COLLEGE OF MEDICINE AND HEALTH SCIENCE

DEPARTMENT OF NURSING

THE EFFECT OF MATERNAL EMPLOYMENT ON NUTRITIONAL STATUS OF 6-59 MONTH OLD CHILDREN IN AREKIT TOWN, GURAGE ZONE ETHIOPIA 2022: COMPARATIVE CROSS-SECTIONAL STUDY

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The effect of maternal employment on nutritional status of 6-59 month old children in Arekit town city, Gurage zone Ethiopia 2022: comparative cross-sectional study

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Acronyms and abbrevation

EBF exclusive breast feeding

EDHS Ethiopian demographic health survey

EMDHS Ethiopian mini demographic health survey

GNP Gross National Product

HFA Height-for-age

MOH Ministry of health

MUAC : mid upper arm circumfrance

NGO : nongovernmental organization

SD standard deviation

SNNPR south nation nationality people's region

SPSS Statistical Package for the Social Sciences

UNICEF United nation international children's emergency fund

WFA weight-for-age

WFH weight-for-height

WHO world health organization

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Abstract

Background: Children under the age of five account for more than half of all deaths in the developing countries including Ethiopia. Malnutrition and infections are the most common cause of child death. The advancement of maternal employment assumed to have a particularly significant link to nutritional well-being of under 5 children. . Increased income tends to correlate to improved family wellbeing and, as a result, increased child food consumption and nutritional status. There is an argument that mother's income or maternal job has a direct impact on childcare, children's nutritional status, and the mother herself Such argument, however, has not been substantiated by studies from Ethiopia.

Objective: To assess the effect of maternal employment on nutritional status of 6-59 month old children in Arekit town, Gurage zone Ethiopia 2022

Methods: community based comparative cross-sectional study was conducted from April 30 – May 07. six of 12 kebeles in arekit town was used for data collection . Data was collected using a interviewer administered structured questionnaire which was pretested on another kebele. The data was entered using EpiData 3.1, and analyzed using Statistical Package for the Social Sciences (SPSS 22), and WHO anthro 3.2.2. bivariate and multivariable analysis was done taking P value 0.25 and 0.05 respectively to determine the association between maternal employment, and other variables with nutritional status of under five children.

Result: The prevalence of malnutrition (wasting, stunting and underweight) among children of employed and unemployed mothers was found to be 10%, 20.8% and 7.0 %, respectively. Wasting was found to be s associated with being, family and home. Stunting appeared to be influenced more by maternal education status (unable to read and write) and age of index child from 18-23 month and 24-35 month. Underweight was found to be associated with being unemployed and duration of breast up to 10-12 month.

Conclusion: Maternal employment has significant positive effect on nutritional status of children who are 6-59 month old in arekit town. Thus it is important aspect of intervention for prevention or improvement of childhood malnutrition.

Key words: malnutrition, maternal employment, anthropometry

1 Introduction

1.1 Background

Nutrition is a critical component of human life, health, and development throughout the lifespan. Proper food and nutrition are essential for survival, physical growth, mental development, performance and productivity, health, and well-being from the earliest stages of fetal development, at birth, through infancy, childhood, adolescence, and on into adulthood and old age. Malnutrition has a complicated etiology and a long list of symptoms. Not only degrades physical and mental abilities, it also causes significant health problems and significantly contributes to child morbidity and mortality[1].

Malnutrition is more prevalent in most African countries, where living conditions are worse compared to other low-income countries. Poor health care service, a scarcity of resources, political instability, and rapid population growth that is outpacing socioeconomic growth exacerbate the problem [2]. Ethiopia as one of the world's least developed low-income countries, a Gross National Product (GNP) per capita of 850 dollars [3] with an annual population growth rate of 2.4 percent[4] and only 34.3% universal health coverage [5]. Considering this condition Children suffer the most from the effects of malnutrition, Acute respiratory infections (ARI), and diarrhea, which frequently coexist, to the point where it remains the leading cause of suffering, disability, and death in Ethiopia, as well as most African counties [6].

As nutritionally vulnerable group, children under the age of five require specific attention, including the time, attention, and behavior required to guarantee adequate nutrition. Breastfeeding and complementary feeding for newborns and early children are examples of caring behaviors, such as support for mothers during pregnancy and at lactation and every step of growth and development. Promoting education, literacy, social security, employment prospects, and women's rights enhances the quality of care for the under 5 children. The advancement of women's rights, as the final component, has a particularly significant link to nutritional well-being. [1]

The nutritional status of children is measured using anthropometric indicies like height for age, weight for height, weight for age, under nutrition. Height-for-age (HFA) is indicative of chronic under-nutrition, which is manifested as stunting the result of prolonged episodes of under-

nutrition both of the pregnant mother and of the young infant, most importantly during the first 2 years of life . As opposed to that weight-for-height (WFH) is indicative of acute malnutrition which is manifested as wasting, a result of exposure to a relatively short duration of inadequate food intake often complicated by concurrent infective illness that cause weight loss . Underweight is a composite index of HFA and WFH, which takes into account both acute and chronic malnutrition and is measured with the weight-for-age (WFA) index [7].

Maternal employment refers to mothers who work for a living and earn wages or salary. Global work patterns have changed dramatically, with women's employment rates increasing significantly. Women currently account for 39.8 percent of the worldwide labor force. Maternal employment has expanded fast as a result of increased household income demand as a result of rising food costs. Thus, in addition to domestic obligations, many women are also working outside the home to support their families. [8].

Women's participation in the work force in developing countries has been increasing steadily over the last several decades, On global basis 42% of women over age 15 are in the labor force. African women, produce as much as 80% of the food, and supplement family income by working in the formal and informal sectors as traders and producers [9].

In Ethiopia, 85 percent of women labor in agriculture in the rural regions, whereas 35 percent of urban inhabitants are women owing to numerous socioeconomic problems as well as rural urban migration. This huge work force was forced to engage in low skills, education, and inability to compete with their male counterparts [9]. Employment among women age 15-49 increased from 29% in 2005 to 38% in 2011 but decreased to 33% in 2016 [10].

1.2 Statement of the Problem

For the past fifty years, malnutrition have been the leading health and welfare issues confronting developing countries . Malnutrition is a major issue in the majority of poor nations. According to a report by United nation international children's emergency fund UNICEF this 'silent emergency'- malnutrition, with other diseases- causes 40,000 child deaths every day with another 150 million children living with ill health and poor growth. One-fourth of child deaths in the world and one-third of child deaths in Africa are attributed to malnutrition . About 25% of the World's under five children are described as malnourished [9].

Malnutrition is still the leading causes of misery, disability, and mortality in most poor nations, particularly among children and women. It is estimated that more than one-third of under-five deaths are attributable to under nutrition every hour of every day, 300 children die because of malnutrition and is an underlying cause of more than 2.6 million child deaths every year, one third of the global total of child deaths. Globally, one quarter of under-five children are stunted in developing countries this figure is as high as one in three. Sub-Saharan Africa and South Asia have particularly high prevalence, at almost 40% and 39%, respectively [11]. The prevalence rate of stunting and underweight among Ethiopian children is one of the highest in the world which is 37% and 21% respectively. [12]

Malnutrition is now widely accepted to be caused by a complex collection of factors. Dietary intake influences nutrition directly, whereas illness, parasites, toxins and/or psychological stressors impact nutrition indirectly [13]. In Ethiopia, feeding practices and the frequency of illness have the greatest impact on children's nutritional status [14]. These, in turn, are linked to a variety of socioeconomic and environmental factors, such as environmental sanitation, water supplies, and primary health care, as well as family dynamics, such as the presence of other family members, type of housing, water availability, household hygiene, mother's education, infant feeding practices, decision-making power, and maternal employment status[15].

The fact that women are expected to fulfill two roles: caring for their children and earning money, necessitates a special attention on the relationship between women's job and child outcomes [7].It is widely accepted that a mother's employment level has a significant impact on her child's health and nutritional status. It is anticipated that mother employment has two effects

on the nutritional condition of children under the age of five. One has a direct and beneficial influence, whereas the other has an inverse and negative effect [16].

The mother is usually the main caregiver for the infant and the very young child. Mothers who are not working have a lot of free time. As a result, it is likely that the mother is always accessible for breast feeding and frequent meals, to provide the attention that a child need; to detect primary indications of malnutrition and the effects of malnutrition and act as soon as possible. However, given the situation in least developed countries, where there are insufficient resources, both in terms of quality and quantity, as well as a lack of knowledge about the basic care a child requires, the amount of time a mother spends with her child has little impact on the nutritional status of infants and young children, particularly those over the age of six months, who require more food than breast milk [17].

This rapid increment of maternal employment has been due to increased household income demand as a result of increased prices of food. Many factors can cause malnutrition, most of which are related to poor diet or severe and repeated infections, and maternal education. Maternal work frequently leads in a loss of childcare time; presumably, the mother is therefore less accessible for breast feeding and preparing frequent meals, etc, [17].Employed mothers are less likely to practice exclusive breast feeding (EBF) than the unemployed ones[18].on the other hand Increased income appears to contribute to improved family wellbeing, and hence improved child food intake and nutritional status. Critical caregiving behaviors can be continued if there are appropriate replacement care providers if they are economically stable which could compensate for the effect of employed mother.

Therefore, there is an argument that income earned by mother or maternal employment has a direct effect on childcare, nutritional status of children, and the mother themselves. Such argument, however, has not been substantiated by studies from developing countries [20]. Therefore the aim of this study is to assess the nutritional status of children is affected more by the time constraints of women who perform the dual role of a mother, or by the increased income generated by the mother's employment and generating the best evidence on the effect of maternal employment on nutritional status of 6-59 month old children in Arekite city , Gurage zone Ethiopia 2022.

1.3 Significance of the study

The study aimed to benefit women by building on when and how to start and also how to work with child by providing information that government bodies like health bureau and different Non-Governmental Organization (NGO) as well as international organization uses to design projects and interventions to decrease prevalence of malnutrition and associatied morbidity and mortality and to enhance health of under 5 children. The finding of this study can be also be used as for planning purpose and body of knowledge for researchers.

2 Literature Review

2.1 Prevalence of malnutrition

Malnutrition and under nutrition continue to make millions of children more susceptible to disease and death. Globally in 2019, about one fifth (21.3%) of children under 5 years of age were stunted, compared with one third (32.4%) in 2000. Approximately 144.0 million children under 5 years worldwide suffered from stunting in 2019, two thirds of whom lived in the Africa and South-East Asia regions. More than 47.0 million children (6.9%) under 5 years of age globally suffered from wasting in 2019 [21].

Many studies were done in Africa to determine the prevalence of malnutrition. Egypt Demographic Health Survey showed that the HAZ average mean is equal to -0.6 which indicates the nutritional status of the entire population is poorer on average than the World health organization (WHO)growth reference population.21% of children were stunted and it's prevalence peaks among children ages 18-23, and it is also ostensibly among children below 6 months[26]. Comparative analysis done in Nigeria showed that overall, 15.1% of the under-five children were stunted, 18.1% wasted and 10.4% were underweight for age [22].

Results from the 2019 Ethiopia mini demographic and health survey (EMDHS) reported prevalence of malnutrition in terms of anthropometric indices. 37% of children under 5 are short for their age or stunted (below -2 SD), and 12% are severely stunted (below -3 SD). Overall, 7% of children in Ethiopia are wasted, and 1% are severely wasted (below -3 SD). The 2019 EMDHS results show that 21% of all children are underweight (below-2 SD), and 6% are severely underweight (below -3 SD)[12].

Community Based Cross Sectional Study done in Mendera Kochi Kebele, Jimma showed the children of working mothers were observed to have better nutritional status from their anthropometric measurements with higher MUAC values than children of unemployed mothers. 151(57.2%) of the children had a mean upper arm circumference of > = 12.5. 51.1% of the children had height for age measurement within 90–95% percentiles [9].

Study in wolayta sodo The overall result showed that the prevalence of malnutrition was 29.9%, 18.4% and 29.9% for underweight, stunting and wasting, respectively. However, the prevalence of underweight and stunting were lower than the reported prevalence in the national survey of

SNNPR in which they were 34.7% and 51.6%, respectively, while the prevalence of wasting was higher than the SNNPR report of 6.5%.[7]

2.2 Factors affecting nutritional status of under 5 children

Studies that assess the association of maternal employment to child health and nutrition are frequently characterized by a list of indicators assessing the major variables of interest and a variety of methodological techniques, and the results are often contradictory. The majority of researches in developing countries that associate maternal employment to child health are correlational rather than causative[23].

Study done in Iran show that mother workload has a negative impact on the nutrition status of early children through non-financial processes impacting food consumption and health. Using household data from Nicaragua. Lamontagne show that (with and without controlling for socioeconomic status of the household, childcare adequacy, and other variables) maternal employment had positive effects on weight for-height for children aged 12-18 months [36]. However, no significant impacts of maternal work were found on weight for age or length for age. According to Tucker and Sunjar , maternal employment had no effect on anthropometric markers. It did, however, have a favorable influence on children's nutritional intake and hemoglobin levels, demonstrating that the kid was receiving enough care[11].

When we come to the context of Africa study done in West Africa found that the positive income effect of maternal employment is counterbalanced by the negative time allocation effect, resulting in a net negative effect of maternal employment on child health. Research done in Nigeria evaluated the link between women's job and children's nutritional status (stunting and wasting) in 5,331 Nigerian children aged 0-59 months using both bivariate and multivariate analyses. The study shows that infants and young children of working mothers have decreased rate of stunting, whereas infants and young children of not working mothers have increase rate stunting. , while wasting among infants increases when the mothers are not taking their children to workplaces [24].

Prospective cohort Study conducted in Addis Abeba Anthropometrics data showed that, in univariate analysis that the children of working mothers were observed to achieve better nutritional status than the children of non-working mothers. The difference was not statistically

significant in bivariate analysis. Thus, the overall nutritional status of children of working mothers is significantly better than that of children's of non-working mothers. Particularly weight-for-age and height-for-age were positively associated with maternal employment [17].

According to Study done in SNNPR wolayta sodo zone the general nutritional status of children of employed mothers differed insignificantly from that of children of unemployed mothers. Maternal education, on the other hand, was shown to be the most significant predictors of chronic malnutrition. Furthermore, household wealth was substantially related with chronic malnutrition (stunting) in children, and in this regard, the importance of the socio-economic status of a population in determining malnutrition was evident. As a consequence of the findings, the household economy appears to be an essential determinant in children's nutritional condition [7].

A case-control study done in Meskan district, Gurage Zone on Factors associated with stunting among children of age 24 to 59 months showed that Family size, number of under-five children in the household, maternal occupation, duration of exclusive breastfeeding, duration breast feeding, and method of feeding complementary food were independently associated with stunting [25].

2.3 Conceptual Framework on the effect of maternal employment on nurtional status of 6-59 month old children

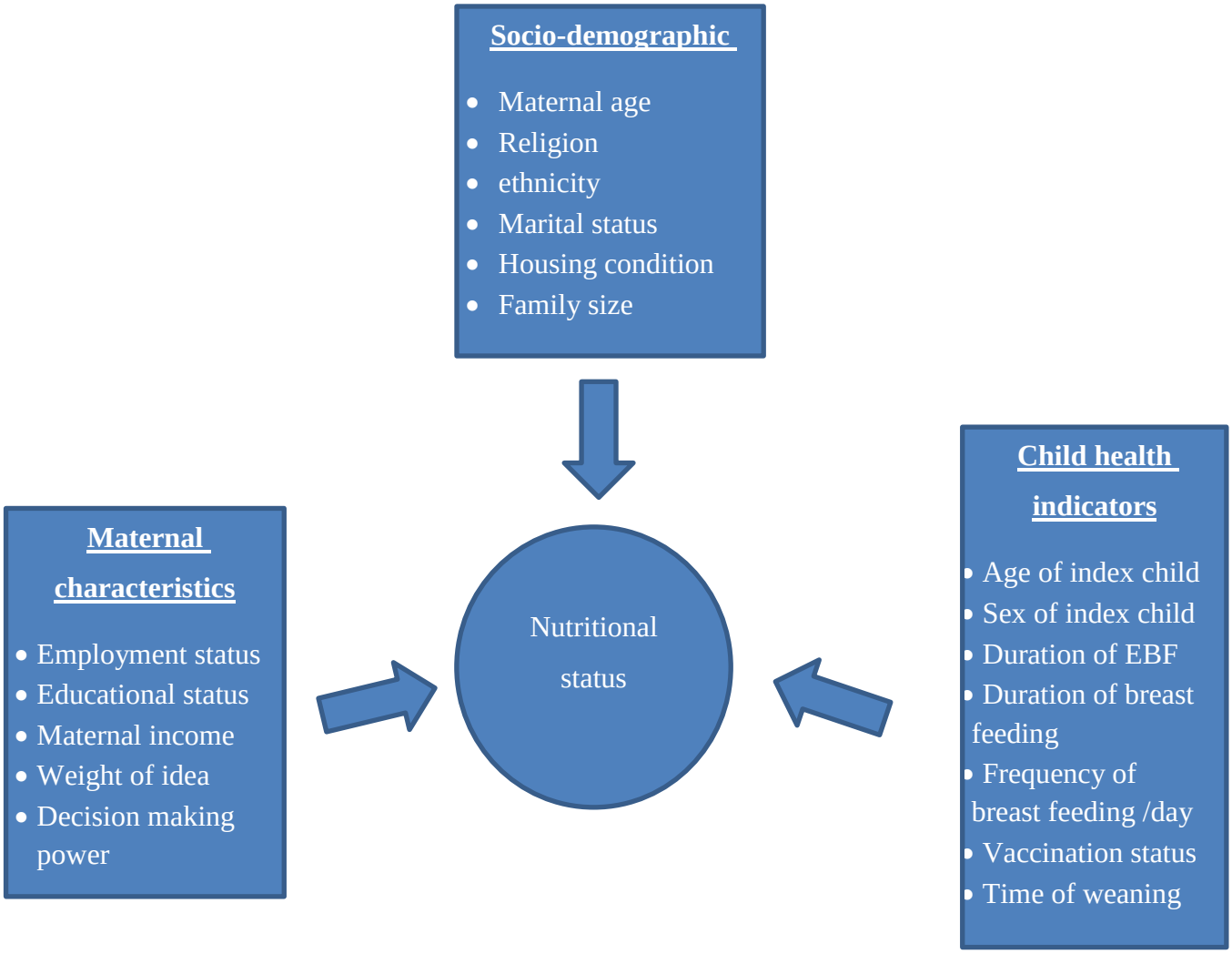

Figure 1: conceptual framework of effect of maternal work status on nutritional status of under 5 children adapted from study done in Addisabeba.[15]

3 Objective

3.1 General Objective

To determine the effect of maternal employment status on nutritional status of 6-59 month-old children in Arekit , Gurage zone, Ethiopia,2022

3.2 Specific Objectives:

1. To determine prevalence of malnutrition among children 6-59 month in Arekit city, Gurage zone, Ethiopia.

2. To asses the association between maternal employment on nutritional status of children 6-59 month in Arekit city, Gurage zone, Ethiopia.

4 Methods

4.1 Study Design

Community based comparative cross-sectional study design was employed to asses association between maternal employement and nutritional status of 6-59 month old children.

4.2 Study area

This community based comparative cross sectional study had been conducted in Arekit town, capital of Gumer woreda, Gurage zone, SNNPR, Ethiopia. The town was located 224 km south west of Addis Ababa the capital of Ethiopia, 362 km from Hawassa the capital of SNNPR and 68 km from Wolkite. It was located at latitude of 8^0 17⏐N $37^0$47⏐E and longitude of 8.283^0 N 37.783^0 E with an elevation of 1910 and 1935 meters above sea level. Sturctural it consists of 12 village. According to Arekit town statically agency report, Arekit town had a total population of 4091 peoples of these 1921 are males and 2170 are females. (Gumer woreda administrative office).

4.3 Population

4.3.1 Source Population

Our source of population were mothers who resides in Areket town.

4.3.2 Study Population

The study population was Employed and non-employed mothers with 6-59 month old children in Areket town.

4.4 Inclusion and Exclusion Criteria

4.4.1 Inclusion Criteria

Mothers with child between 6-59 month and live together with their child were eligible for the study.

4.4.2 Exclusion Criteria

Mother of children with chronic disease or congenital defect were excluded from this study.

4.5 Sample Size and Sampling Procedure

4.5.1 Sample size

Sample size was calculated by using double population proportion formula. That is:

$$n = \frac{[(Z\,\alpha/2\sqrt{\left(1+\frac{1}{r}\right)p(1-p)} + z\beta\sqrt{P_1(1-P_1)+P_2(1-P_2)/r})]^2}{(P_1-P_2)^2}$$

Where, n = initial sample size

P_1 = proportion of stunting among employed

P_2 = proportion of stunting among unemployed

$Z_{\alpha/2}$ = the value under standard normal table (by taking 95% CI)

β = power (by taking 80%)

r = ratio of unexposed to exposed 1:1

Then, by using Open EPI info statistical package version 7.2.1 for employment status, sample size was calculated and described in table 1 below.

Table1 Sample size calculation using Open EPI info statistical package version 7.2.1 for the effect of maternal work status on nutritional status of 6-59 month-old children in Arekit city, Gurage zone, Ethiopia, 2022

Factors	Assumptions	Proportions	Initial sample size	Final sample size with 10% for possible incomplete data	References
Employment status	Power=80% CI= 95% 1:1 Ratio	P1= 54.3% P2 = 39.5%	382	421	Research conducted in Adama town

4.5.2 Sampling procedure

For this study, from a total of 12 villages found in arekit town 6 of them was selected using simple random sampling method. Due to the fact that there was no registered data on employment status we went to every house hold in the 6 villages and collected the data if we find mother who were eligible for the study. If more than one child aged 6 to 59 months or more

than 1 mother with child aged 6 to 59 months were found in the sampled single household lottery method was applied to select the index child.

4.6 Variables

4.6.1 Dependent Variable

Nutritional status of children (wasting, stunting and underweight)

4.6.2 Independent Variables

Socio-demographic - Maternal, age, Religion, ethnicity, Marital status, Housing condition ,Family size

Maternal characteristics - Employment status, Educational status, Maternal income, Weight of idea, Decision making power

Child health indicators- Age of index child, Sex of index child, Duration of EBF, Duration of breast feeding, Frequency of breast feeding /day, Vaccination status, Time of weaning

4.7 Operational Definition

1. **Employed mother** - A mother is considered to be a " working mother" if she reports earning income at least for the last one year by working either in government, NGO, public, private sector, or earnings is based on self – managed income-generating work.[17]

2. Unemployed mother - A mother isconsidered to be " non-working mother " if she reports that she is not working at least for the last one year and dependent on someone else for earnings (these include, house-wives, and others, etc). (It is assumed that, a one-year gap in maternal employment is ideal to show any significant difference in nutritional status of both younger and older children).[17]

4. Height-for-age is a measure of linear growth retardation and cumulative growth deficits [10].

5. Stunting – Children whose height-for-age Z-score is below minus two standard deviations (-2 SD) from the median of the reference population are considered short for their age (stunted), or chronically undernourished [10].

7. Weight-for-height - The index measures body mass in relation to body height or length and describes current nutritional status [10].

8. Wasting - Children whose Z-score is below minus two standard deviations (-2 SD) from the median of the reference population are considered thin (wasted), or acutely undernourished [10].

10. Weight-for-age is a composite index of height-for-age and weight-for-height that accounts for both acute and chronic undernutrition [10].

11. Underweight - Children whose weight-for-age Z-score is below minus two standard deviations (-2 SD) from the median of the reference population are classified as underweight[10].

13. Childcare substitute: - refers to a type of arrangements to care for child when the mother is away for work.[17]

14. Caregiver – is the most responsible person that provides child care when the mother is out of home for work.[17]

4.8 Data Collection Procedure and Quality assurance

4.8.1 4.8.1 Data Collection Procedure

Data was collected through face to face interviews using a structured questionnaire adopted from published literatures which both closed and open-ended questions concerning socio-demographic, maternal, and child health indicator. The data was collected by member of the group and other fellow students. Weights of the child were measured using SECA 874 portable, digital scale with a capacity of 150kg to the nearest 0.1 kg and measurement of height/length was done in a lying position with wooden board for children under two years of age and children above two years were measured in a standing position to the nearest of 1 cm.

4.8.2 Data Quality Assurance

High attention was given for collected data for completeness and accuracy frequently. Before data was collected, the group members study on how to interview and how to take anthropometric measurements. The instruments were pre tested in similar circumstance in order to assure whether the instruments are efficient enough to meet the objective of the study or not. There was a tight supervision on data collection. Problems we faced in the time of data collection were discussed to find an immediate solution.

4.8.3 Data Management

Data entry was done by using EPI data 3.1 software, and exported to SPSS version 22 software for analysis. The data was analyzed first using binary logistic regression with 95% confidence interval. Variable whose p value less than 0.25 was then analyzed using multivariate analysis to determine the effect of various factors on the outcome variable and to control confounding effects. After this variables with p value less than 0.05 are termed as significantly associated for that specific dependant variable. The anthropometry data was entered to WHO Anthro v.3.2.2 software to convert nutritional data into Z-scores of the indices by using the new WHO growth standard.The results will be presented in the form of tables, figures and texts using frequencies and summary statistics such as mean and percentage to describe the study population. The strength of association between independent and dependent variables was assessed using p value, crude odds ratio and adjusted odd ration with 95% confidence interval.

4.9 Ethical Consideration

Ethical clearance and permission was obtained from ethical clearance committee of Wolkite University, College of Medicine and health sciences department of nursing. All the information collected from the study participants is handled confidentially through omitting their personal identification. Participants were also informed about their rights to respond or not to respond for the questions. All data collected are kept confidential and used for the study purpose only. Study participants were assured whether.The participants were informed about the objective and the purpose of the study and there is no potential risk related to measurement or data collection. Verbal Informed consent will be obtained from study participants.

4.10 Plans for Dissemination of Finding

The result of the current study will be presented to Wolkite University scientific community and it will be provided to Gurage zone health bureau. The report will also be provided to Department of nursing, College of Health and Medical sciences, Wolkite University. Finally, efforts will be made to publish results in national and international journal for dissemination worldwide.

5 Results

5.1 Socio demographic characterstics of respondants

A total of 421 mothers with under five children sampled for the study, the overall response rate was 400 (95.0%), The age of respondents ranged from 18-49 years, the mean (SD) ages of the respondents were 29.36±7.703 years. Concerning religion Majority of the respondents were Orthodox 218 (54.5%). Marital status majority of the respondents 347 (86.8%) were married. Regarding ownership of the house 290(72.5%) owns the house they live in.. Pipe water is the most common source of water 311(77.8%). Most of our respondents uses private pit latrine 345(86.3%).

Table 2Summary of socio demographic characteristics of employed and non-employed mothers of 6-59 month children in Arekit town, gurage zone, Ethiopia 2022

Variables		Employment status		Total (n,%)
		Employed (n, %)	Unemployed (n,%)	
Age	18-28	98(49.7%)	99(50.3%)	197(100.0%)
	29-38	72(49.3%)	74(50.7%)	146(100.0%)
	39-49	30(52.6%)	27(47.4%)	57(100.0%)
religion	orthodox	104(47.7%)	114(52.3%)	218(100.0%)
	muslim	62(52.1%)	57(47.9%)	119(100.0%)
	protestant	33(53.2%)	29(46.8%)	62(100.0%)
	other	1(100.0%)	0(0.0%)	1(100.0%)
Marital status	single	16(51.6%)	15(48.4%)	31(100.0%)
	married	170(49.0%)	177(51.0%)	347(100.0%)
	divorced	11(61.1%)	7(38.9%)	18(100.0%)
	widowed	3(75.0%)	1(25.0%)	4(100.0%)
Family size	2-3	34(52.3%)	31(47.7%)	65(100.0%)
	4	109(47.6%)	120(52.4%)	229(100.0%)
	5 or more	57(53.8%)	49(46.2%)	106(100.0%)
Ethinicity	Gurage	79(38.2%)	128(61.8%)	207(100.0%)
	Amhara	79(71.8%)	31(28.2%)	110(100.0%)

	Oromo	9(36.0%)	16(64.0%)	25(100.0%)
	Tigrie	0(0.0%)	4(100.0%)	4(100.0%)
	other	33(61.1%)	21(38.9%)	54(100.0%)

5.2 Maternal characteristics

Regarding to educational status, all of respondants who are unable to read and write are unemployed 70(100%). 69(97.2%) unemployed can read and write without formal education. Whereas 35 (55.6%) unemployed had attended primary school. 82(80.4%) from employed mothers had attended secondary school. Among mothers who attended college and above majority were employed mothers. 53(93.0%) and 35(94.6%) of employed mothers had attended college and university respectively. Majority of the employed mothers are self-employed 65(32.5%). From these employed mother 95(23.8%) mothers leaves their child with child care substitute who is under 13 age. Majority of employed mother spend their leisure time preparing/cooking food 67(52.8%). Majority of unemployed mothers 73(54.5%) care for the child in their leisure time and 61(45.5%) employed as well care for their child during their leisure time.

Table 3 Characteristics of Mothers of 6-59 month old Children in Arekit town, Gurage zone , Ethiopia 2022

Variables		Employment status		Total
		employed (n,%)	Unemployed (n, %)	
Educational status	can't read and write	0(0.0%)	70(100.0%)	70
	read and write	2(2.8%)	69(97.2%)	71
	primary(1-8)	28(44.4%)	35(55.6%)	63
	secondary(9-12)	82(80.4%)	20(19.6%)	102
	collage(diploma)	53(93.0%)	4(7.0%)	57
	university(degree and above)	35(94.6%)	2(5.4%)	37
Monthly income of mothers	<1000birr	1(100.0%)	-	1(100.0%)
	1000-3000 birr	86(100.0%)	-	86(100.0%)
	3001-5000 birr	38(100.0%)	-	38(100.0%)

	>5000 birr	75(100.0%)	-	75(100.0%)
Care taker	Leave with adult caregiver	91(100.0%)	-	91(100.0%)
	Leave with child less than 13	95(100.0%)	-	95(100.0%)
	Leave with child care institution	10(100.0%)	-	10(100.0%)
	Take the child to work	4(100.0%)	-	4(100.0%)
Weight of idea	More weight	3(75.0%	1(25.0%)	4(100.0%)
	Less weight	112(51.1%	107(48.9%)	219(100.0%)
	Same weight	84(47.7%	92(52.3%)	176(100.0%)
Leisure time	Do hand craft	54(51.9%)	50(48.1%)	104
	listen to mass media (radio,tv)	11(57.9%)	8(42.1%)	19
	preparing/cooking food	67(52.8%)	60(47.2%)	127
	care for the child	61(45.5%)	73(54.5%)	134
	others	7(43.8%)	9(56.2%)	16
Place of delivery	At health institution	189(50.40)	186(49.60)	375(100%)
	At home	11(44.00)	14(56.00)	25(100%)

5.3 Child health indicators

Regarding place of delivery for index child 375(93.8%) were born in health institution and attended by health professionals. Most of the index children are male 221(55.3%). The mean age of index child is 26.45± 12.804 months. There is high prevalence of breastfeeding 97.8%. Most of the mothers 153(38.0%) breast fed up to 10-12months. 280(70%) mothers perceived that exclusive breast feeding should be up to 6 months and 223(55.8) mother starts weaning at 6 month. When we see vaccination status 366(91.5%) had at least took vaccination 1 times in the past and 197(49.3%) are fully vaccinated.

Table 4Characteristics of Children heath in in Arekit city, Gurage zone, Ethiopia, 2022 (N=400)

Variables	**Category**	**Employed No (%)**	**Unemployed No (%)**
Sex	Male	115(52.00)	106 (48.00)

	Female	85 (47.50)	94 (52.50)
Age (months)	6-11	42(71.20)	17(28.80)
	12-17	28(51.90)	26(48.10)
	18-23	42(62.70)	25(37.30)
	24-35	66(60.60)	43(39.40)
	36-47	17(18.10)	77(81.90)
	48-59	4(36.40)	7(63.60)
Number of breast feeding during day time	2 times	3(18.80)	13(81.30)
	3-4 times	46(33.60)	91(66.40)
	5-6 times	90(54.90)	74(45.10)
	Greater than 6 times	52(75.40)	17(24.60)
Vaccination status	BCG only	13(56.50)	10(43.50)
	Penta1,OPV1,PCV1,Rota1	9(45.00)	11(55.00)
	Penta2,OPV2,PCV2,Rota2	7(50.00)	7(50.00)
	Penta3,OPV3,PCV3,IPV	23(57.50)	17(42.50)
	MCV 1	14(45.20)	17(54.80)
	MCV 2	17(45.90)	20(54.10)
	Fully vaccinated	100(50.80)	97(49.20)
	none	3(75.00)	1(25.00)
Duration of breast feeding	lessthan_4months	1(20.00)	4(80.00)
	4-6 month	13(28.90)	32(71.10)
	7-9 month	74(48.70)	78(51.30)
	10-12 month	79(56.00)	62(44.00)
	Greater than 12month	28(58.30)	20(41.70)

5.4 Prevalence of wasting, stunting and underweight

The overall prevalence of wasting, stunting and underweight is 10.0%, 20.8% and 7.0 % respectively. Majority of wasted, stunted and underweight children are from unemployed mothers.8.25%, 12.75%, 6.25%.89.3% of underweight; 61.4% of stunted; 82.5% of wasted are children of unemployed mother.

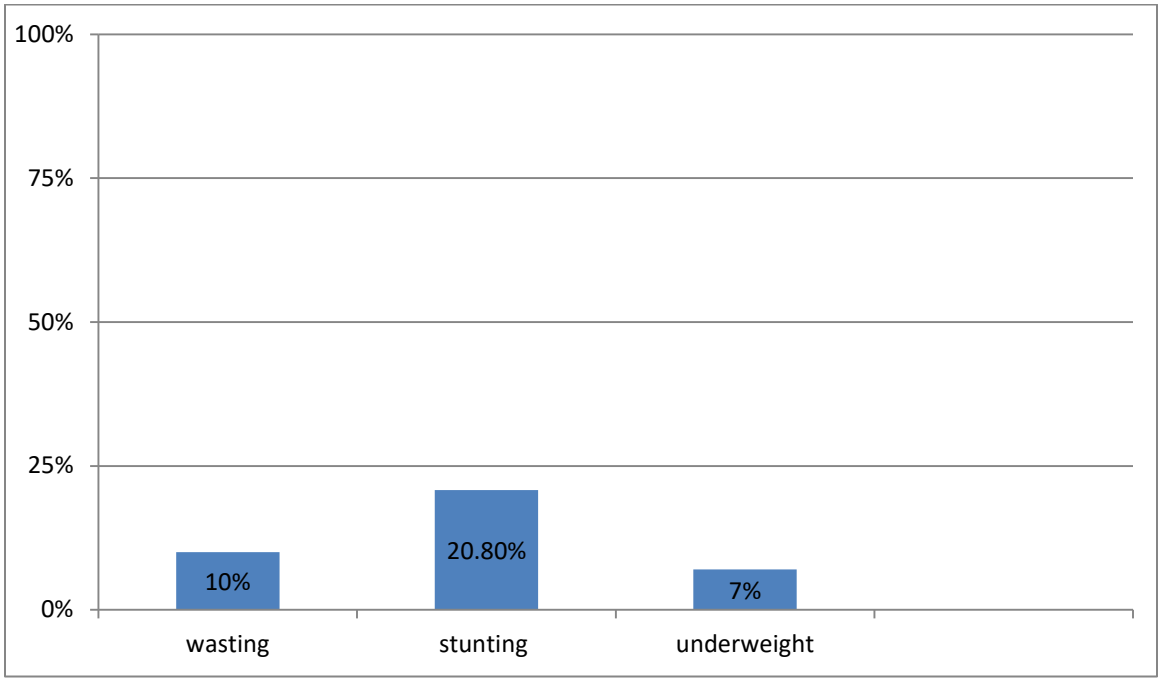

Figure 2prevalence of wasting, stunting and underweight in Arekit town, Gurage zone, Ethiopia 2022 (N=400)

5.5 Factors affecting nutritional status of children

Wasting was found to be strongly associated with maternal employment, family size and place of delivery. Children of unemployed mothers have 4.8 times [AOR (95% CI) 4.835(1.688, 13.850)] higher odd of being wasted than children of employed mothers. Regarding family size the odds of a child being wasted was 5.0 times higher in a families with 2-3 members compared to family size greater than 5. Concerning place of delivery of index child those who are born at home are 4.7 times more likely to be wasted compared to child born at health facility

Table 5Bivariate and multivariable analysis of factors associated with wasting among 6-59 month old children in Arekit town , Gurage zone, Ethiopia, 2022 (N=400)

Variables	Category	Nutritional status		COR (95% CI)	AOR (95% CI)
		Not Wasted No (%)	wasted No (%)		
Employment status*	Employed	193(96.5)	7(3.5)	1	1
	Unemployed	167(83.5)	33(16.5)	5.448 (2.349,12.639)	4.835 (1.688,13.850)
Duration of breast feeding	<4months	4(80.0)	1(20.0)	1.083 (0.108,10.893)	1.427 (0.065,31.155)
	4-6month	38(84.4)	7(15.6)	0.798 (0.270,2.360)	0.725 (0.107,4.928)
	7-9month	135(88.8)	17(11.2)	0.546 (0.226,1.320)	0.584 (0.072,4.737)
	10-12month	135(95.7)	6(4.3)	0.193 (0.065,0.574)	0.227 (0.038,1.350
	> 12month	39(81.3)	9(18.8)	1	1
Number of breast feeding	No during day time	1(20.0)	4(80.0)	272.000 (14.243,5194.419)	117501974976. 8140.000
	2_times	6(37.5)	10(62.5)	113.333 (12.326,1042.074)	57.751 (5.511,605.221)
	3-4times	119(86.9)	18(13.1)	10.286 (1.343,78.756)	6.811 (0.833,55.688)
	5-6 times	157(95.7)	7(4.3)	3.032 (.366,25.121)	2.076 (0.232,18.531)
	>6 times	68(98.6)	1(1.4)	1	1
Family size *	2-3	55(84.60)	10(15.4)	3.030 (1.045,8.784)	5.057 (1.319,19.387)
	4	205(89.5)	24(10.5)	1.951 (0.773,4.926)	1.502 (0.449,5.018)
	5 or more	100(94.3)	6(5.7)	1	1
Place of delivery of index child *	At health institution	341(90.9)	34(9.1)	1	1
	At home	19(76.0)	6(24.0)	3.167 (1.185,8.466)	4.689 (1.207,18.215)
Leisure time	Do hand craft	97(93.3)	7(6.7)	0.397 (0.073,2.152)	2.026 (0.057,71.966)

activity	Listen to mass media	17(89.5)	2(10.5)	0.647(0.079,5.292)	3.356 (0.158,71.322
	Reading	1(33.3)	2(66.7)	11.000 (0.646,187.166)	53.673 (1.056,2729.162)
	preparing/cooking food	117(92.1)	10(7.9)	0.470 (0.091,2.421)	1.386 (0.096,20.115)
	Care for the child	117(87.3)	17(12.7)	0.799 0.163,3.920)	3.602 (0.249,52.162)
	do_nothing	11(84.6)	2(15.4)	1	1

P value <0.05 =*

Stunting appeared to be influenced more by maternal education status and age of index child. Child of mothers who can't read write is 9.5 times more likely to be stunted than those who attended university or have degree or above. Children between the range of 12-17,91.6%,18-23 month and 24-35 months were 72.7% and 88.1% less likely to be stunted than children between the age range of 6-11 months respectively.

Table 6 Bivariate and multivariable analysis of factors associated with stunting among 6-59 month old children in Arekit town , Gurage zone, Ethiopia, 2022 (N=400)

Variables	Category	Nutritional status		COR (95% CI)	AOR (95% CI)
		Not Stunted No (%)	stunted No (%)		
Employment status	Employed	168(84.00)	32(16.00)	1	1
	Unemployed	149 (74.50)	51(25.50)	0.292 (0.117,0.732)	
Educational status*	can't read and write	50(57.50)	37(42.50)	2.056 (0.859,4.918)	9.479(1.543,58.217)
	Read and write	63(84.0)	12(16.00)	0.529 (0.198.1.411)	0.642 (0.052,7.898)
	primary(1-8)	48(84.20)	9(15.80)	0.521 (0.184,1.478)	0.498(0.1,2.473)
	secondary(9-12)	83 (87.40)	12(12.60)	0.402 (0.152,1.063)	0.46 (0.146,1.447)

	collage(diploma)	48(92.30)	4(7.70)	0.231 (0.065,0.827)	0.423 (0.101,1.77)
	university(degree and above)	25(73.50)	9(26.50)	1	1
Care giver of child	Leave with adult caregiver	77(84.60)	14(15.40)	0.182 (0.024,1.400)	4.988 (0.033,748.336)
	Leave with child < 13 years	82(86.30)	13(13.70)	0.159 (0.021,1.226)	0.394 (0.003,53.950
	Leave with child are institution	7(70.00)	3(30.00)	0.429 (0.040,4.637)	0.21 (0.001,41.86)
	Take the child to work	2(50.00)	2(50.00)	1	1
Duration of breast feeding	<4months	0(0.00)	5(100.0)	5433869925.954 .000	3.58611E+17 0 .
	4-6month	22(48.90)	23(51.10)	3.517 (1.442,8.576)	0.527 (0.04,6.974)
	7-9month	133(87.50)	19(12.50)	0.481 (0.210,1.099)	0.865 (0.102,7.364)
	10-12month	118(83.70)	23(16.30)	0.656 (0.292,1.471)	0.717 (0.173,2.971)
	>12month	37(77.10)	11(22.90)	1	1
Number of breast feeding	no_during_day_time	4(80.00)	1(20.00)	1.318(0.134,12.941)	
	2_times	14(87.50)	2(12.50)	0.753 (0.150,3.790)	
	3-4times	110(80.30)	27(19.70)	1.294 (0.599,2.795)	0.744 (0.155,3.582)
	5-6_times	124(75.60)	40(24.40)	1.701 (0.814,3.553)	1.441 (0.45,4.617)
	>6 times	58(84.10)	11(15.90)	1	1
Age of index child*	6-11 month	37(62.70)	22(37.30)	1	1
	12-17 month	46(85.20)	8(14.80)	0.292 (0.117,0.732)	0.084 (0.014,0.492)
	18-23 month	56(83.60)	11(16.40)	0.330 (0.143,0.761)	0.273 (0.08,0.937)
	24-35 month	95(87.20)	14(12.80)	0.248 (0.115,0.535)	0.119 (0.034,0.417)
	36-47 month	70(74.50)	24(25.50)	0.577 (0.286,1.164)	0.282 (0.051,1.57)

	48-59 month	8(72.70)	3(27.30)	0.631 (0.151,2.630)	0 .

P value <0.05 =*

Underweight was found to be associated with maternal employment and duration of breast feeding. Children of unemployed mother are 7.2 times[AOR7.272(1.902,27.811)] more likely to be underweight when compared to children of employed mother. Children who breast fed 7-9 months [AOR (95% CI) 0.117(0.028,0.496)] and 10-12 months [AOR (95% CI) 0.065(0.011,0.377)] were less likely to be underweight than children who breast fed for more than 12 month.

Table 7 Bivariate and multivariable analysis of factors associated with wasting among 6-59 month old children in Arekit town , Gurage zone, Ethiopia, 2022 (N=400)

Variables	**Category**	Nutritional status		COR (95% CI)	AOR (95% CI)
		Not Underweight No (%)	underweight No (%)		
Employment status**	Employed	199(99.50)	3(1.50)	1	1
	Unemployed	175(87.50)	25(12.50)	28.429 (3.813,211.975)	7.272 (1.902,27.811)
Educational status	can't read and write	77(88.50)	10(11.50)	1	1
	Read and write	64(85.30)	11(14.70)	1.323 (0.528,3.315)	0.726 (0.197,2.676)
	primary(1-8)	54(94.70)	3(5.30)	0.428 (0.112,1.628)	0.815 (0.158,4.202)
	secondary(9-12)	94(98.90)	1(1.10)	0.082 (0.010,0.654)	0.235 (0.019,2.872)
	collage(diploma)	52(100.00)	0(0.00)	0.000	0.000
	university(degree and above)	33(97.10)	1(2.90)	0.233 (0.029,1.897)	2.749 (0.137,55.164
Age of index child	6-11	55(93.20)	4(6.80)	1	1
	12-17	50(92.60)	4(7.40)	1.100 (0.261,4.633)	0.464 (0.092,2.349)
	18-23	66(98.50)	1(1.50)	0.208 (0.023,1.919)	0.08 (0.007,0.887)

	24-35	105(96.30)	4(3.70)	0.524 (0.126,2.175)	0.223 (0.045,1.109)
	36-47	83(88.30)	11(11.70)	1.822 (0.552,6.014)	0.473 (0.124,1.809)
	48-59	10(90.90)	1(9.10)	1.375 (0.139,13.613)	0.388 (0.032,4.645)
Family size	2-3	62(95.40)	3(4.60)	0.806 (0.195,3.342)	0.088 (0.002,3.403)
	4	212(92.60)	17(7.40)	1.336 (0.511,3.493)	0.102 (0.004,2.381)
	5 or more	100(94.30)	6(5.70)	1	1
Place of delivery	At health institution	354(94.40)	21(5.60)	1	1
	at_home	20(80.00)	5(20.00)	4.214 (1.439,12.339)	2.641 (0.464,15.026)
Duration of breast feeding **	<4months	4(80.00)	1(20.0)	1.464 (0.142,15.100)	0.788 (0.07,8.924)
	4-6month	37(82.2)	8(17.8)	1.673 (0.576,4.859)	0.819 (0.218,3.083)
	7-9month	146(96.1)	6(3.9)	0.241 (0.077,0.756)	0.117 (0.028,0.496)
	10-12month	138(97.9)	3(2.1)	0.127 (0.032,0.515)	0.065 (0.011,0.377)
	>12month	41(85.4)	7(14.6)	1	1

P value <0.05 = *

6 Discussion

The overall child malnutrition (wasting, stunting and underweight) among children of employed and unemployed mothers was found to be 10%, 20.8% and 7.0 %, respectively. The prevalence of wasting is consistent with EDHS 2016 [10].

In the current study the prevalence of stunting among under five children was consistent with the global prevalence of stunting which is 21.3%[20] and study conducted in Egypt on which prevalence of stunting is 21% [26]. Study conducted in wolayta sodo has also found consistent result, 18.4%. Even though the prevalence of stunting is consistent, prevalence of wasting and underweight in our study is lower than that of study conducted in wolayta sodo, 29.9% and 29.9% respectively [7]. The difference might be due to good practice of breast feeding among

respondents of the study which is total breast feeding children 97.8%; exclusive breast feeding 70.6%.

According to EMDHS 2019 report prevalence of stunting, wasting and underweight is 37%, 7% and 21%. Prevalence of stunting and underweight is higher than our study [12]. This can be due to the difference in sample size.

The prevalence of underweight in this study is 7.0 % which is high as per the WHO classification. However, it is lower than the study conducted in rural kebeles of Haramaya district which was 23.6% [27] in west Gojjam which was 49.2 % [6], in Oromia region, Gimbi which was 23.5 % [7] and it may be due to inclusion of rural kebeles in the study where the overall nutrition status of children are neglected.

The study has been attempted to assess the effect of maternal employment on nutritional status of under five children. The study founded that Children of unemployed mother had higher risk of being wasted and underweight when compared to children of employed mothers. Study in Nicaragua show maternal employment had positive effects on weight for-height for children which support our study [28]. This finding is also consistent with the finding of a study conducted in adama, oromia. That the prevalence of underweight, stunting and wasting among children of unemployed mother was higher than that of children who had employed[11]. Study conducted in jimma also concluded that overall nutritional status of children of working mothers is significantly better than that of unemployed, This finding was consistent with other studies done in other country like guatimala[9].This association can be reasoned out as employed mothers brings extra income or finance that will enable them to support the family and to provide their children with good nutrition consistently over a long period of time. On the other hand unemployed mothers might have struggled to provide access to good nutrition as they may lack the economic means to purchase adequate food for the family than those mothers who are employed. Since in most cases the poor nutrition status of children in developing country like Ethiopia is mainly due to the lack of money [16].

From this study we found that stunting has no significant association with employment status of mothers. this finding is consistent with study done in wolayta sodo [7] This might be due to the

substitute care givers are good at child care and gave good care for the babies after the mothers return to their work after maternity leave.

study conducted in bale robe revealed children born to employed mothers had a higher chance of under nutrition (stunting, wasting and underweight) .

7 Conclusion and recommendation

Maternal employment has significant positive association on nutritional status of children who are 6-59 month old in arekit town. Thus it is important aspect of intervention- for prevention or improvement of childhood malnutrition. Many programs should be launched that empower women and increase economic stability at national and regional level specially focus should be give to mother that are far from major cities where job opportunities are good relatively.

In addition it is imperative to launch sustainable programs at national and regional level to uplift women educational status, utilization of family planning, institutional delivery and child feeding practice as these are also associated with nutritional status of 6-59 month old children in arekit town .

Maternal employment has significant positive effect on nutritional status of children who are 6-59 month old in arekit town. Thus it is important aspect of intervention for prevention or improvement of childhood malnutrition.

8 Limitation of the study

The study doesn't consider the effect of paternal income on nutritional status of children.

There may be recall bias in child feeding practices. Furthermore, there could be a social desirability bias in terms of the socio-economic status of the respondents.

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Annex

Questioner

Dear respondent,

This questionnaire is prepared by Wolkite University College Of Medicine And Other Health Science Department Of Nursing 4th year nursing students with the aim of assessing effect of maternal employment on nutritional status of 6-59 month old children in Gurage zone Emdibir city. We would like to ask some questions about your employment status and your child's condition and related factors and the information you give us is very much important and we would like to appreciate you participation. Here we would greatly like inform you that there is no risk for being participant in this questionnaire. your name will not be included in this questionnaire.

A. Agree B. Disagree

Part I parent related socio demographic characteristics			
S/No	Question	Response	Remark
01	Age	_____ Years	
02	Religion	1. Orthodox 2. Muslim 3. Protestant 4. Others (specify) _____	
03	What is your current marital status?	1.Single 2.Married 3. Divorced 4.Widowed	
04	Family size	1. 2-3 2 .4 3.5 or more	
05	What is your religion?	1. Orthodox 2. Muslim 3. Catholic 4. Protestant 5. Others ----------	
06	What is your ethnicity?	1. Gurage 2. Amhara 3. Oromo 4. Tigrie 5. Others ----------	
07	Residence	Urban/rural	

Part II Housing condition			
08	What is the ownership of your house?	1. Owned 2. Rented 3. Dependent 4. Others ----------	
09	How many rooms excluding kitchen and bathroom in your dwelling are for exclusive use of the members of your household?	Number of Rooms ----------	
10	What is the main source of drinking water for members of your household?	1. Piped water 2. Well water 3. Surface water (river, spring) 4. Others ----------	
11	What kind of toilet facility does your household have?	1. Flush toilet 2. Pit latrine, private 3. Pit latrine, shared 4. No facility / Bush / Field	
Part III maternal characteristics			
12	Educational status	1. Can't read and write 2. Read and write 3. Primary (1-8) 4. Secondary (9-12) 5. Collage (diploma) 6.University(degree and above)	
13	What is your occupational status?	1.Government employee 2.Private Sector Employee 3.NGO employee 4. Self employee 5. Daily laborer 6. Vending 7. No work(skip to 15) 8. Others ----------	
14	What is the monthly income of your husband/partner?	1. Less than Birr 1000 2. Birr 1000 - Birr 3000 3. Birr 3001- Birr 5000 4. More than Birr 5000 5. Don't Know	
15	If "No" for question No. 15, how do you get earnings?	Help from husband---------- Help from relatives---------- Help from other----------specify	
16	**(Only for working mothers)**Who usually takes care of your child while you are at work /working? Or away from home?	1 = Leaves with adult care giver(husband, grand-mother,/father, siblings, neighbors, friends) 2 = Leaves with child <13 years (Siblings, servant/hired help)	

		3 = Leaves at child care institution 4 =Takes Child is in school with mother to work	
17	In general, in your household, do you think that your views carry more, less or about the same weight as your husband/partner?	1. More weight 2. Less weight 3. Same weight 4. No response	
18	In your household, who generally decides in purchasing consumable goods?	1. Respondent 2. Husband/partner 3. Both together 4. Others ----------specify 5. No response	
19	When your child is sick, who decides whether the child is sick enough to be taken for treatment?	1. Respondent 2. Husband/partner 3. Both together 4. Others ----------specify 5. No response	
20	While you are at home, what do you do in your leisure time?	1. Do hand work (crafting) 2. Listen radio/Watch TV 3. Reading 4. Preparing/Cooking food 5. Care for my child 6. Do nothing 7. Others ----------	
21	When you yourself is sick, who decides whether you are sick to go for treatment?	1. Respondent 2. Husband/partner 3. Both together 4. Others ---------- 5. No response	
22	Who in your household decides whether your children will be enrolled in school, or which school they will attend?	1. Respondent 2. Husband/partner 3. Both together 4. Others ----------specify 5. No response	
23	Who in your household decides whether or not you should work outside the home?	1. Respondent 2. Husband/partner 3. Both together 4. Others ----------specify 5. No response	
24	Who in your household decides whether or not you should use birth control?	1. Respondent 2. Husband/partner 3. Both together 4. Others ----------specify	
Part IV Child health indicators			

25	Place of delivery of your index child	1.At health facility 2.At home	
26	Who assisted you at delivery of the index child?	1.Health professional 2.Trained Birth Attendant 3.Traditional Birth 4,AttendantRelatives/Friend/Neighbor 5.Others ----------	
27	How much did your child weigh?	(Record weight from health card, if available) Grams from: Card---------- Recall ---------- Don't know----------	
28	What is the age of your child?	(Index child) _____In months	
29	What is the sex of your child? (Index child)	1.Male 2. Female	
30	Did you ever breast feed your child?	1.Yes 2. No	
31	If yes, for how many months did you breastfeed?	1. Less than 4 months 2. 4 - 6 months 3. 7 – 9 months 4. 10 – 12 months 5. More than 12 months	
32	For how long do you think should a child exclusively breast feed?	_____In months	
33	At what age do you think that a child should start weaning?	_____In months	
34	At what age was your child weaned?	_____In months(**for breastfeeding mother only)**	
35	How many times did you breastfeed your child during the day light hours on working days (Monday to Friday)?	1. No during the day time 2. 2 - times 3. 3 – 4 times 4. 5 – 6 times 5. More than 6 times	
36	Has the child been ill with fever, cough or diarrhea at any time in the last two weeks?	1. Yes 2. No(skip to 40)	
37	If the answer for 37 is yes, did you seek advice or treatment for this signs?	1. Yes 2. No	
38	If the answer for question 37 is yes, where did you seek advice/treatment?	1. Public Sector (Hosp ,HC, HP) 2. Private Medical Sector (Hosp, Clinic, Pharmacy) 3. Traditional Practitioner	

39	Is your child vaccinated?(See card)	1.Yes 2.No	
40	If the answer for question number 28 is yes, what type of vaccination does he/she take?	A) From Card () B) Mother's Report () 1. BCG only 2. Penta 1, OPV 1,PCV 1, Rota 1 3. Penta 2, OPV 2,PCV 2, Rota 2 4. Penta 3,OPV 3,PCV 3, IPV 5.MCV 1 6.MCV 2	
41	Child's Weight in KG.	(to the nearest 100gr) ---------- KG.	
42	Child's Height in centimeters?	(to the nearest 1cm) ----------CMS.	

Wolkite university

College of health science and medicine Department of nursing

This is to witness the research prepared by "Elias chunche, Bine Riek Yat and Efrem Getu " on the topic of the effect of maternal employment on nutritional status of 6-59 month old children in Arekit town, Gurage zone Ethiopia 2022: comparative cross-sectional study from May 8-22 for partial fulfillment of bachelor degree in nursing. Instructions with regulations of the university are met and the accepted standards are achieved. The advisor's recognition on this paper is announced.

Board of Approval

Advisor's Name	**Signature**	**Date**
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Department Head's Name	**Signature**	**Date**
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