African Journal of Health, Nursing and Midwifery
ISSN: 2689-9418
Volume 7, Issue 2, 2024 (pp. 141-154)
www.abjournals.org

EXAMINING MODERATOR INFLUENCES ON THE EFFECT OF INFORMATION AND MOTIVATION ON INFANT-SURVIVAL BEHAVIOURAL SKILLS OF MOTHERS IN SELECTED PHC FACILITIES

Aliyu-Jacob Ijanada[1*], Atulomah Nnodimele[2], Dangana Jonathan[3], Egga Dennis[4], Olorunnisola Abosede[5], and Onyeike Nelson O.[6]

[1]Department of Public Health, Faculty Public and Allied Health, Babcock University.

[2,3,4,5]Department of Public Health, Faculty Public and Allied Health, Babcock University.

[6]Department of Epidemiology & Medical Statistics, Faculty of Public Health, University of Ibadan.

[*]Corresponding Author's Email: janadajohnj@gmail.com

Cite this article:

Aliyu-Jacob I., Atulomah N., Dangana J., Egga D., Olorunnisola A., Onyeike N. O. (2024), Examining Moderator Influences on the Effect of Information and Motivation on Infant-Survival Behavioural Skills of Mothers in Selected PHC Facilities. African Journal of Health, Nursing and Midwifery 7(2), 141-154. DOI: 10.52589/AJHNM-ZBKLMMKG

Manuscript History

Received: 2 Feb 2024

Accepted: 29 Apr 2024

Published: 13 Jun 2024

ABSTRACT: *This research aims to identify the moderating variables such as age, education level, and number of children alive in the association between information and motivation on infant-survival behavioural skills of mothers in selected PHC facilities. The research was taken from a quasi-experimental design, with one experimental group (n=25) and one control group (n=25) to determine the effect of a peer-led educational intervention on Infant-Survival behavioural skills of mothers. Results revealed that age (β =-2.36; p<0.05) and number (β =3.26; p<0.05) have a significant moderating effect on motivation while education has a significant moderating effect on knowledge or information (β =-7.51; p<0.05) with association to behavioural skills for EG. In the EG, the correlation coefficient shows that a very strong relationship exists between knowledge, motivation and behavioural skills due to the presence of moderating variables and influence of the interventions. The adjusted R^2 of 0.646; p<0.05 connotes 65% changes in behavioural skills was due to knowledge and motivation coupled with moderation factors.*

KEYWORDS: Infant-survival, behavioural skills, knowledge, motivation.

Article DOI: 10.52589/AJHNM-ZBKLMMKG
DOI URL: https://doi.org/10.52589/AJHNM-ZBKLMMKG

African Journal of Health, Nursing and Midwifery
ISSN: 2689-9418
Volume 7, Issue 2, 2024 (pp. 141-154)

www.abjournals.org

INTRODUCTION

The national maternal mortality ratio (NMR) in Nigeria was 40 deaths per 1,000 live births; this statistic has only decreased to 36 deaths per 1,000 live births in 2018 and is anticipated to shrink to 35.5 deaths per 1,000 live births in 2020 (UNICEF, 2018; UNICEF, 2020). Neonatal causes accounted for 47% of all fatalities among children under 5 years of age (UN IGME, 2019). Sub-Saharan Africa (SSA) has made the least progress in addressing newborn morbidity and death and carries a disproportionately large burden of adverse infant outcomes. As a crucial component of the socioeconomic and health indicators of a country, child survival has been a persistent concern and focus of the United Nations indicator frameworks (UNICEF, 2018). As a target for addressing the problem of infant survival, the Sustainable Development Goal 3 (SDG-3) intends to achieve a reduction of under-five mortality rates (U5MR) to 25 per 1000 live births and new-born mortality rates to 12 per 1000 live births for all participating countries in the world by 2023 (WHO, 2015; United Nations, 2018). Despite intense global efforts to reduce preventable childhood mortality, sub-Saharan Africa lags behind rich nations (UNICEF, 2018). Particularly, the North-western states have the highest infant mortality rates in Nigeria. Neonatal disorders (22.9%), lower respiratory infections (19.4%), diarrhea (13.2%), malaria (13.9%), meningitis (5.45%), protein-energy malnutrition (2.8%), measles (2.5%), HIV/AIDS (2%), tuberculosis (1.4%), and other sexually transmitted infections (1.6%) are the leading causes of under-5 mortality in Nigeria, according to research (Statista, 2017). Despite great global success in lowering child mortality, additional child survival initiatives must be implemented.

According to the socio-demographic parameters reported in Edet et al.'s (2020) study, the majority of respondents had secondary and tertiary education, and there is a favourable correlation between educational status and the availability of information, including health education. In addition, there is an association between education level and the probability of getting a health education (Zimmerman & Wolf, 2014; Radanovich et al., 2016; Anyanwu, et al., 2013). Sokefun and Atulomah (2020) discovered that those with lucrative work reported better outcomes than those who were unemployed, housewives, or self-employed. This is because persons with lucrative employment are more likely to be educated, empowered, and financially supported than individuals with other sorts of employment. When studying the effect of employment on infant mortality, Ko et al. (2014) discovered similar results. They concluded that the mother's employment provided concrete support and enhanced her self-efficacy to implement infant care advice. Women with lesser levels of education and those residing in more disadvantaged areas are associated with greater infant death rates (Joshi et al., 2013). Individuals with a higher degree of academic achievement are more likely to appreciate the complexities of health literacy requirements and may be able to convey to their family the precise support and baby care help needed. In a study somewhat similar to this one, Adebowale et al. (2012) found that those with higher levels of education and higher-paying jobs had lower mortality rates.

Several factors, including economic, social, demographic, environmental, and biological factors (Vikram et al., 2010), can explain the relationship between maternal education and infant survival. For instance, maternal education can raise awareness and promote optimal infant feeding and care; alternatively, participation in higher education enables a woman to obtain a better job and, consequently, a higher income/wealth level. These two types of education are advantageous for women and their children (Aslam & Kingdon, 2012). Education

Article DOI: 10.52589/AJHNM-ZBKLMMKG
DOI URL: https://doi.org/10.52589/AJHNM-ZBKLMMKG

for mothers can also alter mothers' attitudes toward conventional norms and beliefs, such as traditional techniques for caring for babies and information about procedures for preventing illness and disease, both of which influence the likelihood of an infant or child's survival (Kiross et al., 2020). A mother with more education is better equipped to utilize modern medical facilities and is more conscious of the need for keeping adequate hygiene (Ara et al., 2018). Education can also impact infant survival by influencing reproductive behaviour and increasing mothers' awareness of healthcare practices related to contraception, nutrition, hygiene, disease prevention, and treatment. These variables influence the likelihood that a baby will reach maturity (Fatema & Kabir, 2017). Therefore, this research aims to identify the moderating variables such as age, education level, and number of children alive in the association between information and motivation on infant-survival behavioural skills of mothers in selected PHC Facilities.

LITERATURE/THEORETICAL UNDERPINNING

Fisher and Fisher (1992) developed the Information-Motivation-Behavioural Skills (IMB) Model in 1992 as they sought to understand the mechanism behind HIV-risk behaviour change (Fisher & Fisher, 1992). They found that behavioural change was a function of an individual's possession of three factors: information, motivation and behavioural skills. They consolidated these findings into a generalizable model that has served as a framework for interventions and as a reference for understanding various behaviour changes both within and outside the health field. The three elements of the model interplay to influence a behavioural change.

1. Information: An individual has relevant information concerning the behaviour and its implications.
2. Motivation: An individual's attitude toward the behaviour and the consequences of that behaviour. This attitude is influenced by both personal and social motivation.
    - **Personal Motivation:** Attitude toward the behaviour and self-perception about own performance of behaviour.
    - **Social Motivation:** Society’s acceptance of the behaviour and the individual's desire to adhere to social norms.
3. Behavioural Skills: The resources necessary for an individual to carry out behaviour. The individual must have both ability and self-efficacy.
    - **Objective Ability:** An individual's capability to practice behaviour.
    - **Self-Efficacy:** An individual's self-belief in their capability to practice behaviour. Both information and motivation activate the behavioural skills necessary for behaviour change.

A study conducted by a few researchers confirms that in order to develop effective intervention strategies, it is essential to assess moderating variables in mothers' desire for behavioural skills and knowledge (information) at the personal level prior to intervention. Studies have demonstrated that the Information-Motivation-Behavioral skills (IMB) model influences the psychological and emotional states of women undergoing caesarean sections (CS) as well as

Article DOI: 10.52589/AJHNM-ZBKLMMKG
DOI URL: https://doi.org/10.52589/AJHNM-ZBKLMMKG

behaviours linked to gestational weight management (You, Wang, Zhang et al., 2023; Shen, Liu & Zhou, 2021). Furthermore, studies using the IMB model have shown promise in enhancing primiparas' exclusive nursing habits (Xu, Fang, Xu & Shen, 2023). The aforementioned results underscore the need of taking into account individual qualities such as knowledge, motivation, and behavioural skills when developing interventions for maternal health. This emphasises the necessity for custom methods.

METHODOLOGY

The research was a quasi-experimental design, with one experimental group and one control group to determine the effect of a peer-led educational intervention on Infant-Survival Behavioural Skills of Mothers in Selected Primary Healthcare Facilities in Sokoto State, Nigeria. It is believed that there were more than 4.2 million people residing there. As a result of its past role as the capital of the Sokoto Caliphate, the majority of the city's population identify as Muslims, and the city is widely regarded as an important center for Islamic education within Nigeria. The climate in Sokoto is characterized as being hot and semi-arid most of the year. The study population were mothers of infants in Selected Primary Healthcare Facilities in Sokoto State, Nigeria. The study was conducted among women who had given birth to live babies within the last 12 months. The mothers of infants chosen for the study were fully registered in the selected Primary Health Care Facilities. The mothers' willingness to participate in the study was sought. Mothers who consented to participating were briefed about the research work. The mothers were enrolled with the assumption that they would be active in the primary healthcare facilities until the end of the study. No given estimate of the prevalence of infant mortality in Sokoto State was cited in the literatures reviewed; thus, the sample size was determined using the Power formula (Moyer, Kinard, Conner, Caplovitz, Ford & Ann et al., 1955) for computation of sample size. This sample size was just for one group; therefore, the total size was multiplied by two to get the total sample size for all the targeted population in the two groups.

$$n = \frac{(Z_\alpha + Z_\beta)^2 \times P_0 (1 - P_0)}{(P_1 - P_0)^2}$$

Z_α = 1.96 at 95% confidence level of the standard normal population distribution,

Z_β = 80%, i.e., 0.84 (Power to detect changes in the outcome variable at end of the study and to avoid type II error)

P_0 = prevalence (at 50%)

P_1 = 80% (desired level of outcome variable)

$$n = \frac{(1.96 + 0.84)^2 \times 0.5 (1 - 0.5)}{(0.8 - 0.5)^2}$$

$$\frac{(2.8)^2 \times 0.5 (0.5)}{(0.8 - 0.5)^2}$$

Article DOI: 10.52589/AJHNM-ZBKLMMKG
DOI URL: https://doi.org/10.52589/AJHNM-ZBKLMMKG

$$\frac{7.84 \times 0.25}{0.09}$$

$$= 21.78 \simeq 22$$

The minimum sample size computed was 22 participants.

A 10% of the minimum sample size was added to take care of attrition.

The total number of participants after adding 10% of 22 was 22 + 2.2 ≃ 25

Based on this computation, there was a total number of 50 participants (25 x 2) from 2 LGA.

The sampling procedure that was adopted for this study was a combination of simple random sampling and multi-stage sampling techniques for the selection of mothers of infants from the selected primary healthcare facilities. A senatorial district in Sokoto State was selected by simple random sampling through balloting; the senatorial district selected was the Sokoto North senatorial district and from the senatorial district selected, two local governments were randomly selected. The two local governments consequently selected were Sokoto North Local Government Area and Wamakko Local Government Area. The second stage saw the selection of the primary health care centers; hence, a political ward was randomly selected from the selected local government; subsequently, a primary health care facility was selected from the selected ward using the balloting system. At the third stage, a random sampling technique was employed in selecting the mothers of infants attending the selected hospitals. Three mothers of infants were also recruited separately to deliver the training to their peers. At the fourth stage, the mothers of infants that were recruited across the two groups (2 LGAs).

The independent variables in the study were selected demographic variables, information, and motivation related to infant-survival behavioural skills. The dependent variable was infant-survival behavioural skills of mothers of infants. The instrument was a participant-administered questionnaire, which solicited information on the demographic characteristics: information, motivation, and the behavioural skills of mothers of infants toward infant survival strategies. The instrument was developed specifically for this study and was utilized for the collection of data. This technique consisted of three phases, baseline, immediate and follow evaluation. However, this study focused on the baseline and follow-up phases. The data on the infant survival behavioural skills among mothers was obtained as part of this study and would serve as a reference for determining how effective the intervention was. This study collected baseline information and SPSS version 23 was utilized in the collation, entry, and for the data analysis. The t-test and Pearson chi-square were deplored for the demography data while moderated regression test statistics was used for the determining effects and significance of moderating variables and dispersion on scatter plot.

Article DOI: 10.52589/AJHNM-ZBKLMMKG
DOI URL: https://doi.org/10.52589/AJHNM-ZBKLMMKG

African Journal of Health, Nursing and Midwifery
ISSN: 2689-9418
Volume 7, Issue 2, 2024 (pp. 141-154)

www.abjournals.org

Ethical Considerations

The institutional review board for ethical approval of the university, Babcock University Health Research and Ethics Committee (BUHREC), and State Primary Health Care Development Agency Research Ethics, Sokoto State was sought to provide ethical approval of the study protocol to conduct the study through an application.

RESULTS/FINDINGS

Table 1: Demographic Characteristics of the Participants in Each Group at the Baseline of the Study

Variable	Experimental N=25	Control N=25	
	Frequency N (%)	Frequency N (%)	p-value
Age	28.32±6.556	27.36±6.480	0.610
Educational attainment			0.724
Non-formal	1(4.0)	0	
Primary	5(20.0)	6(24.0)	
Secondary	16(64.0)	17(68.0)	
Tertiary	3(12.0)	2(8.0)	
Number of Children Alive	M=2.04, SD=0.79	M=2.04, SD=0.79	0.850
One child	7(28.0)	6(24.0)	
Two Child	10(40.0)	12(48.0)	
More than two children	8(32.0)	7(28.0)	

M - mean; SD - standard deviation

The results in Table 1 show that all female participants had similar characteristics at a full glance at some areas. The mean age of respondents was 28.32±6.49 years with an age range of 19 to 41 years of age. According to Figure 4.1, the majority of the participants fell within the categories of 22 and 30 years of age. This implies that the majority of the respondents were less than 31 years old. The results also indicated that the majority, 49 (98%) of the participants are married. On educational attainment, non-formal education was 1 (2%), primary education was 11 (22.0%), secondary education was 32 (64%), while the post-secondary education of respondents was 6 (12%). Those with more than 2 children comprised about 30% of the respondents while those with 2 children were the majority (40–48%). The similarity of the age, educational level and number of living children showed no significant ($p>0.05$) difference for both groups.

Article DOI: 10.52589/AJHNM-ZBKLMMKG
DOI URL: https://doi.org/10.52589/AJHNM-ZBKLMMKG

African Journal of Health, Nursing and Midwifery
ISSN: 2689-9418
Volume 7, Issue 2, 2024 (pp. 141-154)
www.abjournals.org

The Effect of Personal-level Disposition of Knowledge (Information) and Motivation of Mothers on Infant-survival Behavioural Skills of Mothers in Selected PHC without Moderating Variables (at baseline)

Table 2: Means, Standard Deviations and Ranges of the Core Variables at Baseline

Variable	Experimental Group (n=25)		Control group (n=25)		p-value
	Mean	SD	Mean	SD	
Behavioural skills	22.72	4.55	25.38	5.38	0.054
Knowledge (Information)	13.00	1.16	12.50	2.11	0.315
motivation	17.36	3.44	22.08	3.67	0.000

Maximum point scale for behavioural skills = 30, knowledge = 15 and Motivation = 36

Table 3: Results of Regression Analysis at Baseline without Moderating Variable

Predictor	Experimental group (β)	Control group (β)
knowledge	1.483	-0.237
motivation	0.133	-0.615
	R= 0.378	R= 0.406
	Adj. R^2 = 0.065; sig.=0.183	Adj. R^2 = 0.085; sig.=0.151

Dependent variable: behavioural skills. Model: Enter; * p<0.05. ** p<0.001

The basic results of the experimental and the control group on the personal-level disposition of knowledge derived from information for appropriate decision-making, motivation defined by attitudinal disposition and perceptions of mothers on infant-survival skills revealed that the computed mean and standard deviation scores for knowledge were 13.00±1.08 and 12.52±2.06 (p=0.07) for the control and experimental groups respectively, measured on a 15-point rating scale.

Motivation score defined by attitudes and perceptions of mothers in this study at baseline, measured on a 36-point scale, showed a mean score of 17.36±3.43 for the experimental groups, and a mean score of 22.08±3.67 for the control group. This indicates that there is a significant difference (p<0.001) between the control and experimental groups at baseline because the control group tended to have a slightly higher moderate level. At baseline, it can be summarized that both groups have a moderate overall level of motivation. The behavioural skills scores, which reflect the capacity to practice infant-survival strategies for the control group with a mean score of 25.48±3.70 and for the experimental group of 22.70±4.58, measure 30-point scale are reported (See Table 2).

According to Table 3, regression coefficients of knowledge (in form of information) and motivation equalled respectively β = 1.48, (p>0.05) and β = 0.13 (p>0.05) for experimental group; β = -0.24 (p>0.05) and β = -0.62 (p>0.05) for control group. In addition, knowledge (in form of information) and motivation were not significantly associated with infant-survival behavioural skills of mothers for both groups. Regression analysis confirmed this result, showing an insignificant positive but slightly weak result (R=0.378) between knowledge and motivation associated with behaviour skill. The explained variance in behaviour skill by these

Article DOI: 10.52589/AJHNM-ZBKLMMKG
DOI URL: https://doi.org/10.52589/AJHNM-ZBKLMMKG

variables (information/knowledge and motivation) was however quite small (adjusted R^2 = 0.065; p>0.05) in the experimental group. In the control group, there was also an insignificant positive and slightly weak (R=0.406) between knowledge and motivation associated with behaviour skill. The explained variance in behaviour skill by these variables (information/knowledge and motivation) was however quite small (adjusted R^2 = 0.085; p>0.05).

Evaluation of Moderating Variables in Personal-level Disposition of Knowledge (Information) and Motivation of Mothers on Behavioural Skills before Intervention

Table 4: Results of Moderated Regression Analysis on Infant-survival Behavioural Skills of Mothers in Selected PHC before Intervention

Predictor	Experimental group (β)	Control group (β)
knowledge (Z-score)	.015	-.314
motivation (Z-score)	.022	-.452
age (Z-score)	-2.399	.156
education level (Z-score)	4.356	.280
number children (Z-score)	8.595*	-.613
Product 1(know(Z-score) * age(Z-score))	-.778	-.361
Product 2 (motivation(Z-score) * age(Z-score))	-.514	.430
Product 3 (know(Z-score) * Edu(Z-score))	1.865	.508
Product 4 (motivation(Z-score) * Edu(Z-score))	.262	.183
Product 5 (know(Z-score) * nchild(Z-score))	3.800	.831
Product 6 (motivation(Z-score) * nchild(Z-score))	.365	-.755
	R= 0.742	R= 0.622
	Adj.R^2=0.169; sig.=0.261	Adj.R^2=0.176; sig.=0.729

Dependent variable: Zscore(behavioural skills). Model: Enter; * p<0.05. ** p<0.001

Experimental Group Scatter Plot **Control group scatterplot**

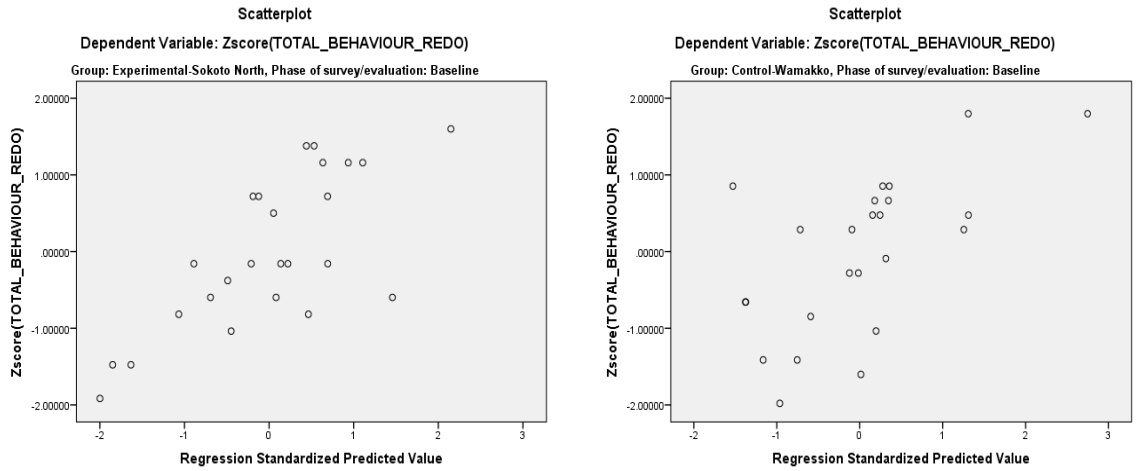

Figure 1: Experimental group scatterplot and control group scatter plot at baseline phase (before intervention)

Article DOI: 10.52589/AJHNM-ZBKLMMKG
DOI URL: https://doi.org/10.52589/AJHNM-ZBKLMMKG

The moderating role of age, education and number of living children were explored, using moderated regression analysis per interaction term for each time perspective before peer-led health education intervention. As shown in Table 4, the interaction term Product 1 (knowledge (Z-score) * age (Zscore)), Product 2 (motivation(Z-score) * age(Z-score)), Product 3 (know(Z-score) * Edu(Z-score)), Product 4 (motivation(Z-score) * Edu(Z-score)), Product 5 (know(Z-score) * nchild(Z-score)), and Product 6 (motivation(Z-score) * nchild(Z-score)) proved to be insignificant for both groups. No significant interaction terms were found. Results are shown in Table 4. Regression analysis confirmed this result, showing an insignificant positive and strong relationship (R=0.742) between knowledge and motivation associated with behaviour skill in the experimental group (EG). More so, the regression analysis for the control group (CG) confirmed that there is an insignificant positive and slightly strong relationship (R=0.662) between knowledge and motivation associated with behavioural skill for infant-survival in selected PHC.

The explained variance in behaviour skill by these variables (information/knowledge and motivation) was however small (adjusted $R^2 = 0.169$; $p>0.05$) in the experimental group. While in the CG, the explained variance in behaviour skill by these variables (information/knowledge and motivation) was however quite small (adjusted $R^2 = 0.176$; $p>0.05$). The scatter plot for both groups shows dots that disperse more for a positive or direct relation from point zero, that is, if a positive diagonal line is drawn from point zero, the dots will not cluster close to that line.

Evaluation of Moderating Variables in Personal-level Disposition of Knowledge (Information) and Motivation of Mothers on Behavioural Skills after Intervention

Table 5: Results of Moderated Regression Analysis on Infant-survival Behavioural Skills of Mothers in Selected PHC after Intervention

Predictor	Experimental group (β)	Control group (β)
knowledge (Z-score)	.421*	.169
motivation (Z-score)	.949	-.056
age (Z-score)	5.303	-.740
education level (Z-score)	4.650*	.360
number children (Z-score)	-5.280*	1.627*
Product 1(know(Z-score) * age(Z-score))	-4.537	.239
Product 2 (motivation(Z-score) * age(Z-score))	-2.356*	-.529
Product 3 (know(Z-score) * Edu(Z-score))	-7.506*	-1.302
Product 4 (motivation(Z-score) * Edu(Z-score))	.540	.362
Product 5 (know(Z-score) * nchild(Z-score))	3.174	-3.609*
Product 6 (motivation(Z-score) * nchild(Z-score))	3.257*	1.570*
	R= 0.899	R= 0.799
	Adj.R^2=0.646; sig.=0.004*	Adj.R^2= 0.33; sig.=0.105

Dependent variable: Zscore (behavioural skills). Model: Enter; * p<0.05. ** p<0.001

Article DOI: 10.52589/AJHNM-ZBKLMMKG
DOI URL: https://doi.org/10.52589/AJHNM-ZBKLMMKG

African Journal of Health, Nursing and Midwifery
ISSN: 2689-9418
Volume 7, Issue 2, 2024 (pp. 141-154)
www.abjournals.org

Experimental Group Scatter Plot **Control group scatterplot**

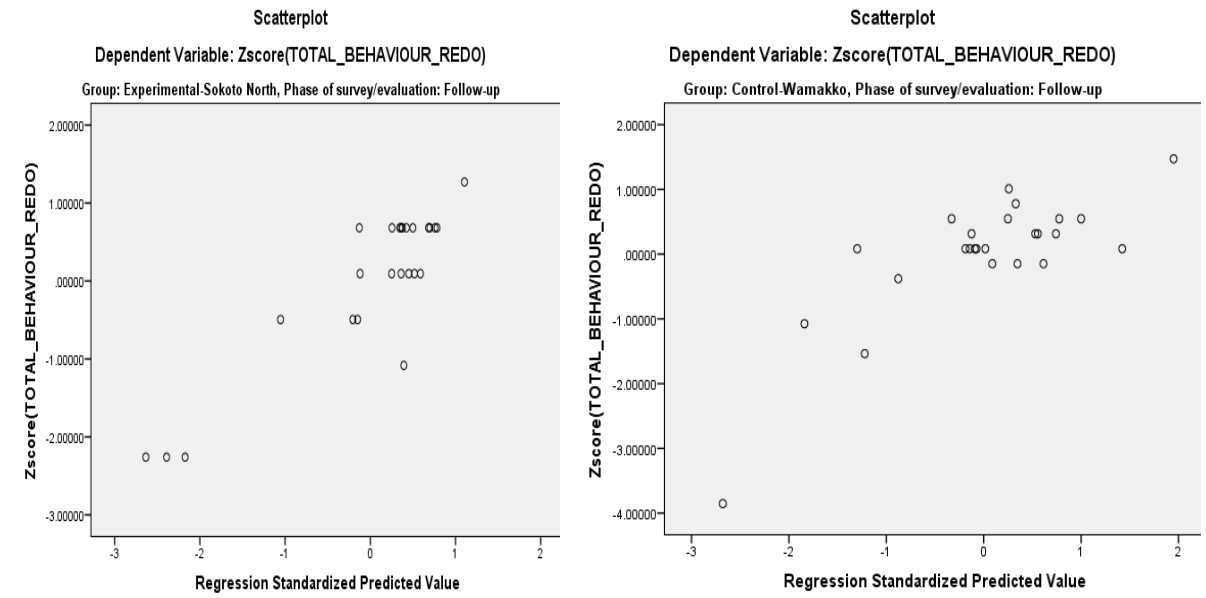

Figure 2: Experimental group scatter plot and Control group scatterplot at follow-up phase (after interventions).

According to Table 5, the moderating role of age, education and number of living children were explored after the peer-led health education intervention, using moderated regression analysis per interaction term for each time viewpoint. The interaction term Product 2 (motivation(Z-score) * age(Z-score)) shows that age has a significant moderating effect on motivation variable (β =-2.36; $p<0.05$), and the Product 3 (know(Z-score) * Edu(Z-score)) results implies that education has a significant moderating effect on knowledge or information (β =-7.51; $p<0.05$) with association to behavioural skills, while Product 6 (motivation(Z-score) * nchild(Z-score)) proved to be significant (β =3.26; $p<0.05$) for the moderating effects of number living children in motivation. However, no significant effect was observed for age on knowledge ($p>0.05$), educational level on motivation ($p>0.05$) and number of living children on knowledge ($p>0.05$) with association to behavioural skills.

In the EG, the correlation coefficient shows that a very strong relationship (R=0.899) existed between knowledge, motivation in association with behavioural skills due to the presence of moderating variables and influence of the interventions. The adjusted R^2 of 0.646 implies that the 65% changes seen in behavioural skills can be attributed to changes in knowledge and motivation coupled with moderation of age, education and number of children living on motivation, knowledge, and motivation respectively.

The experience was different for control group (CG) participants who showed that the number of children living has significant moderating effects on both knowledge or information ($p<0.05$) and motivations ($p<0.05$) with association with behavioural skills. Overall, no significant effect was seen on these interaction terms in relation between knowledge and motivation with association of behavioural skills (R=0.799; Adjusted R^2=0.33, $p=0.105>0.05$). The scatter plot for EG shows dots that cluster more at the diagonal with positive or direct relations from point zero, while CG is still dispersed from the diagonal of the box.

Article DOI: 10.52589/AJHNM-ZBKLMMKG
DOI URL: https://doi.org/10.52589/AJHNM-ZBKLMMKG

African Journal of Health, Nursing and Midwifery
ISSN: 2689-9418
Volume 7, Issue 2, 2024 (pp. 141-154)

www.abjournals.org

DISCUSSION

Without interventions, the level of knowledge of the women on issues related to personal-level disposition and infant-survival practices of mothers was high. However, the motivation towards Implementing Infant Survival Skills was low. The infant survival practices in which the behavioural skills were embedded had an average mean score that was slightly high. In all these, there was a need to ascertain the moderating variable interaction on the effects of information possessed by women in Sokoto PHC and their motivation level on infant-survival behavioural skills with regards to child's survival before and after interventions for experimental and control groups. The moderating variables (age, educational level and number living children) strengthened the effect of the independent variable (information/knowledge and motivation) on the dependent variable (infant-survival behavioural skills). On the other hand, without the presence of moderating variables, a study from North-eastern Nigeria found that mothers' behavioural skills linked to baby survival practices are highly influenced by their personal-level disposition of knowledge and motivation. Behaviour skills and information were strongly correlated ($r = 0.29$, $p < 0.001$ and $r = 0.37$, $p < 0.001$, respectively); behaviour was also significantly correlated ($r = 0.22$, $p < 0.001$ and $r = 0.11$, $p = 0.033$, respectively) (Balami et al., 2019a). Another study by researchers still affirmed that information and motivation directly affect conduct (Akgün & Taştekin, 2020).

Regression analysis on knowledge (information possessed) and motivation's effect on infant-survival behavioural skills were not significant across the group of participants. Though the relationship between the dependent and independent variables were positive, it was slightly weak. The explainable variance in infant-survival behaviour skill by these variables (information/knowledge and motivation) was however quite small in the experimental and control groups before intervention. At the baseline phase, the moderating role of age, education and number of living children were examined using moderated regression analysis per interaction term which revealed no statistically significant influence of the moderating variables though the correlation coefficient (R-value) was strengthened for both groups. Only few (small) percentages of the variance in infant-survival behaviour skill can be attributed to information/knowledge and motivation. A study conducted by a few researchers confirms that in order to develop effective intervention strategies, it is essential to assess moderating variables in mothers' desire for behavioural skills and knowledge (information) at the personal level prior to intervention. Studies have demonstrated that the Information-Motivation-Behavioural skills (IMB) model influences the psychological and emotional states of women undergoing caesarean sections (CS) as well as behaviours linked to a specific healthy behaviour (Shen, Liu, & Zhou, 2021; You, Wang, Zhang, et al., 2023). Furthermore, studies using the IMB model have shown promise in enhancing primiparas' exclusive nursing habits (Xu, Fang, Xu & Shen, 2023). The aforementioned results underscore the need of taking into account individual qualities such as knowledge, motivation, and behavioural skills when developing interventions for maternal health. This emphasises the necessity for custom methods.

After the peer-led health education intervention, using moderated regression analysis, age has a significant moderating effect on motivation while education has a significant moderating effect on knowledge or information with association to behavioural skills. The same effect was observed with the moderating variable of "number of children living" in its interaction with motivation on behavioural skills for EG. The overall regression test showed a very strong relationship (R-value) compared to the baseline results. In terms of variation (Adjusted R^2),

Article DOI: 10.52589/AJHNM-ZBKLMMKG
DOI URL: https://doi.org/10.52589/AJHNM-ZBKLMMKG

65% changes seen in infant-survival behavioural skills can be attributed to changes in knowledge and motivation coupled with moderation of age, education and number of children living on motivation, knowledge, and motivation respectively. No significant impact was seen in CG participants even at the final phase of the study. Similar results were seen in another study conducted in Nigeria, where the intervention significantly increased the intervention group's total knowledge, motivation, and behavioural skills scores over the control group by 12.75% ($p < 0.001$), 8.55% ($p < 0.001$), and 6.350% ($p < 0.001$), respectively. Even with no replacement data for the missing data, the sensitivity analysis did not show significant variations in the effect sizes. Knowledge, motivation, and behavioural skills were all improved by the intervention module (Balami et al., 2019b).

IMPLICATION TO RESEARCH AND PRACTICE

This research strengthens and promotes the adoption of the Information-Motivation-Behavioural skills (IMB) model into peer-led interventions programmes in issues that affect women and their responsibility to protect their children from health problems. It emphasises the direct relationship between information and motivation and behavioural skills, which in turn influence behaviour, as seen from theoretical perspectives (Farhati et al., 2019; Scott et al., 2020). In order to encourage better behavioural outcomes in neonatal care, it is crucial to raise information and motivation levels, as this association highlights. The IMB model-based interventions have demonstrated efficacy in enhancing pregnant women's knowledge, motivation, and behavioural skills, underscoring the need of tackling these elements in fostering desired health behaviours, making it possible for other researchers to use the findings of this research to improve their conceptual models for fieldwork in the sub-Saharan region of Africa.

CONCLUSION

This research aims to identify the moderating variables in the association between information and motivation on infant-survival behavioural skills among mothers in selected PHC Facilities. Regression analysis on knowledge (in form of information) and motivation's effect on behavioural skills showed an insignificant positive but slightly weak relationship before intervention and applying the moderating variables. At this point, the variance in behaviour skill attributed information/knowledge and motivation was small in all groups. More so, at the baseline phase the moderating role of age, education and number of living children were also not statistically significant on the association that exists among core variables (information/knowledge, motivation and behavioural skills) with similar variance observed like before. However, after the peer-led health education intervention, using moderated regression analysis, age and "number of children living" have significant moderating effects on motivation while education has a significant moderating effect on knowledge or information with association to behavioural skills in EG. The overall regression test showed a very strong relationship (R-value) with a higher percentage of changes seen in behavioural skills. It is evident that the moderating variables have contributed to the strength of the relationship between the independent variables (information and motivation) and the dependent variable (behavioural skills). From the viewpoint of the EG, it also means moderating variables that are taken into cognisance during interventions will trigger a better infant survival behavioural skill

Article DOI: 10.52589/AJHNM-ZBKLMMKG
DOI URL: https://doi.org/10.52589/AJHNM-ZBKLMMKG

for infant survival strategies among mothers. This study, therefore recommends that each LGA should have a workshop for promoting infant survival skills using cues to action, such as local content posters, or use a practical training workshop to enhance self-efficacy

FUTURE RESEARCH

Future research study should focus on how the social demography of spouses and social capital can influence behavioural skills for infant-survival.

REFERENCES

Adebowale, A. S., Yusuf, B. O., & Fagbamigbe, A. F. (2012). Survival probability and predictors for women experiencing childhood death in Nigeria: "analysis of North-South differentials". *BMC public health*, *12*, 430. https://doi.org/10.1186/1471-2458-12-430

Akgün, P., & Taştekin, A. (2020). The effect of information–motivation–behavioral skills on breastfeeding success: A hypothetical model. *Journal of Transcultural Nursing*, *31*(4), 378-386.

Anyanwu JI, Ezegbe BN, & Eskay A. (2013). Family Planning in Nigeria: A myth or reality? Implication for education. J Edu Pract 2013; 4(12): 26-28

Aslam M, & Kingdon GG. Parental education and child health—understanding the pathways of impact in Pakistan. World Development, 2012. 40(10): p. 2014–2032.

Balami, A. D., Said, S. M., Zulkefli, N. A. M., Bachok, N. A., & Balami, E. L. (2019a). An information-motivation-behavioural skills analysis of long-lasting insecticidal net use among pregnant women in a hospital in North-Eastern Nigeria. *BMC medical research methodology*, *19*, 1-9.

Balami, A. D., Said, S. M., Zulkefli, N. A. M., Bachok, N. A., & Audu, B. (2019b). Effects of a health educational intervention on malaria knowledge, motivation, and behavioural skills: a randomized controlled trial. *Malaria journal*, *18*, 1-14.

Edet, I.V., Effiong, J.H., & Udoh, I.A. (2020). Knowledge and Practice of Child Survival Strategies among Mothers Attending Postnatal Clinic in Itu, a Sub-Urban Area of South Nigeria. *International Journal of Health Sciences and Research, 10, 1-8.*

Farhati, F., Resmana, R., & Nurhadianti, D. (2019). Pendidikan Kesehatan dengan Pendekatan Model Information Motivation Behavior Skill (IMB) terhadap Peningkatan Pengetahuan dan Pola Konsumsi Sayur dan Buah pada Ibu Hamil. *Jurnal Kesehatan*, *10*(3), 320-328.

Fisher, J.D., and Fisher,W.A (1992). Changing AIDS risk behavior. Centre for Health, Information and Prevention Documents. Paper 2.

Joshi R, Sharma S, & Van Teijlingen E (2013). Improving neonatal health in Nepal: major challenges to achieving millennium development goal 4. *Health Sci J*. 7(3):247–57.

Kiross GT, Chojenta C, Barker D, Tiruye TY, Loxton D (2019). The effect of maternal education on infant mortality in Ethiopia: A systematic review and meta-analysis. *PLoS ONE* 14(7): e0220076. https://doi.org/10.1371/journal.pone.0220076

Ko YJ, Shin SH, Park SM, Kim HS, Lee JY, Kim KH, & Cho B. (2014). Effects of employment and education on preterm and full-term infant mortality in Korea. Public Health. 2014;128(3):254–61.

Radanovich O, Cedomir S, Alexander V, Tasic A, & Mavkovic R. (2016). The influence of education on family planning. Med Biol 2016; 13(1): 58-64.

Article DOI: 10.52589/AJHNM-ZBKLMMKG
DOI URL: https://doi.org/10.52589/AJHNM-ZBKLMMKG

Scott, J., Oxlad, M., Dodd, J., Szabo, C., Deussen, A., & Turnbull, D. (2020). Creating healthy change in the preconception period for women with overweight or obesity: A qualitative study using the Information–Motivation–Behavioural Skills Model. *Journal of Clinical Medicine*, *9*(10), 3351.

Shen, W., Liu, X., & Zhou, A. (2021). Analysis of continuous nursing intervention on aplastic anemia patients based on the "information-motivation-behavioral skills model". *Evidence-Based Complementary and Alternative Medicine*, *2021*.

Sokefun, E.E., & Atulomah, N.O. (2020). Predictors of infant-survival practices among mothers attending paediatric clinics in Ijebu-Ode, Ogun State, Nigeria. *BMC Public Health* **20**, 1245. https://doi.org/10.1186/s12889-020-09310-3

UN IGME (2019). Levels and Trends in Child Mortallity. In. New York: UNICEF; 2019

UNICEF (2018). Data, Under-5 Mortality 2018. Available at hpp://dataunicef.org/topic/childsurvival/underfive. Accessed on 28/5/2019.

UNICEF DATA. Under 5 Morbidity Available@:htt//dataunicef.org/topic./childsurvial/underfine. accessed on 28/5/2019

United Nations Department of Economic and Social Afairs, Population Division (2020). World Fertility and Family Planning 2020: Highlights (ST/ ESA/SER.A/440)

United Nations Inter-agency Group for Child Mortality Estimation (UN IGME) (2017). Levels & Trends in child mortality: report 2017, estimates developed by the UN inter-agency Group for Child Mortality Estimation. New York: United Nations Children's Fund; 2017

United Nations (2021). Millennium Development Goals. Goal 4: reduce child mortality. https://www.un.org/millenniumgoals/childhealth.shtml.

Vikram K, Vanneman R, & Desai S (2010). Maternal Education and Child Mortality: Exploring the Pathways of Influence September 2010.

WHO (2016) Children: reducing mortality. 2016. http://www.who.int/mediacentre/factsheets/fs178/en/. Accessed 26 Mar 2017.

WHO (2016). Immunization coverage fact sheet. 2018.

WHO/UNICEF (2019). Regional Child Survival Strategy – Accelerated and Sustained Action towards MDG4. Available at http://www.who.who.int/child-adolescenthealth/strategy/regionalchildsurvivalstrategy.

Xu, L., Fang, L., Xu, Q., & Shen, D. (2023). Study on the effect of intervention on postpartum psychological improvement and body recovery of caesarean section women based on information-motivation-behavioural skills model. *Nursing Open*, *10*(7), 4705-4712

You, H., Wang, Y. Y., Zhang, C., Walker, A. N., Ge, J. J., Zhao, S. Q., & Peng, X. Q. (2023). Empirical validation of the information-motivation-behavioral skills model of gestational weight management behavior: a framework for intervention. *BMC Public Health*, *23*(1), 130.

Zimmerman E, Wolf SH. (2015). Understanding the relationship between education and health. Discussion paper. Institute of Medicine of the National Academy, 2014. Available @: https://nam.edu>upload>2015/06. Accessed on 26/5/2019.

Zimmermann B, Miranda C, Rausch KCP, Bosco VL, Cordeiro MMR, Grosseman S. (2014) Unintentional Injuries in Brazilian Preschool Children. Pesquisa Brasileira em Odontopediatria e Clinica Integrada. 2014;14(1):35-41.

Article DOI: 10.52589/AJHNM-ZBKLMMKG
DOI URL: https://doi.org/10.52589/AJHNM-ZBKLMMKG