	275 (36.1)	
Family+bank loan	7 (7.5)	11 (8.0)	56 (10.6)	75 (9.8)	
Others	18 (19.4)	27 (19.6)	44 (8.3)	89 (11.7)	
Average loan amount per year (USD) <sup>#</sup>					
Mean±SD	773±414	819±185	1002±417	946±389	<0.01

\*P-values are based on the Chi-square tests and ANOVA. % in the parenthesis shows the proportion of students in public, mission, and private Institutions. <sup>#</sup>Loan amount in US dollars (conversion 1 USD=63.37 INR). <sup>§</sup>Sc/St: Scheduled caste/scheduled tribe (constitutionally recognized as belonging to lowest social class), backward class refers to the lower and forward class refers to those in the upper social class. SD: Standard deviation

students in missionary institutions came from rural villages (56.5%), compared to public and private institutions. Private institutions have a greater proportion of students (28.3%) from the upper castes compared to public and missionary institutions. Students in public institutions seemed better academically (their mean high school performance was significantly higher compared to those in private and missionary institutions,  $P < 0.01$ ). Finally, students in private institutions had to borrow an average of US\$1002 annually, which was higher than students in other institutions.

**Job preferences**

Figure 1 explains the most important aspect considered by nursing students when considering a job. The patterns were significantly different for the three types of institutions (Chi-square: 24.17,  $P < 0.01$ ). A high proportion of students trained in mission (46.7%) preferred a job “where they can help others” which was significantly higher than those in public (33.3%) and private institutions (25.6%). More than

one-third of students in public (35.5%) and private (39.4%) institutions considered a “job with good salary” as their most preferred job.

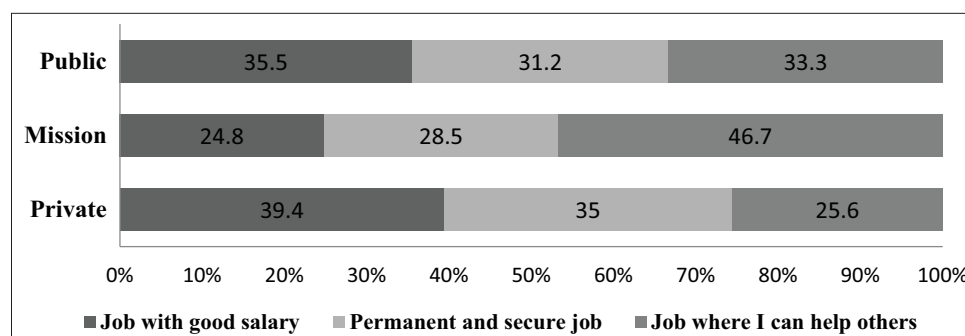
Table 4 shows the job intentions of the nursing students trained in public, mission, and private institutions. Overall, 80% of the students had intentions to work as a nurse after graduation. Among those who would want to work as a nurse, a significantly higher proportion of nursing students in public institutions expressed an interest in working within TN (81.5%), compared to those in mission and private institutions (61% and 57%, respectively). A significant proportion of nursing students from private institutions expressed the interest to work abroad (27%) when compared to public and missionary institutions (15.4% and 15.3% respectively).

Figure 2 shows the job intentions of nursing students (who wanted to work as nurses within India [468]) to work in public, mission or private facilities. A majority of students

**Table 4:** Job intentions of graduating nursing students stratified by institution type

Nurses' job intentions	Public n=93 (%)	Mission n=138 (%)	Private n=527 (%)	Total n=758 (%)	P-value*
Job intentions after graduation					
Take up a nursing job	65 (69.9)	118 (85.5)	433 (82.5)	616 (81.5)	0.06
Do not take up a nursing job	28 (30.1)	20 (14.5)	92 (17.5)	140 (18.5)	
Of those who want to take up a nursing job					
Take up a job in TN	53 (81.5)	72 (61.0)	247 (57.0)	372 (60.4)	<0.01
Take up a job in another state in India	2 (3.1)	28 (23.7)	69 (15.9)	99 (16.1)	
Take up a job in abroad	10 (15.4)	18 (15.3)	117 (27.0)	145 (23.5)	
Of those who do not want to take up a nursing job					
Higher studies in nursing	20 (71.4)	16 (80.0)	63 (68.5)	99 (70.7)	0.40
Higher studies other than nursing	2 (7.1)	3 (15.0)	16 (17.4)	21 (15.0)	
Change profession	6 (21.4)	1 (5.0)	13 (14.1)	20 (14.3)	
Job intentions of those who want to take up a nursing job in India					
Rural	17 (30.9)	38 (38.0)	90 (29.0)	145 (31.2)	0.24
Urban	38 (69.1)	62 (62.0)	220 (71.0)	320 (68.8)	
Hospital	41 (75.9)	93 (93.0)	275 (87.9)	409 (87.6)	0.02
Teaching institution	12 (22.2)	6 (6.0)	26 (8.3)	44 (9.4)	
Other	1 (1.9)	1 (1.0)	12 (3.9)	14 (3.0)	

\*P-values are from the Chi-square tests

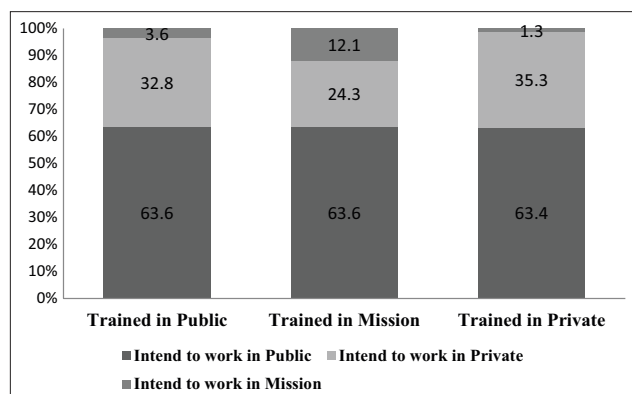


**Figure 1:** Most important factor to consider a job

(63.5%) wish to take up a government job, irrespective of the type of institution where they were trained. More students in missionary institutions (12.1%) expressed a preference for working in missionary institutions which were significantly higher (Chi-square value: 26.95,  $P < 0.01$ ) compared to those in public and private institutions (3.6% and 1.3%, respectively).

**Factors associated with job preferences**

Table 5 presents the results of the multiple regression analysis investigating the factors associated with the



**Figure 2:** Job intentions to work in public, mission, or private sector

intentions to take up a job in TN and a job in the public sector. There was no association between the type of institution and the job intentions of nursing students to work within TN or to take up a public sector job, after adjusting for other factors.

Looking at the factors associated with the intention to work in TN, we found that female nurses, students from lower castes, those who were educated in their mother tongue in high school, and those who were motivated to help others, were more likely to take up a job within TN. Students that believed they could earn more in the private sector were less likely to intend working in TN.

In relation to intentions of working in the public sector, we similarly found that lower caste students compared to upper-caste students, students who used their mother tongue in high school were more likely to intend working in the public sector. Students who believed that they could earn more in the private sector were less likely to take up a public sector job.

**Discussion**

This study investigated the intentions and preferences of final-year nursing students and is the first of its kind in TN. A number of important observations emerge from this

**Table 5:** Factors associated with taking up a job in TN and in public sector

Job intentions-associated factors	Take up job in TN <sup>@</sup>			Take up a job in public sector <sup>@@</sup>		
	OR	95% CI	P-value	OR	95% CI	P-value
Type of institution						
Public	1			1		
Private	0.94	0.56–1.55	0.80	1.38	0.80–2.38	0.23
Mission	0.77	0.43–1.37	0.38	0.84	0.45–1.55	0.58
Sex						
Male	1			1		
Female	4.38	1.99–9.65	<0.01	0.97	0.45–2.08	0.95
Social class						
Upper caste	1			1		
Lower caste	2.63	1.48–4.67	<0.01	2.76	1.50–5.07	<0.01
Sc/St <sup>§</sup>	2.38	1.51–3.76	<0.01	2.25	1.43–3.54	<0.01
Language in high school						
English	1			1		
Mother tongue	1.68	1.15–2.46	<0.01	1.92	1.30–2.8	<0.01
Rank first while considering a job						
Good salary	1			1		
Secure job	1.24	0.84–1.83	0.26	1.23	0.82–1.85	0.31
Help others	1.66	1.10–2.48	0.01	1.14	0.74–1.76	0.54
Can earn more in the private sector						
Disagree	1			1		
Agree	0.62	0.44–0.88	0.01	0.56	0.38–0.80	0.01

<sup>§</sup>Sc/St: Scheduled caste/scheduled tribe, backward class refers to the lower and forward class refers to those in the upper social class. Model summary: <sup>@</sup>Take up a job in TN (Nagelkerke R<sup>2</sup>=0.139, Hosmer and Lemeshow test: P=0.718). <sup>@@</sup>Take up a job in public sector (Nagelkerke R<sup>2</sup>=0.145, Hosmer and Lemeshow test: P-value=0.498). TN: Tamil Nadu, OR: Odds ratio, CI: Confidence interval

survey study. Most students (more than 60%) preferred a job in government facilities irrespective of whether they were trained in private, mission and public institutions, although this preference for public sector jobs was even more predominant among students from lower castes. However, the majority of students (68.8%), from all three types of training institution, indicated they would seek work in the urban areas over rural areas (31.2%). A significant proportion (23.7%) of those trained in missionary institutions intend to work outside the state of TN. Female students particularly showed stronger preferences for working within the TN state. Finally, those who had schooling in English showed a greater preference for a job in private facilities and also were more likely to want to work outside TN than those who had education in their mother tongue.

The high preference for a job in the public sector reflects the overall cultural and historical trends among various professionals in India. As Osella and Osella pointed out, holding a public sector job is considered to be a prestigious, permanent, salaried, and white-collar position. It is a symbol of prestige and security.<sup>[6]</sup> Parents aspire for their children to work in government jobs, as they consider government jobs a “life-long appointment.”<sup>[7]</sup>

A study reported that parents of children attending both government and private schools aspire that their children should get a government job. This was high among parents of male children attending government schools in rural (62.9%) and urban slums (61%).<sup>[8]</sup>

Career preference and attitude toward rural health services were assessed among graduating interns of one medical college in Bengaluru. The study reported that only 44% of the interns expressed their desire to work in rural areas. Lack of clinical infrastructure (such clinical equipment), living facility (good housing, water, electricity, etc.), connectivity, and career opportunities were the main reasons stated by students who did not want to serve rural areas.<sup>[9]</sup>

The main socio-cultural barrier faced by female students in India is where parents want a protective environment for their daughters and are less likely to send them outside their home state or abroad for education.<sup>[10]</sup> This could be one of the reasons why female students showed higher preferences to work within TN state.

Students coming from English medium schools are bold and get easily adjusted to the urban atmosphere, whereas those from vernacular medium are found nervous, diffident, and experience inferiority complex.<sup>[11]</sup> This could be an explanation to why students from English medium are more willing to work outside TN state.

An important consideration is the limitations of the study design and data collection. First, as this study is a cross-sectional survey before qualification, the results shown

indicate job intentions or preference rather than actual job choices. These students will be followed up over time to evaluate these differences. Second, social desirability bias in the ways students responded to the questionnaires. Third, there was a small sample size in the public compared to the private institution. One of the strengths of the study was that it was able to recruit all the students who were present at the time of data collection giving a response rate was 100%.

## Conclusion

The production of nurses in the state of TN is quite high, while their absorption in the public sector is very low. As a result, the nursing community is forced to explore job opportunities in other states of India and outside India.

## Future scope

From a policy perspective, an understanding of the nursing job market is essential. The government must develop policy initiatives to improve job opportunities for nurses within the state. We need to undertake further empirical research, on the actual job choices made by nurses over a period of time and its associated factors, to make valid inferences on the dynamics of the nursing market in India.

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## Ethics Approval and Consent to Participate

Ethics committee constituted by the Department of Humanities and Social Sciences, IIT Madras approved this research project. Consent was obtained from the students, and their participation was purely voluntary. No names and no personal identifier existed in the data set.

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