

**INFLUENCE OF MINDFULNESS AND EMOTION REGULATION ON  
PSYCHOLOGICAL DISTRESS AMONG PREGNANT WOMEN IN UYO  
METROPOLIS: A PILOT STUDY**

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**Abstract**

Many a times, women have been faced with anxiety and depression which usually comes with pregnancy. Based on this, the study investigated the predictive influence of mindfulness and emotion regulation on psychological distress among pregnant women in a private hospital. To empirically find solutions, three standardized measuring instruments were utilized: Kessler Psychological Distress Scale (K6) developed by Dadfar, Lester, Momeni, and Roshanpajouh, (2018), the Five Facet Mindfulness Questionnaire (FFMQ-SF) developed by Bohlmeijer, ten Klooster, Fledderus, Veehof, and Baer (2011), and the 8-item Regulation dimension of Emotional Intelligence scale developed by Espinoza-Venegas, Sanhueza-Alvarado, Ramírez-Elizondo, and Sáez-Carrillo (2015). Required ethical requirements were met before and during administration of the questionnaires. Thereafter, collected data were subjected to empirical software analysis using descriptive statistics and multiple linear regressions to probe the three primary research hypotheses. The first hypothesis which stated

that mindfulness will significantly contribute to psychological distress among pregnant women was retained. In the same way the second hypothesis which states that pregnant women with low emotion regulation will significantly report high psychological distress was confirmed. Then, a significant interplay was observed between mindfulness and emotion regulation on the criterion variable (psychological distress). In line with the findings, implications centered on the need for pregnant women to be fully equipped and trained with the rudiments of mindfulness during their antenatal visits; in the same way, their emotion needs to be met and well guided in order to keep them in check regarding their levels of psychological distress, and indirectly, boosting their psychological well-being.

**Keywords:** Mindfulness, emotion regulation, psychological distress, pregnant women.

## INTRODUCTION

Pregnancy is an exciting experience and a path to reaching perfection for every woman, which changes many aspects of her life, contributing immensely to her health, happiness, and well-being (Huizink, Mulder, Medina, & Buitelaar, 2004). In fact, a woman that has not been pregnant, is not given respect or taken seriously even among her fellow women folk in a Nigerian community; thus, pregnancy could be a potential stressor and high risk period in which a woman may develop psychological distress (Awopetu, Annor, Ingyer, & Ayankaa, 2016). During pregnancy, a woman goes through various physiological and psychological upheavals, juggling along uncertainty, expectation and hope. An expectant mother could feel insecure and vulnerable (Orr & Blazar, 2007; Ajah et al., 2022). Although, pregnancy has been viewed as a time of diminished self-doubts and a period of well-being that allows a woman to feel biologically complete, it is understood that most women still view this period negatively that they may fear child birth or feel inadequate about mothering (Bhat, Sheth, Shah, Palel & Bhavsa, 2015). The fear of uncertainty that comes with pregnancy can lead to anxious thoughts resulting in psychological distress (Nierenberg, 2015).

Psychological distress is a state of emotional suffering characterized by symptoms of depression (such as; loss of interest, sadness and hopelessness) and anxiety (such as;

restlessness and feeling tensed), having an impact at both cognitive and behavioral levels with devastating consequences not only for the woman experiencing it, but also for her children and family (Ajah et al., 2022; Awopetu et al., 2016; Yasien, Nasir, & Shaheen, 2016; Ahmad, Arshad, & Kausar, 2015). Furthermore, unaddressed psychological distress can lead to poor nutrition, drinking, smoking, and suicidal behavior, higher rates of placenta abnormalities such as placenta previa, preeclampsia, and spontaneous miscarriage (Straub, Adams, Kim, & Silver, 2012).

According to Adelaja (2014), a woman dies every fifteen minutes while giving birth in Nigeria and about 630 women die out of every 100,000 live births in Nigeria, the second highest maternal mortality rate in the world. In order for pregnant women to checkmate their level of psychological distress, there is need for calmness and serenity in their mental space, engineering the inclusion of mindfulness as a contributing variable.

Mindfulness is a practice and a skill rooted in Buddhist practice and philosophy but its premise is simple and has a secular quality to it: non-judgmental acceptance and awareness of the present moment. Mindfulness connotes paying attention to present experiences from moment-to-moment – including bodily sensations, feelings, thoughts, and external stimuli from the environment – while observing judgments and reactivity and learning to let go of them. This process is achieved through a meditative practice that focuses on the flow of the breath, producing a mental state that is comprehensively balanced (Kabat-Zinn, 1990).

While mindfulness practice can induce states of relaxation, it is not exactly a relaxation technique because the focus in mindfulness is developing the capacity to simply observe or witness changing mental and physiological states, thereby enabling and ennobling the individual psychologically without necessarily trying to alter those states and achieve some desired state of mind such as relaxation and calmness (Duncan & Bardacke, 2010). This has led psychologists to emphasize the potential advantage of understanding mindfulness not

only for the development of clinical psychology, but also for maximizing the likely treatment benefits of mindfulness-based clinical interventions among fragile populations such as pregnant women (Hayes & Wilson, 2003; Kabat-Zinn, 2003).

Preliminary evidence indicates that one of the most important mechanisms could be emotion regulation (Shapiro, Carlson, Astin, & Freedman, 2006) which is been incorporated in the study as another contributing variable. Emotion regulation is the ability to modulate the intensity and/or duration of emotional states (Cicchetti, Ackerman, & Izard, 1995). Given that both emotion regulation and psychopathology are constantly evolving, the need to integrate an approach with an interventional framework in order to understand the role of emotion regulation among pregnant women becomes pertinent. Theorists believe that those who are not able to manage their emotions properly against everyday events mostly show diagnostic symptoms and internal disorders such as depression and anxiety (Mennin & Farach, 2007; Aldao, Gee, Reyes, & Seagera, 2016).

The theory of Brown and Harris which holds that women are more likely to become depressed when they experience entrapment and humiliation is highly salient to this study (Brown and Harris, 1978). A non-exhaustive list of predisposing risk factors which could explain the high prevalence of mental health problems during pregnancy includes: adolescent pregnancy, being unmarried or separated, unwanted pregnancy, marital relationship, unsupportive partners, polygamous families, previous stillbirth or repeated miscarriage, nulliparity, poverty and lack of financial resources, lack of practical support, pregnancy as a result of rape, spouse/domestic violence, and difficult relationship with in-laws (WHO-UNFPA, 2008).

Having considered the possible contributions of mindfulness, and emotion regulation in reducing psychological distress among pregnant women, the researchers were motivated to properly investigate these phenomena among pregnant women in Uyo metropolis. In line

with the research objectives, the study proposes that (1) mindfulness will significantly contribute to psychological distress among pregnant women; (2) pregnant women with low emotion regulation will significantly report high psychological distress and (3) mindfulness and emotion regulation will interact to influence psychological distress among pregnant women in Uyo metropolis.

### **Theoretical Underpinnings**

Theory of Mind (ToM) as propounded by Sabbagh (2004) delineates two component processes of ToM: “(1) detecting or decoding others’ mental states based on immediately available observation information and (2) reasoning about those mental states in the service of explaining or predicting others’ actions”. The theory of mind appears to be a hub theory for this study. It looks at individuals who are having difficulty with paying attention to themselves and their environment. In this state of emotional turmoil, the tendency to suffer psychological distress becomes very high. Most at times, pregnant women will need the help or assistance of their spouse, family members, health providers, and even members of the public. But when this assistance are not forth coming or comes haphazardly, they quickly begin to interpret the actions of these ‘other people’ negatively in their minds which in-turn leads to distress among pregnant women. Nevertheless, the theory focused only on the individual’s perception of ‘other’s behaviour and an attempt to classify that behaviour. The theory is deficient in the sense that individual’s perception might be judgemental and biased as a result of the individual’s upbringing and past experience. Several related empirical studies have been carried out with respect to the subject of interest both locally and internationally. Gust, Gvetadze, Furtado, Makanga, Akelo, Ondenge, Nyagol, and McLellan-Lemal, (2017) analyzed data from 461 young women screened for a longitudinal contraceptive ring study in Kisumu, Kenya and results revealed significant psychological distress. Yu, Zhu, Xu, Hu, Zhou, Zheng, and Yin (2020) evaluated the prevalence of

depressive symptoms and its influencing factors in late pregnancy by surveying 813 women in their late pregnancy and found prevalence of depression symptoms, no exercise during pregnancy, low self-efficacy, low social support, poor sleep quality, existence of anxiety symptoms. Braeken, Jones, Otte, and Van den Bergh (2016) recruited 156 pregnant Dutch women volunteers and results shows that more women had lower levels in parasympathetic nervous system activity over the course of their pregnancy; given that these cardiac measures reflect changes in autonomic nervous system function. Higher levels of mindfulness were significantly associated with lower levels of emotional distress both during and after pregnancy.

Further, Partoa and Besharat (2011) investigated the relationship of mindfulness with psychological well-being and psychological distress and assessed the role of self-regulation and autonomy as mediating variables and mechanisms of mindfulness by recruiting 717 students and results showed that mindfulness was negatively and highly correlated with psychological distress and was positively and highly correlated with psychological well-being. Halligan, Cooper, Fearon, Wheeler, Crosby, and Murray, (2013) examined emotion regulation in the context of psychosocial adversity (i.e., low socioeconomic status, unstable living conditions, and relationship instability. Emotion regulation assessed at 12–18 months (and at 5 years) was the only prospective predictor of externalizing symptoms at age 5 (after controlling for behavioral problems at age 12–18 months, child gender, and risk group). Again, Vieten and Astin, (2008), in a pilot study among pregnant women developed a mindfulness meditation intervention to reduce depressive symptoms during pregnancy and the early postpartum period. The intervention showed that women who received Mindful Motherhood reported significantly decreased anxiety and negative affect when compared to wait-list controls.

## **METHOD**

### **Research Design/Area**

A cross-sectional survey design was adopted in this study. The Premier Medical Services (PMS) or Premier Hospital located at #3 High Tension Lane, Off Edet Akpan Avenue, Uyo purposively served as the research area.

### **Participants**

A total of thirty one (31) pregnant women were part of this pilot-phase study. Only 2 (6.4%) aged between 15-19 years, while 14 (45.2%) aged 20-29 years, and 15 (48.4%) were 30 years and above. Educational level of participants indicated that majority 13 (41.9%) had tertiary education qualification, followed by secondary school 10 (32.3%) and post-graduate 5 (16.1%), while 3 (9.7%) had primary school qualification. Their pregnancy experience showed that first timers were 12 (38.7%), second timers were 11 (35.5%), and third timers were 7 (22.6%) whereas, 1 (3.2%) did not respond. Similarly, while responding to their gestation period, results revealed that 6 (19.4%) were between 18-20 weeks gestation, 10 (32.3%) were between 21-23 gestation, 11 (35.5%) were 24 weeks and above, while 4 (12.9%) did not respond. Husband's employment status showed that 3 (9.7%) were unemployed, 16 (51.6%) were employed, 9 (29.0%) were self-employed, and 3 (9.7%) did not respond to their husband's employment status. Further, family monthly income depicted that 4 (12.9%) earns less than or equal to N20, 000, 5 (16.1%) earns between N20, 000 to N49, 000, 17 (54.8%) earns N50, 000 and above, while 5 (16.1%) did not respond to how much their family's income in a month. Ethnic group of participants showed that majority were Ibibio 15 (48.4%) while others were divided between Efik, Oro, Annang, and Igbo

ethnic groups. Majority of participants were married 26 (83.9%) as against those in a relationship but not married, and those who were single.

### **Study Instruments**

The tools employed in the present study for data collection are briefly described below under five (5) different sections, Section A, B, C, and D. Section A comprises of demographic section having nine (9) factors such as age, educational level (primary, secondary, tertiary, post-graduate), husband's/partner's employment status (unemployed, employed, self-employed), family monthly income (less than or equal to N20, 000, N20, 000-N49, 000, and N50, 000 and above), ethnic group (Ibibio, Efik, Oron, Annang, Igbo, others), number of children, marital status (single, in a relationship but not married, married, separated, others), pregnancy experience (first timers, second timers, third timers and above) and gestation period (1st trimester, 2nd trimester, 3rd trimester).

Section B embodied Kessler Psychological Distress Scale (K6) as developed by Dadfar, Lester, Momeni, and Roshanpajouh, (2018). The K6 can predict mood and anxiety disorders and measures general distress in the preceding month (Dadfar, Lester, AtefVahid, & Esfahani, 2016). The items measure whether the respondent feels nervous, hopeless, restless, jumpy, sad, and worthless. Each item of the K6 is answered on a 5-point Likert-type scale: None of the time (0); A little of the time (1); Some of the time (2); Most of the time (3), and All of the time (4). The total score ranges from 0-24. Norm for K6 is 7.13 implying that scores between 7.13 and above can be said to be high in psychological distress. Cronbach alpha of .70 was observed for K6.

Section C is a 24-item short form of the Five Facet Mindfulness Questionnaire (FFMQ-SF) developed by Bohlmeijer, ten Klooster, Fledderus, Veehof, and Baer (2011) that measures five facets of mindfulness: observing, describing, acting with awareness, non-judging, and non-reactivity. Participants were asked to rate the degree to which each



statement is true for them. Items were scored on a 5-point Likert-type scale ranging from 1 (never or very rarely true) to 5 (very often or always true). Facet scores were computed by summing the scores on the individual items. Facet scores range from 5 to 25 (except for the observing facet, which ranges from 4 to 20), with higher scores indicating more mindfulness. While the composite scores for mindfulness ranges from 24-120. The scale norm is 68.26; therefore, scores below the norm will indicate presence of mindfulness while scores above 68.26 will indicate lack of mindfulness. Cronbach alpha of .84 was observed for the emotion regulation dimension.

Section D comprises the 8-item Regulation dimension of Emotional Intelligence scale developed by Espinoza-Venegas, Sanhueza-Alvarado, Ramírez-Elizondo, and Sáez-Carrillo (2015) was utilized. Norm for emotion regulation is 26.42; scores below the norm of 26.42 indicates low emotion regulation while scores above the norm 26.42 indicates high emotion regulation. Specifically, a Cronbach alpha of .80 was observed for the mindfulness scale.

### **Procedure**

Identification letter was obtained from the Head, Department of Psychology, University of Uyo. In order to obtain ethical clearance, the lead researcher contacted representatives of the Akwa Ibom State Ministry of Health and got the clearance from the Ethical Committee, Ministry of Health, Akwa Ibom State, Idongesit Nkanga Secretariat, IBB Avenue, Uyo. The researchers also approached the Chief Matron of the hospital where participants were recruited; after explaining the purpose of the study, the researchers got on-the-spot approval/permission to go on with the study which recruited 31 willing pregnant women within two antenatal days: Tuesday, 18<sup>th</sup> February and Friday, 21<sup>st</sup> February, 2020. Inclusion criteria consist of participants whose age ranges from 15 to 40 years old and gestational age of 18-24 weeks (i.e. 4-7 months or pregnant women within second or third trimester but not late third trimester). This gestational age was chosen so that the discomforts

of the first trimester had disappeared (nausea or vomiting) and those of late pregnancy had not yet appeared (backache, or breathing difficulties). On the other hand, exclusion criteria for the survey hinged on pregnant women who had mental disorders in the past such as dissociation, psychosis, hallucination, or any other delusional component. The researchers spent some time interacting and familiarizing with the pregnant women before the administering the questionnaires. Participants had the right to refrain or withdraw from participating in the study at any time without experiencing any negative or adverse consequences. Data confidentiality and patients' privacy was also assured. At the end, participants were thanked verbally and given one (1) pen each for their willingness to participate.

### Method of Data Analysis

Data analysis was carried out using IBM SPSS Statistics (version 25) and both descriptive and inferential statistics were used to analyze the data. First, descriptive statistics was computed to describe the nature and distribution of the scores that were obtained from the demographic variables and the scales using simple percentages, measures of central tendency (mean), and measures of variation. In addition, multiple linear regressions were utilized to analyze the primary research hypotheses in the study.

## RESULTS

**Multi-linear regression showing the contributing influence of mindfulness and emotion regulation on psychological distress among pregnant women in Uyo metropolis.**

Variable	Psychological Distress			
	Model 2			
	Model 1 $\beta$	$\beta$	P	95% CI
Constant	-1.52	.75	.63	[-7.90, 4.85]
Mindfulness	.23	.75	.00*	[.14, .31]
Emotion Regulation	-.26	-.38	.01*	[-.44, -.08]

<b>R<sup>2</sup></b>	<b>.55</b>
<b>F</b>	<b>16.80</b>
<b>▲R<sup>2</sup></b>	<b>.51</b>
<b>▲F</b>	<b>3.47</b>
<b>Sig</b>	<b>.00*</b>

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**Note: N = 31, CI = Confidence Interval; \*P<0.05; \*\* P<0.01**

The results also indicates that mindfulness and emotion regulation yielded a coefficient of multiple correlation (R) of 0.739 and multiple correlation square (R<sup>2</sup>) of 0.546. Finding that the R<sup>2</sup> of our model is 0.546 implies that the linear regression explains 54.6% of the variance in psychological distress. The adjusted R<sup>2</sup> of 0.513 gives us some idea of how well our model generalizes, which ideally should be very close to the value of R<sup>2</sup>. In this model, the difference is (0.546 - 0.513 = 0.034 or 3.4%). This shrinkage means that if the model were derived from the population of pregnant women it would account for approximately 3.4% less variance in the outcome. The table indicated that mindfulness was an independent predictor of psychological distress ( $\beta = .23$ ;  $t = 5.64$ ;  $P < 0.05$ ). Based on this, the first hypothesis which states that mindfulness will significantly contribute to psychological distress among pregnant women was accepted. Closely, the second hypothesis which states that pregnant women with low emotion regulation will significantly report high psychological distress was retained ( $\beta = -.26$ ;  $t = .09$ ;  $P < 0.05$ ). Thereafter, a significant interactive influence of mindfulness and emotion regulation on psychological distress was recorded,  $F(2, 28) = 16.80$ ,  $P < 0.05$ .

## DISCUSSION

In this pilot-phase study, mindfulness and emotion regulation merged to understand their predictive influence among a cohort group of pregnant women. The multi-linear regression statistically revealed an influence of mindfulness on psychological distress. This finding mirrors the study of Braeken, Jones, Otte, and Van den Bergh, (2016) that recruited 156 pregnant Dutch women volunteers and found that mindfulness were significantly associated with emotional distress both during and after pregnancy. At a practical level, the finding suggests that when pregnant women are very much concerned about their here and now experience, there is a tendency that their levels of anxiety and depression will increase.

Second, the result shows that emotion regulation influenced psychological distress such that higher levels of emotion regulation were associated with lower levels of psychological distress. This finding was in line with the study of Halligan, Cooper, Fearon, Wheeler, Crosby, and Murray (2013) that examined emotion regulation in the context of psychosocial adversity and found it to be the only prospective predictor of externalizing symptoms. Possible explanation of this finding can be buttressed on the fact that pregnant women are usually very emotional, and the discomfort of pregnancy coupled with the fact that intimacy issues evident their partners could exacerbate the levels of distress (Farmer & Sundberg, 2010). Third, the result revealed a joint influence of mindfulness and emotion regulation on psychological distress. This finding is in consonance with Theory of Mind as propounded by Sabbagh (2004) whose two major leanings were that detecting or decoding others' mental states based on immediately available observation information and individuals who are having difficulty with paying attention to themselves and their environment are bound in this state of emotional turmoil, to suffer psychological distress.

### **Conclusion and limitations of the study**

This study investigated the contributing influence of mindfulness and emotion regulation on psychological distress by recruiting 31 pregnant women from Premier Medical Services, Uyo using purposive sampling method. Three standardized measuring instruments were utilized and necessary ethical requirements were ensured during administration of the questionnaires. Thereafter, collected data were subjected to empirical software analysis using descriptive statistics and multiple linear regressions to probe the primary research hypotheses. The three hypotheses were all retained. Mindfulness independently contributed to psychological distress; in the same way emotion regulation contributed to psychological distress. As expected, a significant interplay was seen between mindfulness and emotion regulation on the criterion variable. This study has some limitations that should be brought to the fore. First concern was as a result of the cross-sectional nature that makes it quite problematic to make causal inferences. Secondly, findings of this study may encounter difficulties in respect to generalization of findings due to the validity of self-reported data and the number of participants that was recruited being a pilot-phase study. Finally, the study did not consider other contributing variables that could be of importance in explaining psychological distress among pregnant women, such as marital abuse, mental health challenges, self-efficacy, social support, and self-esteem among others. The inclusion of these constructs could better explain and increase the variance in psychological distress explained by the regression models.

### **Implications, recommendations and direction for future studies**

The finding of this study will begin to build on other works carried out in this area and will throw more searchlights on the existing conditions of psychological distress among pregnant women in Uyo by adding to the scant literature. This addition was apt to show that pregnant women need to be fully equipped and trained with the rudiments of mindfulness

skills during their antenatal visits; in the same way, their emotion needs to be in check and well guided as higher levels of emotion regulation has been seen to correlate with lower levels of psychological distress. The results of this study will be beneficial to obstetrician, maternal and mental health nurses/midwives to make programs for prevention, psychological interventions during antenatal care, and treatment of psychological health problems among pregnant women whose psychological well-being are always fragile due to their mood swings unusual way they normally feel when pregnant.

The study thereby recommends that to prevent psychological distress among pregnant women which can lead to mental disorders, early screening for psychological distress should be carried out whenever women registers for antenatal care; coupled with promotion/classes of positive psychology, mental healthcare during pregnancy and improved family and partner support should be advocated and implemented. Future studies should consider investigating the extent to which the use of mindfulness as a therapeutic construct and skills in emotion regulation can reduce levels of psychological distress among pregnant women. Also, further research should consider interviewing participants, having a group therapy and carrying out post-pregnancy follow up studies to have a comprehensive empirical picture of the causative, curative, and preventive factors of psychological distress among pregnant women.

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