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Chapter 5

The Impact of Maternal Education and Socioeconomic Status on Child Health outcomes in Edo State, Nigeria

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Abstract:

The understanding of child health has significantly evolved over the years. Modern perspectives recognize that a healthy childhood is shaped by a complex interplay of factors—biological, social, environmental, and psychological. The study aimed to understand the impact of maternal education and socioeconomic status on child health. The study further sought to investigate the impact of maternal attitude and health practices on child health in a Nigeria context. The study was conducted in the 21-bed sitter pediatric department of Irrua Specialist Teaching hospital, Irrua (ISTH), Edo state Nigeria. A descriptive cross-sectional study was employed from October 2023 to April 2024. A total of 60 questionnaires were distributed for collection of data. From the study, it was seen that all mothers have received various degree of literacy with majority (46.70%) of the women having gotten tertiary level of education and the least (16.70%) having primary level of education with 90% of the women displaying good knowledge.

More of the women were middle income earners (60%) while just a few (20%) were high income earners. The study found a positive correlation between maternal attitudes and socio-demographic characteristics, with most women demonstrating favorable attitudes. These findings highlight the importance of maternal education and socioeconomic status in shaping child health outcomes, with potential implications for policy and intervention strategies. The relevance of this study will help all and sundry to step up in contributing their role in reducing children mortality and improve overall quality health care delivery.

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1. Introduction

1.1 Background of the Study

Maternal education is necessary as it aims at enabling women to obtain important knowledge, skills and emotional support so as to carter for themselves especially when pregnant and their babies after delivery [1] while Maternal health focuses on the state of complete physical, mental and social wellbeing of the mother, and not just the absence of disease or infirmity. Maternal health also includes the absence of maternal morbidity and mortality [2].

The understanding of child health has significantly evolved over the years. Initially defined simply as the absence of disease or disability, it has grown into a more nuanced concept. Modern perspectives recognize that a healthy childhood is shaped by a complex interplay of factors—biological, social, environmental, and psychological. This comprehensive view not only emphasizes the conditions necessary for children to thrive but also highlights the importance of building a strong foundation for lifelong well-being [3].

A noted relationship between parental education and child health is that the better education, the better the health care utilization. Besides this, mother's education can affect child health through several other ways. For instance, when women are well educated and have partners, who are same, the ability to relate with health care providers is enhanced and the understanding of what they need to do as it relates to child care is clear [4]. To further emphasize this, Caldwell documented that, children of educated mothers experience lower mortality compared with children belonging to uneducated mothers [5].

UNICEF states that diarrhea disease is currently amongst the most common cause of child deaths worldwide especially in under-fives which is actually both a preventable and treatable disease condition. Untreated severe diarrhea leads to fluid loss and it may be life-threatening especially in young children and the source of infection occurs when food or drinking-water are contaminated and transmitted from person to person from poor hygiene [6]. Mothers are very instrumental and key to preventing and resolving this condition for their children when they well educated and aware of the condition of the child this is due to the fact that the Mother is the primary caregiver for the child in most societies of the world. Hence, the health practices, along with maternal education, socioeconomic condition of mothers are important factors that can determine the well-being of the child [7].

Evidence demonstrating the effects of poor education especially for mothers has a negative impact on the wellbeing of the child's health which can be overwhelming; it's a burden on the health care system. The repetitive negative effect of healthcare choices and behavior on children born to mothers of poor educational level with ill health ranging from psychological,

physical and social challenges such as low socioeconomic status/poverty, maternal depression and has increasingly become a societal concern. The impact of maternal wellbeing and educational level on the health of a child can't be overemphasized.

The study seeks to give valuable insights as it highlights the relationship between maternal education, income and health with respect outcome of child health. It also seeks to project the severity of this negative impact caused by maternal decision on child health. The findings from this study will be valuable in institutionalizing measures to improve maternal knowledge and optimize their health as this has a direct effect on the outcome of child. This will increase the knowledge and awareness of mothers on basic and important subjects which will lead to better response to immunization, good health seeking behavior, good nutrition which will ultimately decrease child morbidity and mortality.

The study aimed at understanding the impact of maternal education and socioeconomic status on child health among mothers in pediatric ward of Irrua Specialist Teaching Hospital, Irrua Edo state Nigeria with a view to accessing the impact of the knowledge of mothers on child health, knowing the impact of maternal education and socioeconomic status on child health and to determine the effect of maternal attitude and maternal health practices on child health.

2.Methodology

2.1 Study Area

The study was conducted in the 21-bed sitter pediatric department of Irrua Specialist Teaching Hospital, Irrua (ISTH), Edo state Nigeria.

2.2 Study Design

A descriptive cross-sectional study was employed for the study.

2.3 Study Population

The study participants were mothers seen at the pediatric and children emergency department of ISTH which cut across women of various age in different areas of profession or irrespective of status.

2.4 Study Duration

The study lasted a period of 7 months from October 2023 to April 2024.

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2.5a Inclusion Criteria

- Mothers seen at the pediatric department and Children emergency ward of Irrua Specialist Teaching Hospital.
- Mothers of index patient seen at the time of study at the pediatric department of Irrua Specialist Teaching Hospital.
- Mothers of children less than 18years old.

2.5b Exclusion Criteria

- Those not present at the time of study.
- Those who do not consent to be part of the study.

2.6 Sample Size Estimation

Sample size is estimated using Cochran's formula for cross sectional surveys

$$\text{Sample size} \quad n = \frac{Z^2Pq}{d^2} = \ldots\ldots\ldots\ldots\ldots [22]$$

$Z = 1.96$

$P = 96.4\%$ i.e 0.964 (prevalence value in the study showing the positive attitude of mothers to vaccinating their children; stating that vaccination is best for each infant) [16]

$d = 0.05$

$$\text{Sample size } n = \frac{Z^2Pq}{d^2}$$

n = sample size

P= 96.4% i.e 0.964

q= 1-P ; [1-0.964] =0.036

$$n = \frac{(1.96)^2 \times 0.964 \times (1-0.964)}{(0.05)^2}$$

$$n = \frac{3.8416 \times 0.96 \times 0.037}{0.0025}$$

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$$n = \frac{0.1365}{0.0025}$$

$$n = 54.59$$

Approximately 55

From the calculation above, the estimated sample size is 55.

Attrition or non-response rate = 10% of sample size

$$55 \times \frac{10}{100} = 5.5 = 6$$

10% of sample size was added to cover for possible non-response during the course of study. Therefore, the estimated sample size was 56 + (10% of 56) giving a total of 61 respondents were recruited for this study.

2.7 Sampling Technique

A simple random sampling technique was employed in the study whereby each participant has an equal probability of being chosen for the study so that an unbiased representation of the total population will be achieved. The mothers seen at the pediatric ward, clinic, and children emergency room that made up the sample will be chosen by balloting and questionnaires were distributed to the mothers selected from the sampling technique. Consenting mothers which fits into the inclusion criteria will be taken as part of the participant. This process was continued until both the desired number members and number of groups is gotten.

2.8 Study Instrument

Questionnaire:

The questionnaire will cover the following sections

Section A : Socio Demographic Data.

Section B : Assessment of the impact of the level of Knowledge of Mothers on Child Health

Section C : Assessment of the effect of Maternal Education and Socioeconomic Status on Child Health.

Section D : Assessment of the effect of Maternal Attitude and Maternal Health Practices on Child Health.

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2.9 Pretesting

To ensure the reliability, the questionnaire was pretested among consenting mothers participants at a primary health care center in Ekpoma a neighboring village who fit into the inclusion criteria. The first draft of questionnaires was based on the literature review on the specific objectives. The questionnaire will be administered to 10% of sample size 61 which is 6 participants. The data collected was analyzed and used to design the standardized structured questionnaire.

2.9.1 Data Analysis

Statistical test of association between proportions was done by the use of appropriate test of statistics using the statistical Package for the Social Sciences (SPSS) version 21. Statistical level of significance was set at $p < 0.05$, construction of 95% confidence interval and odds ratio was done where applicable. Association between the dependent and independent variable was tested using Chi-square.

The data was analyzed using the descriptive statistical method which was represented in frequency distribution tables and percentage.

2.9.2 Ethical Consideration

This research complied with the Nigeria Code of Health Research Ethics and the Declaration of Helsinki. The conduct of the research process will be based on Good Clinical Practice (GCP) and approved by the research ethics committee.

Ethical approval was sought from Irrua Specialist Teaching Hospital Research Ethics Committee. The study was conducted in line with local and international research ethics code and regulations. Consent was obtained after the purpose of the study, risks, and benefits have been explained to the research participants. The electronic database for responses will have a restricted access only be accessible with a password.

2.9.3 Limitation of Study

This study may not be generalizable to all women because the study is going to be conducted among a subsection of mothers seen at the pediatric department of ISTH. Mothers seen at pediatric ward, clinic and the children emergency will be included in this study so this does may not reflect the views of mothers in other states in Nigeria. The sample size collected over the period of time was relatively too small and also contributes to the fact that the study cannot be generalized.

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3. Results

This chapter deals with the analysis of collected data and presentation of results with the use of percentage, frequency tables and Charts. A total of 60 questionnaires were distributed and retrieved with a response rate of 100%. The results were analyzed under the following sub-headings;

TABLE 1: SOCIAL DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

VARIABLE	FREQUENCY N=60	PERCENTAGE
AGE IN YEARS		
21-25	10	16.7
26-30	19	21.7
31-35	13	31.7
>35	18	30
MEAN±S.D	**28±2.65**	
LEVEL OF EDUCATION		
Primary	10	16.7
Secondary	22	36.7
Tertiary	28	46.7
RELIGION		
Christianity	54	90
Islam	6	10
African traditional religion	-	-
ETHNICITY		
Esan	35	58.3
Yoruba	-	-
Igbo	4	6.7
Hausa	-	-
Benin	6	10
Etsako	10	16.7
Others*	5	8.3

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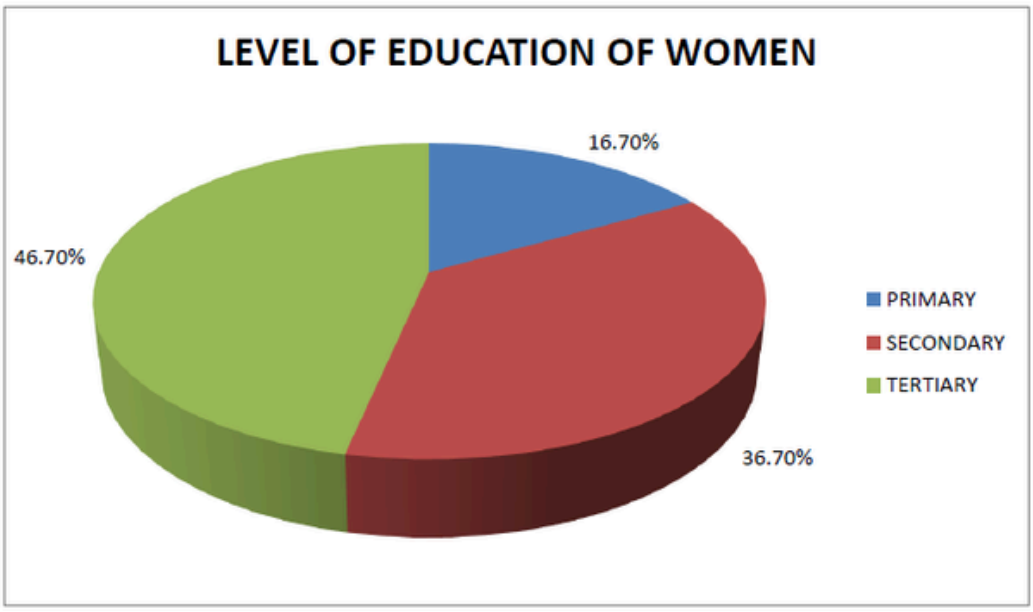
From the above socio-demographic factors, all participants were women and it was observed that majority of participants were between the age group of 26-30 years (53%) with a mean age of 28years. Majorities were Christians (90%) and about less than half had tertiary level of education (46.7%). The Esan speaking tribe dominated the ethnic group (58.3%).

Others indicated by the Afemai, Owan, Urobho tribes.



Figurte 1 : Level of Education

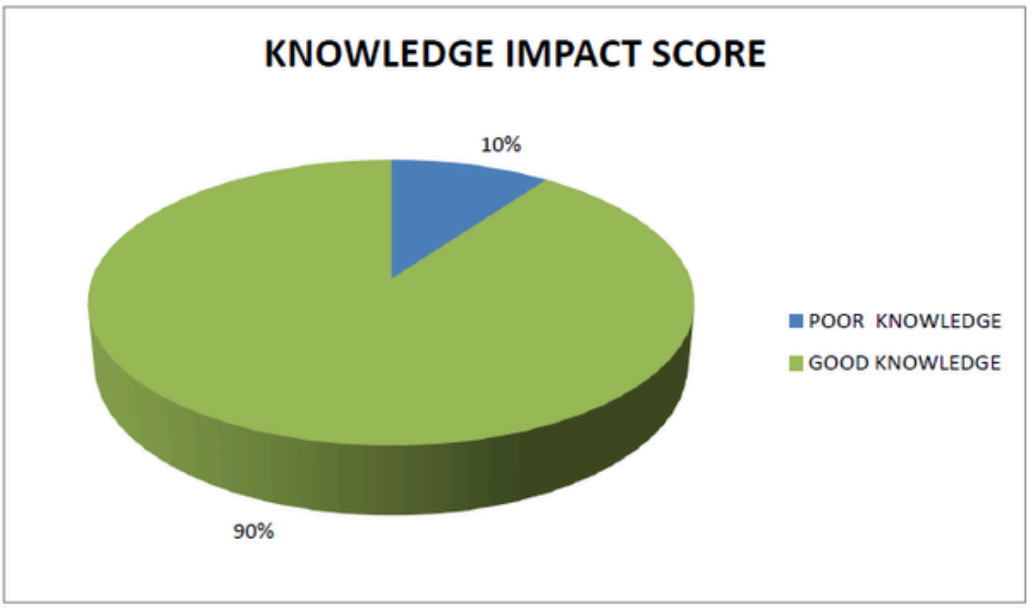


Figure 2 : Pie chart showing the knowledge impact score on breast feeding

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TABLE 2. TABLE SHOWING THE ASSESSMENT OF THE IMPACT OF THE LEVEL OF KNOWLEDGE OF MOTHERS ON CHILD HEALTH

VARIABLE	TRUE (%)	FALSE (%)
Breast milk is the best diet for babies in the first few weeks of life	1 (1.7)	59 (98.3)
The best method to treat child fever is to bathe with cold water	11 (18.3)	49 (81.7)
Children who have vomiting or diarrhea should not be given oral solutions, so the intestines and stomach can rest	20 (33.3)	40 (66.7)
Vaccination is considered one of the most effective method of disease prevention	54 (90.0)	6 (10.0)
Overweight/obese children are usually more healthy than others	20 (33.3)	40 (66.7)
On most occasions, fever in children is a symptom of serious disease.	40 (66.7)	20 (33.3)

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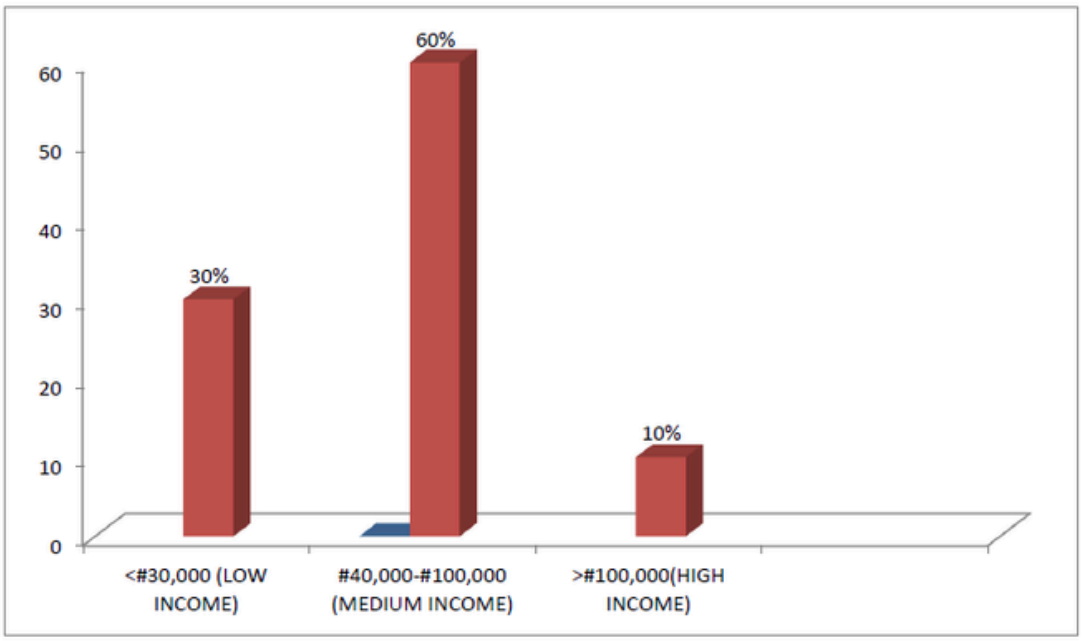

Figure : 3 Bar Chart Showing Various level of income

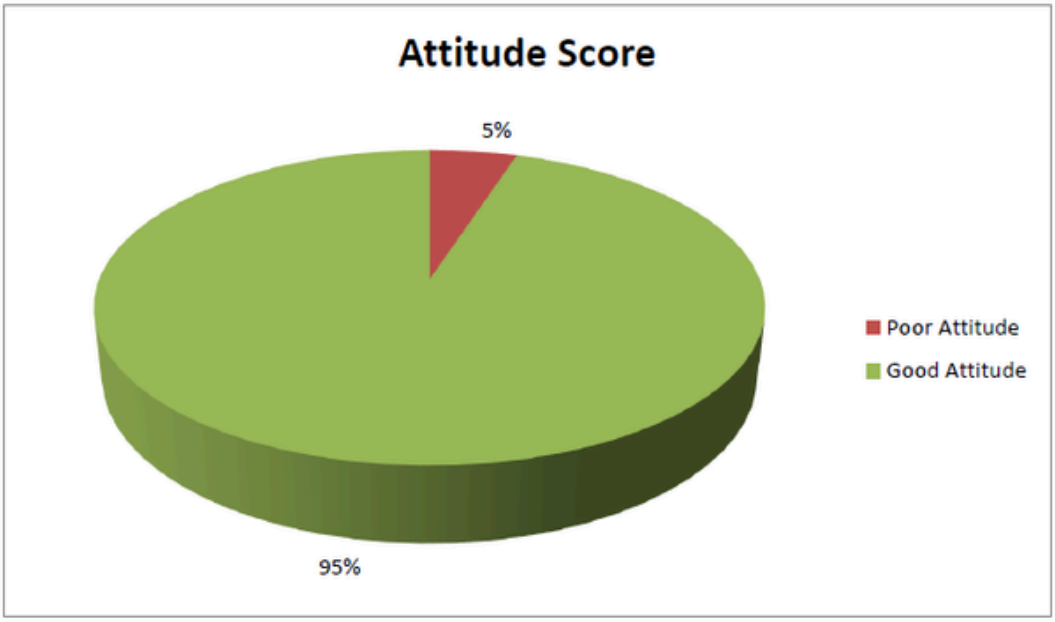

Figure : 4 Pie Chart Demonstrating attitude score

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TABLE 3 ASSESSMENT OF THE EFFECT OF MATERNAL EDUCATION AND SOCIOECONOMIC STATUS ON CHILD HEALTH

VARIABLES	YES (%)	NO (%)
Have you noticed any correlation between maternal education and access to health for your child?	50 (83.3)	10 (16.7)
Do you believe that a mother's education influences her ability to make informed health related decisions for her child?	57 (95)	3 (5)
Do you think maternal education can impact a child a child's nutrition and diet?	56 (93.3)	4 (6.7)
Do you think mothers with higher education are more aware about vaccination and immunization for their children?	45 (75)	14 (25)
Do you think maternal income can affect choice of healthcare services for her child?	53 (88)	7 (22)
Do you think maternal income can affect prompt response to child's illness?	49 (82)	11 (18)

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TABLE 4 ASSESSMENT OF THE EFFECT OF MATERNAL ATTITUDE AND MATERNAL HEALTH PRACTICES ON CHILD HEALTH.

VARIABLES	YES (%)	NO (%)
Do you agree on the importance of skilled health providers for your child's care?	58 (97)	2(3)
Do you agree delays in seeking care for child health complication contribute to child's death?	58 (97)	2(3)
Do you agree routine vaccination is important for your child health?	60 (100)	-
Do you believe that practicing proper food handling and good personal hygiene has good health benefit on your child?	60 (100)	-
Do you believe that practicing exclusive breastfeeding is important and should be done?	58 (97)	2(3)
Do you think traditional methods of addressing certain child illnesses are good; such as burning the legs in fire or putting spoon in the mouth of a convulsing child?	23(38.3)	37 (61.7)

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TABLE 5 ASSOCIATION BETWEEN SELECTED SOCIO-DEMOGRAPHIC DATA AND KNOWLEDGE IMPACT

SOCIO-DEMOGRAPHIC DATA	Variable				
	Knowledge		Total	$\chi 2$	P_{val}
LEVEL OF EDUCATION	**POOR**	**GOOD**		**1.798**	**0.407**
Primary	0	10	10		
Secondary	2	20	22		
Tertiary	4	23	27		
Total	6	53	60		
AGE				**5.922**	**0.115**
21-25	2	8	10		
26-30	0	19	19		
31-35	3	10	13		
>35	1	16	17		
Total	6	54	60		

TABLE 6 ASSOCIATION BETWEEN SELECTED SOCIO-DEMOGRAPHIC DATA AND LEVEL OF INCOME.

SOCIO-DEMOGRAPHIC DATA	Variable INCOME LEVEL				$\chi 2$	P_{val}
LEVEL OF EDUCATION	**Low**	**Medium**	**High**	**TOTAL**		
Primary	4	3	3	10		
Secondary	7	9	6	22		
Tertiary	3	15	10	28		
Total	14	27	19	60	2.45	0.654

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4. Discussion

The study focused on assessment of maternal level of education and socioeconomic status and its effect on child health among mother seen in pediatric ward in ISTH.

A total of 60 questionnaires were distributed and a 100% rate was achieved. From the study it was observed that all mothers have received various degree of literacy with majority (46.70%) of the women having gotten tertiary level of education and the least (16.70%) having primary level of education, but a contrast study in Edo state showed higher level women with secondary education [8]. There was however similarity with a study done in Avad [9] where many women who participated in the study were well educated.

Over all, the knowledge displayed by the women was good as seen in most of the women (90%) while in only a few was poor knowledge (10%) noticed. However, there was no value of statistical significance seen as regards knowledge and level of education. Similar study was found to be done in the King Khalid University Hospital in Riyadh [10]. Closely related to knowledge about health care, feeding, hygiene, and awareness of their children's health, maternal education tends to be higher for children with good nutrition and vice versa. Several studies have shown that the mother's last education is one factor causing malnutrition in infants and toddlers. This was highlighted in Ethiopia [11], India [12].

From the study, it is seen that majority of the woman (60%) were middle income earners closely followed by low income earners (40%). Only a few (20%) were observed to be high income earners. Despite this proportion gap, participants in the study demonstrated that the social economic status of mothers will go a long way in having its effect on the child. This was very similar to studies done among pupils in a school in Nigeria [13] where it was observed that social Economic Status do influence maternal knowledge of nutrition and physical activity as well as children's bodyweights. There was no significant relationship however between level of maternal income and level of education [13].

Most of the women acknowledged the fact that routine vaccination, good health seeking behavior, exclusive breastfeeding; proper food handling are essential in having a positive impact on child health there by demonstrating good attitude (95%) with a negligible number (5%) of women demonstrating poor attitude. This was in line with studies conducted in Vietnam [14] were positive was observed to be demonstrated by mothers irrespective of their level of education or social economic status.

But very much in contrast to studies done in Sierra Lone [15], Gesha area of Ethiopia were low attitude level was noticed amongst woman especially those with low social economic status [16].

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The study also showed a positive relationship between attitude and socio-demographic characteristics since most of the women showed good attitude.

5. Conclusion

5.1 General Public Health Implication of the Study

Maternal education, socioeconomic status during childhood has important consequences for children's development and opportunities for social mobility. With respect to duration and stability, if children in more highly-educated families experience a longer duration of positive economic, family structure and mental health circumstances, as well as greater stability in those resources, they may be less likely to experience the compounding developmental effects of family disadvantage. There is ample evidence, for example, that chronic exposure to poverty is particularly detrimental for children, to the extent that it persistently increases exposure to stressors and limits opportunities for human capital development, social and economic advancement as argued by Wagmiller [17]. Along with maternal education, the availability, accessibility and quality of health services also correlate to child health outcomes as observed in a study in Indonesia, here it was seen that there was a relationship between poor maternal actions and the prevalence of wasting in toddlers (P value = 0.015 ≤ 0.05) [23]. Evidence shows that a considerable number of child deaths can be avoided through the equitable coverage and effective use of public health services [18]. Better access to the required infrastructure, skilled health care providers, and high-quality health services plays an important role in improving child health outcomes [19]. Women who receive counseling during prenatal care gain familiarity with the existing health system, and are, in turn, more likely to utilize the system for improving the health of their children [20]. It has been found that easier access to health infrastructure and community health workers has helped in increasing child immunization coverage [21]. Proximity to health facilities such as a hospital or a Primary Health Centres (PHC) also ensures a higher level of immunization coverage for children. Further, the quality of the health infrastructure and health personnel has also been associated with better infant immunization coverage.

5.2 Recommendation

From our study, the following recommendations are made:

1.To the government/Legislators:

a). Awareness and Sensitization should be created by the government to help educate nursing mothers on appropriate good health seeking behavior.

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b). Government should ensure that Primary health care centers are well catered for and new ones established to bring health services to vulnerable women.

c). Policies that will help to improve the standard of living such as free health care services for under 5's and nursing mothers should be and increase social welfare of the society should be implemented.

2.To the Populace:

a). Mothers should be made to receive basic health care training with regards to caring for infants.

b). Good health care seeking behavior should be promoted so as to greatly reduce the incidence of child hood morbidity and mortality.

3.To the Health Practitioners:

a). Health workers should ensure that basic health techniques on handling children with common health condition should be taught to nursing mothers.

b). Regular awareness and sensitization should be done by health practitioners on identifying common illness like diarrhea, malaria, malnutrition and other common conditions that can impact child's health.

c). Health practitioners should undergo regular training and retraining to be updated with the global standards of treating diseases and illnesses of children.

Disclaimer (Artifical Intelligence)

Authors hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts. This guarantees the fact that the originality of the study was maintained.

Competing Interests

Authors have declared that no competing interests exist.

Reference

1. Paz-Pascual, C., Artieta-Pinedo, I., Grandes, G. et al. (2019). Consensus on priorities in maternal education: results of Delphi and nominal group technique approaches. BMC Pregnancy Childbirth 19, 264 https://doi.org/10.1186/s12884-019- 2382-8

2. Olonade O, Olawande TI, Alabi OJ, Imhonopi D. 2019Maternal Mortality and Maternal Health Care in Nigeria: Implications for Socio-Economic Development. *Open Access Maced J Med Sci*.;7(5):849-855. Published 2019 Mar 14. doi:10.3889/oamjms.2019.041

3. Stein R. E. K. (2024). Defining child health in the 21st century. Pediatric research, 96(6), 1438–1444. https://doi.org/10.1038/s41390-024-03423-w

4. Amwonya, D., Kigosa, N. & Kizza, J. (2022). Female education and maternal health care utilization: evidence from Uganda. *Reprod Health* **19**, 142 https://doi.org/10.1186/s12978-022-01432-8

5. Balaj, M., York, H. W., Sripada, K., Besnier, E., Vonen, H. D., Aravkin, A., Friedman, J., Griswold, M., Jensen, M. R., Mohammad, T., Mullany, E. C., Solhaug, S., Sorensen, R., Stonkute, D., Tallaksen, A., Whisnant, J., Zheng, P., Gakidou, E., & Eikemo, T. A. (2021). Parental education and inequalities in child mortality: a global systematic review and meta-analysis. Lancet (London, England), 398(10300), 608–620. https://doi.org/10.1016/S0140-6736(21)00534-1

6. Daley SF, Avva U. Pediatric Dehydration. [Updated 2024 Jun 8]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK436022/

7. Mutalik AV, Raje VV. Relationship between maternal education and socioeconomic status on knowledge, attitude and practice of mother and her child regarding acute diarrhoeal diseases. Int J Community Med Public Health 2017;4:4472-6.

8. Aigbokhaode AQ, Isah EC, Isara AR. 2015Health seeking behaviour among caregivers of under five children in Edo State, Nigeria (Original research). SEEJPH 2015, posted: 18 February. DOI 10.12908/SEEJPH-2014-41

9. Akinyinka MR, Olatona FA, Oluwole EO. 2016 Breastfeeding Knowledge and Practices among Mothers of Children under 2 Years of Age Living in a Military Barrack in Southwest Nigeria. Int J MCH AIDS.;5(1):1-13. PMID: 27622007; PMCID: PMC5005982.

10. Abiyu, C., & Belachew, T. (2020). Level and predictors of mothers' knowledge and attitude on optimal complementary feeding in West Gojjam Zone, Northwest Ethiopia. Nutrition and Dietary Supplements, 12, 113–121. https://doi.org/10.2147/NDS.S257206

11. Du Plessis, L. M., McLachlan, M. H., & Drimie, S. E. (2018). What does an enabling environment for infant and young child nutrition look like at implementation level? Perspectives from a multi-stakeholder process in the breede valley. *BMC Public Health, 18*(1), 240

12. Hassen SS, Lelisho ME. 2022 Determining factors associated with the prevalence of knowledge, attitude, and practice in seeking skilled maternal healthcare services among women in a remote area of Gesha district. BMC Health Serv Res. Nov 4;22(1):1318. doi: 10.1186/s12913-022-08710-y. PMID: 36329430; PMCID: PMC9635200.

13. Adebisi I. Hammed, Suleiman O. Usman, Onyemechi Ezekiel, Joy C. Duru, Oluwaseun J. Oladimeji Ogolo Jirho1. EQOL Journal (2021) 13(1): 39-44. Influence of physical activity and children's bodyweight of Nigerian school pupils. DOI: 10.31382/eqol.210605

14. Nguyen Thi Thanh. Huong, Hoang Phuong. Anh, Mai Thi Thuy. Hao, Nguyen Thi Hoa. Huyen, 2021Knowledge, attitude and practice of parents on maternal care in a mountainous district of Vietnam: A qualitative study,Midwifery, Volume 102, , 103091, ISSN 0266-6138, https://doi.org/10.1016/j.midw.2021.103091.(https://www.sciencedirect.com/science/article/pii/S0266613821001716)

15. Kanu JS, Tang Y, Liu Y (2014) Assessment on the Knowledge and Reported Practices of Women on Maternal and Child Health in Rural Sierra Leone: A Cross- Sectional Survey. PLoS ONE 9(8): e105936. https://doi.org/10.1371/journal.pone.0105936

16. Simegn W, Diress M, Gela YY, Belay DG, Ayelign Kibret A, Chilot D, Sinamaw D, Abdu Seid M, Andualem AA, Anmut Bitew D, Eshetu HB, Mohammed Seid A. 2023.Childhood vaccination practices and associated factors among mothers/caregivers in Debre Tabor town, Northwest Ethiopia: A cross-sectional study. Front Pediatr. 2023 Jan 30;11:1070722. doi: 10.3389/fped. 1070722. PMID: 36793335; PMCID: PMC9922988

17. Jackson M, Kiernan K, McLanahan S. 2017Maternal Education, Changing Family Circumstances, and Children's Skill Development in the United States and UK. Ann Am Acad Pol Soc Sci.;674(1):59-84. doi:10.1177/0002716217729471

18. Uneke CJ, Sombie I, Uro-Chukwu HC, Johnson E. 2019Developing equity-focused interventions for maternal and child health in Nigeria: an evidence synthesis for policy, based on equitable impact sensitive tool (EQUIST). *Pan Afr Med J.* 2019;34:158. Published Nov 25. doi:10.11604/pamj.2019.34.158.16622

19. Marianne Fay, Danny Leipziger, Quentin Wodon, Tito Yepes, 2015. Achieving child-health-related Millennium Development Goals: The role of infrastructure, World Development, Volume 33, Issue 8, , Pages 1267-1284, ISSN 0305-750X, https://doi.org/10.1016/j.worlddev.2005.03.001. (https://www.sciencedirect.com/science/article/pii/S0305750X05000768)

20. Michelle Bellessa Frost, Renata Forste, David W. Haas 2015, Maternal education and child nutritional status in Bolivia: finding the links, Social Science & Medicine, Volume 60, Issue 2, , Pages 395-407, ISSN 0277-9536, https://doi.org/10.1016/j.socscimed.2004.05.010. (https://www.sciencedirect.com/science/article/pii/S0277953604002448)

21. Firew Tekle Bobo, Augustine Asante, Mirkuzie Woldie, Angela Dawson, Andrew Hayen 2022, Child vaccination in sub-Saharan Africa: Increasing coverage addresses inequalities, Vaccine,Volume 40, Issue 1, , Pages 141-150, ISSN 0264-410X, https://doi.org/10.1016/j.vaccine.2021.11.005.(https://www.sciencedirect.com/science/article/pii/S0264410X21014390)

22. Sirwan Khalid Ahmed, 2024. How to choose a sampling technique and determine sample size for research: A simplified guide for researchers, Oral Oncology Reports, Volume 12, , 100662, ISSN 2772-9060, https://doi.org/10.1016/j.oor.2024.100662.

23. Maulizar R, Marniati, Mulyani I, Ayunda HM, Putri ES. 2023. The Relationship between Behavior, Maternal Education and the Prevalence of Wasting among Toddlers in Meureubo and Kaway Xvi Districts, West Aceh Regency. Asian J. Adv. Res. Rep. [Internet]. Dec. 15 [cited 2025 Jan. 10];17(12):108-15. Available from: https://journalajarr.com/index.php/AJARR/article/view/590