**4.1 Socio-demographical characteristics of the participants**

Majority of the participants (35%) were in the age group 25-29 years, as more than half of them were female (53%), all of them were Nigerians. The ethnic group categorized as ‘others’ like the Eggon, Idoma, Tiv, Igala and Igede were the most common (29%), followed by the Yoruba group (28%), most of them practiced Christianity (53.4%). Majority of them were married (51%), had tertiary education (41%) and unemployed (40%).

**Table 4.1 Socio-demographical characteristics of the participants**

| **Characteristic** | **N = 352** |
| --- | --- |
| **Age** |  |
| < 20 years | 5 (1.4%) |
| 20-24 years | 79 (22%) |
| 25-29 years | 124 (35%) |
| 30-34 years | 76 (22%) |
| 35-39 years | 54 (15%) |
| 40-44 years | 14 (4.0%) |
| **Gender** |  |
| Female | 188 (53%) |
| Male | 164 (47%) |
| **Nationality** |  |
| Nigerian | 352 (100%) |
| **Ethnicity** |  |
| hausa | 85 (24%) |
| Ibo | 67 (19%) |
| Yoruba | 98 (28%) |
| Others (eggon, idoma, Tiv, Igala and Igede) | 102 (29) |
| **Religion** |  |
| Christianity | 188 (53.4%) |
| Islam | 139 (39.5%) |
| Traditional | 25 (7.1%) |
| **Marital Status** |  |
| Divorced | 89 (26%) |
| Married | 178 (51%) |
| Separated | 14 (4.0%) |
| Single | 52 (15%) |
| Widowed | 14 (4.0%) |
| Unknown | 5 |
| **Level of Education** |  |
| Primary | 95 (27%) |
| Secondary | 104 (30%) |
| Tertiary | 143 (41%) |
| Others | 4 (2%) |
| Unknown | 6 |
| **Occupation** |  |
| Employed | 119 (34%) |
| Self-employed | 92 (26%) |
| Unemployed | 141 (40%) |

**4.2 Level of awareness among caregivers regarding Nigeria immunization**

More than half of the participants (58%) claimed they had heard of immunization, the three most common sources of information were the community (47%), family/friends (45%) and other sources (45%). Majority of the participants knew the following: that BCG is the vaccine given at birth (49%), 9 months is the recommended age for measles vaccination (45%). However, majority (49%) claimed they did not know the age children are expected to receive their first immunization. The assessment of the knowledge of available vaccine is shown in Figure 4.1 in a combination analysis chart, the top 5 common responses are as follows: IPV+ Bopv+Td+Mena+Penta+Rota (25, 7.1%), Measles+HPV+BCG (19, 5.4%), Td+MenA+BCG+Rota (17, 4.8%), IPV+BoPV+HPV+MenA+Penta+BCG+Rota (17, 4.8%) and Measles+Td+MenA+BCG+Rota (16, 4.5%).

The overall level of awareness was assessed by scoring any correct response 1, and scoring any wrong response 0 in the section B of the questionnaire, there are 18 possible scores in this section. A score of 0-9 was graded as poor, while 10-18 was graded as good. In this study, it was reported that majority of the participants (62.8%) had poor awareness, while few of them (37.2%) had good awareness regarding Nigeria immunization. See Table 4.2.1.

The association of the awareness of immunization among with socio-demographic factors was determined using the Chi-square test of association, at significance level of p-value <0.05. It was observed that the following were significantly associated with the level of awareness: Age category (Chi-square = 21.358, p-value = 0.001), religion (Chi-square = 32.613, p-value = 0.001), marital status (Chi-square = 30.653, p-value = 0.001) and Education level (Chi-square = 10.886, p-value = 0.012).

Multivariate analysis was done using the logistic regression analysis to determine the predictors of the level of awareness, in reference to the 40-44 years age group, the age group 30-34 years were 2.6 times likely to have good awareness of immunization (AOR = 2.607, P-value = 0.161). The Christianity category were 3 times more likely to good awareness of immunization than the other religion (AOR = 3.112, p-value = 0.001). In reference to the separated category, the married group are 5.8 times likely to have good awareness than the other groups (AOR = 5.836, p-value < 0.001). The tertiary education group are 2.4 times more like to good awareness of immunization than the other groups (AOR = 2.446, p-value = 0.566). See table 4.2.3

**Table 4.2.1 Level of awareness among caregivers regarding Nigeria immunization**

| **Characteristic** | **N = 352** |
| --- | --- |
| **Have you ever heard of immunization schedule before** | 205 (58%) |
| **if yes to question 9, how did you get to know about Immunization schedule #** |  |
| The Community | 166 (47%) |
| Family/Friends | 157 (45%) |
| Media (television, radio) | 140 (40%) |
| Health personnel | 148 (42%) |
| Other | 157 (45%) |
| **Which vaccine is given at birth #** |  |
| BCG | 171 (49%) |
| Yellow fever | 129 (37%) |
| Rota | 134 (38%) |
| MenA | 135 (38%) |
| Measles | 154 (44%) |
| HPV | 151 (43%) |
| I don’t know | 160 (45%) |
| **What is the recommended age for measles vaccination** |  |
| 12 months | 50 (14%) |
| 22 months | 53 (15%) |
| 6 months | 92 (26%) |
| 9 months | 157 (45%) |
| **At what age are children expected to receive their first immunization** |  |
| 2 weeks after birth | 32 (9.1%) |
| 3 weeks | 46 (13%) |
| At birth | 103 (29%) |
| I dont know | 171 (49%) |
| **Overall Awareness level** |  |
| Poor | 221 (62.8%) |
| Good | 131 (37.2%) |

**Table 4.2.2 The association of the level of awareness of immunization among participants with socio-demographic factors**

| Sociodemographic | Poor Awareness | Good Awareness | Chi-square | P-value |
| --- | --- | --- | --- | --- |
| **Age category** |  |  | 21.358 | 0.001\* |
| < 20 years | 2 (40%) | 3 (60%) |  |  |
| 20-24 years | 53 (67.1%) | 26 (32.9%) |  |  |
| 25-29 years | 75 (60.5%) | 49 (39.5%) |  |  |
| 30-34 years | 36 (47.4%) | 40 (52.6%) |  |  |
| 35-39 years | 46 (85.2%) | 8 (14.8%) |  |  |
| 40-44 years | 9 (64.3%) | 5 (35.7%) |  |  |
| **Gender** |  |  | 1.238 | 0.158 |
| Male | 108 (65.9%) | 56 (34.1%) |  |  |
| Female | 113 (60.1%) | 75 (39.9%) |  |  |
| **Religion** |  |  |  |  |
| Christianity | 113 (60.1%) | 75 (39.9%) | 32.613 | <0.001\* |
| Islam | 104 (74.8%) | 35 (25.2%) |  |  |
| Traditional | 4 (16%) | 21 (84%) |  |  |
| **Marital status** |  |  | 30.653 | <0.001\* |
| Single | 22 (42.3%) | 30 (57.7%) |  |  |
| Married | 128 (71.9%) | 50 (57.7%) |  |  |
| Divorced | 49 (55.1%) | 40 (44.9%) |  |  |
| Widowed | 5 (35.7) | 9 (64.3%) |  |  |
| Separated | 14 (100%) | 0 (0%) |  |  |
| **Education level** |  |  | 10.886 | 0.012\* |
| Primary | 64 (67.4%) | 31 (32.6%) |  |  |
| Secondary | 77 (74.0%) | 27 (26.0%) |  |  |
| Tertiary | 78 (54.5%) | 65 (45.5%) |  |  |
| Others | 2 (50%) | 2 (50%) |  |  |
| **Occupation** |  |  | 1.935 | 0.380 |
| Employed | 80 (67.2%) | 39 (32.8%) |  |  |
| Unemployed | 83 (58.9%) | 58 (41.1%) |  |  |
| Self-employed | 58 (63.0%) | 34 (37.0%) |  |  |

\*-significant at p-value < 0.05

**Table 4.2.3 Multivariate analysis of the level of awareness of immunization among participants with socio-demographic factors**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Variables** | **Odd ratio** | **p-value** | **95%CI** | **Adj. OR** | **p-value** | **95%CI** |
| **Age category** |  |  |  |  |  |  |
| < 20 years | 1.700 | 0.353 | 0.332-21.97 | 1.408 | 0.095 | 0.708-7.741 |
| 20-24 years | 0.883 | 0.838 | 0.269-2.90 | 1.742 | 0.419 | 0.456-6.697 |
| 25-29 years | 1.176 | 0.782 | 0.372-3.71 | 1.925 | 0.353 | 0.483-7.678 |
| 30-34 years | 2.000 | 0.251 | 0.613-6.52 | 2.607 | 0.161 | 0.683-9.941 |
| 35-39 years | 0.313 | 0.086 | 0.083-1.179 | 0.439 | 0.282 | 0.098-1.970 |
| 40-44 years | 1 (ref) |  |  | 1 (ref) |  |  |
| **Religion** |  |  |  |  |  |  |
| Christianity | 2.126 | <0.001 | 0.042-3.83 | 3.112 | 0.001 | 0.032-4.391 |
| Islam | 2.064 | <0.001 | 0.021-3.01 | 3.098 | 0.000 | 0.029-4.233 |
| Traditional | 1 (ref) |  |  | 1 (ref) |  |  |
| **Marital status** |  |  |  |  |  |  |
| Single | 2.202 | <0.001 | 0.881-4.352 | 3.953 | <0.001 | 0.532-5.111 |
| Married | 3.311 | <0.001 | 1.367-10.251 | 5.836 | <0.001 | 2.850-13.866 |
| Divorced | 1.318 | <0.001 | 0.038-4.991 | 1.849 | <0.001 | 0.687-9.008 |
| Widowed | 2.907 | <0.001 | 1.912-8.762 | 3.967 | <0.001 | 1.802- 12.551 |
| Separated | 1 (ref) |  |  | 1 (ref) |  |  |
| **Education level** |  |  |  |  |  |  |
| Primary | 0.484 | 0.479 | 0.484-3.602 | 0.131 | 0.157 | 0.008-2.185 |
| Secondary | 0.351 | 0.306 | 0.351-2.613 | 0.108 | 0.121 | 0.006-1.797 |
| Tertiary | 1.833 | 0.857 | 0.833-6.081 | 2.446 | 0.566 | 0.028-7.019 |
| Others | 1 (ref) |  |  | 1 (ref) |  |  |

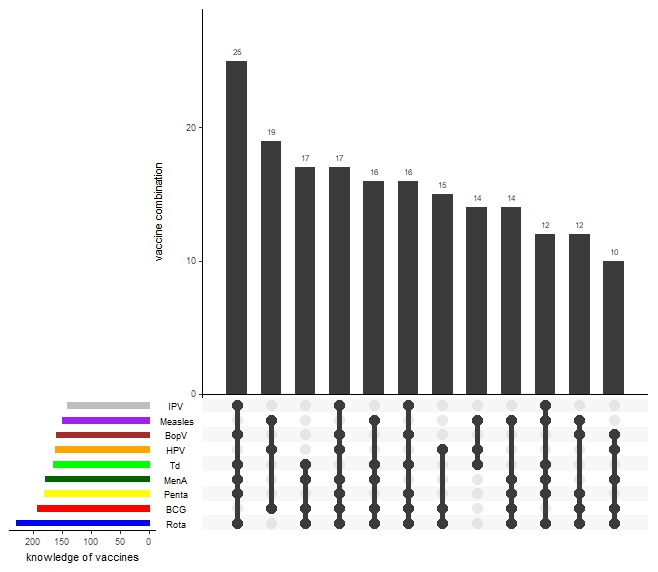


Figure 4.1 Knowledge of available vaccines among caregivers

**4.3 Frequency of missed opportunity for vaccination among eligible clients**

Most of the participants (50%) do not know their children’s last vaccination, many of the participants (63%) also claimed that their children have missed their vaccination schedules. Majority (38.1%) claimed they had missed one vaccination schedule, most of them (59%) do not visit any other health facilities when they miss any vaccines and have not been referred to another health facility for missed vaccines. A larger proportion of the participants (63.6%) claimed there has not been any recall or reminder from their health facilities for missed vaccines. The top 5 commonly missed vaccines are Yf (52%), Rota (49.7%), Penta (46.9%), MenA (41.2%) and Measles (39.2%), see Figure 4.2.

**Table 4.3 Frequency of missed opportunity for vaccination among eligible clients**

| **Characteristic** | **N = 352** |
| --- | --- |
| **When was your child’s last vaccination** |  |
| < 1 month | 86 (24%) |
| > 1 year | 8 (2.6%) |
| 1-6 month ago | 50 (14%) |
| 7-12 months ago | 33 (9.4%) |
| I dont know | 175 (50%) |
| **Has your child missed any vaccination schedule (Yes)** | 223 (63%) |
| **If "yes" to 15 above how many vaccination has your child missed** |  |
| 1 | 134 (38.1%) |
| 2 | 133 (37.8%) |
| 3 | 55 (15.6%) |
| 4 | 30 (8.5%) |
| **Do you visit other health facilities to received missed vaccines** |  |
| Yes | 144 (41%) |
| No | 208 (59%) |
| **Have you ever been referred to another health facility for missed vaccines** |  |
| Yes | 145 (41%) |
| No | 207 (59%) |
| **Has there been any recall or reminder for missed vaccinations from your Health facility** |  |
| Yes | 128 (36.4%) |
| No | 224 (63.6%) |

Figure 4.2 Frequency of missed vaccines

**4.4 Drivers for missed opportunity for vaccination**

The 5 top common drivers for missed opportunity for vaccination were Stock outs/unavailability of some vaccines (65%), Lack of awareness about vaccination schedules (63%), Long waiting hours (58%), No reminder/recall from health centre (54%), inconvenient clinic hours (46%) and cultural Beliefs (46%). Many of the participant (55%) claimed the health facility conducts health talks on the importance of immunization. About half of the participants (51%) claimed they are satisfied with the services at the primary health care, majority claimed that the primary health center is more than 30mins far from their homes.

**Table 4.4 Drivers for missed opportunity for vaccination**

| **Characteristic** | **N = 352** |
| --- | --- |
| **What are challenges you face in assessing vaccination services** |  |
| I. Lack of awareness about vaccination schedules | 221 (63%) |
| II. Stock outs/unavailability of some vaccines | 230 (65%) |
| III. Long waiting hours | 205 (58%) |
| IV. No communication from health workers | 137 (39%) |
| V. Long distance to Health centre | 153 (43%) |
| VI. Cultural believe | 161 (46%) |
| VII Religious beliefs | 128 (36%) |
| VIII No reminder/recall from health centre | 191 (54%) |
| IX Misconception about vaccines | 138 (39%) |
| X Lack of transportation | 136 (39%) |
| XI inconvenient clinic hours | 161 (46%) |
| XII No felt need | 117 (33%) |
| **Does the health facility conducts health talk/ health education on the importance of immunization and other health matters** |  |
| I dont know | 79 (22%) |
| No | 78 (22%) |
| Yes | 195 (55%) |
| **Are you satisfied with the service you receive at the Primary health care center** |  |
| I dont know | 51 (14%) |
| No | 120 (34%) |
| Yes | 181 (51%) |
| **How far is the Primary health center from your home** |  |
| > 30mins from home | 121 (36%) |
| I dont know | 125 (34%) |
| within 30mins from home | 106 (30%) |

**Figure 4.3 challenges of assessing vaccination services**

**CHAPTER FIVE**

**DISCUSSION, CONCLUSION AND RECOMMENDATION**

**5.0 SUMMARY**

This study aimed to assess the missed opportunity for vaccination among infants in PHCs in Makurdi LGA of Benue State. The findings revealed a 67% level of poor awareness among the participants. The study did not highlight the significant impact of missed opportunity for vaccination on the baby’s health but it provided the main drivers and challenges associated with immunization schedules. Several predictors were identified, including age-group, marital status, level of education and Religion. These findings emphasize the complex interplay of awareness, cultural and religious beliefs, accessibility and availability, health seeking as the causes of missed vaccinations.

**5.0 DISCUSSION**

The study, conducted at selected PHCs in Makurdi LGA of Benue State, Nigeria to examine the level of awareness of the caregivers and identify the drivers of missed vaccination in the population. The research revealed insightful sociodemographic trends among the participants. The majority of the women fell within the 25-39 years’ age bracket, constituting 35% of the study population, in similar studies conducted in the North-Central Nigeria and a Multinational study comprising of some African countries, the same age group accounted for 59.3% and 60.3% of the population respectively (Tungchama et al., 2017; Amer et al., 2024), however, this is contrary to an earlier study conducted in another part of Kaduna, where the dominant age group was 20-29 years (Mohammed-Durosinlorun et al., 2022). This age group is typically associated with peak fertility and, consequently, a higher likelihood of experiencing childbirth and potentially missing out on vaccination more than the other age groups. A significant proportion of the participants identified as Christians (53.4%) and were married (51%), reflecting the dominant religious and marital norms within the Makurdi community, this is contrary to the Islamic dominance in the Northern Nigeria where Islam was practiced by 60.8% and 74.7% of the participants in the Northern Central and Kaduna, respectively (Tungchama et al., 2017; Mohammed-Durosinlorun et al., 2022). However, the religious and marital demography is true of the participants in a study conducted by Obioha et al., (2021) in Lagos where majority were Christian (63.7%) and married (91.0%). Educational attainment was also moderate, with 41% of the participants having received tertiary education, this was similar to the study of Obioha et al., (2021) and the earlier study conducted in Kaduna (Mohammed-Durosinlorun et al., 2022) where tertiary education was dominant (54%). This finding suggests that missed opportunity for vaccination is not limited to population with lower levels of education, as might be assumed due to potential socioeconomic disparities. Interestingly, a large portion of the participants were unemployed (40%), indicating a degree of financial dependence and perhaps low decision-making power. These sociodemographic characteristics are consistent with other studies on vaccination in Nigeria, which have also found that younger age, being married, having higher education, and being employed are associated with a higher risk of missing vaccination schedules for their babies.

The estimated level of awareness of immunization in Africa is 18.4% (Adeyemo et al., 2020). However, various countries have reported higher rates such as Uganda (43.0%), Cameroun (23.4%) Ghana (26%) (Adeyemo et al., 2020; Amer et al., 2024). In Nigeria, various studies have been conducted to determine the level of awareness of immunization. In western Nigeria, the lowest and highest prevalence of PPD reported were 14.6% (Adeyemo et al., 2020). In Northern Nigeria, seemingly high prevalence rates of 21.8% in Jos (Tungchama et al., 2017), 5.7% in Kaduna (Mohammed-Durosinlorun et al., 2022) and 15.3% in Kano (Tsiga-Ahmed et al., 2024). The low prevalence in the earlier study in Kaduna may be due to selection bias that was introduced in their convenience sampling method or errors due to self-reporting by the participants. This study's findings revealed an overall awareness of 62.8% good awareness level and 37.2% poor awareness level . This figure is considerably higher than the global prevalence of 17.2% (Wang et al., 2021). This discrepancy highlights the potential influence of region-specific factors on the occurrence of PPD. Several factors may contribute to the elevated prevalence of PPD in Nigeria. These include the high rates of poverty, which can lead to financial stress and inadequate access to resources; gender inequality, which can limit women's autonomy and decision-making power; and a lack of access to mental health care, which can hinder early detection and intervention. Additionally, cultural factors, such as stigma surrounding mental health issues and expectations regarding motherhood, may also play a role in the increased prevalence of PPD in Nigeria.

The study identified several risk factors significantly associated with PPD among the participants. These risk factors can be classified into obstetric and infant-related factors such as pregnancy type, gestational age of the child and depressive symptoms during pregnancy, socio-economic status related factors (SES) such as marital status, highest education attained, and type of employment while the other risk factors were psychological characteristic such as lack of family support, and intimate partner violence. These findings corroborate the previous research from Kaduna (Mohammed-Durosinlorun et al., 2022) where Several factors such as reproductive characteristics and pregnancy outcomes were risk factors for PPD such as parity, live birth, recent stressor events and inadequate social support. In the same vein, other studies in Nigeria and other parts of the world have also implicated these factors in the development of PPD. Unintended pregnancies may lead to increased stress and emotional turmoil for the mother, potentially contributing to PPD, similar risk factor was reported by Amer et al, (2024). Preterm births and associated complications can cause significant anxiety and emotional distress for mothers, increasing their susceptibility to PPD (Adeyemo et al., 2020; Nweke et al., 2021). A history of depression or anxiety during pregnancy is a strong predictor of PPD, indicating a continuity of mental health challenges throughout the perinatal period (Nweke et al., 2021). Social support, particularly from family members, plays a crucial role in buffering the stresses of motherhood, lack of social support as a risk factor for PPD was also reported in several studies (Nweke et al., 2021; Amer et al., 2024), Its absence can leave women feeling isolated and overwhelmed, increasing their risk of PPD. Experiencing physical, emotional, or sexual abuse from a partner can have severe psychological consequences, including an elevated risk of PPD, this was also reported in several studies (Nweke et al., 2021; Okunola et al., 2021). These findings underscore the complex interplay of biological, psychological, and social factors in the etiology of PPD.

The findings of this study revealed significant relationships between PPD and socio-economic status (SES) such as marital status, highest education attained, and type of employment. These findings are contrary to earlier studies where they reported no significant association between PPD and SES (Adeyemo et al., 2020; Al Nasr et al., 2020; Mohammed-Durosinlorun et al., 2022), the difference may be due to sampling method and sample size with other studies conducted in Nigeria and globally, further emphasizing the role of sociodemographic factors in influencing the risk of PPD. Married women were found to have a higher risk of PPD compared to divorced women, this was similar to the several studies (Tungchama et al., 2017; Obioha et al (2021). This finding may seem counterintuitive, as marriage is often associated with social support. However, it is important to consider that marital relationships can also be a source of stress and conflict, particularly during the transition to parenthood. Additionally, cultural expectations and gender roles within marriage may contribute to increased pressure on women, potentially leading to PPD. Women with no formal education were identified as having the highest risk of PPD. This finding was also reported in the work of Tungchama et al., (2017), it highlights the potential impact of education on mental health literacy and access to resources. Women with lower levels of education may be less aware of the signs and symptoms of PPD and may face greater barriers to seeking help. Self-employed women were found to have a higher risk of PPD compared to those in private/NGO or government jobs. This finding may be attributed to the unique challenges faced by self-employed individuals, such as income instability, long working hours, and limited access to social security benefits. These factors can contribute to increased stress and financial insecurity, potentially increasing the risk of PPD.

**5.1.5 Conclusion**

The findings of this study highlight the high prevalence of PPD among mothers in Kafanchan, Kaduna State, Nigeria. The study also identified a number of risk factors for PPD, including sociodemographic factors, pregnancy-related factors, and family support factors. These findings are consistent with other studies from Nigeria and other parts of the world. The study's findings suggest that there is a need for increased awareness of PPD in Nigeria and for the development of prevention and intervention strategies that address the risk factors identified in this study. The high prevalence of PPD observed in this study underscores the urgent need for increased awareness and comprehensive intervention strategies. The identification of various risk factors, including sociodemographic factors, pregnancy-related factors, and family support factors, offers a roadmap for developing targeted prevention and intervention programs. Addressing the risk factors identified in this study, such as unintended pregnancies, preterm births, lack of family support, and intimate partner violence, is crucial to reducing the burden of PPD and promoting the mental health and well-being of new mothers.

The study's findings are consistent with other research conducted in Nigeria, such as the studies by Nweke et al., (2021) and Okunola et al., (2021) which also found that younger maternal age, being married, having a higher level of education, and being employed were associated with an increased risk of PPD. These similarities suggest that certain risk factors for PPD may be common across different regions and populations in Nigeria. The study's findings have important implications for the prevention and intervention of PPD in Nigeria. The high prevalence of PPD and the identification of various risk factors highlight the urgent need for increased awareness and comprehensive support services for new mothers. Healthcare professionals, policymakers, and communities need to work together to address the risk factors identified in this study and provide timely interventions to women experiencing PPD.

Tailored programs that address the specific needs of different groups of women, such as those with lower levels of education or those who are self-employed, are essential to ensuring equitable access to mental health care and support. Addressing these risk factors through comprehensive prevention and intervention strategies is essential to mitigate the burden of PPD among new mothers. In conclusion, the study's findings contribute to a growing body of evidence highlighting the prevalence and complexity of PPD. By raising awareness, addressing risk factors, and providing comprehensive support, healthcare professionals, policymakers, and communities can work together to reduce the burden of PPD and promote the mental health and well-being of new mothers in Nigeria and globally.

**5.3 RECOMMENDATION**

Based on the study findings, the following recommendations are made:

* Increase awareness and screening for PPD: Healthcare providers should routinely screen for PPD during antenatal and postnatal care visits.
* Strengthen family support systems: Encourage partners, families, and communities to provide adequate support to new mothers.
* Address intimate partner violence: Implement programs to prevent and address intimate partner violence, which is a significant risk factor for PPD.
* Provide accessible mental health services: Ensure access to affordable and culturally sensitive mental health services for mothers experiencing PPD.
* Target interventions for high-risk groups: Develop tailored interventions for mothers with identified risk factors, such as those with low education levels or limited family support.
* Further research: Conduct additional research to explore the cultural and social factors contributing to PPD in the specific context of Kafanchan, Kaduna State.

**Table 4.3.2 The association of the MOV among participants with socio-demographic factors**

| Sociodemographic | Yes | No | Chi-square | P-value |
| --- | --- | --- | --- | --- |
| **Age category** |  |  | 32.402 | 0.001\* |
| < 20 years | 3 (60%) | 2 (40%) |  |  |
| 20-24 years | 47 (59.5%) | 32 (40.5%) |  |  |
| 25-29 years | 81 (65.3%) | 43 (34.7%) |  |  |
| 30-34 years | 60 (78.9%) | 16 (21.1%) |  |  |
| 35-39 years | 19 (35.2%) | 35 (64.8%) |  |  |
| 40-44 years | 13 (92.9%) | 1 (7.1%) |  |  |
| **Gender** |  |  | 1.180 | 0.165 |
| Male | 99 (60.4%) | 65 (39.6%) |  |  |
| Female | 124 (66.0%) | 64 (34.0%) |  |  |
| **Religion** |  |  |  |  |
| Christianity | 120 (63.8%) | 68 (36.2%) | 5.747 | 0.057 |
| Islam | 82 (59.0%) | 57 (41.0%) |  |  |
| Traditional | 21 (84%) | 4 (16%) |  |  |
| **Marital status** |  |  | 30.653 | <0.001\* |
| Single | 44 (84.6%) | 8 (15.4%) |  |  |
| Married | 93 (52.2%) | 85 (47.8%) |  |  |
| Divorced | 58 (65.2%) | 31 (34.8%) |  |  |
| Widowed | 12 (85.7) | 2 (14.3%) |  |  |
| Separated | 14 (100%) | 0 (0%) |  |  |
| **Education level** |  |  | 10.886 | 0.012\* |
| Primary | 65 (68.4%) | 30 (31.6%) |  |  |
| Secondary | 41 (39.4%) | 63 (60.6%) |  |  |
| Tertiary | 115 (80.4%) | 28 (19.6%) |  |  |
| Others | 2 (50%) | 2 (50%) |  |  |
| **Occupation** |  |  | 1.935 | 0.380 |
| Employed | 80 (67.2%) | 39 (32.8%) |  |  |
| Unemployed | 83 (58.9%) | 58 (41.1%) |  |  |
| Self-employed | 58 (63.0%) | 34 (37.0%) |  |  |
| **Awareness of immunization schedules** |  |  | 14.759 | <0.001\* |
| Yes | 147 (71.7%) | 58 (28.3%) |  |  |
| No | 76 (51.7%) | 71 (48.3%) |  |  |
|  |  |  |  |  |

\*-significant at p-value < 0.05

**Table 4.3.3 Multivariate analysis of the MOV among participants with socio-demographic factors**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Variables** | **Odd ratio** | **p-value** | **95%CI** | **Adj. OR** | **p-value** | **95%CI** |
| **Age category** |  |  |  |  |  |  |
| < 20 years | 1.700 | 0.353 | 0.332-21.97 | 1.408 | 0.095 | 0.708-7.741 |
| 20-24 years | 0.883 | 0.838 | 0.269-2.90 | 1.742 | 0.419 | 0.456-6.697 |
| 25-29 years | 1.176 | 0.782 | 0.372-3.71 | 1.925 | 0.353 | 0.483-7.678 |
| 30-34 years | 2.000 | 0.251 | 0.613-6.52 | 2.607 | 0.161 | 0.683-9.941 |
| 35-39 years | 0.313 | 0.086 | 0.083-1.179 | 0.439 | 0.282 | 0.098-1.970 |
| 40-44 years | 1 (ref) |  |  | 1 (ref) |  |  |
| **Marital status** |  |  |  |  |  |  |
| Single | 2.202 | <0.001 | 0.881-4.352 | 3.953 | <0.001 | 0.532-5.111 |
| Married | 3.311 | <0.001 | 1.367-10.251 | 5.836 | <0.001 | 2.850-13.866 |
| Divorced | 1.318 | <0.001 | 0.038-4.991 | 1.849 | <0.001 | 0.687-9.008 |
| Widowed | 2.907 | <0.001 | 1.912-8.762 | 3.967 | <0.001 | 1.802- 12.551 |
| Separated | 1 (ref) |  |  | 1 (ref) |  |  |
| **Education level** |  |  |  |  |  |  |
| Primary | 0.484 | 0.479 | 0.484-3.602 | 0.131 | 0.157 | 0.008-2.185 |
| Secondary | 0.351 | 0.306 | 0.351-2.613 | 0.108 | 0.121 | 0.006-1.797 |
| Tertiary | 1.833 | 0.857 | 0.833-6.081 | 2.446 | 0.566 | 0.028-7.019 |
| Others | 1 (ref) |  |  | 1 (ref) |  |  |
| **Awareness of Immunisation** |  |  |  |  |  |  |
| Yes | 0.911 | 0.512 | 0.442-2.189 | 0.935 | 0.708 | 0.585-2.203 |
| No | 1 (ref) |  |  | 1 (ref) |  |  |