



Maternal Employment and Nutritional Status of Children (6 to 59 Months)

Mallika Shrestha ^{a,b*}, Sabanam Karki ^a and Nirmala Bhatta ^b

^a Health Office Parsa, Ministry of Health and Population, Parsa, Nepal.

^b Central Department of Home Science, T.U, Kathmandu, Nepal.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: <https://doi.org/10.9734/ajfrn/2025/v4i1220>

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/127979>

Original Research Article

Received: 26/10/2024

Accepted: 28/12/2024

Published: 07/01/2025

ABSTRACT

Background: Childhood malnutrition remains common in many parts of the world; the magnitude of worldwide stunting, and wasting in children under five years of age were 22.3 %, and 6.8 % respectively. Around 45% of deaths among children under 5 years of age are linked to undernutrition. In Nepal, 25% and 8% of children under five years old were stunted and wasted, respectively.

Aim: This study aimed to assess the nutritional status of children aged 6-59 months and its relationship with maternal employment.

Methodology: A cross-sectional study was conducted in Kritipur Municipality. A simple random sampling method was used to select a sample of 324 children aged 6-59 months. Anthropometric measurements of the children were conducted only after interviewing their mothers. Structured questionnaires and checklists were utilized to assess maternal employment and the nutritional status of children aged 6–59 months. The collected data were coded, entered into Epi Data 3.1 software, and analyzed using SPSS version 16. Descriptive analysis and binary logistic regression were used to explore associations between dependent and independent variables.

*Corresponding author: E-mail: shresthamallika19@gmail.com;

Results: The overall result revealed that the prevalence of stunting was 19.4%, of which 15.2% and 23.8% were in children of employed and unemployed mothers, respectively. Low weight for age was 1.8% and wasting was about 1.8%. There was a statistically significant association between maternal employment and Stunting. Moreover, chronic malnutrition (stunting) was influenced by family type, child age, caretaker, exclusive breastfeeding, and complementary feeding practices.

Conclusion: The study suggest that nutritional intervention efforts should be prioritize to enhance maternal nutritional education and expand employment opportunities and support for working mothers in the workplace.

Keywords: *Childhood Nutrition; maternal employment; malnutrition; exclusive breastfeeding practice; stunting.*

1. INTRODUCTION

Malnutrition among children under the age of five presents a formidable challenge within the realm of public health research. It exerts detrimental effects on both cognitive and physical development, while also contributing significantly to child morbidity and mortality rates (Black et al., 2013). Malnutrition is a significant burden for children under five years worldwide (WHO, 2023). It has both short-term (ill health) and long-term (impaired cognitive development, poorer educational achievement, economic productivity) consequences. It affects all geographies, age groups, rich or poor people, and all sexes at some point in their lifecycle, from infancy to old age (Fanzo et al., 2018).

It is well explained that the first five years of a child's life, including the nine months of pregnancy, are crucial to a child's overall well-being, and further development occurs at this phase (Siddhanta & Chattopadhyay, 2017). Child growth has been recognized as an essential indicator of nutritional status where underweight, stunting, and wasting are used to measure nutritional imbalances (WHO, 2023).

According to WHO 2022 report, globally only about 44% of infants 0-6 months old are exclusively breastfed. Undernutrition is a major concern, contributing to an estimated 2.7 million child deaths each year, accounting for 45% of all child mortality cases. Infant and young child feeding emerges as a pivotal domain for enhancing child survival and fostering robust growth and development. The prevalence of exclusive breastfeeding in early infancy may be in decline, as indicated by a slight reduction from about 70 to 56% between consecutive NDHS from 2011 to 2022 (Ministry of Health and Population, 2022).

Women's employment and financial independence are central to global policy

discussions on topics such as gender equality and women's empowerment (Brauner-Otto et al., 2019). In Nepal, about 68% were employed at any time in the past 12 months, and about half of married women who are employed and earn cash make decisions on how to spend their earnings (NDHS, 2022). With the increasing participation of Nepali women in the workforce, it becomes imperative to explore the potential link between maternal employment and the nutritional status of their children (Chitekwe et al., 2022). The objective of this research is to identify the nutritional status of children aged between 6 - 59 months children and its relationship with maternal employment.

1.1 Objective of the Study

1.1.1 General objective

The general objective of the study is to identify the nutritional status of children aged between 6 - 59 months children and its relationship with maternal employment in Kirtipur Municipality.

1.1.2 Specific objectives

- To assess the nutritional status of children aged between 6-59 months in Kirtipur municipality.
- To identify the exclusive breastfeeding practice between employed and unemployed mothers having children 6-59 months of age in Kirtipur Municipality.
- To determine the relationship between maternal employment and nutritional status of children aged between 6-59 months in Kirtipur Municipality.

2. MATERIALS AND METHODS

2.1 Research Design and Area

An analytical cross-sectional study design was applied in this study. Study was conducted within the boundaries of Kirtipur Municipality, an urban

area encompassing 10 wards and a total population of approximately 65,599 residents situated in the Kathmandu district, Kirtipur stands as a developed city, attracting individuals from various regions of Nepal in pursuit of employment opportunities.

2.2 Study Population and Sample Size

The target population was the children aged 6-59 months living in Kirtipur municipality. The study sample size was determined by single population proportion formula. Based on the study in Bangladesh, on nutritional status of children <5 years of age who have a working mother, the sample size for this study, 33.7% proportion (33.7% of children were wasted whose mothers were employed) was used (Department of Health Services, 2019).

The target population of children aged 6-59 months in Kirtipur municipality was about 6177 as per Kirtipur municipality data. Therefore, at 95% confidence interval and 5% margin of error, the sample size is calculated below.

$$n = \frac{Z^2 pq}{d^2}$$

Where,

n= desired sample size

Z= standard normal deviate usually at 1.96 which corresponds to 95% confidence interval (value for error)

p= prevalence of 33.7% of the children who were wasted

*q= 1-p= 1-0.337,

d= level of error 5% = 0.05

$$\text{Sample size } (n) = \frac{Z^2 pq}{d^2} = 342$$

$$\begin{aligned} \text{The final sample size} &= \frac{ss}{1 + \frac{ss-1}{pop}} \\ &= 32 \end{aligned}$$

The desired sample size is 324.

2.3 Sampling Method

Simple random sampling method (table method) was used to collect the desired information of the children aged 6-59 months since the total numbers of children were fixed.

2.4 Data Collection Techniques

Structured questionnaire and checklist were used as tool to measure the maternal employment and

nutritional status of children aged between 6 to 59 months. The questionnaire and checklist were prepared in English and then translated to Nepali. Interview technique was utilized to collect the data and anthropometric measurement was done to collect the nutrition status of children.

Data was collected through individual face-to-face interviews using structured questionnaires with the mothers. Anthropometric assessment (length, weight and height) was conducted among children aged 6 to 59 months.

2.5 Data Analysis

The questionnaire was checked at the time of data collection for completeness. Anthropometric measurement of the child was done only after interviewing the mother, followed by filling up an observation checklist to reduce data collection biases. Data was edited at the spot of collection and on the evening of the same day of data collection. Then, it was coded and entered in Epi Data 3.1 computer software with a check file and unique identifier. Following the completed data entry, it was exported to Statistical Package for Social Science (SPSS) version 16 software. After that, data cleaning was performed by rearranging data in ascending and descending way; at that moment, if any flows were found, it was corrected immediately after reviewing the records. Furthermore, an anthropometric calculation was done using the ENA for SMART app.

Descriptive analysis was done to calculate the frequency, percentage, mean and standard deviation. Binary logistic regression was applied to know the association between dependent and independent variables. Bivariate logistic regression was performed to test the existence of a significant association between dependent and independent variables, and the significant variables were further observed in the bivariate analysis and subsequently included in the multivariate logistic analysis to adjust confounding factors. Association between dependent and independent variables was assessed using odds ratio (OR) and corresponding 95% confidence interval (CI), with statistical significance defined as $p < 0.05$.

2.6 Limitation of the Study

There might be potential of recall bias in the study since the period time of exclusive breastfeeding and complementary feeding is extensive.

3. RESULTS AND DISCUSSION

3.1 Results

3.1.1 Demographic and socio-economic status of respondents

The mean age (\pm SD) of the mothers was 31.14 ± 4.52 years while the mean age of children was 33 ± 13.4 months.

Among the respondents, approximately 81.7% identified themselves as Hindu followers, making it the predominant religious group. Remarkably, the data indicates that the majority of respondents, approximately 62.6%, belonged to the Janajati group. This observation aligns with the demographic composition of Kirtipur city, where the Janajati group constitutes a substantial portion of the resident population. An overwhelming 99.7% of the respondents were found to be literate.

3.1.2 Socio-economic characteristics of respondents

Among 324 respondents, roughly, 49.1% of the respondents were classified as employed, while

the remaining 50.9% were characterized as unemployed, reflecting a relatively even split between the two categories. Approximately 59.3%, were engaged in employment within the private sector, indicating a substantial presence of private sector employment within the study population. The detail of the socio- economic characteristics of the respondent are illustrated in Table 2.

3.1.3 Child feeding practices and immunization of the child

Table 3 explains the child feeding practice and immunization as per schedule practice. About 51.3% of the respondents have good practice of initiation of breast feeding i.e. within 1 hour of birth of the child. However, it is worth noting that a small proportion, about 3.6% of the respondents, reported instances of pre-lacteal feeding within their families. Among those who practiced pre-lacteal feeding, honey feeding was the most common choice, observed in a significant majority of cases, accounting for 58.3% of such instances in the study.

Table 1. Socio-demographic characteristics of the respondents

S.no	Variables		Unemployed N= 165	Employed N= 159
1	Age of mother	≤ 30 years	66 (20.4%)	75 (23.1%)
		> 30 years	99 (30.6%)	84 (25.9%)
2	Religion	Hindu	131 (40.4%)	134 (41.5%)
		Buddhist	25 (7.7%)	27 (8.3%)
		Christian	3 (0.9%)	3 (0.9%)
		Muslim	0	1 (0.3%)
3	Ethnicity	Brahmin/Chhetri	56 (17.2%)	43 (13.3%)
		Janajati	90 (27.8%)	114 (35.2%)
		Dalit	9 (2.8%)	2 (0.6%)
		Others	4 (1.2%)	6 (1.9%)
		Brahmin/Chhetri	56 (17.2%)	43 (13.3%)
4	Education status	Educated	158 (48.8%)	165 (50.9%)
		Uneducated	1 (0.3%)	0 (0.0%)
5	Education level	Primary	4 (1.2%)	2 (0.6%)
		Secondary	43 (13.3%)	24 (7.4%)
		Higher secondary	93 (28.8%)	55 (17.0%)
		Bachelor & above	18 (5.6%)	84 (26.1%)
6	Type of family	Nuclear	92 (28.4%)	45 (13.9%)
		Joint	67 (20.7%)	120 (37.0%)
7	Age of Child	< 12 months	6 (1.9%)	7 (2.2%)
		12-23 months	27 (8.3%)	55 (17.0%)
		24-35 months	67 (20.7%)	38 (11.7%)
		36-47 months	26 (8.0%)	38 (11.7%)
		> 48 months	33 (10.2%)	27 (21.9%)
8	Sex of child	Male	74 (22.8%)	94 (29.0%)
		Female	85 (26.3%)	71 (21.9%)

Table 2. Socio-economic characteristics of mothers having child aged 6 months to 59 months

S.no	General Characteristics	Variables	No. of Respondent (324)
1	Mother employment status	Employed	159 (49.1%)
		Unemployed	165(50.9%)
2	Type of work	Agriculture	6 (3.6%)
		Government service	26 (15.2%)
		Private service	98 (59.4%)
		Labour	2 (1.2%)
		Self employed	33 (20.6%)
3	Income of mother	Below 15000	24 (15.09%)
		15000-25000	39 (24.5%)
		25000-35000	57 (35.8%)
		>35000	39 (24.5%)
4	Income of family	Below 15000	14 (0.4%)
		15000-25000	121 (37.3%)
		25000-35000	150 (46.3%)
		>35000	39 (12.03%)
5	Working distance	< 10 minutes	46 (28.2%)
		10-20 minutes	38 (23.3%)
		20- 30 minutes	50 (30.7%)
		>30 minutes	29 (17.8%)
6	Working hour	< 4 hours	5 (3.0%)
		4-6 hours	39 (23.8%)
		6-8 hours	94 (57.3%)
		> 8 hours	26 (15.9%)

Table 3. Child feeding practice and health-seeking of the mothers having child aged 6 months to 59 months

S.no	General Characteristics	Variable	Employed N= 165	Unemployed N= 159 (%)
1	Initiation of breast feeding	Within 1 hour	84 (25.9%)	85 (26.2%)
		2-4 hour	62 (19.1%)	44 (13.6%)
		5- 24 hour	15 (4.6%)	15 (4.6%)
		More than 24 hours	4 (1.2%)	15 (4.6%)
2	Pre-lacteal practice in family	Yes	10 (3%)	2 (0.7%)
		No	155 (47.8%)	157 (48.5%)
3	Type of pre-lacteal feeding	Water	2 (16.7%)	0
		Honey	7 (58.3%)	0
		Formula milk	0	2 (16.7%)
		Others	1 (8.3%)	0
4	Exclusive breastfeeding practices	<6 month	89 (27.4%)	51 (15.7%)
		≥ 6 months	76 (23.5%)	108 (33.4%)
5	Timely Initiation of complementary feeding (0.045)	Yes	94 (22.8%)	90 (14.2%)
		No	71 (28%)	69 (35%)
6	Immunization of child as scheduled	Yes	163 (50.3)	159 (49.1%)
		No	2 (0.6%)	0 (0%)

Table 4. Children under the care of family members and received maternity leaves by the mothers

S.no.	General Characteristics	Variables	Frequency (324)
1	Type of Caretaker	Family	268 (82.7%)
		Day-care	45 (13.9%)
		House help	11 (3.4%)
2	Maternal leave	< 1 month	19 (12.3%)
		1-2 months	17 (11.1%)
		2-3 months	59 (38.3%)
		> 3 months	59 (38.3%)

Source: Field survey from May 1, 2021 to June 2, 2021

Table 5. Nutritional status of children aged 6 to 59 months

S.no	General Characteristics	Variable	N (324)	%
1	Weight-for-Age Z score	Normal (>-2SD)	321	99.1
		Underweight (<-2 SD)	3	0.9
2	Height-for-Age Z score	Normal (>-2 SD)	261	80.6
		Stunted (< -2 SD)	38	11.7
		Severely stunted(<-3SD)	25	7.7
3	Weight-age-Height Z score	Normal (> -2SD)	321	99.1
		Wasted (< -2 SD)	2	0.6
		Severely wasted (< -3SD)	1	0.3
4	MUAC	Severe Acute Malnutrition (<11 cm)	5	1.5
		Malnutrition (11 cm- 12.5 cm)	20	6.2
		Risk to Acute Malnutrition (12.5 cm-13.5 cm)	31	9.6
		Well nourished (> 13.5 cm)	268	82.7

Table 6. Association of employment status with different variables

S.no	Variables	Employment status		P-value
		Employed	Unemployed	
1	Caste			0.023
	Brahmin/Chhetri	43	56	
	Janajati	114	90	
	Dalit	2	9	
	Others	6	4	
2	Height for age			0.029
	Normal	141	124	
	Stunted	10	24	
	Severely Stunted	14	11	
3	Initiation of breast feeding			0.024
	Within 1 hour	84	85	
	2-4 hour	62	44	
	5- 24 hour	15	15	
	More than 24 hours	4	15	
4	Pre lacteal feeding practice in family			0.036
	Yes	10	2	
	No	155	157	
5	Type of pre-lacteal practice			0.03
	Water	2	0	
	Honey	7	0	
	Formula milk	0	2	
	Others	1	0	
6	Practice of exclusive breastfeeding			0.01
	<6 months	76	51	
	≥6 months	89	108	
7	Initiation of complementary feeding			0.03
	< 6 months	74	46	
	≥6 months	91	112	

3.1.4 Organizational and family support

A substantial 82.7% of the respondents reported that their children were under the care of family members. Notably, a significant majority of employed mothers, approximately 93.3%,

received maternity leave as part of their employment benefits.

3.1.5 Nutritional status of children

Table 5 illustrate the nutritional status of child aged between 6 to 59 months. The study's

findings reveal that a small proportion, approximately 0.9%, of the children were categorized as underweight. Additionally, a significant 19.4% of the children exhibited stunted growth, while a minimal 0.9% were identified as wasted. Collectively, about 7.7% of the children were found to be experiencing different level of malnutrition, emphasizing the importance of addressing nutritional challenges in this population.

3.1.6 Association of employment status with different variables

The study's analysis indicated a significant association between employment status and several independent variables, including caste, height for age, initiation of breastfeeding, pre-lacteal feeding, type of pre-lacteal feeding, exclusive breastfeeding practices, and complementary food feeding practices.

3.1.7 Association of nutrition status with different variables

Table 7. Association of nutrition status (weight for age) with different variables

Variables	Weight for age		P value
	Normal Weight	Under weight	
Within 1 hour	169	0	0.02
1-4 hour	105	1	
5-24 hour	28	2	
After 24 hours	19	0	

Table 8. Association of nutrition status (height for age) with different variables

S.no	Variable	Normal height	Height for age Stunted	Severely stunted	P value
1	Child age				0.003
	< 12 months	10	0	3	
	12-23 months	64	8	10	
	24- 35 months	77	20	8	
	36-47 months	59	3	2	
	>48 months	55	3	2	
2	Mother's age				0.041
	< 30 years	107	21	13	
	≥ 30 years	158	13	12	
3	Family type				0.004
	Nuclear	100	20	17	
	Joint	161	19	7	
4	Mothers' employment				0.027
	Employed	140	12	13	
	Unemployed	124	27	11	
5	Type of Care taker				0.013
	Family	216	37	15	
	Day care	37	2	6	
	House help	8	0	3	
6	Immunization				0.006
	Yes	265	34	23	
	No	0	0	2	

Table 9. Association of nutrition status (weight for height) with different variables

S.no	Variable	Normal	Weight for height		P value
			Wasted	Severely wasted	
1	Initiation of breastfeeding Within 1 hour	159	0	0	0.01
	1-4 hour	115	2	0	
	5-24 hour	34	0	0	
	After 24 hour	13	0	1	

Table 10. Association of nutrition status (MAUC measurement) with exclusive breastfeeding practice

Variables	MUAC				P value
	SAM	Acute Malnutrition	Risk to acute Malnutrition	Well nourished	
Exclusive breast-feeding practice	<6 months	2	2	9	0.009
	≥6 months	3	18	22	

Table 11. Association of nutrition Status with different independent Variables

S.no.	Categories	Value	Nutrition status		P value
			Healthy	Unhealthy	
1	Family type	Nuclear	88	49	0.038
		Joint	140	47	
2	Mother's education	Illiterate	0	1	0.016
		Primary level	5	1	
		Secondary level	37	30	
		Higher secondary level	113	35	
		Bachelor level or above	73	29	
3	Pre-lacteal feeding practice	Yes	2	10	0.0001
		No	229	83	

Table 12. Association between stunting and other variables

Variable	P value	COR (CI)	Stunting P-value	AOR (CI)
Family type	0.004	0.4 (0.2-0.7)	0.04	0.5(0.2-0.9)
Employment status	0.04	0.5 (0.3-0.9)	0.3	0.7 (0.4-1.3)
Income of family	0.04	1 (0.5-1.7)	0.29	1.2(0.8-1.9)

Table 11 demonstrate the relationship between various independent variable and stunting. Those with joint family are 2 times less likely (1/OR) to have stunting among children aged 6-59 months (COR = 0.4, 95% CI: 0.2-0.7). Employed mothers are 2 times less likely (1/OR) to have stunting among children aged 6-59 months (COR = 0.5, 95% CI: 0.2-0.7). The p-value is 0.005, which indicates a statistically significant association between education level and exclusive breastfeeding.

Likewise, based on multivariate analysis, having covariates family type, employment status of mother and income of the family, the result explains that joint family are 2 times less likely (1/OR) to have stunting among children aged 6-59 months (COR = 0.5, 95% CI: 0.2-0.9).

4. DISCUSSION

Based on the NDHS 2022 report, it shows children under 5 years old are about 25% were

stunted, 19% were under weight and 8% were wasted. Likewise, if we see the data of Kirtipur municipality, about 18.2% were stunted, 0.9% were underweight, 0.9% were wasted and 7.7% were malnourished based on MUAC measurement. This explains that overall status was better than that of the national data. It suggests that the Multi-Sectoral Nutritional Plan (MSNP) aims to improve the nutritional condition of adolescent girls, breastfeeding mothers, and all children under 24 months (Dungan, 2023). Therefore, the MSNP in Nepal must be appropriately implemented for the decreasing frequency of nutritional deficiencies (Fanzo et al., 2019; Dungan, 2023).

Wasting is a consequence of acute undernutrition, stunting arises from chronic undernutrition, and underweight is the outcome of both acute and chronic undernutrition. The initial 1000 days of life represent a critical period characterized by a heightened vulnerability to the development of nutritional deficiencies, and this

susceptibility often persists into childhood (Jones & Berkley, 2014).

Stunting among children under the age of five has emerged as a significant global health challenge, particularly impacting low- and middle-income nations. This issue carries the potential for adverse consequences, including impaired physical development and enduring health effects. It's essential to recognize that wasting arises from acute undernutrition, stunting is a result of chronic undernutrition, and underweight is attributed to both acute and chronic undernutrition. The initial 1000 days of a child's life represent a critical window marked by a heightened susceptibility to nutritional deficiencies, and this vulnerability often persists into childhood, underscoring the need for targeted interventions to address these concerns (Jones & Berkley, 2014).

While a significant body of literature has previously linked parental education status with child stunting, suggesting that mothers with higher educational attainment make better decisions for their children's nutritional well-being, the present study presents a different perspective. It does not find any such associations between parental education and child stunting, challenging the conventional understanding of this relationship (Pal et al., 2017).

Mothers who completed secondary and higher education were about four times more likely to practice EBF compared to those who were illiterate [Adjusted OR = 3.8; 95% CI (1.5, 9.5)] Intriguingly, in this study, a notable trend emerged: mothers with lower monthly household incomes exhibited a higher likelihood of ensuring good nutrition status for their children. This observation aligns with similar findings in Ethiopia and South Africa. It may be attributed to the fact that, for mothers with limited financial resources, breastfeeding often remains the most viable and cost-effective option, given the challenges associated with affording alternative foods (Kimani-Murage et al., 2021).

Though the sex of the child did not show any association with nutritional status in the study, boys were found to be at a higher risk for stunting than girls in other related studies. Such findings could result from biological fragility or may be due to feeding practice and preferences

and types of exposure directed more towards the male child. Hence, the findings of the study conflict with other studies on stunting. Parental education status has been associated with children's underweight in much of the literature, as it is argued that parents with higher educational status have a better ability to make decisions that improve children's nutritional status. However, the current study shows no such associations (Pal et al., 2017).

Women's employment and financial independence have become crucial aspects of advancing gender equality and empowering women. In 2022, the global average workforce participation of women was 39.49%, with Nepal's rate recorded at 38.06% (Khan, 2022). By 2023, the global women's employment rate rose to 44.4% (Statista, 2024).

These statistics underscore the growing recognition of the pivotal role of women's economic empowerment in advancing gender equality and fostering women's independence (Brauner-Otto et al., 2019). Likewise, in Nepal, a noteworthy portion of married women, comprising approximately 68%, are actively engaged in employment and enjoy financial independence. This statistic underscores the notable prevalence of economically self-sufficient married women in the nation, signaling the evolving dynamics of women's roles within the workforce and the broader economic landscape (Brauner-Otto et al., 2019).

Women's participation in the workforce often leads to an increase in household income, which, in turn, can enhance women's status and decision-making power within the family. This can foster a woman's inclination to allocate her earnings towards health and nutrition, thereby benefiting her children. However, the scenario is nuanced, as women who lack control over their income and have limited decision-making authority in matters of household finances may face constraints in taking proactive steps to improve their babies' nutritional well-being. The implications are two-fold, as maternal employment can both positively contribute to child nutrition through increased resources and potentially negatively impact child nutrition by reducing the time available for childcare, feeding, and breastfeeding while increasing the reliance on caregiving from other sources.

The study unveiled significant disparities in the prevalence of Exclusive Breastfeeding (EBF) practices, with rates of 24.8% observed among employed mothers and substantially higher rates of 82.9% among unemployed mothers in the 24 hours preceding the survey. Among employed mothers, various reasons were cited for not exclusively breastfeeding during this period. The majority of these reasons included workplace engagement by 68 (81.9%), followed by concerns about breast milk alone not being sufficient, cited by 8 (9.6%) of mothers. Additionally, decreased milk secretion was mentioned by 4 (4.8%) mothers, while maternal illness was a factor for 3 (3.6%) mothers in opting to feed their infants something other than breast milk within the past 24 hours. On the other hand, the perception that breast milk only is not enough 35 (45.5%), decreased milk secretion 34 (44.2%), and illness of the mother 8 (10.4%) were the reasons stated by the unemployed mothers for feeding their infant something other than breast milk in the past 24 h. Those mothers who were unemployed were twenty-six times more likely to practice EBF compared to those employed mothers [Adjusted OR = 26.5; 95% CI (13.6, 51.6)] (Tadesse F. et. al., 2019).

Study shown that there is a significant association between stunting and maternal employment status and a similar outcome was also seen in the study Mali, Africa. In this study, an association is seen between employed mothers and stunting. Employed mothers are 2 times less likely (1/OR) to have stunting among children aged 6-59 months. But with other covariates present, no association is seen between stunting and maternal employment. Maternal employment is not the reason of stunting but is caused by different other factors like family income, family type, caretaking practices.

5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

In summary, the study conducted a comprehensive comparison of the overall nutritional (anthropometric) status of children with employed mothers and those with unemployed mothers. Notably, a significant association was observed between stunting and maternal

employment, while no such association was found between maternal employment and other nutritional aspects, including wasting, underweight, and Mid-Upper Arm Circumference (MUAC) measurements. Wasting and underweight were specifically evident among children with employed mothers. The high prevalence of stunting observed in the study area is a matter of public health concern. Furthermore, stunting was found to be notably influenced by several factors, including maternal age, child age, maternal employment status, caregiver, and adherence to immunization schedules. While maternal academic education did not demonstrate a direct association, the research underscores the importance of a mother's knowledge in child nutrition and care practices, which significantly influences children's nutritional well-being. A high prevalence of stunting was observed among children aged 6-59 months, and this was found to be linked to factors such as low socio-demographic and socio-economic status, caregiver practices, and adherence to immunization schedules. Enhancing mothers' understanding of Infant and Young Child Feeding (IYCF) practices is expected to play a pivotal role in enhancing the nutritional well-being of children.

5.2 Recommendation

- To develop nutritional intervention initiatives that focus on supporting maternal income generation as well as education on child nutrition.
- To conduct further research work on the indifference between employed and unemployed mothers on under-five nutrition status is also recommended (a mixed method study).

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

ACKNOWLEDGEMENT

We would like to thank the Chairperson of Central Department of Home Science Lecturer Mrs. Santosh Giri and respected supervisor, faculty Mrs. Nirmala Bhatta PhD for their continuous motivation and invaluable guidance

and dynamic supervision throughout this study. We are thankful to all the study participants who provided their valuable time and cooperation in this venture

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

- Black, R. E., Victora, C. G., Walker, S. P., Bhutta, Z. A., Christian, P., de Onis, M., Ezzati, M., Grantham-McGregor, S., Katz, J., Martorell, R., & Uauy, R. (2013). Maternal and child undernutrition and overweight in low-income and middle-income countries. *The Lancet*, 382(9890), 427-451. [https://doi.org/10.1016/s0140-6736\(13\)60937](https://doi.org/10.1016/s0140-6736(13)60937)
- Brauner-Otto, S., Baird, S., & Ghimire, D. (2019). Maternal employment and child health in Nepal: The importance of job type and timing across the child's first five years. *Social Science and Medicine*, 224, 94–105. <https://doi.org/10.1016/j.socscimed.2019.02.009>
- Chitekwe, S., Torlesse, H., & Aguayo, V. M. (2022). Nutrition in Nepal: Three decades of commitment to children and women. *Maternal & Child Nutrition*, 18(S1), e13229. <https://doi.org/10.1111/mcn.13229>
- Department of Health Services. (2019). *Annual Report 2077/78 (2021/22)*. Teku Kathmandu, Nepal: Department of Health Services. Retrieved August 2, 2023, from <https://dohs.gov.np/wp-content/uploads/2022/11/DoHS-Annual-Report-FY-077-78-.pdf>
- Dungan, D. (2023, September 6). Countries ranked by percentage of workforce who are women. *Qualtrics*. <https://www.qualtrics.com/blog/countries-ranked-by-female-workforce/>
- Fanzo, J., Hawkes, C., Udomkesmalee, E., Afshin, A., Allemandi, L., Assery, O., Baker, P., Battersby, J., Bhutta, Z., & Chen, K. (2019). *2018 Global nutrition report*.
- Jones, K. D. J., & Berkley, J. A. (2014). Severe acute malnutrition and infection. *Paediatrics and International Child Health*, 34(sup1), S1-S29. <https://doi.org/10.1179/2046904714Z.00000000218>
- Khan, A. M. (2022). Maternal mental health and child nutritional status in an urban slum in Bangladesh: A cross-sectional study. *PLOS Global Public Health*. <https://doi.org/10.1371/journal.pgph.0000871>
- Kimani-Murage, E. W., Wilunda, C., Macharia, T. N., Kamande, E. W., Gatheru, P. M., Zerfu, T., Donfouet, H. P. P., Kiige, L., Jabando, S., Dinga, L. A., Samburu, B., Lilford, R., Griffiths, P., Jackson, D., Begin, F., & Moloney, G. (2021). Effect of a baby-friendly workplace support intervention on exclusive breastfeeding in Kenya. *Maternal and Child Nutrition*, 17(4), 1–10. <https://doi.org/10.1111/mcn.13191>
- Nepal Demographic Health Survey (2022). *Nepal: New Era and ICF*. UNICEF. Retrieved September 2, 2023, from <https://dhsprogram.com/pubs/pdf/FR379/FR379.pdf>
- Pal, A., Pari, A. K., Sinha, A., & Dhara, P. C. (2017). Prevalence of undernutrition and associated factors. *International Journal of Pediatrics and Adolescent Medicine*, 4(1), 9–18. <https://doi.org/10.1016/j.ijpam.2016.08.009>
- Siddhanta, A., & Chattopadhyay, A. (2017). Role of women's empowerment in determining child stunting in Eastern India and Bangladesh. *Social Science Spectrum*, 3(1), 38–51. <http://www.socialspectrum.in/index.php/sp/article/view/93>
- Statista. (2024, July 4). Employment rate worldwide 2023, by gender. <https://www.statista.com/statistics/1337165/global-employment-rate-gender/>
- Tadesse, F., Alemayehu, Y., Shine, S., Asresahegn, H., & Tadesse, T. (2019). Exclusive breastfeeding and maternal employment among mothers of infants from three to five months old in the Fafan zone, Somali regional state of Ethiopia: A comparative cross-sectional study. *BMC Public Health*, 19(1). <https://doi.org/10.1186/s12889-019-7345-5>
- World Health Organization. (2021). Infant and young child feeding. Retrieved April 2, 2022, from <https://www.who.int/news-room/fact-sheets/detail/infant-and-young-child-feeding>
- World Health Organization. (2023). *World Health Malnutrition*.

Organization. https://www.who.int/health-topics/malnutrition#tab=tab_1 Survey 2022 Key Indicators Report.
Ministry of Health and Population, (2022). Demographic and Health https://dhsprogram.com/pubs/pdf/PR142/PR142.pdf?utm_source=chatgpt.com

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of the publisher and/or the editor(s). This publisher and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.

© Copyright (2025): Author(s). The licensee is the journal publisher. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:
<https://www.sdiarticle5.com/review-history/127979>