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Empowering Families, Saving Lives: Evaluating the Effectiveness of Grouped-Based Family Therapy and Psychoeducation in Reducing Maternal Mortality in Bada Community Adamawa State

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Abstract

Introduction: This study evaluated the effectiveness of psychoeducation and family therapy done in groups in decreasing the risks of maternal mortality among households in Bada community, Adamawa State.

Methods: Through a three-phase (mixed) study, 510 women were involved in a baseline survey, 96 in psychoeducation intervention, and 21 families in an eight-week family therapy programme. There was the use of systematic sampling, purposive selection, and validated tools in data collection.

Results: The result indicated that the majority of the participants had experienced perinatal loss and low levels of knowledge about the risks of maternal health at baseline, but after the intervention, the situation was found to have improved considerably. The technique of psychoeducation has raised good knowledge to 62.5 per cent and influenced improvements in attitudes and intentions to obtain quality care ($p < 0.001$). Furthermore, group-based family therapy showed even more results, increasing the level of positive family communication, male involvement, and tangible family health planning by more than 50 percentage points ($p < 0.001$).

Conclusion: The study affirms that psychoeducation enhances the awareness, whereas family therapy augments the dedication and collective responsibility at the household level to overcome the challenges to safe maternal practices enforced by the cultural blocks.

Keywords: Psychoeducation, Family therapy, Maternal Mortality experiences, Knowledge, Attitude, Family Practices

Background

The issue of maternal mortality is one of the most serious public health problems facing the world today, which has far-reaching consequences for the woman, the family and the whole society. In 2020 alone, an estimated 287,000 women lost their lives because of pregnancy-related and childbirth complications, which means that every day about 800 women die on preventable grounds.[1] It has been found that Sub-Saharan Africa alone contributes to almost 70 per cent of these deaths, which reflects the failure of health systems and other socio-cultural setbacks that remain a setback to progress.[2] The situation is especially frightening in Nigeria, considering the estimated ratio of maternal mortality is 512 deaths per 100,000 live births. [3]

Not all areas in the six geopolitical zones in the country share in this burden equally. Whereas the zones of the South-West and South-East record relatively lower rates, the North-East geopolitical zone in which Adamawa State is found consistently records one of the worst indicators of maternal health. It has been reported in the recent past that the Northeast has a considerable proportion of maternal deaths as a result of deep poverty, lack of access to skilled care, insecurity, and cultural practices that are deep-rooted.[4-6] Adamawa is one of the states that are located in this area; this state is the example of such challenges. Low antenatal care attendance, lack of health infrastructure, and little knowledge about how to protect the lives of the mothers compound the situation in Bada, a rural community, contributing to its maternal mortality.[4,7]It is thus important to focus on Adamawa State, and more precisely, the Bada community. The study attempts to fill these gaps and provide a solution to the issue as it occurs locally by focusing the precision of interventions on the grassroots level. Community-based action is critical, especially when health systems are fragile and families bear the brunt of the consequences.

Beyond infrastructural interventions, there is growing evidence that psychological and family-orientated interventions play a vital role in improving maternal health outcomes. [8] Family therapy aims to strengthen familial relationships, enhance supportive behaviours during pregnancy, and promote joint decision-making regarding health-seeking behaviours. Psychoeducation, on the other hand, equips expectant mothers and their families with knowledge about risk factors, danger signs, and the importance of timely care. While family therapy encourages participatory support structures, psychoeducation fosters informed choices and behavioural change. [9, 10] However, these approaches are not without limitations. Family therapy may be constrained by cultural resistance to open family dialogue or entrenched gender norms that limit women's agency. [11] Similarly, psychoeducation can be ineffective if not culturally sensitive or if literacy barriers are not addressed. Nonetheless, combining

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these interventions has shown promise in building resilience, enhancing social support, and reducing preventable deaths in resource-poor settings.[12] Evaluating the effectiveness of family therapy and psychoeducation in Bada community is therefore not only timely but necessary. Such research provides actionable insights for stakeholders, aligns with Nigeria's commitment to reducing maternal mortality under the Sustainable Development Goal 3 (good health and well-being), and supports national strategies such as the Nigeria Every Newborn Action Plan. By generating family and community-specific evidence, this research is aimed at analysing how psychoeducation and family therapies in groups are effective in enhancing maternal health awareness, family support mechanisms, and discouraging preventable cases of maternal deaths among the households in the Bada community, Adamawa State, Nigeria.

Method

Research Design

This study employed a three-phase design to assess the effectiveness of community-based interventions aimed at reducing maternal mortality. The design incorporated descriptive survey and quasi-experimental methodologies to provide a comprehensive evaluation. The first phase used a descriptive survey to collect baseline data on maternal health knowledge, household history of maternal mortality, and health practices. The second and third phases adopted a quasi-experimental approach to evaluate psychoeducation and group-based family therapy interventions.

Study Population

The study focused on women of reproductive age (18-45 years) in the Bada community. This group was selected due to their direct involvement in maternal health decisions and practices. The sample population for each phase was drawn from this group to assess the effectiveness of various interventions on maternal health outcomes.

Sample and Sampling Procedure

The study used systematic sampling in the first phase, selecting every even-numbered household, starting from the town hall and progressing through the community until reaching the study location next to the Emir's palace. Cochran's formula was used to calculate the sample size, resulting in 510 women participating in the baseline survey, exceeding the target of 500. In the second phase, 189 women expressed interest in participating in psychoeducation sessions, with 96 women attending regularly, resulting in a 51% response rate. The third phase targeted 37 families with a history of maternal mortality, with 21 families completing the group therapy sessions, yielding a 57% response rate.

Community Engagement

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Stakeholder engagement was critical for the success of this study. Consultative meetings were held with key community leaders, including the Emir, the Chief Imam, and local healthcare directors. Their support ensured community buy-in and access to the venue for the study. This engagement fostered trust and facilitated smooth implementation of the research phases.

Data Collection

Data collection occurred over three phases. The first phase involved a four-week baseline data collection period, focusing on maternal health knowledge and household history of maternal mortality. The second phase consisted of a four-week psychoeducation intervention on maternal health risks and safe behaviours. The third phase extended over eight weeks, during which group-based family therapy sessions were conducted to improve family support systems and address cultural barriers. The total data collection period spanned 20 weeks, from November 2024 to March 2025.

Intervention Design

Psychoeducation

The psychoeducation intervention was a four-week programme aimed at improving maternal health outcomes by providing practical knowledge and skills. Week 1 focused on understanding maternal mortality causes and identifying early warning signs. Week 2 emphasised safe motherhood practices, including antenatal checkups and delivering in skilled facilities. Week 3 taught emergency preparation, including saving money for birth-related expenses and arranging transportation. In the final week, participants engaged in group activities (role-plays and stories) highlighting the importance of family and community support, especially from male partners. Health professionals, trained community volunteers, and local leaders facilitated the sessions to ensure cultural relevance and trust.

Group-Based Family Therapy

This eight-week programme aimed to foster a supportive environment for safe maternal health practices. The first two weeks focused on trust-building and communication exercises to address sensitive topics and enhance mutual understanding within families. Weeks 3 and 4 addressed traditional roles and harmful cultural beliefs preventing timely healthcare access, with training in conflict resolution and equal distribution of household chores during pregnancy. Weeks 5 and 6 focused on problem-solving and decision-making tasks, helping families overcome logistical and cultural barriers. The final two weeks guided families in creating action plans for birth preparations and emergencies. Families were also connected to peer support groups for continued progress. Facilitators included trained therapists, social workers, psychologists, and local leaders to ensure cultural sensitivity and relevance.

Results

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Maternal Mortality Experience, Knowledge, Attitude and Family Practice

The data shows high maternal-related experiences, with 76.5% witnessing perinatal loss and 60.8% reporting the death of a pregnant family member. Most participants experienced 1-5 losses. Knowledge of maternal mortality was poor (62.7%), and attitudes were negative. Intent to seek skilled care was low in 58.8%, and family communication about pregnancy issues was poor (66.7%). Family support was low (56.9%), and safe practices were insufficient (60.8%). Emergency preparedness was inadequate (62.7%). Male involvement in maternal health was weak (68.6%), and confidence in discussing danger signs and willingness to accompany women were low. Only 17.6% of families had a health plan for pregnancy.

Table 1: Participants' Responses on Maternal Mortality Experience, Knowledge, Attitudes, and Family Practices (n = 510)

Items	Response	Frequency (%)
Have you witnessed perinatal loss	Yes	390 (76.5%)
	No	120 (23.5%)
If yes, how many perinatal losses have you witnessed	Not applicable	120 (23.5%)
	1–5	340 (66.7%)
	6–10	50 (9.8%)
Have you lost a family member while she was pregnant?	Yes	310 (60.8%)
	No	200 (39.2%)
If yes, how many	1–5	270 (52.9%)
	6–10	40 (7.8%)
Knowledge about Maternal Mortality	Poor	320 (62.7%)
	Average	160 (31.4%)
	Good	30 (5.9%)
Attitude toward Maternal Mortality	Positive	190 (37.3%)
	Negative	320 (62.7%)
Intent to seek skilled care	Low	300 (58.8%)
	Moderate	150 (29.4%)
	High	60 (11.8%)

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Family communication about pregnancy issues	Positive	170 (33.3%)
	Negative	340 (66.7%)
Family support for pregnant women	Low	290 (56.9%)
	Moderate	170 (33.3%)
	High	50 (9.8%)
Practice of safe maternal health behaviours	Low	310 (60.8%)
	Moderate	150 (29.4%)
	High	50 (9.8%)
Emergency preparedness for complications	Low	320 (62.7%)
	Moderate	140 (27.5%)
	High	50 (9.8%)
Male involvement in maternal health decisions	Low	350 (68.6%)
	Moderate	120 (23.5%)
	High	40 (7.8%)
Confidence to discuss pregnancy danger signs	Low	340 (66.7%)
	Moderate	130 (25.5%)
	High	40 (7.8%)
Willingness to accompany women to health facility	Low	300 (58.8%)
	Moderate	160 (31.4%)
	High	50 (9.8%)
Do you have a family health plan for pregnancy?	Yes	90 (17.6%)
	No	420 (82.4%)

Association between Psychoeducation, Maternal Mortality Experience, Knowledge, Attitude and Family Practice

Table 2 compares maternal health-related knowledge, attitudes, and practices before and after the psychoeducational intervention. While maternal mortality experience remained unchanged, significant improvements were noted across other variables. Knowledge of maternal mortality increased from 8.3% to 62.5%, and positive attitudes rose from 41.7% to 81.3%. Intent to seek skilled care improved from 16.6% to 54.2%. Family communication increased from 39.6% to

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78.1%, and family support rose from 10.4% to 45.8%. Safe practices improved from 13.5% to 58.3%. Emergency preparedness, male involvement, confidence, and willingness to accompany women all increased by over 30 percentage points. Families with a health plan rose from 20.8% to 72.9%. All changes were statistically significant ($p < 0.001$), highlighting the program's effectiveness.

Table 2: Association between Maternal Mortality Experience, Knowledge, Attitudes, Family Practices and Psychoeducation (n = 96)

Items	Response	Pre-intervention F (%)	Post-intervention F (%)	Chi-Square
Have you witnessed perinatal loss	Yes	72 (75.0%)	72 (75.0%)	—
	No	24 (25.0%)	24 (25.0%)	—
If yes, how many perinatal losses have you witnessed	Not applicable	24 (25.0%)	24 (25.0%)	—
	1–5	60 (62.5%)	60 (62.5%)	—
	6–10	12 (12.5%)	12 (12.5%)	—
Have you lost a family member while she was pregnant?	Yes	58 (60.4%)	58 (60.4%)	—
	No	38 (39.6%)	38 (39.6%)	—
If yes, how many	1–5	53 (55.2%)	53 (55.2%)	—
	6–10	5 (5.2%)	5 (5.2%)	—
Knowledge about Maternal Mortality	Poor	58 (60.4%)	8 (8.3%)	**p < 0.001**
	Average	30 (31.3%)	28 (29.2%)	
	Good	8 (8.3%)	60 (62.5%)	
Attitude toward Maternal Mortality	Positive	40 (41.7%)	78 (81.3%)	**p < 0.001**
	Negative	56 (58.3%)	18 (18.7%)	
Intent to seek skilled care	Low	50 (52.1%)	12 (12.5%)	**p < 0.001**
	Moderate	30 (31.3%)	32 (33.3%)	
	High	16 (16.6%)	52 (54.2%)	
Family communication about pregnancy issues	Positive	38 (39.6%)	75 (78.1%)	**p < 0.001**
	Negative	58 (60.4%)	21 (21.9%)	

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Family support for pregnant women	Low	52 (54.2%)	12 (12.5%)	**p < 0.001**
	Moderate	34 (35.4%)	40 (41.7%)	
	High	10 (10.4%)	44 (45.8%)	
Practice of safe maternal health behaviours	Low	55 (57.3%)	10 (10.4%)	**p < 0.001**
	Moderate	28 (29.2%)	30 (31.3%)	
	High	13 (13.5%)	56 (58.3%)	
Emergency preparedness for complications	Low	60 (62.5%)	12 (12.5%)	**p < 0.001**
	Moderate	26 (27.1%)	34 (35.4%)	
	High	10 (10.4%)	50 (52.1%)	
Male involvement in maternal health decisions	Low	62 (64.6%)	20 (20.8%)	**p < 0.001**
	Moderate	24 (25.0%)	38 (39.6%)	
	High	10 (10.4%)	38 (39.6%)	
Confidence to discuss pregnancy danger signs	Low	64 (66.7%)	16 (16.7%)	**p < 0.001**
	Moderate	22 (22.9%)	36 (37.5%)	
	High	10 (10.4%)	44 (45.8%)	
Willingness to accompany women to health facility	Low	50 (52.1%)	12 (12.5%)	**p < 0.001**
	Moderate	32 (33.3%)	28 (29.2%)	
	High	14 (14.6%)	56 (58.3%)	
Do you have a family health plan for pregnancy?	Yes	20 (20.8%)	70 (72.9%)	**p < 0.001**
	No	76 (79.2%)	26 (27.1%)	

Association between Group-Based Family Therapy, Maternal Mortality Experience, Knowledge, Attitude and Family Practice

The results show that while maternal mortality experience remained unchanged, group-based family therapy significantly improved maternal health knowledge, attitudes, and practices. Knowledge of maternal mortality increased from 9.5% to 61.9%, and positive attitudes rose from 38.1% to 85.7%. Intent to seek skilled care improved from 19.1% to 61.9%, and family communication about pregnancy increased from 33.3% to 85.7%. Family support, safe practices, and emergency preparedness all saw significant improvements. Male involvement in decisions increased from 14.3% to 61.9%, and family health plans rose from 19.0% to 85.7%. All changes were statistically significant ($p < 0.001$).

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Table 3: Association between Group-Based Family Therapy, Maternal Mortality Experience, Knowledge, Attitudes, and Family Practices (n = 21)

Items	Response	Pre-intervention F (%)	Post-intervention F (%)	Chi-Square
Have you witnessed perinatal loss	Yes	16 (76.2%)	16 (76.2%)	—
	No	5 (23.8%)	5 (23.8%)	—
If yes, how many perinatal losses have you witnessed	Not applicable	5 (23.8%)	5 (23.8%)	—
	1–5	14 (66.7%)	14 (66.7%)	—
	6–10	2 (9.5%)	2 (9.5%)	—
Have you lost a family member while she was pregnant?	Yes	13 (61.9%)	13 (61.9%)	—
	No	8 (38.1%)	8 (38.1%)	—
If yes, how many	1–5	12 (57.1%)	12 (57.1%)	—
	6–10	1 (4.8%)	1 (4.8%)	—
Knowledge about Maternal Mortality	Poor	12 (57.1%)	2 (9.5%)	**p < 0.001**
	Average	7 (33.3%)	6 (28.6%)	
	Good	2 (9.5%)	13 (61.9%)	
Attitude toward Maternal Mortality	Positive	8 (38.1%)	18 (85.7%)	**p < 0.001**
	Negative	13 (61.9%)	3 (14.3%)	
Intent to seek skilled care	Low	12 (57.1%)	2 (9.5%)	**p < 0.001**
	Moderate	5 (23.8%)	6 (28.6%)	
	High	4 (19.1%)	13 (61.9%)	
Family communication about pregnancy issues	Positive	7 (33.3%)	18 (85.7%)	**p < 0.001**
	Negative	14 (66.7%)	3 (14.3%)	
Family support for pregnant women	Low	11 (52.4%)	1 (4.8%)	**p < 0.001**
	Moderate	7 (33.3%)	7 (33.3%)	

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	High	3 (14.3%)	13 (61.9%)	
Practice of safe maternal health behaviours	Low	11 (52.4%)	2 (9.5%)	**p < 0.001**
	Moderate	6 (28.6%)	6 (28.6%)	
	High	4 (19.0%)	13 (61.9%)	
Emergency preparedness for complications	Low	12 (57.1%)	2 (9.5%)	**p < 0.001**
	Moderate	6 (28.6%)	7 (33.3%)	
	High	3 (14.3%)	12 (57.1%)	
Male involvement in maternal health decisions	Low	13 (61.9%)	2 (9.5%)	**p < 0.001**
	Moderate	5 (23.8%)	6 (28.6%)	
	High	3 (14.3%)	13 (61.9%)	
Confidence to discuss pregnancy danger signs	Low	12 (57.1%)	2 (9.5%)	**p < 0.001**
	Moderate	6 (28.6%)	6 (28.6%)	
	High	3 (14.3%)	13 (61.9%)	
Willingness to accompany women to health facility	Low	11 (52.4%)	2 (9.5%)	**p < 0.001**
	Moderate	6 (28.6%)	5 (23.8%)	
	High	4 (19.0%)	14 (66.7%)	
Do you have a family health plan for pregnancy?	Yes	4 (19.0%)	18 (85.7%)	**p < 0.001**
	No	17 (81.0%)	3 (14.3%)	

Comparative Effectiveness of Psychoeducation and Group-Based Family Therapy in Reducing Maternal Mortality

The results show that the family therapy group had a higher post-intervention mean score (79.80) compared to the psychoeducation group (72.45), indicating greater improvement in reducing maternal mortality risks. The t-test ($t = 4.23$, $df = 115$, $p < 0.001$) confirms statistical significance. This suggests that while psychoeducation improved knowledge, family therapy provided stronger, more consistent support, communication, and readiness, reinforcing the importance of integrated family interventions alongside education to reduce maternal mortality.

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Table 4: Independent t-test Showing the Difference Between Psychoeducation and Group-Based Family Therapy Effectiveness in Reducing Maternal Mortality

Variable	Intervention Type	N	Mean	SD	df	T	p-value	η^2
Post-intervention score	Psychoeducation	96	72.45	8.50	115	4.23	**p < 0.001**	
	Group-based Family Therapy	21	79.80	6.75				

Discussion

The results of this research support the existing literature that maternal mortality is firmly incorporated in the daily life of families in Bada community, provided by the fact that a significant percentage of the participants admitted they experienced and observed perinatal loss (76.5%) or the death of a pregnant family member (60.8%). These statistics reiterate the trends that have been reported by studies [4,5] at the North-East regional level, specifically pointing at the fact that behind every statistic, there is a household that has to shoulder the grief, silence, and generally lack of effective channels to obtain timely and competent services. Baseline characteristics proved that knowledge and awareness were pronounced gaps: more than 62% of participants responded poorly to questions related to maternal mortality risks, communication was poor, and decision-making was weak in most households, which is also reflective of socio-cultural barriers.[6,7]

In a positive light, the psychoeducation intervention presented findings that culturally specific information, which is specific to the gaps to be addressed, can begin to bridge such differences. There was a great improvement in the number of participants who had good knowledge as compared to the very low percentage of 8.3 to 62.5 percent after four weeks into the structured sessions. This observation confirms the conclusion by existing studies [9,10] that the provision of clear and convenient knowledge about signs of danger and safe measures can lead to a significant shift in behavioural intentions in case the community increases awareness of these facts. The attitudes towards maternal health were also changed, where positive attitudes changed by 41.7 per cent to above 80 per cent ($p < 0.001$) and this indicates that informed families become motivated and more willing to use skilled services and prepare against emergencies.

In this case, however, this study advances to illustrate that information might not be sufficient where cultural altruism (silence), as well as family affairs, threatens personal

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wills. Even more improvements observed in practically all indicators, including knowledge and attitude and the practical readiness, were achieved by the group-based family therapy. Families that completed the eight-week sessions reported significant improvements in establishing a concrete family health plan (increment of 19.0% to 85.7%) and increased confidence in discussing warning indicators (an increase of 14.3% to 61.9%). The above finding builds on the claims [8,11] that approaches that are respectful of household power structures and expose men to engaging interventions are more probable to convert awareness into actual changes in behaviour.

As demonstrated by the independent t -test, the mean post-intervention score of the group-based family therapy group was significantly higher than that of the psychoeducation group ($t = 4.23$, $p < 0.001$). Herein lies clear evidence that, although psychoeducation helps to develop knowledge and change attitudes, family therapy roots that change in a supportive family and fosters group action, solidarity and long-term follow-up. Collectively, these results illustrate the potential inheritance of community-based psychoeducation and a well-organised family involvement approach as a feasible intervention to curb preventable deaths in women due to the provision of systemic hindrances evident in underserved populations such as Bada. This is a direct contribution to Nigeria's commitment under SDG 3 and the national Every Newborn Action Plan by justifying the role of the household-centred action and locally specific psychological support .[7]

Conclusion

Psychoeducation had a huge impact on knowledge, attitude, and desire to receive a qualified care provider, and group-based family therapy provided enhanced family communication, involvement of males, and tangible health planning at the household level. The major divergence in the two interventions indicates that information, as powerful as it is, can only go so far as family-level participation and a sense of group responsibility entrench the effects and prolong changes in behaviour. The study helps to bridge knowledge to family action towards mitigation of some of the local barriers aggravating the high burden of maternal mortality in Nigeria. Using these findings, this study suggests that combined psychoeducation and structured family support should be used to reduce maternal mortality in rural Nigerians so that it can prevent some of the discrepancies of information, as well as the family dynamics behind health decision-making. Culturally sensitive, male-friendly and family-preparedness-orientated models of family therapy should be given prime attention by the local governments, primary healthcare providers and development partners. Religious institutions and community leaders must act as the friendly mobilisers of the family at all times. Lastly, comparable family-centred approaches are to be implemented into the current maternal and child health policies and expanded

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throughout the Sustainable Development Goal agenda of Nigeria so that no mother should die due to treatable conditions.

Conflict of Interest

The authors declare no conflict of interest

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