



Knowledge of Baby Sex Selection and Ante Partum Psychological Distress Among Expectant Mothers: Moderating Role of Resilience

Okechukwu H. Eke¹, Jude O Ezeokana², Chidozie E. Nwafor²

¹Clinical Psychology Unit, Medical Center University of Nigeria,

²Department of Psychology, Nnamdi Azikiwe University Awka. Nigeria

Abstract

This study explores the relationship of knowledge about baby sex selection, antepartum psychological distress, and the moderating role of resilience among expectant mothers. A sample of 297 participants from the University of Nigeria Medical Centre and Bishop Shannahan Hospital Nsukka was analyzed using hierarchical multiple regression. The participants represented diverse employment statuses, trimesters, educational backgrounds, and pregnancy experiences. Notably, the majority were Igbo, reflecting the regional context. The study utilized the Brief Resilience Scale (BRS) to assess resilience and the General Health Questionnaire-12 (GHQ-12) to assess antepartum psychological distress. Results indicated that neither control variables nor knowledge of sex selection correlated with antepartum psychological distress. However, knowledge of sex selection and resilience independently predicted lower antepartum psychological distress. Intriguingly, a significant interaction effect emerged between knowledge of sex selection and resilience, indicating a nuanced relationship impacting antepartum psychological distress. This study contributes valuable insights into the dynamics between knowledge of sex selection, resilience, and psychological distress during pregnancy. The findings suggest potential avenues for clinical applications and emphasize the need for further research in this area. Understanding how these factors interact can inform interventions that enhance maternal well-being and family relationships during this crucial life stage.

Key Words: Baby sex selection, antepartum, psychological distress, resilience, mothers

Introduction

Embarking on the journey of pregnancy is a multifaceted experience, marked by both joy and challenges. The physiological, hormonal, and emotional changes accompanying this period can significantly impact the well-being of expectant mothers (Tesfaye et al., 2017; Yusuff et al.,

2015). Among the challenges, antepartum psychological distress can manifest in various forms, potentially affecting not only the mothers themselves but also their families.

Psychological distress during pregnancy encompasses a range of negative mood states, from mild to severe, and may lead to adverse outcomes for both the mother and the developing fetus (Fortin et al., 2007; Lupied, 2011). Factors contributing to maternal distress are diverse, including child rearing, interpersonal interactions, and socio-economic conditions (Ezugwu et al., 2014; Sageer et al., 2019). The study explores two specific variables: knowledge of baby sex selection and resilience.

Knowledge of sex selection has gained prominence globally, reflecting cultural, religious, and societal norms that influence individual attitudes and behaviors (Cai Yiping, 2012). This knowledge, deeply rooted in preferences for a specific gender, can significantly impact family dynamics, particularly in regions where son preference is pronounced (Das Gupta, 2019). Understanding the implications of this knowledge on expectant mothers is crucial, as it may contribute to psychological distress (Bhagyalakshmi, et al., 2022; Rouhi, et al., 2017; Tungchama, et al., 2021 & Yadav & Badari, 2020) and affects their well-being and family relationships.

Resilience, on the other hand, emerges as a crucial factor in navigating the challenges of pregnancy. Defined as the ability to bounce back, resist illness, and adapt to stress, resilience plays a pivotal role in determining how individuals cope with adversities (Alves, et al., 2021/ Alves, et al., 2023; Wagnild & Young, 1990). Successful adaptation under high-risk conditions, termed resilience, encompasses characteristics such as a purposeful life, perseverance, equanimity, self-reliance, and existential aloneness (Wagnild & Young, 1990). These attributes collectively contribute to an individual's capacity to withstand and overcome challenges. This study seeks to unravel the intricate relationships between knowledge of baby sex selection, resilience, and antepartum psychological distress. By delving into these dynamics, we aim to provide valuable insights for clinical applications, interventions, and future research, ultimately enhancing the well-being of expectant mothers and fostering healthier family relationships. The specific objectives of this study are to examine whether: 1) Knowledge of baby sex selection predicts ante partum psychological distress. 2) Resilience predict ante

partum psychological distress 3) Resilience moderates the relationship between knowledge of baby sex selection and psychological distress

Method

Participants and procedure

Participants were 297 expectant mothers (Age range = 18– 40years, *mage* = 28. 18years) drawn from health facilities in eastern Nigeria using a convenient sampling technique. Data was collected by means of questionnaires. Following ethical approval by the institutional Review Board of the Hospital, Following ethical approval by the Institutional Review Board of the Hospital, mothers were approached by researchers during ante natal clinics, and asked to participate in this study. The purpose and procedures of the study, the kinds of questions that would be asked, confidentiality of data, and participants' rights were explained to them. Mothers who gave informed consent were recruited for the study It took approximately 14 min to answer the questionnaire. Ten participants whose data were missing for >25% of items within any of the scales were not included in the analysis, giving rise to a final sample of 297 expectant mothers.

Measures

Data was collected using two self-report measures, namely Socio demographic form, Brief Resilience Scale (BRS) and General Health Questionnaire -12 (GHQ-12). Participants provided data on their age, trimester, education level, number of pregnancy, and ethnic group by indicating them on the questionnaire. To assess resilience, we used 6-item Brief Resilience Scale (BRS) (Smith et al., 2008). BRS has shown to be reliable; Smith et al. (2008) reported its Cronbach's alpha ranging from .80 to .91. Nwankwo (2016) validated the scale in Nigerian and reported a Cronbach's alpha coefficient of .80. Brief resilience scale has been used in Nigerian samples (Ishaku, 2019; Sororadi, 2018) this study reported reliability indices of .80 and .85 respectively. To assess psychological distress, we use the 12-item General Health Questionnaire (Goldberg, 1972; Goldberg & Williams, 1981) which has been found to be a useful screening tool for psychological distress in Nigerian samples (e.g Chukwuorji, et al., 2016; Chukwuorji & Zacchaeus, 2014). It has a good internal consistency ($\alpha = .70$) and a test

retest reliability (.71). Total scores range from 1 to 48 and higher scores (of the respondent) on the 12 items) Indicate higher psychological distress

Data analysis

Data was analyzed using Hayes regression-based PROCESS macro for SPSS.

Results

Table 1 *Descriptive and correlation statistics of the demographic and predictor variables*

Variables	M	SD	1	2	3	4	5	6	7	8	9	10
1.Age	28.18	5.20	-									
2.Ethnic group	1.40	.66	.24**	-								
3.Trimester	2.00	.75	-.04	.14*	-							
4.Number of pregnancy	2.10	.67	.04	-.02	.08	-						
5.Nature of pregnancy	2.48	.62	.19**	.11	.17**	.00	-					
6.Occupation	1.24	.57	-.04	.01	.02	-.01	-.01	-				
7.Educational level	2.24	.83	.07	-.01	.25**	.11*	.04	.25**	-			
8.Knowledge of sex selection	18.17	4.73	-.05	.13*	-.00	-.02	.07	-.07	.18**	-		
9.Resilience	21.44	4.40	-.12*	.01	.04	-.08	.01	.06	-.05	.01	-	
10.Psychological distress	16.63	4.19	-.05	-.06	.03	.03	.04	-.01	-.05	.15**	.16**	-

** . Correlation is significant at the 0.01 level (2-tailed). * . Correlation is significant at the 0.05 level (2-tailed). Note: $N = 297$, * = $p < .05$ (two-tailed), ** = $p < .01$ (two-tailed). Gender was coded 01= male, 2 = female. M=Mean, SD= Standard Deviation.

In Table 1, variables such as age, ethnic group, trimester, number of pregnancy, nature of pregnancy, occupation, and educational level were added as controls measures, which invariably was indicative that none of them correlated with antepartum psychological distress. Meanwhile knowledge of sex selection ($r = -.15$, $p < .01$) and resilience ($r = -.16$, $p < .01$) negatively correlated respectively with antepartum psychological distress.

Table 2 Hayes PROCES Macro result for moderating role of resilience on the relationship between knowledge of sex selection and antepartum psychological distress

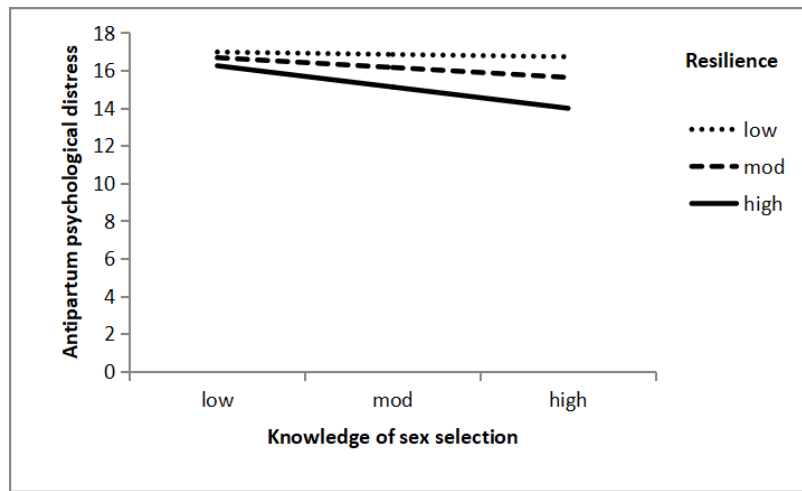
Variables	β	SE	t	95%CL		ΔR^2	ΔF
				LLCI	ULCI		
Knowledge of sex selection (KSS)	-.14	.05	-2.85**	-.24	-.04		
Resilience (R)	-.18	.05	-3.26**	-.29	-.07		
KSS X R	-.03	.01	-2.08*	-.05	-.00	.07	6.91**

Note: * = $p < .05$ (two-tailed), ** = $p < .01$ (two-tailed). β = Regression Coefficient; SE = Standard Error; t = population t value; p = Probability Level; LLCI and ULCI = Lower and Upper Limit Confident Interval; ΔR^2 Adjusted R square.

In Table 2, Knowledge of sex selection negatively predict antepartum psychological distress ($\beta = -.14$, $t = -2.85$, $p = < .01$), indicating that increase in knowledge of sex selection is associated with decrease in the level of antepartum psychological distress. Resilience also negatively predict antepartum psychological distress ($\beta = -.18$, $t = -3.26$, $p = < .01$). It shows that the more resilience the less experience of antepartum psychological distress. Meanwhile the interaction effect between knowledge of sex selection and resilience produce a significant effect on antepartum psychological distress ($\beta = -.03$, $t = 2.08$, $p = < .05$), indicating that resilience moderate the relationship between knowledge of sex selection and antepartum psychological distress. For the slope of the interaction (see Figure 1), it indicates that knowledge of sex selection did not predict antepartum psychological distress for people with low resilience ($\beta = -4.45$, $p = > .05$), but for people with moderate ($\beta = -.45$, $p = < .05$) and high resilience ($\beta = 5.55$,

$p = <.01$). The R^2 for the model was .07, indicating that knowledge of sex selection and resilience contributed 7% variance in antepartum psychological distress.

Figure 1 *Interaction slope showing the moderating role of resilience on the relationship between knowledge of sex selection and antepartum psychological distress*



Discussion

The present study investigated on knowledge of baby sex selection and ante partum psychological distress among expectant mothers: moderating role of resilience. The first hypothesis stated that knowledge of baby sex selection will significantly associated with psychological distress among expectant mothers

The result in table1 showed that knowledge of baby sex selection negatively associated with psychological distress among expectant mothers. It indicates that the more expectant mothers have knowledge on baby sex selection the lesser their level of psychological distress. However, it could be that having knowledge of a baby sex selection helped expectant mothers to feel lesser impact of having same sex children, have control and the ability to determine sex of their fetus in future pregnancies. These serve as a buffer that protected them from pathogenic effects of stress emanating from pregnancy and having same sex children. The finding is consistent with studies which reported that knowledge of baby sex selection may decrease

the level of psychological distress (Bhagyalakshmi, et al.,2022; Rouhi, et al., 2017; Tungchama, et al ., 2021 & Yadav & Badari, 2020).

Conversely, the second hypothesis which stated that resilience will significantly associated with psychological distress among expectant mothers was confirmed

The result in table 1 showed that resilience was negatively associated with psychological distress among expectant mothers. It indicates that the more expectant mothers experience resilience the lesser their level of their psychological distress. However, it could be that resilience provides a framework for self-enhancing attributions, positive social identification and self-fulfillment, which in turn, promote well-being and reduce distress among expecting mothers. In addition, it could be that their level of resilience provides them with greater hope or optimism about their future, and greater indicators of well-being.

Furthermore, the moderating role of resilience on the relationship between knowledge of baby sex selection and antepartum psychological distress was tested in hypothesis 3. The result showed that the interaction of knowledge of baby sex selection and resilience was significant for ante partum psychological distress indicating that resilience moderated the relationship between knowledge of baby sex selection and ante partum psychological distress. Thus, the third hypothesis which states that resilience will moderate the relationship between knowledge of sex selection and antepartum psychological distress was accepted. This implies that expectant mothers' level of resilience plays significant roles on how antepartum psychological distress is developed among them. Expectant mothers with high resilient experiences lesser ante partum psychological distress. This may be explained using resilience theory by Ouellette and Diplacido (2001). The theory proposed protective factor as one the factors that facilitate and foster resiliency

These factors improve an individual's response to stressful and problematic life events producing thereby producing a positive outcome. In this, resilience may have serve as a buffer to expectant mothers thereby protecting them from effects of stress relating to baby sex selection.

Reference

- Alves, A.C., Cecatti, J.G., & Souza, J. R.T (2021). Resilience and stress during pregnancy : A comprehensive multidimensional approach in maternal and prenatal health: The Scientific World Journal <https://doi.org/10.1155/2021/9512854>
- Alves, A.C., Souza, R.T.& Mayrink, J.(2023). Measuring resilience and stress during pregnancy and its relation to vulnerability and pregnancy outcomes in a nulliparous cohort study. *BMC Pregnancy Childbirth* **23**, 396. <https://doi.org/10.1186/s12884-023-05692-5>
- Bhagyalakshmi, U ., Kumar, G., Kumari., A & Kumari, P (2022). Antenatal anxiety towards gender preference and social acceptance among primi and multi gravid antenatal mother attending sadar hospital, sasaram. *International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)* **2**(1), 494-500.
- Chukwuorji J.C., Amazue, L.O., & Eke , O.H. (2016). Loneliness and psychological health of orthopaedic patients' caregivers: does gender make a difference? *Psychology,health & Medicine, Psychology*, <http://dx.doi.org/10.1080/13548506.2016.1173711>
- Das Gupta, M. (2019). Selective discrimination against female children in rural Punjab. *Population and Development Review* **13**, 77-100
- Ezugwu, E.C., Agu, P.U., Nwoke, M.O., & Ezugwu, F.O (2014) Reducing maternal deaths in a low resource setting in Nigeria. *Nigerian Journal of Clinical Practice*, **17**(1):62–6.
- Fortin, M., Hudon, C., Bayliss, E.A., Soubhi, H., & Lapointe, L. (2007). Caring for body and soul: The importance of recognizing and managing psychological distress in persons with multi morbidity. *International Journal of Psychiatry in Medicine*, **37**, 1-9.
- Goldberg, D. (1972). *The detection of psychiatric illness by questionnaire*. London: Oxford University Press
- Golderberg, D., & Williams, P. (1988). *A user's guide to the general health*. Institute of Psychology: London
- Ifeagwazi, C., Chukwuorji, J. and Zacchaeus, E. (2014) Alienation and Psychological Wellbeing: Moderation by Resilience. *Social Indicators Research*, 1-20.
- Lupien, S. J. (2011). Effects of stress across the lifespan. *Stress: The International Journal on the Biology of Stress*, **14**(5), 475-480. <https://doi.org/10.3109/10253890.2011.604879>
- Rouhi, M., Rouhi, N., Vizheh M & Salehi, K (2017) Male child preference: Is it a risk factor for antenatal depression among Iranian women? *British Journal of Midwifery*, **25**, (9), 572-579
- Sageer, R., Kongnyuy, E., Adebimpe, W.O. *et al.* (2019). Causes and contributory factors of maternal mortality: evidence from maternal and perinatal death

-
- surveillance and response in Ogun state, Southwest Nigeria. *BMC Pregnancy Childbirth* **19**, 63 (2019). <https://doi.org/10.1186/s12884-019-2202-2>
- Smith, B.W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P. & Bernard, J. (2008). The Brief Resilience Scale: Assessing the Ability to Bounce Back. *International Journal of Behavioral Medicine*, 15, 194-200.
- Tesfaye, G., Loxton, D., Chojenta, C., Semahegn, A. & Smith R.(2017). Delayed initiation of antenatal care and associated factors in Ethiopia: a systematic review and meta-analysis. *Reproductive Health*.14 (1):150.
- Tungchama, F. P., Umar, M.U., Maigari, T. Y., Davou, F.J., Armiyau, A. Y., Goar, S. & Uwakwe, R (2021) The role of infant's gender and other psycho-social variables on women with postpartum depression in Jos, Nigeria. *Journal of Medicine*,10, 2, 11-15.
- Wagnild, G., & Young, H. M. (2021). Resilience among older women. *Journal of Nursing Scholarship*, 22, 252-5.