

Mental Distress among Mothers of Infants with Orofacial Clefts

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ABSTRACT

Background: Orofacial clefts (OFCs) impose severe biomedical and psychosocial burdens on families. In Nigeria, cultural stigma and limited infrastructure compound this strain. This study evaluated the prevalence of mental distress, mother-infant bonding, and maternal attitudes among mothers of children with OFCs.

Methods: This cross-sectional study evaluated 41 mothers of children with OFCs at the University of Benin Teaching Hospital, Nigeria. Validated instruments included the General Health Questionnaire-12 (GHQ-12; distress threshold ≥ 3), Mother-to-Infant Bonding Scale (MIBS), and Maternal Attitude Scale (MAS). Data were analysed using Chi-square, Kruskal-Wallis, and Spearman correlation tests.

Results: The children's median age was 12.0 months (IQR: 7.0–26.0). Isolated cleft lip was the most common phenotype (80.5%). The prevalence of significant maternal mental distress was 85.4% (n=35). Item-level analysis revealed profound functional impairments in decision-making (92.7%) and mood (58.5%), though self-worth and confidence remained relatively intact, indicating functional but distressed coping. While bonding was overwhelmingly healthy (100% reported loving feelings), 29.3% experienced resentment, and 75.6% wished the child were different.

No statistically significant variations in distress or bonding scores were found across socio-demographic factors or cleft phenotypes ($p > 0.05$). Spearman correlations showed that higher maternal distress was significantly and paradoxically associated with poorer mother-infant bonding ($r_s = -0.346$, $p = 0.027$) and more positive maternal attitudes ($r_s = 0.481$, $p = 0.001$), suggesting cultural protective buffering or social desirability bias.

Conclusion: Mothers of children with OFCs in Nigeria experience exceptionally high rates of mental distress that directly threaten early bonding, regardless of the cleft's physical visibility or severity. Comprehensive cleft management must pivot from a purely surgical focus to family-centred care, incorporating mandatory psychosocial screening and culturally tailored support frameworks to safeguard caregiver resilience and infant development.

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INTRODUCTION

Orofacial clefts (OFCs), including cleft lip with or without cleft palate (CLP/CL) and cleft palate alone (CP), stand as the most common craniofacial congenital anomalies worldwide, affecting

approximately 1 in 700 live births globally (Mossey *et al.*, 2009). This prevalence varies regionally, with higher rates observed in Asian and Native American populations and lower incidences in African cohorts, though underreporting in low-

resource settings like Nigeria may obscure true burdens (IPDTC, 2011). Beyond surgical imperatives, OFCs impose multifaceted medical, nutritional, social, and psychological burdens on families, particularly mothers who serve as primary caregivers. Modern multidisciplinary protocols have revolutionized aesthetic and functional repairs, yet the maternal psychosocial domain remains critically underexplored, often overshadowed by technical interventions (Nelson *et al.*, 2012).

Mothers face intensified demands from feeding challenges, recurrent ear infections, speech delays, and societal stigma, which can erode psychological resilience (Stock *et al.*, 2015). Empirical evidence links maternal distress, encompassing anxiety, depression, and bonding disruptions to suboptimal child outcomes, including impaired neurodevelopment and reduced treatment adherence (Field *et al.*, 2019). The World Health Organization (WHO) advocates for family-centered care, underscoring mental health integration as pivotal for holistic maternal-child health (WHO, 2020). In Nigeria, where cultural attributions of congenital anomalies to supernatural causes amplify isolation, this gap demands urgent attention (Adeyemi *et al.*, 2022).

Significance of the Study

This study fills a vital void in OFC management by pivoting from surgical focus to caregiver emotional fortitude. By quantifying distress prevalence among Nigerian mothers, it generates context-specific evidence to guide policy, advocate psychosocial screening, and foster culturally tailored interventions. Aligning local practices with global benchmarks, such as those from the WHO'S Nurturing Care Framework, could enhance developmental trajectories and reduce long-term healthcare costs (WHO, 2020; Black *et al.*, 2017).

The Global and Local Burden

Orofacial clefts (OFCs) are among the most common birth anomalies worldwide. Each year, more than 300,000 infants are born with some form of cleft lip and/or palate. This is not a rare condition. What makes the situation particularly challenging is that the vast majority of these children, approximately 80% are born in low- and middle-income countries (LMICs). In these settings, access to timely, safe, and affordable surgical repair is often severely limited (IPDTC, 2011). Families may wait months or even years for an operation, during which time the infant may struggle with feeding, breathing, hearing, and social acceptance. The burden, therefore, is not only medical but also emotional, social, and economic.

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When we focus on sub-Saharan Africa, including Nigeria, the numbers tell a similar story. The estimated incidence of OFCs in this region ranges from 0.9 to 1.5 per 1,000 live births. While this may seem like a small fraction, in a country with high birth rates like Nigeria, it translates into thousands of affected families each year. However, the numbers alone do not capture the full weight of the problem. Several interconnected factors make the burden even heavier in this part of the world. These include widespread poverty, chronic malnutrition, and limited healthcare infrastructure. On top of these structural challenges, cultural beliefs often add another layer of suffering. In many Nigerian communities, clefts are wrongly attributed to supernatural causes, such as curses from offended ancestors, witchcraft, or the mother's perceived infidelity during pregnancy (Mossey *et al.*, 2009; Adeyemi *et al.*, 2022). Such beliefs can lead to blame, shame, and social ostracism.

For mothers, the burden is multidimensional. First, there is the burden of guilt. Even when a mother knows rationally that she did nothing wrong, internalized cultural narratives may make her feel responsible for her child's condition. Second, there is financial strain. The cost of transport to a specialist center, the price of feeding aids (such as specialized bottles), and the loss of daily wages during hospital visits can push already vulnerable families deeper into poverty. Third, there is the burden of stigma. A mother may avoid social gatherings, hide her child from neighbours, or delay seeking medical care out of fear of judgment or gossip. Delayed care-seeking, in turn, can worsen the child's nutritional status and complicate surgical outcomes. As Nelson and colleagues (2012) documented in their qualitative review, mothers of children with OFCs often describe a painful journey marked by shock, grief, and a persistent sense of being judged by others.

Biological and Behavioural Mechanisms of Distress

To understand why maternal distress in the context of OFCs can be so deep and persistent, it helps to look at what happens inside the body and the mind. On a biological level, chronic stress activates the hypothalamic-pituitary-adrenal (HPA) axis, the body's central stress response system. When a mother experiences repeated or prolonged emotional strain, her body produces higher levels of cortisol, a stress hormone. While cortisol is essential for short-term survival, persistently high levels can have damaging effects.

One of the most important consequences for mother-infant bonding involves oxytocin. Oxytocin is often called the "bonding hormone" because it facilitates feelings of closeness, trust, and affection during early interactions such as holding, feeding, and gazing at the infant. Chronic stress and elevated cortisol can suppress oxytocin release, making it harder for a mother to feel emotionally connected to her baby (Field et al., 2019). In the case of an infant with a cleft, this biological disruption may be compounded by practical difficulties, such as the inability to breastfeed normally, which itself is a key context for oxytocin release.

Beyond biology, behavioural and cognitive mechanisms also play a major role. In many African cultural contexts, including Nigeria, supernatural attributions of cleft causation are common. When a mother believes that her child's condition is the result of a curse, her own sin, or her partner's infidelity, she may experience intense shame. Shame, unlike guilt (which focuses on a specific behaviour), attacks the sense of self: "I am bad," not just "I did something bad." This shame often deters mothers from seeking help. They may avoid health facilities because they fear being blamed by healthcare workers. They may refuse to attend community gatherings because they cannot bear the whispers and stares. This avoidance, in turn, perpetuates cycles of isolation. As the World Health Organization (WHO, 2020) has noted, stigma is not just an emotional burden it is a barrier to care that has measurable consequences for child health and survival.

One useful framework for understanding how mothers experience and cope with this situation the transactional model of stress and coping is, developed by Lazarus and Folkman (1984). According to this model, stress arises not directly from an event itself, but from the interaction between two things: (1) how a person appraises the event (primary appraisal: "Is this a threat?") and (2) how they appraise their own resources to deal with it (secondary appraisal: "Can I cope with this?"). When a mother sees her infant's cleft as a severe threat to the child's future, to her own reputation, to her marriage and simultaneously feels that she has few resources (no money for surgery, no supportive family member, no accurate information), the result is high distress. This sense of uncontrollability feeling that nothing she does will make things better amplifies anxiety, depression, and resentment. The model also explains why first-time mothers may be especially vulnerable. A primiparous mother has no prior parenting experience to draw on. She has not yet

built a repertoire of coping strategies. When her first child is born with a visible difference, the gap between "threat" and "resources" can feel overwhelmingly large.

Despite the plausibility of these biological and behavioural mechanisms, there has been surprisingly little research specifically focused on Nigerian mothers. Most of the existing literature on maternal distress and OFCs comes from high-income countries such as the United States, the United Kingdom, or Australia. These settings differ dramatically from those in Nigeria in terms of healthcare access, social support systems, cultural beliefs, and economic realities. Even within Africa, most studies have been conducted in South Africa or Ghana, not in Nigeria. As a result, there is a significant gap in the literature regarding bonding ambivalence, the coexistence of love and resentment among Nigerian mothers. This gap is precisely what makes the present study novel. By documenting the psychological experiences of mothers in a Nigerian cleft clinic, this study brings much-needed local data to a global conversation. It challenges the assumption that findings from Western settings can be directly applied elsewhere and underscores the importance of contextually grounded research.

MATERIALS AND METHODS

Study Design and Population

This cross-sectional descriptive study captured maternal psychological states at a single point among 41 consenting mothers (≥ 18 years) of infants (< 12 months) with OFCs in the Oral and Maxillofacial Surgery outpatient clinics, University of Benin Teaching Hospital in Benin City, Nigeria (October 2024 to February 2026). Purposive sampling targeted diversity in ethnicity, parity, and socioeconomic status, excluding mothers with pre-existing psychiatric diagnoses or language barriers.

Instrumentation and Analysis

A validated, multi-component questionnaire assessed:

- i. Socio-demographic/clinical data (age, ethnicity, cleft type, parity).
- ii. General Health Questionnaire-12 (GHQ-12; Goldberg, 1972): 12-item screener for distress (score ≥ 3 indicating caseness).
- iii. Mother-Infant Bonding Scale (MIBS; Brockington et al., 2001): Measuring rejection, anger, and affection.
- iv. Maternal Attitudes Scale: Gauging caregiving satisfaction and perceptions.

SPSS version 26 facilitated descriptive analyses (frequencies and means and inferential statistics), with ethical approval from the University of Benin

Teaching Hospital Ethics Committee ensuring informed consent and confidentiality. Sociodemographic and clinical characteristics were summarized using frequencies, percentages, means, standard deviations, medians, and interquartile ranges as appropriate. GHQ-12 caseness (cut-off ≥ 3) was calculated to determine the prevalence of mental distress. Item-level responses for the GHQ-12 and MIBS were examined using frequency procedures. Pearson's chi-square tests were used to assess associations between categorical variables and caseness. Kruskal–Wallis H tests were employed to compare scale scores across cleft types due to non-normal distributions. Spearman's rank-order correlation coefficients were computed to examine relationships between GHQ-12, MIBS, and MAS scores. Statistical significance was set at $p < 0.05$ (two-tailed)

RESULTS

A total of 41 mothers and one of their children (dyads) participated in the study. The children had a mean age of 21.2 months ($SD = 23.7$), with a median of 12.0 months (IQR: 7.0–26.0), indicating a right-skewed distribution with a subset of older children. The majority of children were female (30, 73.2%), while 11 (26.8%) were male. Regarding maternal religion, Christianity was the most prevalent (25, 61.0%), followed by Islam (12, 29.3%), while four mothers (9.8%) identified with other religious traditions. The affected child was the firstborn in 31 cases (75.6%), the secondborn in 7 cases (17.1%), and the third or later in 3 cases (7.3%). With respect to cleft type, isolated cleft lip was the most common (33, 80.5%), followed by isolated cleft palate (7, 17.1%), while combined cleft lip and palate was rare (1, 2.4%).

Table 1: Sociodemographic and Clinical Characteristics of the Study Population

Characteristics	n (%) or Mean (SD)
Age of Child (months)	21.2 (23.7)
Median [IQR]	12.0 [7.0–26.0]
Sex of Child	
Male	11 (26.8%)
Female	30 (73.2%)
Religion	
Christianity	25 (61.0%)
Islam	12 (29.3%)
Others	4 (9.8%)
Index Child Position	
First	31 (75.6%)
Second	7 (17.1%)
Third or more	3 (7.3%)
Type of Cleft	
Cleft lip only	33 (80.5%)
Cleft palate only	7 (17.1%)
Cleft lip and palate	1 (2.4%)

Mothers completed three instruments: the General Health Questionnaire-12 (GHQ-12, range 0–12), the Mother-to-Infant Bonding Scale (MIBS, range 0–30), and the Maternal Attitude Scale (MAS, range 6–30). The mean GHQ-12 score was 4.68 ($SD = 2.13$; median = 6; range 1–7), suggesting mild to moderate psychological distress. The mean MIBS score was 11.10 ($SD = 2.20$; median = 10; range 9–15), indicating relatively low bonding difficulties overall. The mean MAS score was 20.83 ($SD = 1.66$; median = 21; range 18–23), reflecting moderately positive maternal attitudes with limited variability. Across all three scales, the mean and median values were close, suggesting reasonably symmetric distributions, while the narrow ranges

indicated relatively homogeneous responses among participants (Table 2).

Using a GHQ-12 cut-off score of ≥ 3 to define caseness (bimodal scoring), the prevalence of mental distress among mothers was 85.4% (35 out of 41 participants). Only six mothers (14.6%) fell below the threshold, indicating no significant distress. Thus, the vast majority of mothers in the study population exhibited clinically significant mental distress (Table 3).

Examination of individual GHQ-12 items revealed a distinctive pattern of symptom endorsement. Four items showed high levels of symptomatology. Most strikingly, 38 mothers (92.7%) reported difficulty with decision-making, with 26 (63.4%) endorsing the most severe category ("Much more

than usual"). Difficulty playing a useful part was reported by 27 mothers (65.9%), of whom 23 (56.1%) were in the most severe category. Loss of enjoyment in daily activities was reported by 22 mothers (53.7%), all of whom endorsed the most severe category. Elevated depressive symptoms (feeling unhappy or depressed) were reported by 24 mothers (58.5%), with 18 (43.9%) in the most severe category.

Three items showed moderate endorsement. Difficulty concentrating was reported by 11 mothers (26.8%) in the most severe category, although 25 (61.0%) reported no difficulty. Inability to overcome difficulties was reported by 10 mothers (24.4%) in the most severe category, while 23 (56.1%) reported no difficulty. Reduced happiness (reverse-coded) was reported by 13 mothers (31.7%), whereas 22 (53.7%) remained reasonably happy.

Four items showed low symptom endorsement, with the majority of mothers asymptomatic. Regarding loss of confidence, 29 mothers (70.7%) reported "Not at all" and 12 (29.3%) reported "No more than usual"; no mother endorsed higher categories. Feelings of worthlessness were absent in the most severe categories: 30 mothers (73.2%) reported "Not at all," six (14.6%) reported "No more than usual," and five (12.2%) reported "Rather more than usual," with none in the most severe category. Loss of sleep over worry was denied by 28 mothers (68.3%), and constant strain was similarly denied by 28 mothers (68.3%).

In summary, mothers showed profound impairment in decision-making capacity, sense of usefulness, enjoyment of activities, and mood, yet maintained confidence, self-worth, and sleep relatively intact—a pattern suggestive of functional but emotionally distressed coping (*Table 4*).

Table 2: Scale Scores

Scale	Mean	SD	Min	Max	Median
GHQ-12 Total Score (0–12)	4.68	2.13	1	7	6
MIBS Total Score (0–30)	11.10	2.20	9	15	10
MAS Total Score (6–30)	20.83	1.66	18	23	21

Table 3: Prevalence of Mental Distress

GHQ-12 Category	N	Percentage
Mental Distress (Case)	35	85.4%
No Distress (Non-case)	6	14.6%

Table 4: Item-Level Analysis of the GHQ-12

GHQ-12 Item	Not at all n (%)	No more than usual n (%)	Rather more than usual n (%)	Much more than usual n (%)
Ability to concentrate	25 (61.0%)	5 (12.2%)	0 (0.0%)	11 (26.8%)
Lost sleep over worry	28 (68.3%)	0 (0.0%)	7 (17.1%)	6 (14.6%)
Playing useful part	8 (19.5%)	6 (14.6%)	4 (9.8%)	23 (56.1%)
Capable of decisions	2 (4.9%)	1 (2.4%)	12 (29.3%)	26 (63.4%)
Constantly under strain	28 (68.3%)	2 (4.9%)	4 (9.8%)	7 (17.1%)
Could not overcome difficulties	23 (56.1%)	8 (19.5%)	0 (0.0%)	10 (24.4%)
Enjoy daily activities	13 (31.7%)	6 (14.6%)	0 (0.0%)	22 (53.7%)
Face up to problems	16 (39.0%)	7 (17.1%)	13 (31.7%)	5 (12.2%)
Feeling unhappy/depressed	7 (17.1%)	10 (24.4%)	6 (14.6%)	18 (43.9%)
Losing confidence	29 (70.7%)	12 (29.3%)	0 (0.0%)	0 (0.0%)
Feeling worthless	30 (73.2%)	6 (14.6%)	5 (12.2%)	0 (0.0%)
Feeling reasonably happy	6 (14.6%)	22 (53.7%)	5 (12.2%)	8 (19.5%)

Analysis of the MIBS revealed overwhelmingly healthy bonding on positive items. All 41 mothers (100%) endorsed the most loving response for "Feeling loving towards baby." For "Enjoys doing things for baby," 35 mothers (85.4%) endorsed the strongest enjoyment. Feeling protective towards baby was endorsed at the strongest level by 31

mothers (75.6%) and feeling close to baby by 35 mothers (85.4%). On negative bonding items, reassuringly, no mother endorsed any anger towards the baby (100% reported no anger), no mother wished she did not have the baby (100% reported no such wishes), and no mother reported

feeling scared or panicky doing things for the baby (100% reported no fear or panic).

However, a minority of mothers endorsed concerning responses on three items. Regarding resentment towards the baby, 28 mothers (68.3%) reported no resentment, but 12 (29.3%) endorsed the most resentful response. On feeling nothing for the baby, 34 mothers (82.9%) reported no emotional emptiness, while seven (17.1%) endorsed the worst response. Notably, on wishing

the baby were different, only nine mothers (22.0%) had no such wishes, while 14 (34.1%) strongly endorsed this wish and 17 (41.5%) moderately endorsed it. Thus, while bonding was remarkably healthy overall, a minority subgroup (approximately 17–34%) exhibited some resentment, emotional detachment, or wishes that the baby was different, warranting clinical attention (Table 5).

Table 5: Item-Level Analysis of the Mother-to-Infant Bonding Scale

MIBS Item	Response a n (%)	Response b n (%)	Response c n (%)	Response d n (%)
Feeling loving towards the baby	41 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Scared/panicky doing things for baby	41 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Feeling resentful towards the baby	12 (29.3%)	1 (2.4%)	0 (0.0%)	28 (68.3%)
Feeling nothing for the baby	7 (17.1%)	0 (0.0%)	0 (0.0%)	34 (82.9%)
Feeling angry with the baby	0 (0.0%)	0 (0.0%)	0 (0.0%)	41 (100.0%)
Enjoys doing things for the baby	0 (0.0%)	0 (0.0%)	6 (14.6%)	35 (85.4%)
Wishes baby were different	14 (34.1%)	1 (2.4%)	17 (41.5%)	9 (22.0%)
Feels protective towards the baby	6 (14.6%)	0 (0.0%)	4 (9.8%)	31 (75.6%)
Wishes she did not have a baby	0 (0.0%)	0 (0.0%)	0 (0.0%)	41 (100.0%)
Feels close to the baby	0 (0.0%)	0 (0.0%)	6 (14.6%)	35 (85.4%)

Chi-square tests were conducted to examine whether GHQ-12 caseness varied by sex of the child, maternal religion, index child position, or type of cleft. None of the variables examined showed a statistically significant association with mental distress caseness (all $p > 0.05$). Specifically, for sex of the child ($p = 0.268$), all 11 male children (100%) had mothers who met caseness criteria, compared to 24 of 30 female children (80.0%). For religion ($p = 0.683$), caseness rates were 84.0% (21/25) among Christians, 83.3% (10/12) among Muslims, and 100% (4/4) among those reporting other religions. For index child position ($p = 0.432$), caseness rates were 87.1% (27/31) for firstborns, 71.4% (5/7) for second-born children, and 100% (3/3) for third or later children. For type of cleft ($p = 0.427$), caseness rates were 81.8% (27/33) for cleft lip only, 100% (7/7) for cleft palate only, and 100% (1/1) for combined cleft lip and palate. Although males and children with cleft palate (alone or combined) showed 100% caseness rates, these differences were not statistically significant, likely

due to the small sample sizes in those subgroups (Table 6).

Kruskal-Wallis tests were performed to compare GHQ-12, MIBS, and MAS scores across the three cleft types. There were no statistically significant differences in any scale score across groups (all $p > 0.05$). For GHQ-12, the mean score for cleft lip only was 4.5 (SD = 2.2), for cleft palate only was 6.0 (SD = 1.4), and for the single participant with combined cleft lip and palate was 3.0 (no SD calculable); the difference was not significant ($p = 0.156$). For MIBS, mean scores were 11.1 (SD = 2.2) for cleft lip only, 11.1 (SD = 2.5) for cleft palate only, and 12.0 for the combined case ($p = 0.881$). For MAS, mean scores were 20.7 (SD = 1.7) for cleft lip only, 21.3 (SD = 1.7) for cleft palate only, and 21.0 for the combined case ($p = 0.743$). Although mothers of children with cleft palate only showed a slightly higher mean GHQ-12 score (6.0 versus 4.5), the difference did not reach statistical significance. Thus, the three groups were essentially comparable across all psychological measures, suggesting that the type

of cleft did not differentially impact maternal mental distress, bonding, or attitudes in this sample (Table 7).

Spearman's rank correlation coefficients were calculated to examine the relationships between GHQ-12, MIBS, and MAS scores. A moderate, statistically significant negative correlation was found between GHQ-12 and MIBS scores ($\rho = -0.346$, $p = 0.027$). Given that lower MIBS scores indicate better bonding, this negative correlation indicates that higher maternal mental distress was associated with poorer mother-to-infant bonding. A moderate, statistically significant positive correlation was observed between GHQ-12 and

MAS scores ($\rho = +0.481$, $p = 0.001$), indicating that higher mental distress was associated with more positive maternal attitudes. In contrast, the correlation between MIBS and MAS was weak and non-significant ($\rho = -0.164$, $p = 0.304$), suggesting that bonding and maternal attitudes were not linearly related in this sample. Taken together, mental distress showed moderate, statistically significant relationships with both bonding and maternal attitudes; however, bonding and attitudes themselves were not correlated with each other, suggesting they represent distinct psychological constructs in this population (Table 8).

Table 6: Associations with Sociodemographic and Clinical Variables

Sex	Variable	Category	Cases n (%)	Chi- sq p- value	Religion	Index Child	Cleft Type
Male	Sex	Male	11/11(100.0)	0.268			
Female	Sex	Female	24/30(80.0)	0.268			
	Religion	Christianity	21/25(84.0)	0.683	Christianity		
	Religion	Islam	10/12(83.3)	0.683	Islam		
	Religion	Others	4/4 (100.0)	0.683	Others		
	Index Child	First	27/31 (87.1)	0.432		First	
	Index Child	Second	5/7 (71.4)	0.432		Second	
	Index Child	Third or more	3/3 (100.0)	0.432		Third or more	
	Cleft Type	Cleft lip only	27/33 (81.8)	0.427			Cleft lip only
	Cleft Type	Cleft palate only	7/7 (100.0)	0.427			Cleft palate only
	Cleft Type	Cleft lip and palate	1/1 (100.0)	0.427			Cleft lip and palate

Table 7: Scale Scores by Type of Cleft

Scale	Cleft Lip Only Mean (SD)	Cleft Palate Only Mean (SD)	Cleft Lip & Palate Mean (SD)	Kruskal-Wallis p
GHQ-12	4.5 (2.2)	6.0 (1.4)	3.0 (NA)	0.156
MIBS	11.1 (2.2)	11.1 (2.5)	12.0 (NA)	0.881
MAS	20.7 (1.7)	21.3 (1.7)	21.0 (NA)	0.743

Values are Mean (SD). Kruskal-Wallis non-parametric test was used due to the ordinal nature of scores.

Table 8: Correlations Between Mental Distress, Bonding, and Attitudes

Comparison	Spearman rho	p-value	Interpretation
GHQ-12 vs MIBS	-0.346	0.027	Moderate
GHQ-12 vs MAS	0.481	0.001	Moderate
MIBS vs MAS	-0.164	0.304	Weak

Spearman's rank correlation was used. Weak: $|\rho| < 0.30$; Moderate: $0.30-0.59$; Strong: ≥ 0.60 .

DISCUSSION

This study examined the prevalence of mental distress, mother-to-infant bonding, and maternal

attitudes among 41 mothers of children with orofacial clefts, as well as the associations between these psychological constructs and selected socio-demographic and clinical variables. The findings reveal a strikingly high prevalence of mental distress (85.4%), relatively preserved bonding and moderately positive attitudes, a distinctive pattern of "functional but distressed coping," and a lack of statistically significant differences across cleft types or socio-demographic factors. These results are discussed below in relation to existing literature, methodological considerations, and clinical implications.

Prevalence of mental distress in context

The finding that 85.4% of mothers met caseness criteria on the GHQ-12 (cut-off ≥ 3) is substantially higher than reported prevalence rates in general populations of mothers, where estimates typically range from 10% to 20% for common mental disorders [Patel & Kleinman, 2003; Fisher et al., 2012]. However, this figure is consistent with studies specifically examining parents of children with orofacial clefts. In a systematic review, (Baker et al., 2009) reported that mothers of children with clefts experience significantly higher levels of psychological distress compared to mothers of unaffected children, with prevalence estimates ranging from 40% to 70% depending on the instrument and cut-off used.

The higher prevalence observed in the present study (85.4%) may be attributable to several factors. First, the GHQ-12 cut-off of ≥ 3 , while standard in some populations (Goldberg & Williams, 1988), may be overly sensitive in this cultural context, potentially overestimating caseness. Second, the timing of data collection—which may have coincided with perioperative periods or recent diagnosis—could have captured acute distress rather than chronic mental disorder (Hunt & Burden, 2012). Third, caregivers of children with clefts face unique stressors, including feeding difficulties, repeated surgical interventions, speech and hearing problems, social stigma, and financial burdens associated with multidisciplinary care (Nelson et al., 2012; Stock & Rumsey, 2015).

Nevertheless, the uniformly high prevalence across nearly all subgroups suggests that the presence of a child with any orofacial cleft may be a sufficient stressor to elevate maternal distress, irrespective of specific clinical or demographic characteristics.

The pattern of functional but distressed coping

The item-level analysis of the GHQ-12 revealed a distinctive and potentially culturally significant pattern. Mothers reported profound difficulties in decision-making (92.7%), sense of usefulness (65.9%), enjoyment of activities (53.7%), and mood

(58.5%), all of which are core features of depressive and anxiety disorders (American Psychiatric Association, 2013). Yet, strikingly, they maintained relatively intact confidence (100% in the lowest two categories), self-worth (87.8% in the lowest two categories), sleep (68.3% reported no sleep loss), and perceived strain (68.3% reported no strain).

This pattern may reflect what (Kleinman, 2004) describes as culturally shaped expressions of distress. In many Nigerian and broader African cultural contexts, somatic and functional complaints are often more acceptable expressions of emotional suffering than direct admissions of worthlessness or hopelessness (Okulate & Jones, 2006, Gureje, 2007). Mothers may readily acknowledge that they cannot make decisions or enjoy activities concrete, functional impairments, while denying existential stigmatising symptoms like worthlessness or loss of confidence, which may carry greater shame.

Alternatively, this pattern could represent resilience or protective buffering by religious faith, which was high in this sample (61% Christianity, 29.3% Islam). Religious coping has been shown to protect self-esteem and provide meaning in the face of childhood illness (Harrison et al., 2009; Pargament et al., 2011). The preservation of confidence and self-worth despite high functional impairment suggests that mothers may be distressed but not demoralised—they feel overwhelmed but still see themselves as capable and worthy.

Mother-to-infant bonding: overwhelmingly healthy with a vulnerable minority

The MIBS findings were largely reassuring. Mothers overwhelmingly endorsed loving feelings (100%), enjoyment of caregiving (85.4%), protectiveness (75.6%), and closeness (85.4%). Furthermore, no mother endorsed anger toward the baby or wished she had not had the baby. This is consistent with attachment theory perspectives suggesting that mothers often respond to a child's congenital condition with hyper-bonding or compensatory caregiving rather than rejection (Bowlby, 1969; Ainsworth et al., 1978).

However, a clinically significant minority (17-34%) endorsed concerning responses: resentment toward the baby (29.3%), feeling nothing for the baby (17.1%), and wishing the baby were different (75.6% when combining moderate and strong endorsement). These figures are notable and warrant clinical attention. Previous studies have identified a subgroup of mothers of children with clefts (approximately 15-25%) who experience bonding difficulties, often in the context of

postnatal depression or inadequate social support (Coy et al., 2014; Lindberg & Berglund, 2014).

The finding that 75.6% of mothers wished their baby was different-with 34.1% strongly endorsing this requires careful interpretation. Wishing the baby were different is not equivalent to rejecting the baby. It may reflect realistic distress about the child's future medical and social challenges, rather than a failure of love or attachment (Stock et al., 2016). Nonetheless, persistent wishes for a "different" child can be a marker for adjustment difficulties and should be explored clinically.

No differences by cleft type or sociodemographic variables

Contrary to expectations, there were no statistically significant differences in any scale score across cleft types (cleft lip only, cleft palate only, cleft lip and palate) or across sociodemographic variables (sex of child, religion, birth order). The Kruskal-Wallis tests yielded p-values of 0.156 (GHQ-12), 0.881 (MIBS), and 0.743 (MAS), all well above the conventional threshold of 0.05.

These null findings may be explained primarily by limited statistical power. The sample size of 41 was adequate for overall prevalence estimates but insufficient for subgroup comparisons, particularly for cleft palate only (n=7) and cleft lip and palate (n=1). The observed 100% caseness rates in males (11/11) and in children with cleft palate (alone or combined) are clinically striking. Still, the statistical tests failed to reach significance due to small cell sizes presenting a classic Type II error (Button et al., 2013).

However, an alternative interpretation is that the type of cleft does not differentially impact maternal psychology. Both visible clefts (lip) and functional clefts (palate alone) impose significant burdens. Cleft lip may be associated with stigma and altered appearance, while cleft palate alone may be associated with feeding, speech, and hearing difficulties that are equally distressing to mothers (Hunt & Burden, 2012; Stock & Rumsey, 2015). It is possible that the mere diagnosis of any orofacial cleft, rather than specific phenotypic features, drives maternal distress. Larger adequately powered studies are needed to confirm or refute this possibility.

Similarly, the absence of associations with religion, birth order, and child sex may indicate that these factors are genuinely not predictive of maternal distress in this population, or that their effects are small and undetectable with the current sample size (Baker et al., 2009) similarly found inconsistent associations between sociodemographic variables and distress in parents of children with clefts,

suggesting that disease-related factors (e.g., number of surgeries, feeding difficulties, social support) may be more important predictors.

Correlations between distress, bonding, and attitudes

The correlational analysis revealed three key findings. First, there was a moderate, statistically significant negative correlation between GHQ-12 and MIBS scores ($\rho = -0.346$, $p = 0.027$). The interpretation of this correlation depends critically on the MIBS scoring direction. In the present study, lower MIBS scores indicated better bonding. Therefore, a negative correlation means that higher mental distress was associated with lower MIBS scores (i.e., better bonding). This is counterintuitive and contrary to most published literature, which typically finds that maternal depression is associated with impaired bonding (Tietz et al., 2014; Lindberg & Berglund, 2014).

One possible explanation is scoring reversal error—that the negative correlation actually indicates the expected direction if MIBS scoring were reversed. Researchers should verify that the MIBS was coded consistently with published conventions (Taylor et al., 2005). Alternatively, this may reflect a genuine finding in this specific population: distressed mothers may paradoxically bond more strongly as a compensatory mechanism. This would align with the hyper-bonding hypothesis discussed earlier.

Second, there was a moderate, statistically significant positive correlation between GHQ-12 and MAS scores ($\rho = +0.481$, $p = 0.001$). Higher distress was associated with more positive maternal attitudes. This is also counterintuitive but has been observed in some caregiving populations (Pakenham & Cox, 2012). Possible explanations include:

- Response shift:* Mothers may recalibrate their attitudes as a coping strategy, becoming more positively oriented to manage distress (Sprangers & Schwartz, 1999).
- Defensive optimism:* Positive attitudes may function as a psychological defence against overwhelming distress.
- Social desirability:* More distressed Mothers may also be more motivated to present as "good mothers" with positive attitudes.
- Construct independence:* The MAS may measure general attitudes about motherhood rather than feelings about this specific child, allowing distress and positive attitudes to co-exist.

Third, the correlation between MIBS and MAS was weak and non-significant ($\rho = -0.164$, $p = 0.304$). This suggests that bonding and maternal attitudes are distinct psychological constructs that do not

necessarily co-vary. A mother can hold positive general attitudes about motherhood while struggling to bond with a particular child, or vice versa. Clinically, this means both constructs should be assessed separately, and good attitudes should not be assumed to indicate good bonding.

Methodological limitations

Several limitations must be acknowledged. First, the sample size (N=41) was modest, particularly for subgroup analyses, increasing the risk of Type II errors and limiting generalizability. Second, the cross-sectional design precludes causal inferences; the direction of associations between distress, bonding, and attitudes cannot be determined.

Third, the use of self-report questionnaires introduces the potential for social desirability bias, especially on sensitive items regarding bonding and rejection of the child.

Fourth, the single-site design may limit generalizability to other Nigerian or international populations. Fifth, the lack of a control group of mothers of unaffected children means we cannot definitively attribute the high distress prevalence to the cleft itself, rather than other unmeasured confounders.

Clinical implications

Despite these limitations, the findings have several clinical implications. First, the 85.4% prevalence of mental distress indicates that psychological screening should be routine and universal for all mothers of children with orofacial clefts, not reserved for those who appear distressed. Second, the identification of a minority subgroup (17-34%) with bonding difficulties suggests that specific assessment of mother-to-infant bonding should be included in routine cleft care protocols. Third, the preserved confidence and self-worth among most distressed mothers suggest that interventions can build on existing strengths rather than focusing solely on deficits. Culturally adapted cognitive-behavioural or supportive interventions that address decision-making difficulties, loss of enjoyment and feelings of uselessness may be particularly beneficial. Fourth, the lack of differences by cleft type implies that all mothers of children with any orofacial cleft should receive similar psychological support, without assuming that visible clefts are more distressing than functional ones.

Recommendations for future research

Future studies should employ larger, multicentre samples to enable adequately powered subgroup analyses. Longitudinal designs are needed to examine how distress, bonding, and attitudes evolve-particularly around key milestones such as diagnosis, first surgical repair, school entry, and

adolescence. Qualitative studies would help elucidate the meaning of the "functional but distressed" coping pattern and clarify why mothers report preserved confidence and self-worth despite high functional impairment cross-cultural comparisons between Nigerian and other African or Western populations would help determine the extent to which the present findings are culturally specific. Finally, intervention studies are urgently needed to test the effectiveness of psychological support programmes for this highly distressed population.

CONCLUSION

This study found that 85.4% of mothers of children with orofacial clefts in a Nigerian sample met criteria for mental distress, a figure substantially higher than general population estimates. Despite this, mother-to-infant bonding was largely healthy, and maternal attitudes were moderately positive. A distinctive pattern of "functional but distressed coping"-characterised by preserved confidence and self-worth despite profound impairments in decision-making, enjoyment, and mood-was observed and may reflect culturally shaped expressions of distress. A minority subgroup (17-34%) exhibited bonding difficulties warranting clinical attention. No statistically significant differences were found by cleft type or sociodemographic variables, likely due to limited statistical power, though the uniform elevation of distress across all subgroups suggests that the presence of any orofacial cleft may be sufficient to elevate maternal psychological morbidity. Routine universal screening for distress and bonding difficulties, culturally adapted interventions, and larger longitudinal studies are recommended.

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