

## The Mediating role of personality in linking depression and coping style among pregnant women.

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### Abstract

**Background:** Despite a growing understanding of coping styles and its determinants, little is known about the mediating role of personality traits in linking depression and coping styles (problem focused and emotion focused). The purpose of this study was to evaluate the mediating role of personality traits in the relationship between depression and coping among pregnant women.

**Materials and Methods:** It was a cross-sectional study involving 200 participants receiving antenatal care at the Enugu State University Teaching Hospital (ESUTH) Enugu, Nigeria between the ages of 17 and 41. Data were obtained using the Hospital Anxiety and Depression Scale (HADS), Brief Coping Scale (BCS) and the Big Five Inventory (BFI). SPSS Version 21/ Process Macro and Pearson Correlation Tests were used to analyze the data. **Results:** Both coping styles and personality traits correlated positively with depression. Using the Process Macro, Extraversion personality trait was found to mediate negatively on the effect of both coping styles has on depression, while Neuroticism mediated positively on the effect emotion based coping style has on depression.

**Conclusion:** Even though coping styles used during the time of stress may predispose one to developing depression in pregnancy, personality traits like Extraversion and Neuroticism have negative and positive mediating roles respectively. In other words, extraverted pregnant women irrespective of their coping styles had less tendency of developing depression, while those of them who scored high in neuroticism and also apply emotion based coping were more prone to developing depression.

**Keywords:** Antenatal depression, Personality Trait, Coping style, Mediating role.

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### I. Introduction

Although many women report that pregnancy is a joyful and happy period in their lives, the demands and changes associated with this reproductive period, and the social context within which pregnancy takes place, can produce high levels of stress and anxiety for many expectant mothers.<sup>1,2</sup> Pregnancy is a period of great changes and demands for women; and often challenges their ability to adapt to important physiological, social, and psychological changes and to continue to perform despite these difficulties.<sup>3</sup> It is found that childbearing age for females is the time of highest risk for developing depression, and antenatal depression is one of the least investigated and under-treated disorders.<sup>4</sup> Although prenatal stress has been associated with increased risk of pregnancy complications, including preterm birth (PTB), gestational diabetes, and preeclampsia;<sup>5,6,7</sup> information on the trajectories of stress from pregnancy to years after delivery is limited.<sup>8,9</sup> Women with high stress levels are less likely to maintain optimal health behaviours during pregnancy, and they are more likely to smoke and be sedentary.<sup>10,11</sup> A resilience approach may shed light on this important issue.<sup>12</sup> For example, variability in coping behaviour and in coping efficacy or skill should contribute to differences in the psychological and physiological effects of stress exposure during pregnancy.<sup>13</sup> Thus, a review of what we know and do not know about coping in pregnancy seemed worth doing.

Coping is defined as constantly changing cognitive and behavioral efforts aimed at dealing with the demands of specific situations that are appraised as stressful.<sup>14</sup> In describing specific coping efforts and more general coping styles, theorists have traditionally distinguished between problem-focused and emotion-focused coping. Problem-focused coping is aimed at the stressor itself, and may involve taking steps to address or resolve the situation. It is most frequently used when the stressor is something an individual appraises as controllable. Emotion-focused coping, in contrast is aimed at reducing feelings of distress associated with stressful experiences, and is more likely to be used if the person views the stressor as uncontrollable.<sup>14,15</sup> Researchers may also distinguish between approaches or engagement coping, referring to efforts aimed at dealing with the stressor itself, either directly or indirectly, as compared to avoidance or disengagement coping which refers to efforts that promote escape from having to deal with the stressor.<sup>16,17</sup> Avoidance coping is usually thought of as a form of emotion-focused coping because it may involve attempts to evade or escape from the feelings of distress associated with the stressor.<sup>18</sup>

The risk factors for PD that are most frequently included in clinical guidelines are current anxious and depressive symptoms, previous history of psychiatric problems, history of sexual abuse or child maltreatment, history of gender violence, adjustment problems with the partner, the experience of a traumatic birth, and the death of the baby during childbirth. In addition to these factors, there is evidence to suggest that certain normal personality traits, especially high neuroticism (N), high psychoticism (P), and low extraversion (E), are related to greater psychopathology in this population.<sup>19</sup> The five-factor model (FFM) of personality recognized that personality is ordered hierarchically from a large number of specific traits to five general characteristics.<sup>20</sup> These "Big Five" traits are neuroticism, extraversion, conscientiousness, agreeableness, and openness to experience. Importantly, the FFM can be further reduced to three dimensions of negative emotionality, positive emotionality, and disinhibition versus constraint that form the next level of the personality hierarchy.<sup>21,22</sup> High neuroticism (N) is a personality trait characterized by the tendency to experience frequent band of intense negative emotions in response to a stressful situation (e.g., pregnancy or childbirth). Furthermore, N is associated with a perception of ineffective coping. Thus, when N is high and persistent, processes such as worry, rumination, or emotional avoidance are likely to appear.<sup>23</sup> Interest in this personality trait, which is considered a widespread biological vulnerability factor for the etiology and maintenance of emotional disorders, including depression, has increased in recent years.<sup>23</sup> For example, Bunevicius et al.<sup>24</sup> found that high scores in N were, together with an unplanned and unwanted pregnancy, independent determinants of prenatal depressive disorders throughout pregnancy. In this same line, several authors have concluded that, of all personality dimensions, N could be considered the most important predictive risk factors for depression both in pregnancy and in the postpartum.<sup>25</sup> Additionally and linked with this tendency to experience negative emotions, N has been associated with low perceived social support<sup>26</sup> and poor adjustment to childbirth stressors,<sup>27</sup> recent study argue that low extraversion, also known as introversion, would be a key personality trait associated with the onset of emotional disorders and poor adjustment during the perinatal period.<sup>28</sup> Finally, P is a personality trait that includes severe psychopathological conditions, such as deception or interpersonal alienation, more frequent human expressions such as hostility, anger, and social isolation.<sup>29</sup> The literature exploring the role of psychoticism in pregnant women is scarce, but research so far supports the idea that high P poses a risk for PD.<sup>30</sup> To date, the relationship between personality and outcomes in perinatal research (i.e., depressive symptomatology and adaptation to the challenges associated with the perinatal period) has been predominantly explored using cross-sectional designs.<sup>24,25,29</sup>

Many scholars have tried to correlate the role of coping styles on the manifestation of depression among pregnant women, and remained silent on the impact of their personality traits. This study was designed to investigate the mediating role of personality traits on depressive symptoms considering the prevailing coping styles among the participants.

## **II. Materials and Methods**

Participants for this study were two hundred (200) pregnant women receiving antenatal care at the Enugu State University Teaching Hospital Parklane, Enugu Nigeria. This is state owned hospital which metamorphosed from the then Nursing Home established in 1930 for the colonial masters to a first class hospital for government officials and elites in the society in the nineteen fifties. It was converted to a general hospital in the early nineteen seventies and later up-graded to a teaching hospital. It was a cross-sectional study and participants were made up of the consecutive attendees of the ante-natal clinics. Two hundred and sixteen women consented to participate in the study, but two hundred of them who completed their questionnaires carefully were used. Hospital Anxiety/Depression Scale (HADS), Big Five Personality Inventory (BFI) and Brief Coping Scale (BCS) were used to collect data.

**Instruments**

Three instruments were used for this study. They are Hospital Anxiety and Depression Scale, Big Five Inventory and Brief Coping Scale.

**Hospital Anxiety and Depression Scale (HADS):** It is a 14-item scale, 7 of which relate to anxiety and the other 7 relate depression. Each item of the questionnaire is scored from 0-3; hence an individual may have a total score between 0-21 for either anxiety or depression. Cut-off point has been determined to be 8/21 for either anxiety or depression. For anxiety, this gave specificity and sensitivity of 0.78 and 0.9 respectively while for depression it gave specificity and sensitivity of 0.79 and 0.83 respectively.

A score of 8-10 is considered as borderline case, while a score of 11-21 is regarded as abnormal case. This instrument has been validated and used in Nigeria.

**Big Five Inventory (BFI):** This is a 44 item questionnaire that assesses personality from a five-dimensional perspective. The essence is to resolve personality into five broad distinct dimensions. The 5 dimensions or subscales include extraversion, agreeableness, neuroticism and openness. Direct scoring is used for all the items and the subscales were scored separately. The scores higher than the norm indicate positive test and scores lower than the norm indicates negative test for each subscale. The Cronbach alpha coefficient=0.80, and the mean convergent validity coefficient of 0.75 and 0.85 with BFI authored by Costa & Mc Crea and Golberg respectively. This instrument has been adapted and standardized for use in Nigeria.

**The Brief Cope Scale:** This was developed to identify the thought and action an individual has used to cope with a specific stressful encounter. It is a 28-item self-administered instrument to measure problem-focused versus emotional-focused coping skill. Items 2, 7, 10, 14, 23 and 25 are problem based coping and the rest are emotion based coping. The scale has a good internal consistency and test-retest reliability of 0.60 for problem focused and 0.75 for emotion-focused coping; and the validity of 0.51 for problem-focused and 0.89 for emotion-focused.

**Statistical analysis:** The data was entered into the SPSS version 21/ Process Macro, and analysis was done using Pearson Correlation Tests and Process Macro. Confidence interval (CI) was set at 95% with p-value of 0.05.

**III. Results**

Based on the Pearson correlation test, both coping styles and personality traits correlated positively and with depression; and they were all statistically significant. Using the Process Macro, Extraversion personality trait was found to mediate negatively on the effect both coping styles (Problem based coping= -.0359, Emotion based coping= -.0163) have on depression, while Neuroticism mediated positively (.0242) on the effect problem based coping style has on depression, but has no mediating effect on emotion based coping.

**Table 1**  
Correlations of personality traits, coping and depression. (N = 200).

		1	2	3
<b>STA SUPPT</b>				
1.	<b>COPING</b> Pearson Correlation			1
	Sig. (2-tailed) N	200		
2.	<b>PERSONALITY</b> Pearson Correlation		.045	1
	Sig. (2-tailed)	.006		
	N	200	200	
3.	<b>DEPRESSION</b> Pearson Correlation		.067	.271
	Sig. (2-tailed)	.004	.000	1
	N	200	200	200

**Table 2**  
The indirect mediating effect of personality traits (extraversion, conscientness, openness, neuroticism and agreeableness) on problem focused coping and depression.

Mediator	Effect	Boot standard error	Boot confidence interval	
			BLLCI	BULCI
Extraversion	-.0359	.0154	-.0693	-.0097
Conscientness	-.0092	.0108	-.0365	.0053
Agreeableness	-.0132	.0120	-.0436	.0025
Openness	-.0164	.0114	-.0439	.0004

Neuroticism	.0242	.0117	.0015	.0484
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Extraversion and Neuroticism have no absolute zero within the boot LLCI and boot ULCI range, so mediation was established. The other personality traits whose BLLCI, BULCI included absolute zero have no mediating effects. BLLCI= Boot lower limit confidence interval. BULCI= Boot upper limit confidence interval.

**Table 3**  
**The indirect mediating effect of personality traits on emotion focused coping (EFC) and depression.**

Mediator	Effect	Boot standard error	Boot confidence interval	
			BLLCI	BULCI
Extraversion	-.0163	.0070	-.0322	-.0050
Consciousness	-.0068	.0061	-.0212	.0028
Agreeableness	-.0085	.0057	-.0220	.0000
Openness	-.0070	.0048	-.0184	.0001
Neuroticism	.0114	.0063	-.0002	.0243

Absolute zero is not included in the range between the boot BLLCI and boot BULCI for only Extraversion so mediation was established. The other personality traits whose BLLCI, BULCI included absolute zero have no mediating effects. BLLCI= Boot lower limit confidence interval. BULCI= Boot upper limit confidence interval.

#### IV. Discussions

Pregnancy is a period that comes with a lot of changes in a women's life. It comes with behaviour changes due to some factors which are either biological, environmental or others. Hence personality trait is considered very important in understanding the management of depression with effective coping.

The researchers` central aim in this study was to examine the mediating role of personality traits on the relationship between depression and coping. Our mediation hypotheses were based primarily on views that there may be underlying mechanisms accounting for the relationships of variables like coping styles and depression. We had hypothesized that personality would mediate the associations of coping and depression.

Thus, the regression analysis showed that personality traits like neuroticism and extraversion mediated depression and problem focused coping, while extraversion alone mediated depression and emotion focused coping. This therefore implies that personality traits of pregnant women will most likely determine their adopted coping style when experiencing depression.

Extraversion is primarily obtaining gratification from outside oneself. It tends to position extraverts to enjoy human interactions, to be enthusiastic, talkative, assertive and gregarious. These characteristics of the individuals with this personality trait of extraversion explains how pregnant women can deal with depression as it mediates negatively against it. Emotion focused coping is a type of stress management that attempts to reduce negative emotional responses associated with stress. Examples of such negative emotions are embarrassment, fear, anxiety and frustration. Therefore, being assertive and enthusiastic helps individuals defeat the native emotions associated with anxiety, frustration and depression.

In this research, pregnant women who share the personality traits of extraversion and neuroticism tend to deal with depression or depressive symptoms while using problem focused coping (pfc). Folkman and Lazarus,<sup>14</sup> outlined strategies directed to defining the problem, constructing alternative solutions, considering the alternative in terms of their costs and benefits and then taking actions. Problem focused coping aim to reduce or remove the causes of stressor rather than its effect. Neuroticism is a personality trait responsible for negative or emotional anxious state. Highly neurotic individuals tend to be labile, but individuals low in neuroticism tends to be content, confident and stable. Therefore, pregnant women who are low in neuroticism will most likely deal with depression effectively using problem focused coping like individual with personality traits of extraversion.

The researchers had expected depression would be related to personality trait and this hypothesis was supported. The researchers found a positive relationship between depression and personality trait of neuroticism. The association were positively significant and consistent with previous studies on the relationship of depressive symptoms and personality trait (Yushua, Junxin, Huisi& Zhang, 2020; Chow, Shaffer, Matthew, LeBaron& Fortuna, 2020; Iliadis, kouhouris, Gingnell, Sylven, Sundstrom, 2015). In this research depression had significant positive relationship on personality trait even when controlled for age, duration of pregnancy and marital status.

Personality traits and coping style also had statistically significant positive relationship. Thus the hypotheses which states that personality trait will significantly relate to coping style were accepted. The findings support previous researches on personality traits which includes an association with coping style in a research by Greene, Cowan, & McAdams, 2020; Madgalena-leszko, Iwanski&Jazzebriska, 2020; Hayden, Bosworth &Siegler, 2003).

Another important aim of this study was to determine the associations of both depression and coping style. Researchers hypothesized that depression would be positively related to coping styles. Based on our findings, depression was positively associated with coping styles (emotion focused and problem focused) which braces the findings of Shao, He, Ling, Tan, Xu, Hiu&Yonggiang, 2020; Yu, Gong, Taylor, Cai& Xu, 2020). The findings confirmed that when a pregnant woman experiences depressive symptoms, adoption of problem focused coping or emotion focused coping style will see her improve.

### **Limitations of the study**

The research was limited to one hospital in South East Nigeria and the outcome of the research may not be generalized to the general population. The questionnaires were self-administered and recall bias may have affected the responses we got.

### **Suggestion for further studies**

Future researchers should try to sample larger population, and also should sample from hospitals in the other geopolitical zones of Nigeria. Future researchers should also try to use other covariates in analyzing their research considering pregnancy complications.

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