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Nutrition Status and Associated Factors Among Preschool Children: A Cross-Sectional Study in Nepal

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Abstract: Childhood is a sensitive period, particularly in the process of human development which may affect educational and occupational opportunities in later life. It can be assumed that the children from the underdeveloped country are deprived of a proper learning environment because of their low socioeconomic status and nutrition status. Nepal is no exception to it. This study aimed to assess the nutritional status and associated factors among 3-5 years old preschool children in Rupandehi district of Nepal. A cross-sectional analytical study was conducted among 389 preschool children who were selected using multi-stage proportionate random sampling method. Chi-square test and logistic regression test statics were used to establish the association of the children's nutritional status with key variables under interest. WHO's Anthro plus and SPSS version 26 were used for data analysis. The findings indicated that more than half of the children had below the normal level of nutrition status and nearly half had a low economic background. Low family income for Height for age (HAZ) and weight for age (WAZ), and father's occupation for WAZ and BMI for age (BAZ) classification of nutrition status were found to be the most specific determinants of poor nutrition status in preschool children. Appropriate interventions such as community mobilization and parents' awareness programs on nutrition with special attention to the disadvantaged population are recommended.

Keywords: Anthropometry, Associated Factors, Caregivers, Nutritional Status, Preschool Children

1. Introduction

The normal nutritional status of preschool children is the foundation for the development of a healthy citizen which is becoming a major concern in Nepal [1]. The preschool period is an effective and cost-efficient time to ensure that all children develop their full potential and productive life for them and the progress of the nation as they are expected to grow and develop optimally and become adults who are physically, mentally, socially, and emotionally healthy [2]. However, nearly 250 million preschool children are found not to be reached their potential for proper development [3]. The returns on investment in early child development are substantial [4] as children with various potentials can develop optimally under these conditions. Balanced nutrition creates milestones for the development of the brain; plays an important role in the proliferation of the cell, deoxyribonucleic acid [DNA] synthesis, hormone metabolism and a neurotransmitter- that plays a critical role in better mental functioning [5]. Family provides for the child's economic, social and psychosocial stimulation support and the education level of parents directly affects

what is purchased to maintain a balanced diet containing high protein [6] and to minimize junk food consumption [7] which determines the nutritional status. The quality of child-rearing for their proper growth and development also depends on social class as high, middle and low-class of parents as they emphasize in children certain traits like happiness, self-control, psychosocial stimulation and hard work [8]. Poverty is one of the major factors affecting parental behaviour and child development [9]. With the immersing of poverty in a family, the direct impact goes on the children to be most affected and vulnerable. As a result their chances of survival, growth, and development are diminished [10]. Good nutrition can help reduce blood pressure and high cholesterol, improve well-being, fight off illness, recover from injury and healthy physical growth on the contrary under-nutrition may affect physical and mental growth, and its maturation [11]. Given the context, this study aimed to determine the relationship between socio-demographic factors and the nutritional status of preschool children aged 3-5 years in Rupandehi district-western Terai of Nepal.

2. Methods

2.1. Study Design

A cross-sectional quantitative analytical study design was employed among the preschool children of 3-5 years for anthropometric measurement and their primary caregivers to measure the current socio-demographic practices of the respondents based on the research problem.

2.2. Study Area

The study was conducted in three local government units (one Sub-metropolitan city, one municipality and another rural municipality) in Rupandehi district of Nepal. It is located in the western Terai region of Nepal and Lumbini-the birthplace of Lord Buddha.

2.3. Study Population and Sampling

The population of this study was 14358 preschool children aged 3-5 years from three local government units of Rupandehi district. The sample was selected through multistage random sampling with proportionate population sampling (PPS) technique. In the first phase, three local units -one Sub-metropolitan city, one municipality, and another rural municipality were selected from a simple random lottery method. The record of the total school/ECD center was collected and applied proportionate sampling technique to decide the total respondents from each selected local governmental unit in the second phase. Five school/ECD centres were selected from each local unit and kept in a systematic order to employ them in first cum first basis until the saturation of the desired sample.

The required sample size was 389 which was calculated using Cochran's formula $n = z^2pq /e^2$ with the desired precision of 5% i.e. the margin of error, 95% confident interval and 3% non-response rate. Among the 389 preschool children, 132, 167 and 90 children from the Sub-metropolitan, municipality and rural municipality respectively and their mothers/primary caregivers were finalized as a sample population and preceded data collection.

2.4. Data Collection Tool and Equipment

A structured interview schedule for primary caregivers was the tool and anthropometric measurements- weighing scale and height measuring wooden board for preschool children were the equipment of this study. For body weight measurement, a branded LCD digital weighing scale with 150kg x 100g and a minimum weighing capacity of 0.82kg was employed. The height of children was measured using a portable child height measuring wooden board of measurement range 0-120c. The device had a smoothly gliding measuring slide/wedge which had a friction feature to avoid reading parallax and assure accurate and precise measurement. Further, it had a large foot/head piece with adjustable feet for stability on uneven floors, which provided a stable base for vertical set up. The measuring slide wobbled a maximum of about 0.2 cm over full length allowing repeated accurate reading. A structured tool was developed to assess the information from the caregivers. The close ended interview schedule was broadly divided into three sections- the socio-economic, demographic and general information schedule.

2.5. Pre-test of the Tools

The interview schedule was pre-tested among 10 percent of respondents who were not included in the study, and shared with the PhD supervisor and two subject experts to get feedback on reliability and validity. For this purpose, two ECD centers, one community based and another community school based were selected. Pre-testing of tools was done to gather information on their understandability, time consumed by each question, and consistency among related variables and acceptability.

2.6. Operationalization of the Variables

The dependent variable of this study was anthropometric measurement (HAZ, WAZ and BAZ) of preschool children. The data of children's nutrition status, HAZ and WAZ were taken through direct anthropometric measurement of body weight and height and calculated by WHO Anthro plus 1.0.4 software and also categorized in to different level (normal (-1 SD $\leq$ z $\leq$+1 SD), moderate (-2 SD $\leq$ z < -1 SD; or +1 SD < z $\leq$+2 SD) and sever (z <-2 SD or z >+2 SD) of nutrition status based on WHO nutrition guideline [12].

The independent variables were the sex, the number of the children, age, types of family, religion, caste/ethnicity, father's education, mother's education, fathers' occupation, mothers' occupation and economic ranking. In this study, the economic ranking tool was adopted from the demographic health survey (DHS) and calculated from an excel worksheet. The wealth status was measured based on household properties (for example, chair, bed, radio, television, cassette player, mobile, car, motorcycle, bicycle and own land etc.)

which were measured by giving a score of '1' if they had any of the items and '0' if not. Similarly, a housing index was made by rating the condition of the roof, floor and wall of the house, fuel used to cook, and type of latrine as well as the availability of water supply. The scores were then summed to make a possible maximum score in the continuous series. The score of the wealth quintile (–0.54 to +3.48) was divided by 25% into every four categories: the poorest, poorer, rich and the richest where <1.8 was the poorest level of economic status. Likewise, from wealth quintile score >1.8 to <2.4 was categorized into poorer, from >2.5 to <2.9 richer and >2.9+ were richest.

2.7. Statistical Analysis

The data were entered in IBM SPSS 26.0 version for statistical analysis. Data were coded and classified as per the need of the objectives, research questions and nature of the variables [13]. Data analysis was done by studying and coding the responses from the interview schedule [14]. Data of nutrition status were uploaded in SPSS and converted into categorical form wherever necessary based on WHO nutrition status guidelines.

The descriptive and inferential statistics were used where *P*-value was considered significant if less than 0.05. Socio-demographic characteristics were presented as numbers (N) and percentages (%). The association between dependent and independent variables was determined from the chi-square test. Further, binary logistic regression analysis indicating the adjusted odds ratio was conducted to determine the net effects of independent variables over the dependent ones.

2.8. Ethical Consideration

Along with research proposal approval from the Office of the Dean, Faculty of Education, Tribhuvan University, an ethical approval to involve the human participants was obtained from the ethical review board of Nepal Health Research Council (NHRC: No. 2078-56/2021). Written informed consent for caregivers or parents and assent for the preschool children were obtained from the school management and primary caregivers.

3. Results

3.1. Background Characteristics

Out of the 389 preschool children, 197 (50.6%) were males and 192 (49.4%) females. Around one in ten children were at the age of three, 45% four years and 45.5% children found at the age of five. Most parents (72%) were having two or less than two children while 28% had more than two. By caste/ethnicity, 13.6% Dalit, 28.3% Janjaati, 23.1% non-Dalit Tarai caste group and 35% possessed an advantageous caste. Similarly, by religion, the majority of the respondents (94.3%) were Hindu, 2.2% Buddhist and 303% belonged to other (Christian and Islam) religions. More than half of the population (52.4) belonged to a joint family followed by 47.6% in the nuclear family (Table 1).

Table 1. *Background characteristics of preschool children.*

Background Characteristics	No.	%
Sex		
Male	197	50.6
Female	192	49.4
Age (Mean 4.35±0.64)		
Three years	37	9.7
Four years	175	45
Five years	177	45.5
Number of children		
Less than or equal to 2	280	72
More than 2	109	28
Caste/ethnicity	53	13.6
Dalit	110	28.3
Janajati	90	23.1
Non-Dalit Terai caste	136	35
Advantages caste		
Religion		
Hindu	367	94.3
Buddhist	9	2.3
Others	13	3.3
Types of family		
Nuclear	185	47.6
Joint	204	52.4
Fathers' occupation		
Job	81	20.8
Business	96	24.7
Foreign job	89	22.9
Others	123	31.6
Mothers' occupation		
Job	53	13.6
Business	60	15.4
Agriculture	92	23.7
Others	184	47.3
Fathers' education		
Illiterate (cannot read and write)	55	14.1
Basic school	193	49.6
Secondary school and above	141	36.2
Mothers' education		
Illiterate (cannot read and write)	89	22.9
Basic school	178	45.8
Secondary school and above	122	31.4
Economic ranking (Mean 2.23±0.82)		
Poorest	97	24.9
Poor	96	24.7
Rich	99	25.4
Richest	97	24.9

Similarly, the result depicts that the father of 20.8% of children's had job, 24.7% engaged in business, 22.9% were foreign employees, and 31.6% had 'other' profession. In the case of mother's occupation, 13.6% of children's mothers had job, 15.4% engaged in business, 23.7% engaged in agriculture and 47.3% of mothers had another profession.

The education levels 14.1% of children's fathers were illiterate, 49.6% had basic education and 36.2% had a secondary and above level of education. Likewise, 22.9% mothers were illiterate, 45.8% had basic level education and 31.4% had a secondary and above. The economic status of 24.9% of the household had in the poorest category, with 24.7% poor. 25.4% were rich while 24.9% belonged to the richest (Table 1).

3.2. Nutrition Status of Preschool Children

The finding that 45% of children belonged to normal HAZ

category, 36% belonged to moderate whereas 19% belonged to severe (severely stunted) category. The nutrition WAZ of 46.5% of children belonged to a normal category, 36.5% belonged to the moderate WAZ classification and 19% belonged to the severe WAZ category. Based on nutrition BAZ, the majority (58.9%) of children belonged to a normal category, 31.1% belonged to the moderate and 10% belonged to the severe BAZ category (Table 2).

Table 2. *Nutrition status of preschool children.*

Variables /Category	No.	%
HAZ/stunted (mean -1.07±1.08)		
Normal	175	45
Moderate	140	36
Severe	74	19
WAZ/wasting (mean -1.03±1.01)		
Normal	181	46.5
Moderate	142	36.5
Severe	66	19
BAZ/thinness (mean -0.52±1.06)		
Normal	229	58.9
Moderate	121	31.1
Severe	39	10

3.3. Relationship Between Associated Factors and Nutrition Status

Out of 389 preschool children, 46.2% male and 43.8% female were in the normal position of nutrition status whereas 53.8% male and 56.2% were in a low level of nutrition status. However, there was no significant relationship between HAZ score and the sex of the children (χ^2=0.234, p=>0.1). Similarly, the almost same scenario was found with WAZ and BAZ categories of nutrition status and sex of the respondents (χ^2=0.899, p=>0.1; (χ^2=1.074, p=>0.1) respectively. Similarly, age of children did not have significant association with HAZ (χ^2=0.683, p=>0.1), WAZ (χ^2=1.199, p=>0.1) and BAZ (χ^2=0.662, p=>0.1). The number of children at home had also not found a significant association with HAZ, WAZ and BAZ nutrition status as it was found (χ^2=0.839, p=>0.1; (χ^2=8.285, p=>0.1; χ^2=3.511, p=>0.1) respectively.

Based on the relationship between caste/ethnicity and nutrition status of the respondents, 47.2% Dalit children were normal HAZ category whereas more than half of them (52.8%) were malnourished. Likewise, the majority of children were under nutrition among Janajati and Non-Dalit Terai caste and 50% children were malnourished in the advantages caste based on HAZ category. It was found a significant association (χ^2=7.862, p=<0.5) with HAZ score and caste/ethnicity of the respondents and almost the same result with WAZ (χ^2=23.284, p=<0.01) and BAZ (χ^2=15.596, p=<0.01) score. Types of family either joint or nuclear did not find an association with HAZ, WAZ and BAZ nutrition status (Table 3).

Table 3. *Relationship of socio-demographic variables and nutrition status.*

Responses	HAZ			WAZ			BAZ		
	High	Low	Chi2/*p*-value	High	Low	Chi2/*p*-value	High	Low	Chi2/*p*-value
	%	%		%	%		%	%	
Sex									
Male	46.2	53.8	0.234	44.2	55.8	0.899	61.4	38.6	1.074
Female	43.8	56.2		49.0	51.0		56.2	43.8	
Age									
Three years	51.4	48.6	0.683	48.6	51.4	1.199	64.9	35.1	0.662
Four years	44.0	56.0		49.1	50.9		58.9	41.1	
Five years	46.6	55.4		43.5	56.5		57.6	42.4	
Number of child									
Less or equal to 2	46.4	53.6	0.839	51.1	48.9	8.285	61.8	38.2	3.511
More than 2	41.3	58.7		34.9	65.1		51.4	48.6	
Caste/ethnicity									
Dalit	47.2	52.8		45.3	54.7		62.3	37.7	15.596**
Janajati	48.2	51.8	7.862*	58.2	41.8	23.284**	66.4	33.6	
Non-Dalit Terai caste	32.2	67.8		25.6	74.4		41.1	58.9	
Advantages caste	50.0	50.0		51.5	48.5		63.2	36.8	
Types of family									
Nuclear	45.9	54.1	0.131	52.4	58.8	4.941	60.5	39.5	0.407
Joint	44.1	55.9		47.6	55.9		57.4	42.6	
Fathers' occupation									
Job	43.2	56.8		48.1	51.9		63.0	37.0	
Business	47.9	52.1	2.083	36.5	63.5	13.233**	46.9	53.1	19.410**
Foreign job	49.4	50.6		61.8	38.2		76.4	23.6	
Others	40.7	59.3		42.3	57.7		52.8	47.2	
Mothers' occupation									
Job	50.9	49.1		50.9	49.1		60.4	39.6	
Business	50.0	50.0	7.664	43.3	56.7	14.761 **	53.3	46.7	18.142 **
Agriculture	32.6	67.4		30.4	69.6		42.4	57.6	
Others	47.8	52.2		54.3	45.7		68.5	32.5	

Responses	HAZ			WAZ			BAZ		
	High	Low	Chi2/*p*-value	High	Low	Chi2/*p*-value	High	Low	Chi2/*p*-value
	%	%		%	%		%	%	
Fathers' education									
Illiterate	47.3	52.7		54.5	45.5		52.7	47.3	1.014
Basic level	43.0	57.0	0.611	44.6	55.4	1.732	59.6	40.4	
Secondary and above	46.8	52.2		46.1	53.9		60.3	39.7	
Mothers' education									
Illiterate	40.4	59.6		42.7	57.3		53.9	46.1	
Basic Level	46.1	53.9	0.973	46.6	53.4	0.871	61.2	38.8	1.309
Secondary and above	46.7	53.3		49.2	50.8		59.0	41.0	
Economic ranking									
Poorest	26.8	73.2		27.8	72.2		48.5	51.5	6.175
Poor	47.9	52.1	17.909**	52.1	47.9	18.195**	63.5	36.5	
Rich	51.5	48.5		53.5	46.5		63.6	36.4	
Richest	53.6	46.4		52.6	47.4		59.8	40.2	

Note: Significant at *p=<0.05 and **p=<0.01

Similarly, a significant association was found between fathers' and mothers' occupation with WAZ and BAZ classification. Fathers' and mothers' education did not have an association with the nutrition status of children however; the economic status of the family had a significant association with WAZ (χ^2=18.195, p=<0.01) and HAZ (χ^2=17.90, p=<0.01) as the majority (72.2%) of children found in the low level of nutrition status from the poorest economic background and comparatively less (47.4%) found in the low level of nutrition from richest family background based on WAZ classification. No significant association was found with BAZ classification.

Table 4. *Likelihood of socio-demographic variables and child nutrition.*

Category	HAZ			WAZ			BAZ		
	aOR	95% CI		aOR	95% CI		aOR	95% CI	
		Lower	Upper		Lower	Upper		Lower	Upper
Economic ranking									
Richest (Ref.)	***			*					
Poorest	2.849***	1.455	5.580	2.647***	1.251	5.597			
Poor	1.263	0.706	2.261	1.280	.686	2.389			
Rich	1.078	0.614	1.892	1.114	.613	2.026			
Caste/ethnicity									
Advantages caste (Ref.)									
Dalit	0.881	0.451	1.724	1.169	.598	2.455	1.028	0.508	2.082
Janajati	0.986	0.587	1.655	0.765	.459	1.352	0.926	0.532	1.611
Non-Dalit Terai caste	1.260	0.667	2.379	1.949	.942	4.112	1.693	0.863	3.321
Fathers' occupation									
Job (Ref.)				**			**		
Business				1.552	.817	2.950	1.832*	0.972	3.451
Foreign job				.605	.320	1.146	0.552*	0.280	1.088
Other				.686	.359	1.310	1.053	0.561	1.974
Mothers' occupation									
Job (Ref.)									
Business				1.145	.516	2.541	0.997	0.451	2.206
Agriculture				1.259	.448	2.895	1.527	0.692	3.367
Other				.848	.445	1.614	0.707	0.365	1.368

Note: Significant at *p<0.1,**p<0.05 and ***p<0.01; aOR = Adjusted Odds Ratio; cOR = Crude Od; CI: confidence interval
HAZ: Constant= 0.861, -2 Log likelihood = 515.803, Cox & Snell R Square =0.049, Nagelkerke R Square=0.066, Model coefficients: Chi-square=19.549, Sig.=.003
WAZ: Constant= 0.885, -2 Log likelihood = 493.901, Cox & Snell R Square =0.106, Nagelkerke R Square=0.141, Model coefficients: Chi-square=43.492, Sig.=.000
BAZ: Constant= 0.629, -2 Log likelihood = 490.103, Cox & Snell R Square =0.090, Nagelkerke R Square=0.122, Model coefficients: Chi-square=36.862, Sig.=.000

The multiple regression analysis computed the adjusted odds ratio (aOR) separately for the HAZ, WAZ and BAZ. The economic status for HAZ and WZ and father's occupation for WAZ and BAZ were found to be significantly associated. Based on their economic status, preschool children from the poorest (aOR=2.849; p=<0.01), poor (aOR=1.263), and rich (aOR=1.078) families backgrounds were more likely to have a low level of nutrition status (HAZ) as compared to the richest (p=<0.01). And based on the WAZ score, the preschool children from the poorest

(aOR=2.647; p=<0.01), poor (aOR=1.280), and rich (aOR=1.114) families backgrounds were more likely to be malnourished with compared to the richest (p=<0.1). Similarly, the children of the father who had business occupation were more likely (aOR=1.552), and less likely to foreign employment (aOR=0.455) and 'Other' occupation for a low level of nutrition status as compared to job occupation (p=<0.05) which is based on WAZ classification. Further, based on BAZ classification, the children of the father who had business occupations were more likely (aOR=1.832; p=<0.1), and less likely to foreign employment (aOR=0.455; p=<0.1) and more likely to 'Other' occupation (aOR=1.053) of a low level of nutrition status as compared to job occupation (p=<0.05).

4. Discussion

Out of the total of 389 preschool children, more than one-third of them [41.1%] were found in the normal HAZ category of nutritional status. Similarly, almost one-third [36.2%] belonged to the moderate HAZ classification whereas less than one-third [19.7%] belonged to the severe HAZ category. While measuring the nutrition status of the WAZ category, also the report found almost the same with HAZ as the majority of them were found [45.1%] in the normal category, about one-third in [36.4%] moderate and less than one-third [18.5%] belonged to severe WAZ category. However, the nutrition status of study children is based on the BAZ category, the majority of them [57.1%] found in the normal category of nutrition status, almost one-third [31.2%] belonged to moderate and very less [11.7%] are found in severe BAZ category. In total, the ratio of HAZ/stunted, WAZ/underweight and BAZ/wasting was high in the study area and the scenario of nutrition status of fewer than five years children found almost the same in rural Pakistan as stunted and wasted children of under five years were in higher percentage having significant association with the socio-demographic situation [15]. Similarly, the nutrition status of 6-59 months children was found near about the same in eastern Terai of Nepal as 41.4% of children were stunted along with 18.1% severe cases, 38.6% were underweight with 13.6% severely underweight and 25% were wasted with 9.5% severe condition [16]. In another study conducted by Shrestha et al., to 36-59 months children, 35.7% found low height for their age, 25.8% were underweight and 9.3% were found to be severely affected by malnutrition [2].

The caste/ethnicity significantly affects the children's nutrition status [HAZ, WAZ and BAZ]. Among them, Dalit and Non-Dalit Terai caste children were found more severely affected by malnutrition than Janajati and advantageous castes. A similar finding has been observed in under-five aged children in eastern Terai of Nepal as Kafle et al., discussed that the children of Dalit parents were more susceptible to malnutrition [16]. Similarly, this result is closely similar to Paudel et al., as they found that the children from the Dalit community had a low average height, weight and BMI [17]. Likewise, Gachhadar et al. found a high prevalence of malnutrition in under-five years Dalit children in Morang district, Nepal [18]. The results indicate that disadvantaged (Dalit, Janajati and Non-Dalit Terai caste) castes seemed to have less attention to the feeding behaviour and nutritional status of their preschool children.

The result indicates that parents' occupation significantly affects on nutrition status [WAZ and BAZ]. A similar finding was detected in Uganda as a mother having an agriculture job is associated with poor child nutrition [19]. Similarly, Alom et al., found in Bangaladesh that the father's occupation is one of the main contributing factors to child malnutrition in under-five age. It can be discussed that parents' occupation determines to provide nutritious food to create nutritional habits for their preschool children [20].

The economic status significantly affects on the nutrition status (HAZ, WAZ) of preschool children. A similar finding was observed by a cross-sectional study among 5-7 years children in Humla district of Nepal by Ranabhat et al., claimed that economic status is a major determinant of BMI [21]. Similarly, Kafle et al., claimed from a study in eastern Terai of Nepal that children from rich and richest families were less likely to be malnourished than poor and the poorest children [16]. Further, Alom et al., found in Bangaladesh that the economic status of the family is one of the main contributing factors of child malnutrition in under-five age [20]. It can be argued that the families from the poorest and poor economic backgrounds cannot supply nutritious food to their children, resulting in malnutrition.

5. Strengths and Limitations of the Study

The study population with required sample size, diverse ethnic, cultural and socio-economic background, and relatively high fertility rate was one of the main strengths of this study. The classification of nutrition status was done based on WHO nutrition guidelines and literature review. However, some limitations of this study need to be considered. Since the study was cross-sectional the data were obtained only on the day of the survey. The study was conducted on the children who studied in the government funded ECD centers. Therefore, it may not represent all preschool children. Further, some of the determinants of nutrition status such as family conflict and violence and habits of food practice were not included in the study.

6. Conclusion

The findings of the study suggest that more than half of the children had a below-normal levels of nutrition status and nearly half of them belonged to poor economic status. Caste/ethnicity and economic status for HAZ, caste, economic status and parental occupation for WAZ and caste and parental occupation for BAZ classification were found to be the main determinants of the nutrition status of preschool children. However, low family income for HAZ and WAZ, and father's occupation for WAZ and BAZ were the main determinants of poor nutrition status of preschool children.

7. Recommendations

In order to cope with the child malnutrition, appropriate interventions such as community mobilization and parents' awareness programs for nutrition-related activities are recommended giving special attention to the disadvantaged group of preschool children in the study area. While this study filled the knowledge in the child nutrition status establishing relationship of socio-demographic variables in Nepal and developing countries of same kind, it can reinforce formal mentoring in other context as well.

Authors' Contributions

PS collected, entered, analysed the data, and developed the manuscript, CB, RM, BD, YRU, and TRB edited the manuscript and provided constructive inputs to finalize it. All the authors read and approved the final manuscript.

Conflict of Interest

The authors have no conflict of interest to declare.

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