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# Addressing GAPS in Nursing Skills and Incentives to Boost the Healthcare Industry

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## Abstract
*Growth in the health care industry in Bangladesh, over the last few decades, has been disappointing. Its adherence to constitutional commitments and global assurances is utterly sabotaged by deficiencies of professional and technical skills in the health care arena. The gaps remain in dearth of adequate supply of qualified, experienced, and specialized nursing professionals in health care industry. In both rural and urban Bangladesh, the healthcare industry is experiencing a simple and abject scarcity of nursing skills among nurses, barring a handful of well-paid professionals in the tertiary level hospitals within the top echelons of the industry. Unsuitable skill mix of doctors and nurses, has led to over-work and miss-use of doctor's skills, overlapping of duties, insecurity for patients, loss of scarce resources and increased out-of-pocket spending for poor and middle-income families. Moreover, lack of proper training and experience affects quality of services proffered by the existing professionals in nursing and care. Curriculum and syllabus followed in nursing training are alleged to be out-of-date, with some faculty members suffering from deficiency of knowledge and modernized information. Shortage of compulsory equipment and facilities for real-world classes and clinical training are also important limitations hindering the growth of this industry.*

***Key Words:*** *Health Care Industry, Nursing Professionals, Clinical Training.*

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## 1. INTRODUCTION

Growth in the health care industry in Bangladesh, over the last few decades, has been disappointing. Its adherence to constitutional commitments and global assurances is utterly sabotaged by deficiencies of professional and technical skills in the health care arena. The gaps remain in dearth of adequate supply of qualified, experienced, and specialized nursing professionals in health care industry. In both rural and urban Bangladesh, the healthcare industry is experiencing a simple and abject scarcity of nursing skills among nurses, barring a handful of well-paid professionals in the tertiary level hospitals within the top echelons of the industry. Unsuitable skill mix of doctors and nurses, has led to over-work and miss-use of doctor's skills, overlapping of duties, insecurity for patients, loss of scarce resources and increased out-of-pocket spending for poor and middle-income families. Moreover, lack of proper training and experience affects quality of services proffered by the existing professionals in nursing and care. Curriculum and syllabus followed in nursing training are alleged to be out-of-date, with some faculty members suffering from deficiency of knowledge and modernized information. Shortage of compulsory equipment and facilities for real-world classes and clinical training are also important limitations hindering the growth of this industry.

## 2. OBJECTIVE

The purpose of this study is to analyze professionalism, performance, skills and training of nurses in Bangladesh, and manner of challenges that require strategic response from the hospital sector that utilize them, aimed at caring for humanity. Its major focus is to identify key areas of amelioration to improve nursing profession and as a corollary, nursing service standards in the hospital industry of Bangladesh.

## 3. RATIONALE

The findings of this study and the deliberations there of, would improve the level of service and state of care givers and pose as a catalyst for the effective, evidence-based, updated policies which would contribute towards progress of our health care industry. The above-mentioned rationale serves as the pivot for a research work of this category.

## 4. METHODOLOGY

A mixed method was utilized in this study to cull the information that was collated painstakingly. This was a period marked by infection and pandemic: a great upheaval and caution, prohibitions and restraints, prevailed. Both quantitative and qualitative techniques were used to give meaningful insights into the study, which could be translated to policy sensitive information and thereby build up the case for addressing gaps in nursing skills and incentives aimed at improving service, efficiency, relevance and positioning of this industry.

Information base of this study comprised of Hospitals, which were chosen randomly from a list. A sampling frame comprising of 100 (N) healthcare institutions both in the public and private sectors was formulated considering following criteria

- Resources, scope and objectives of this study;
- Exclusion of primary level facilities due to unskilled nurses;

- Inclusion of publicly known institutions for broader spectrum of responses;
- Inter and intra-variation of different health care institutions in terms of capacity and services.

Triangulation of information from 50 hospitals, 171 Nurses, 8 FGDs (with approximately 96 experts) and 32 Key Informant Interviews, adding together approximately 349 respondents' contribution, was collated and analyzed, by using quantitative and qualitative methods comprehensively. As nurses and their related specializations were the primary target, it was appropriate that enterprises running health care industries, overwhelmingly manned by nurses, should be given attention and that more emphasis be accorded to nurses. It includes both secondary and primary data that comprise of structured quantitative survey of hospitals, and employees and experts' opinion, through qualitative analysis. Various research instruments used by the study include, among others, literature review; Questionnaire Survey, comprising of both Institutions and Employees; Key Informant Interviews; and Focus Group Discussions. Institutional survey was conducted on 50 randomly selected tertiary, secondary and lower secondary level healthcare institutes (i.e. hospitals, clinics) - in both public and private sectors, located across three major cities and one district of the country, namely Dhaka, Chattogram, Rajshahi and Tangail. This methodology is unique to this study as it helped to ensure that skill specialization needs of nurses working in these specialized hospitals would be best studied in the context of future training needs on specializations, as mentioned by nurses themselves. Lower-level hospitals would not have nurses with adequate knowledge and work requirements and articulation of future training needs.

Employee survey covered 171 employees drawn from among employees of 41 of the above-mentioned hospitals and 3 other hospitals from Dhaka. Due to COVID-19 restrictions, the scope of interviewing employees (on duty) was very limited, so purposive sampling technique was utilized to conduct interview of nurses.

To complement quantitative findings, 32 Key Informant Interviews were conducted on professionals from healthcare providing institutions. The qualitative information gathered through these KIIs unveiled various aspects of healthcare, nursing, skills gap, job satisfaction, training needs and related issues. Moreover, eight Focus Group Discussions (FGDs) were conducted particularly with members of the nursing and related professions. The goal was to seek opinion and guidelines on the supply and demand for nursing profession, skills gap, policies and measures already taken or suggested. Towards collating and analyzing data, analytical tools utilized include summary statistics, frequency and percent distribution, and qualitative analysis like Key Informant Interviews and Focus Group Discussions, etc.

## 5. LITERATURE REVIEW

It is only recently that skills gap of nurses has been analyzed in a comprehensive manner, which is the prime reason for a relative scarcity in the literature regarding the lacunae in nurses' skills in Bangladesh. The SEIP-ADB BIDS study has become quite relevant in this context. Begum and Mahmood (2022) opine that in appropriate skill mix is a serious drag on the health system. Against WHO recommended ratio of 1:3:5 (doctors: nurses: technologists), the existing ratio in Bangladesh is 1:0.4:0.24 – meaning, for every doctor there are 0.4 nurse, and 0.24 medical

technicians. Based on the WHO, Bangladesh has an astounding dearth of more than a lac doctors, almost 5 lac nurses and skilled Midwives including other healthcare providers and technicians.
WHO commends a doctor nurse ratio of 1: 3; that is, 3 nurses for one doctor, which in the Bangladesh milieu chalks less than one nurse for every physician; 0.5 nurses per doctor. Based on a ratio of 1:2, the minimum projected requirement for nurse in 2030 will be 97,000 nurses. It underlines a population doctor ratio of one doctor for 4,000 people – a tremendously low-slung numeral for a highly populated and rich human resource country (Begum and Mahmood, 2022).

There are unfilled vacancies, as evident from the table below:

**Table 5.1: Types of Health Workers and Unfilled Vacancies in the Public Health-Care Sector**

| Types of Health Workers | Sanctioned Posts | Filled Posts | Vacant Posts |
|---|---|---|---|
| Nurses in Service | 32,861 | 32,189 | 672 |
| Nurses in College/Institute | 511 | 396 | 115 |
| Midwives | 2996 | 1741* | 1255 |
| Non-Nursing Staff | 1126 | 862 | 264 |
| Total | 37,494 | 35,188 | 2,306 |
| *1148 Diploma Midwives + 1600 Certified Midwives | | | |
| Source: DGNM-PMIS Report, February 2019 | | | |

The total number of Nurses in Public Health Care sector was 32,585; Nurses in Private Sector were 20,085, according to data from BNMC, 2018. Registered nurses and midwives are 83,029 (BNMC, 31May 2022). On account of dearth of skilled nurses the patients often struggle to get access to standard services. Patients suffer systemic constraints in healthcare, which has been rendered almost decrepit by the onslaught of corona virus, in the last two years. Poor service has twisted much needed care into punishment. There is basic inequality in access to healthcare of patients in the lower income bracket, and COVID-19 exacerbated it. HRH crisis exists in qualified providers (given WHO estimate for achieving SDG targets), inappropriate skills-mix and inequity in distribution, demands immediate attention from policy makers. Reducing the 'income-erosion' effect of illness through a pro-poor health system is urgently needed in Bangladesh, a country besieged with large out-of-pocket payments for healthcare (Begum, and Mahmood, 2017). This auger badly for patients beset with poverty or suffering a disability. They bear the brunt of this inimical system.
Besides the balance of nurses to doctors, the primary reason for sub-standard health service lies in the lack of specialization of nurses. The mismatch of their placement and the training they receive, the misuse of trained nurses being moved to units for which they were not prepared, on-the-job training which could only be conceptually gleaned from strict, inept supervisors; OT management could be weakly developed on account of lack of confidence and on account of being restricted to routine chores.

## 6. RESULTS OF THE QUANTITATIVE ANALYSIS

Survey for this study was conducted in 2020-2021. The following analysis draws upon the survey but it is unique to this paper alone, as it focuses upon the hospital-based responses as enterprises and nursing skills as an input. It also impinges upon the skills anomaly within specific specializations and work environment of nurses, their aspirations for training, financial needs and the way forward for the industry. Although Data has been taken from the "Labour Market and Skills Gap Analyses, Health Care-Nursing and Care, SEIP-ADB BIDS' Study", this analysis is completely exclusive for this chapter.

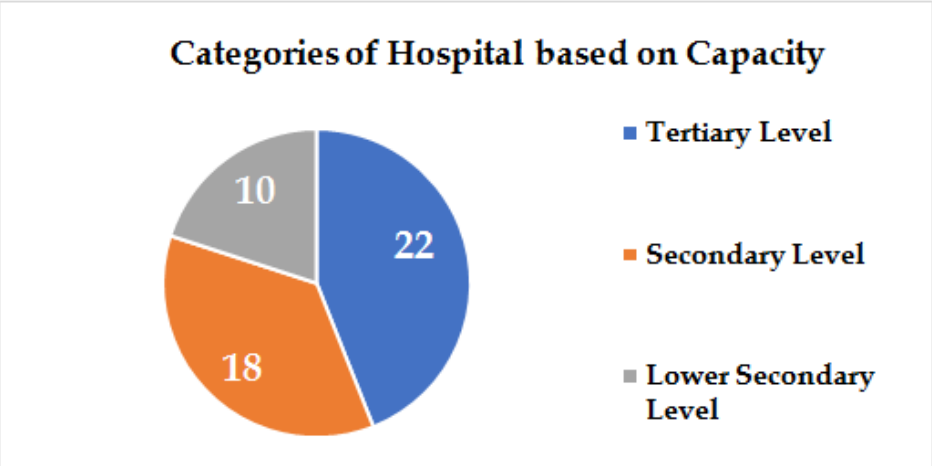


Figure 6.1: Hospital categories based on Capacity
Source: Skills Gap of Nurses Survey (BIDS, 2020)

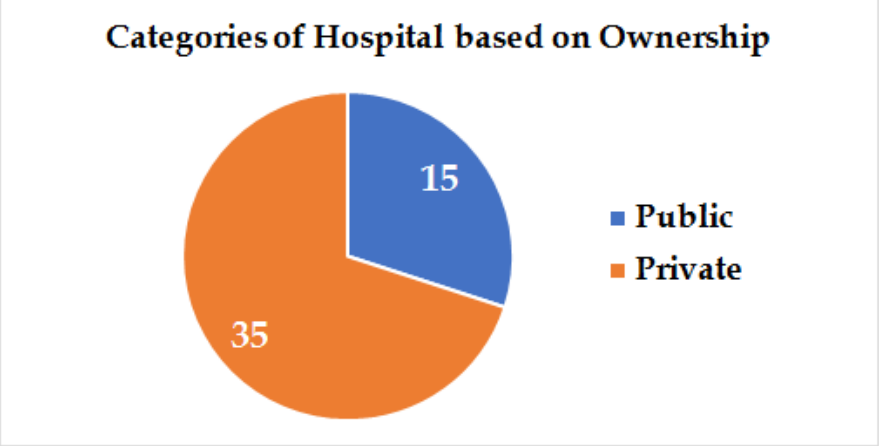


Figure 6.2: Hospital categories based on Ownership
Source: Skills Gap of Nurses Survey (BIDS, 2020)

For hospital survey analysis, we categorized hospitals based on two criteria: capacity and ownership. Based on capacity, hospitals were divided into three categories: tertiary level, secondary level, and lower secondary level. Our sample comprises 22, 10 and 18 hospitals in each category respectively (figure 6.1). Hospitals were also divided into public and private categories based on ownership status with 15 and 35 hospitals in each category respectively (figure 6.2).

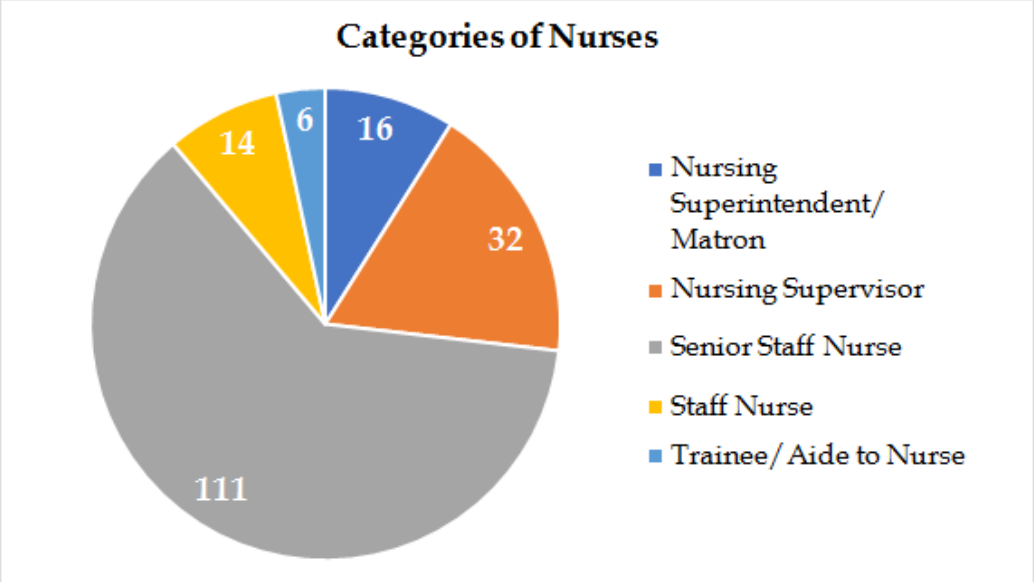


*Figure 6.3: Categories of Nurses*

Furthermore, we also divided the Nurses into five categories based on hierarchy. Nursing Superintendent/ Matron is the top most level, followed by Nursing Supervisor, Senior Staff Nurse, Staff Nurse and Trainee/Aide to Nurse. Our sample comprises 16, 32, 111, 14, and 6 nurses in each category respectively (figure 6.3). It should be noted that the categories mentioned here are not necessarily similar to their formal designation in the organization, but rather equates to their hierarchy.

***Statistical Tests Used:*** In this section, we analyzed the survey responses and conducted statistical test to determine if there are statistically significant differences among groups. We conducted three types of statistical tests:

a. **Two sample t-test:** Regarding hospital survey result, we conducted two sample t-test while comparing them based on ownership- Public and Private. Two sample t-test is used to determine whether the unknown population means of two groups are equal or not.
b. **One-way ANOVA:** We conducted one-way ANOVA to determine if there are any statistically significant differences among the groups while the numbers of groups exceed two. Regarding hospital survey, we conducted one-way ANOVA to determine if there are any statistically significant differences among group based on capacity- tertiary level, secondary level, and lower secondary level. Similarly, regarding employee survey, we

conducted one-way ANOVA to determine if there are any statistically significant differences among five categories of employees- Nursing Superintendent/ Matron. Nursing Supervisor, Senior Staff Nurse, Staff Nurse, and Trainee/Aide to Nurse.

c. **Chi-square test:** Finally, we conducted chi-square test to determine statistically significant differences among mean while analyzing a binary variable: a variable with only two possible values (yes/no, oral/written etc.)

***Interpreting Statistical Test:*** For all statistical tests, we have reported p-value output. P-value represents the lowest possible significance level for which null hypothesis would be rejected. Hence, for 5% level of significance, we conclude that there are no statistically significant differences among groups as determined by the test if p-value is more than 0.05.

## 6.1 Enterprise Survey Analysis

### 6.1.1 Employment

**Table 6.1: Employment Analysis**

| | | Number of Patient Served on Average per Month | Average Annual Salary | Average People Employed | Average Age |
|---|---|---|---|---|---|
| **Mean Value** | **Tertiary** | 62,837 | 424120 | 554 | 30.5 |
| | **Secondary** | 15,501 | 277350 | 151 | 30 |
| | **Lower Secondary** | 9,071 | 316520 | 35.8 | 31.1 |
| **ANOVA** | **p-value** | 0.015 | 0.272 | 0.0001 | 0.888 |

Initially, we look at the four key characteristics of the hospitals: Number of patients served on average per month, average salary, average number of people employed, and average age of the nurses employed. From table 6.1, based on capacity categorization, we see that tertiary level hospitals serve the most patients on average (62837) and lower secondary level hospital serve the lowest (9071), which is consistent with their basis of categorization. P-value of 0.015suggests that difference among them is statistically significant for 5% level of significance. The average number of nurses employed is 554, 151 and 35.8 for tertiary, secondary and lower secondary level respectively. P-value 0.0001 suggests that difference among them is statistically significant for 5% level of significance.

Furthermore, we see that tertiary level hospitals pay the highest average annual salary (424120) while secondary level hospitals pay the lowest (277350). The average age of nurses employed is similar for the three types of hospitals. It should be noted that difference in average annual salary and age among the three levels of hospitals are not statistically significant for 5% level of significance as indicated by one-way ANOVA test.

**Table 6.2: Employment Analysis**

| | | Number of patients served on average per month | Average Annual Salary | Average people employed | Average Age |
|---|---|---|---|---|---|
| **Mean Value** | **Public** | 82194 | 508,586 | 547 | 32 |
| | **Private** | 14399 | 277,507 | 191 | 30 |
| **t-test** | **p-value** | 0.0001 | 0.009 | 0.002 | 0.235 |

Furthermore, from table 6.2, we see the difference among hospitals, based on ownership. Public hospitals served significantly more patients than private hospitals (82,194 and 14,399 respectively), paid higher average annual salary (508,586 and 277,507 respectively), and employed more people (547 and 191 respectively). All three differences are statistically significant for 5% level of significance as indicated by two sample t-test. Average age of the nurses is 32 and 30 for public and private hospitals. However, p-value of 0.235 suggests that difference in age is not statistically significant for 5% level significance as indicated by two sample t-test.

### 6.1.2 Perception about Nature of Shortage

**Table 6.3: Perception about Nature of Shortage Analysis**

| Level of Skills of Nurses | Mean | Grouped by | Test | p-value |
|---|---|---|---|---|
| Total Absence of Required Skill | 4.88 | Capacity | ANOVA | 0.78 |
| | | Ownership | t-test | 0.29 |
| High Average Pay Required | 4.04 | Capacity | ANOVA | 0.06 |
| | | Ownership | t-test | 0.58 |
| High Turnover Rate | 5.11 | Capacity | ANOVA | 0.24 |
| | | Ownership | t-test | 0.28 |
| Difficulties Filling Vacant Posts | 4.6 | Capacity | ANOVA | 0.11 |

We measured the hospitals' perception of the nature of shortage on a scale of 1 to 10 with 1 being least difficult and 10 being most difficult. Mean value analysis in table 6.3 suggests that respondents expressed moderate views on the absence of required skill (4.88), high average pay (4.04), turnover rate (5.11) and difficulties in filling vacant positions (4.6).

For a 5% level of significance, p-value analysis reveals that difference among the absence of required skills, high average pay, turnover rate and difficulties in filling vacant positions are not statistically significant across capacity and ownership categorization.

### 6.1.3 Impact of Hard-to-fill Vacancies

**Table 6.4: Impact of Hard-to-fill Vacancies Analysis**

| Impact of Hard-to-fill Vacancies | Mean | Grouped by | Test | p-value |
|---|---|---|---|---|
| Lose Business to Competitors | 0.88 | Capacity | ANOVA | 0.98 |
| | | Ownership | t-test | 0.16 |
| Have Difficulties in Introducing New Working Practice | 1.88 | Capacity | ANOVA | 0.64 |
| | | Ownership | t-test | 0.41 |
| Increased Work Load for Other Staff | 2.08 | Capacity | ANOVA | 0.30 |
| | | Ownership | t-test | 0.10 |
| Need to Outsource Work | 0.58 | Capacity | ANOVA | 0.81 |
| | | Ownership | t-test | 0.74 |
| Difficulties Meeting Customer Service Objective | 1.7 | Capacity | ANOVA | 0.06 |
| | | Ownership | t-test | 0.05 |
| Have Difficulties Meeting Quality Standard | 1.76 | Capacity | ANOVA | 0.61 |
| | | Ownership | t-test | 0.03 |

We measured the hospitals' situation regarding impact of "hard-to–fill vacancies" on a scale of 0 to 5 with 0 indicating having very low impact and 5 indicating having very high impact. According to mean analysis from table 6.4, the respondent hospitals reported that the impact of hard-to-fill vacancies is low on losing business to competitors (0.88) and outsourcing work (0.58), and the impact is comparatively high on introducing working practices (1.88), work load of other staff (2.08) and meeting customer service objectives (1.7). Furthermore, very high p-value suggests there were no statistically significant differences among losing business to competitors, introducing working practices, work load of other staff, outsourcing work and meeting customer service objectives across capacity and ownership categorization. Furthermore, the mean of 1.76 suggests low impact of hard-to-fill vacancies on meeting quality standards. p-value 0.03 suggests that the difference in meeting quality standards is statistically significant for 5% level of significance as indicated by t-test. A closer look at STATA output reveals that public hospitals (2.33) are more likely to face difficulties in meeting quality standards than the private hospitals (1.51), which appears to be an intuitive conclusion.

**Table 6.5: Impact of Hard-to-fill Vacancies Analysis**

| Impact of Hard-to-fill Vacancies | Proportion | Grouped by | Test | p-value |
|---|---|---|---|---|
| Increasing salary | 0.53 | Capacity | Chi-square | 0.36 |
| | | Ownership | Chi-square | 0.21 |
| Using new recruitment methods | 0.43 | Capacity | Chi-square | 0.63 |
| | | Ownership | Chi-square | 0.36 |
| Recruiting workers who are foreigners | 0.17 | Capacity | Chi-square | 0.49 |
| | | Ownership | Chi-square | 0.25 |

| | | | | |
|---|---|---|---|---|
| Bringing in contractors to the work or contract it out | 0.32 | Capacity | Chi-square | 0.24 |
| | | Ownership | Chi-square | 0.66 |
| Offering training to less qualified recruits | 0.46 | Capacity | Chi-square | 0.35 |
| | | Ownership | Chi-square | 0.12 |
| Increasing training to existing workers | 0.77 | Capacity | Chi-square | 0.005 |
| | | Ownership | Chi-square | 0.34 |

Finally, we looked at how hospitals try to resolve the issues arising from "hard-to-fill vacancies". We listed some possible solutions and respondents assigned 1 if they have used it and 2 if they have not. In table 6.5 we report the proportion of respondents that assigned 1 to their answer. The proportion values suggest that hospitals are more likely to increase salary (0.53), use new recruitment methods (0.43), and offer training to less qualified recruits (0.46) that recruit foreign workers (0.17), and bring in outside contractors (0.32). Furthermore, p-value analysis reveals that the difference in increasing salary, using new recruitment methods, recruiting foreign workers, bringing in contractors or offering training to less qualified recruits are not statistically significant difference for a 5% level of significance as indicated by Chi-square test.

Furthermore, 77% of hospital answered yes to increasing training for existing workers. However, p-value 0.005 suggests that the difference in increasing training to existing workers is statistically significant for 5% level of significance as indicated by Chi-square test. A closer look at STATA output reveals that **tertiary level hospitals (100%) are more likely to increase training to existing employees than the rest (59% and 60% for secondary and lower secondary hospitals respectively).**

### 6.2 Employee Survey Analysis

#### 6.2.1 Need for Training

**Table 6.6: Need for Training Analysis**

| Need for Training | Proportion | Test | p-value |
|---|---|---|---|
| Improving current work proficiency | 0.98 | Chi-square | 0.06 |
| Future job progression/career prospect | 0.92 | Chi-square | 0.45 |

We surveyed respondents' assessment of need for training with yes valued at 1 and no valued at 2. In table 6.6 we reported the proportion of respondents that assigned 1 to their answer. From table 6.6, the mean value 0.98 suggests that respondents believe further training will improve their current work proficiency. Similarly, mean value of 0.92 suggests respondents also believe that they need further training for job progression/career prospect. High p-value in both cases suggests there were no statistically significant differences among groups as determined by Chi-square test.

### 6.2.2 Self-Assessed Skill and Skill Demand

**Table 6.7: Self-Assessed Skill and Skill Demand Analysis**

| Skills and Demand for Skills | Mean Value | Test | p-value |
|---|---|---|---|
| Assessment about market demand for self-skill | 9.20 | ANOVA | 0.02 |
| Assessment about difficulties finding a similar or better job | 8.52 | ANOVA | 0.50 |

We surveyed respondents' self-assessment of market demand of their skill and difficulty of find a similar job with 1 being the lowest and 10 being the highest. From table 6.7, the mean value 9.20 for market demand for self-skill suggests respondents believe there is high demand for their skill. However, p-value of 0.02 suggests that for 5% significance level, statistically significant difference exists among categories. The mean values for Nursing Superintendent, Nursing Supervisor, Senior Stuff Nurse, Staff Nurse and Trainee are 9.63, 9.41, 9.21, 8.14 and 9.33 respectively. Consequently, Staff Nurses assessed market demand for their skills lower than the rest of the categories.

Furthermore, mean value of 8.52 suggests that respondents believe finding a similar or better job will be very difficult for them. The p-value of 0.50 suggests that the difference in opinion of respondents is not statistically significant for 5% level of significance as indicated by one-way ANOVA test across five categories of nurses.

### 6.2.3 Extent of Formality

**Table 6.8: Extent of Formality Analysis**

| Extent of Formality Analysis | Proportion | Test | p-value |
|---|---|---|---|
| Type of contract with employer | 0.77 | Chi-Square | 0.349 |

Furthermore, we surveyed the extent of formality in the respondents' job contract. For the type of contract, we assigned 1 to written contract and 2 to oral contract. In table 6.8, we have reported the proportion of respondents that assigned 1 to their answer. The proportion of 0.77 suggests that most of the contracts are written and high p-value suggest there were no statistically significant differences among five categories of nurses as determined by Chi-square test.

**Table 6.9: Extent of Formality Analysis (2)**

| Extent of formality | | Proportion | Test | p-value |
|---|---|---|---|---|
| Paid | No of Weekly Leave | 0.93 | Chi-Square | 0.537 |
| | Sick Leave | 0.47 | Chi-Square | 0.025 |
| | Casual Leave | 0.81 | Chi-Square | 0.675 |
| | Maternity/Paternity Leave | 0.78 | Chi-Square | 0.287 |
| | Others | 0.5 | Chi-Square | 0.865 |
| Unpaid | Weekly Holiday | 0.27 | Chi-Square | 0.327 |
| | Sick Leave | 0.32 | Chi-Square | 0.599 |
| | Casual Leave | 0.26 | Chi-Square | 0.471 |

| | | | | |
|---|---|---|---|---|
| | Maternity/Paternity Leave | 0.37 | Chi-Square | 0.611 |
| | Others | 0.36 | Chi-Square | 0.075 |
| Pension | | 0.34 | Chi-Square | 0.111 |
| Life Insurance | | 0.17 | Chi-Square | 0.182 |
| Health Insurance | | 0.15 | Chi-Square | 0.111 |
| Loan | | 0.43 | Chi-Square | 0.209 |
| Others | | 0.5 | Chi-Square | 0.645 |
| Scope for Overtime | | 0.42 | Chi-Square | 0.718 |
| Payment for Overtime | | 0.42 | Chi-Square | 0.659 |
| Information about being laid off | | 0.91 | Chi-Square | 0.012 |

For the rest of the survey questions, we assigned 1 to yes and 2 to no. In table 6.9, we have reported the proportion of respondents that assigned 1 to their answer. From table 6.9, most of the nurses get paid casual (0.81) and Maternity/paternity leave (0.78). As for unpaid leave policies, the proportion values suggest that most of the nurses do not get unpaid leave: sick leave (0.32), casual leave (0.26), or maternity/paternity leave (0.37). Similar negative responses were also observed in pension (0.34), life insurance (0.17) and health insurance policies (0.15). The proportion values for employee loan policy (0.43), scope (0.42) and payment for overtime (0.42) also exhibit a similar pattern. For 5% level of significance, the high p-values suggest there were no statistically significant differences among five categories of nurses as determined by Chi-square test.

Furthermore, the proportion value 0.91 suggests most of the employees agreed that the hospital informed them in advance before laying off. However, the p-value 0.012 suggests that only paid sick leave policies and information about being laid off showed statistically significant differences across different nurse categories for 5% level of significance. A closer look at STATA output reveals that the proportion values for being laid off for Nursing Superintendent, Nursing Supervisor, Senior Stuff Nurse, Staff Nurse and Trainee are 0.93, 0.91, 0.94, 0.69 and 0.67 respectively. Hence, trainee/aide to nurses are less likely to be laid off with advance information compared to the rest of the categories.

Finally, the proportion value of paid sick leave policy (0.47) is inconsistent among hospitals. However, the p-value 0.025 suggests that paid sick leave policies showed statistically significant differences across nurse categories. A closer look at STATA output reveals that the proportion values for paid sick leave for Nursing Superintendent, Nursing Supervisor, Senior Stuff Nurse, Staff Nurse and Trainee are 0.67, 0.59, 0.46, 0.08 and 0.5 respectively. Hence, most of the staff nurses do not get any paid sick leave, in contrast to the rest of the category.

### 6.2.4 Job Satisfaction

**Table 6.10: Job Satisfaction Analysis**

| Job satisfaction | Mean Value | Test | p-value |
|---|---|---|---|
| Employee job satisfaction | 8.44 | ANOVA | 0.003 |

In table 6.10, we look at different aspects of job satisfaction of the nurses. We looked at job satisfaction on a scale of 1 to 10 with 1 being the lowest and 10 being the highest. Mean value of 8.44 suggests most employees are very satisfied with their job. However, p-value 0.003 suggests that for a 5% level of significance, statistically significant differences exist across five categories of nurses. A closer look at the STATA output reveals that the mean values for job satisfaction for Nursing Superintendent, Nursing Supervisor, Senior Stuff Nurse, Staff Nurse and Trainee are 8.75, 8.44, 8.67, 6.71 and 7.33 respectively. Hence, staff nurse and Trainee/Aide to nurse exhibit lower job satisfaction, compared to the rest of the categories.

**Table 6.11: Job Satisfaction Analysis (2)**

| Job Satisfaction (2) | Mean Value | Test | p-value |
|---|---|---|---|
| Feel paid adequately for work done | 3.39 | ANOVA | 0.78 |
| Satisfied with job prospect, promotion and salary increase | 3.28 | ANOVA | 0.06 |
| Supervisor is knowledgeable about the job performed | 4.56 | ANOVA | 0.61 |
| Satisfied with work place safety and environment | 4.43 | ANOVA | 0.48 |
| Competitive salary package | 3.65 | ANOVA | 0.86 |
| Opportunities for training | 4.25 | ANOVA | 0.87 |
| Concerned for career advancement | 4.14 | ANOVA | 0.92 |
| Work assignment fully explained/ TOR followed | 4.63 | ANOVA | 0.93 |
| Reward / appreciation for hard work | 4.36 | ANOVA | 0.46 |

Finally, from table 6.11, we looked at different aspects of job satisfaction on a scale of 1 to 5 with 1 being strong disagreement and 5 being cogent agreement. Closer inspection of mean value suggests nurses, on average, are neutral or slightly happy about current salary (3.39), job prospect (3.28), salary package (3.65) and slightly happy or satisfied about knowledgeable supervisor (4.56), workplace safety (4.43), training opportunity (4.25), career advancement (4.14), work assignment (4.63) and reward for hard work (4.36). For the 5% level of significance, p-value analysis reveals that there no statistically significant differences exist among five categories of nurses.

For hospital survey analysis, hospitals were categorized based on capacity and ownership. Based on capacity, hospitals were divided into three categories: Tertiary level, secondary level, and lower secondary level whereas based on ownership, hospitals were divided into two categories: public and private. Our sample consists of 22, 10 and 18 hospitals in tertiary level, secondary level, and lower secondary level respectively and 15 and 35 hospitals in public and private categories respectively. Furthermore, nurses were also based on five categories: Nursing Superintendent/ Matron is the top most level, followed by Nursing Supervisor, Senior Staff Nurse, Staff Nurse and Trainee/Aide to Nurse. Our sample comprises 16, 32, 111, 14, and 6 nurses in each category respectively. Three kinds of statistical tests were used. While conducting the survey, three kinds of statistical tests were used : two sample t-test, one-way ANOVA and

Chi-square test whereas when interpreting the results, a 5% level of significance were considered to have statistically significant differences among groups as determined by the test if p-value is more than 0.05.

Enterprise survey was conducted in three sections: employment, the hospitals' perception of the nature of shortage and impact of hard-to-fill vacancies. The results reveal that, regarding employment, tertiary level hospitals serve the most patients, pay the highest annual salary and employ the most people on average while the average age of employees employed is similar among the employees of three levels of hospitals. Based on ownership, public hospitals serve more patients, pay higher salaries and employ more people on average compared to private hospitals while the average age is similar between them. From the hospitals' perception of the nature of shortage analysis, we see that respondents expressed moderate views on the absence of required skill, high average pay, turnover rate and did not find it very simple in filling vacant posts. Lastly, the results from Impact of Hard-to-fill Vacancies reveals that, while the impact is low on losing business to competitors and outsourcing work, it is comparatively high on meeting quality standards, introducing working practices, work load of other staff and meeting customer service objectives. When looking into how hospitals try to solve these problems, we found out that hospitals are least likely to increase salary, use new recruitment methods, recruit foreign workers, bring in contractors or offer training to less qualified recruits but are likely to increase training for existing workers. Furthermore, tertiary level hospitals are more likely to increase training to existing employees than the rest.

As for the Hospital Survey; need for training, self-assessed skill and skill demand, extent of formality and job satisfaction surveys were conducted. The results reveal that, in case of need for training, respondents believe that further training will improve their current work proficiency and job progression/career prospect. The survey results from self-assessed skill and skill demand show that respondents believe finding a similar or better job will be very difficult although there is high market demand for their skills. Furthermore, Staff nurses assessed market demand for their skills lower than the rest of the categories. The results from Extent of Formality show that, for nurses, most contracts are written, get paid casual and Maternity/paternity leave and get informed about being laid-off. As for unpaid leave policies, most of the nurses do not get unpaid leave: sick leave, casual leave, or maternity/paternity leave. Similar responses were also observed in pension, life insurance and health insurance policies. Employee loan policy, scope and payment for overtime do not exhibit any consistent pattern. Furthermore, Staff nurses get fewer paid sick leave compared to the rest of the categories while trainees/aid to nurses are less likely to be laid off with advance information compared to others. The results from Job Satisfaction reveal that most employees are satisfied with their job even though they are not happy about current salary, job prospects, knowledgeable supervisor, workplace safety, salary package, training opportunity, career advancement, work assignment and reward for hard work. Furthermore, nursing supervisors indicate lower job satisfaction than the rest of categories.

More than 95% of the nurses from all types of hospitals felt the need for further training to improve their current work proficiency. Approximately 85% to 95% of nurses felt the need for future job progression. But only 17 % to 27% of them are willing to pay for their training. Four most sought after training needs for nurses of public hospitals are Cardiology, Diabetes, Dialysis,

and ICU. Five most important training needed by nurses in private hospitals are: Cardiology, ICU, Community Health, Dialysis, and Burn.

Amongst 50 different nursing occupations comprising sample nurses, most common occupations include senior staff nurse, nursing supervisor, matron, staff nurse and junior staff nurse. Though most occupations are common across public and private hospitals, certain nursing occupations would seem prevalent more in private hospitals than in public - Aide to nurse, junior nurse, junior staff nurse etc. are present in private but not in public hospitals. Public hospitals offer patients a comprehensive variety of specialized care. Higher number of nurses are attracted to public hospitals (or government service), which has given this sector an edge over private hospitals. Families of nurses prefer government jobs and with on-job training, public hospitals are able to recruit the best nurses from hospitals like Square, Ever Care and Shishu.

Top three levels of nurses facing skills shortage in public hospitals are superintendent, ICU and surgery. The corresponding levels in private hospitals include surgery, staff nurse and ICU. Included are also nurses with specialization in burn, CCU, neuro, OT, cardiology and dialysis, Cath lab, oncology, orthopedic, post-operative, etc.

## 7. QUALITATIVE FINDINGS AND DISCUSSION

The following sections have drawn upon the report prepared for SEIP-ADB, submitted in July 2022. It becomes imperative to discuss these issues as it impinges upon policy formulation.

Top three possible consequences of skills shortage in the nursing profession are (a) overwork for existing workforce, (b) poor quality healthcare service provided, and (c) slow progress in the health sector. No less important, skills shortage impedes innovations in medical science and technology.

Two important issues relate to training needs for nurses. First, some of the training needs are quite common across public and private hospitals – training in ICU, dialysis, cardiology, CCU, oncology, etc. Secondly, need for such training is more prominent in private hospitals as reflected by sheer number and as well by diversity of needs. And some of these needs are rather unique to private hospitals.

Limitations of existing institutional facilities for nurses' training, training curriculum is believed to be quite outmoded and logistical planning in training institutes is critical. Lack of practical training in nursing curriculum is most problematic. There must be enough provision for practical training of nurses and could constitute at least 50% of the entire coursework.

Three major types of suggestions were put forward by the key informants: First, enhancing the quality of training provided; on-the-job training of high quality, promotion of practical knowledge, crises management (nurses are exposed to death regularly), stamina and endurance, adaptability to new situations etc. Second recommendation is proper planning and co-ordination of management. Third, greater emphasis should be accorded to behavioral training of nurses. Communication skills of nurses have to be developed so that they become better nurses and care givers: bed-side manners, caring attitude and respect for doctors and other health personnel, have to be inculcated in nurses.

The most common need was identified as the need for specialization in critical care nurses. There is a wide array of skill sets that are required in order to be able to carry out the required duties of

the HDU, ICU, CCU units and the task simply cannot be carried out by regular nurses; Moreover, need for specialization in cardiology, oncology and dialysis were also common suggestions from the FGDs. In addition, there is need for nurses trained in Wound Management, surgical, peri-operative, burn, diabetes, hematology, transplants and plastic surgery.

## 8. CONCLUSION

Assessment of Hospitals revealed a need for training; Staff's opinion involved the self-assessed skill and skill demand. Also, the extent of formality and job satisfaction surveys reveal that, in case of need for training, respondents believe that further training will improve their current work proficiency and job progression/career prospect. From the hospitals' view, training would entail costs but improve proficiency. Short training is preferred as it entails managing the service while nurses are on leave. Thus, viewpoints were differently and tactfully couched by managers of public and private hospitals.

With regard to the future need for specialization, the most common answers were that gerontology nurses would be required due to changes in population pyramid in the future and that rehabilitation nurses would also become essential. Some respondents also mentioned the need for nurses trained in wound management, surgical, peri-operative, burn, diabetes, hematology, transplants and plastic surgery.

Referring to the actual shortage of nurses in Bangladesh, most of the respondents opined that the shortage is somewhere near three to five lacs. Although some respondents said that even 5 lacs may fall short of requirements. Considering the ratio of 1 doctor to 1 nurse (1 technician-not considered in this study); provided by WHO, all the respondents from the discussions agreed that a ratio of 1:3 (doctor to nurse ratio), is more feasible in the context of Bangladesh. As for the existing requirements of specialization, the answers obtained in all the Focus Group Discussions, were in accord.

The respondents said that all the specializations listed in our questionnaire are pertinent, and undoubtedly preferable for immediate implementation. Some respondents even added a few other training skills that they think should be included. Other than specific specializations, one very important need was spoken of by almost all the respondents. That is the need for proper etiquette or behavior training of nurses. The nurses lack the required etiquette in dealing with patients, their colleagues and the doctors.

Nurses emphasized that Community Health Training is important for them as it teaches Nurses how to manage people, create awareness among the community, so that diseases are more controlled among families and burden on health-care sector lessens. Handling cancer patients is also risky in our cultural set-up. With regard to crises coping of nurses, even hard-working nurses do not get the requisite support from hospitals. They claimed that without medicinal support, it is very difficult to cope, as salary is not adequate.

Therefore, nurses should be provided risk-allowance for the peril they face routinely. Creditable nurses should be given well-timed job improvements, through a coherent and structured organ gram, to motivate and create the right environment for high-quality service. Only then can the nurses accomplish self-efficacy and attempt additional education and specializations.

Another key issue in our discussions was the probable reason behind the existing shortage in skills in our nursing industry. A wide array of responses was obtained from the discussions. The main issue that was seen is that the nurses lack motivation and rightly so. Almost all the respondents were in agreement that there was a great shortage of nurses in the health-care sector and benefits were not in tandem with rising costs of living. Not only are the nurses not given the salary they deserve, they are not given any extra payment for the risk they undertake either. Moreover, specialization or further certification seldom translates into upward mobility opined many of the respondents. This could be the reason why the nurses are not motivated enough to pursue specializations. Even if they are, most private hospitals do not grant duty leave for specialization and training. Employers are more concerned about ensuring continuous service and thus nurses would not be given leave to pursue higher certification and training. Their attitude is highly conventional. Some of the respondents mentioned that they felt that skill shortage was present due to the fact that nurses were overloaded and could not spare any time to practice and learn their subject specializations. Neither could they acquire the resources nor were training for specialization available or easily reached.

When looking into how hospitals try to solve these problems, we found out that hospitals are least likely to increase salary, use new recruitment methods, recruit foreign workers, bring in contractors or offer training to less qualified recruits but are likely to increase training for existing workers. Furthermore, tertiary level hospitals are more likely to increase training to existing employees than the rest.

Major conclusions of the study include: (i) nursing profession in Bangladesh experiences severe skills shortage with far reaching consequences; (ii) supply side factors constitute major contributor to the perceived skills shortage; (iii) quality of nurse training demands much improvement and up gradation; (iv) lack of specialized nurses is an important aspect of nurses shortages in the country; (v) inadequate infrastructure is a serious stumbling block to increasing supply of quality nurses; (vi) concentration of nursing training facilities in major metropolis may negatively impact interest in nursing education; (vii) inadequate compensation packages are important reasons for fewer nurses in this profession; and (viii) recognition of the role played by nursing profession should be the fulcrum of management and mode of address towards mitigation of skills shortage of nurses.

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