

**RELATIONSHIP BETWEEN PROBLEM SOLVING STYLE AND POSTPARTUM DEPRESSION AMONG POSTPARTUM WOMEN IN NIGERIA****Mahmood Danasabe**School of Applied Psychology,  
Social Work and Policy,  
University Utara Malaysia,  
UUM Sintok, Kedah, Malaysia.**Nadiyah Bt. Elias**Bauchi State College of Nursing  
and Midwifery,  
Nigeria

**ABSTRACT:** This research was aimed to investigate a relationship between three dimensions of the problem solving style and postpartum depression among postpartum depressed women in Nigeria. Literatures were reviewed on postpartum depression and problem solving style. Cross sectional study was employed and the study employed systematic random sampling in data collection and 80 respondents were used throughout the analysis. Descriptive statistics, multiple regression analysis via SPSS was used for data analysis. The outcome of the research established insignificant inverse relationship between postpartum depression (PPD) and rational problem skill (RPS). A significant positive relationship was found between impulsive-careless styles (ICS), avoidance problem solving style (AS) and postpartum depression. The practical and theoretical implications were discussed. This study theoretically contributed to the knowledge on the phenomena of postpartum depression and offers specific insight into problem-solving style in predicting postpartum depression among postpartum women. This creates basis for more investigation and progress connected to cause and treatment for postpartum depression in clinical and community settings. The study implications will be particularly of interest to clinical obstetrics and gynecology, psychiatrists, psychologist professionals, social workers as well as health-care institutions, government and health policy makers.

**KEYWORDS:** Postpartum depression, Problem solving style, Rational problem style, Impulsive careless style and Avoidance style.

**1. INTRODUCTION**

Daily life problems are inevitable and a response to these problems can be constructive or destructive. Some people handle their problems logically and tactfully, while other approached problems solving haphazardly, carelessly and in procrastinated manner. Difficulties in life do not resolved themselves, until appropriate sequential actions are taken to solve them. Problem solving style is a process and a multidimensional construct derived from social problem solving model where individual engaged in problem solving (D'Zurilla & Goldfried, 1971; Visser, 2015; Hasegawa, 2015). Problem solving style consists of three dimensions. The rational problem style (RPS), impulsive careless skill (ICS) and avoidance style (AS). Problems if not resolved can affect and distort individual's mood leading to depression. Postpartum period is highly vulnerable to depression among postpartum women (Tissot et al., 2013).

**2. LITERATURE REVIEW****2.1 Postpartum depression (PPD)**

Episode of depression from four weeks after childbirth is termed postpartum depression which is characterized by cognitive and psychosomatic symptoms (American Psychiatric Association, 2013). Postpartum depression negatively affects the quality of motherhood care with a significance long term negative consequences on the cognitive, intellectual, social and emotional development of child (Cheadle et al., 2014). Substantial studies reported the prevalence of postpartum depression as ranged from 10-15% (O'Hara & Swain, 1996), but the rate in Nigeria is as high as 45.7% (Mahmood & Elias, 2016).

Postpartum depression is one of the leading causes of suicide. In Nigeria one in every six women suffered postpartum depression and is among the leading cause of suicide (Ekwerike, 2015; Shittu et al., 2014). The effects of postpartum depression leads to hopelessness, disinterest in parenting care, maternal role, negative guilt feelings, suicide and infanticide (Sampson et al., 2014; Chibanda et al., 2014). Despite the negative effects of postpartum depression, yet its etiology is inconclusive (Wu, Chen & Xu, 2012).

Mothers who lack problem-solving style are more likely to suffer postpartum depression because they lack basic skills required to control early motherhood stresses effectively (Abboud, 2010). Social problem solving model asserts that problem-solving style is a cognitive and behavioral process by which a person attempts to understand problems and discover means of coping with the problem through effective solution identification (D'Zurilla & Goldfried, 1971). Problem solving style consists of three dimensions. These are rational problem solving style (RPS), impulsive careless style (ICS) and avoidance style (AS). These constructs are measured by social problem solving inventory (SPSI-R; D'Zurilla et al., 2002)

## **2.2 Problem solving style**

Problem solving skill is the person's psychological or behavioral features and characteristics when face with a difficult situation. It entails person's actions and reactions in an effort to recognize problem and identifying means that is effective in solving or coping with the problem (D'Zurilla & Goldfried, 1971; D'Zurilla et al., 2004; D'Zurilla et al., 1982). The problem-solving model proposed that a person shows three kinds of problem-solving styles, which are Avoidance style (AS), Impulsive-Careless style (ICS), and Rational Problem Solving Style (RPS).

### **2.2.1 Rational problem solving style**

This is a constructive, logical and step by step approach to problems solving. Individual under this construct handle problem effectively in a rational and organized ways. The first step is identification of problem. The problem that is more disturbing which can be broken down from complex to simple manner. The second step is to generate multiple solutions to the problems. The third step is brainstorming on the merits and demerits of each generated solution in term of its cost effectiveness, efforts and time taken. The fourth step is implementing the chosen solution through action plan. The fifth step is evaluating the success or failure of the implemented solutions. If the salutation implemented is successful will be continue and if fails should be revisited over again. Increase in this construct signify effective problem solving (Chang 2004; Yen et al., 2010).

### **2.2.2 Impulsive careless problem solving style.**

This is a destructive or maladaptive problem-solving style. The approach of problem in this way is shallow, haphazardly, and half-finished and impulsively carelessly. Individual having this type of problem-solving recognizes merely a little solution options, frequently impulsively going with the first idea that comes to his mind. More again, individual sees the outcomes of solutions rapidly, hastily, and randomly, and inadequately (Chang 2004; Pech & O'Kearney, 2013). The increase in this construct is indicating poor problem solving style.

### **2.2.3 Avoidance style**

Avoidance problem solving style is another destructive dimension that approach problem solving in a procrastinated way, delay in solving a problem, and inactive or relying on others for problem solving. Individual choses to dodge problems instead of facing the problem, puts off attempt to a solution to problems and waits for a problems to take care for themselves as well as transferring to someone else. Increase in the avoidance style signify ineffective or poor problem solving style (Pech & O'Kearney, 2013; Emam, 2013).

Numerous studies were carried out on the antecedents or relationship between problem solving style and depression outside postpartum period (Gellis & Bruce, 2010; Gellis & Kenaley, 2007; Alexopoulos et al., 2010; Hasegawa *et al.*, 2015; Visser et al., 2015; Eskin et al, 2014; Maddoux et al., 2014; Ranjbar et al., 2013; Yen et al., 2011). A prospective study among 161 university students in Japan investigated whether depression is associated with social problem solving style and depressive

rumination and reported that depression was associated with impulsive-carelessness skill among samples in Japan (Hasegawa *et al.*, 2015). A greater level of problem-solving style was related with decreased depression, fewer numbers of negative life events and perceived stress among psoriatic patients. Psoriatic patients with ineffective problem-solving styles resulted into the development of depression (Eskin *et al.*, 2014).

In a cross-sectional comparative study, social problem solving inventory-revised short form and center for epidemiologic studies depression scale were used to measure problem solving skill and depression respectively among 166 stroke outpatients. The result after comparison revealed that patients who scores higher in depression used lower positive problem solving style, more negative problem solving orientation and avoidance skill. The study established that depression is significantly associated with the dimensions of avoidance style (Visser *et al.*, 2015). Another cross-sectional research of two hundred and eighty five mothers was carried out. Using social problem-solving inventory with 25 items, it was found that increased rates of anxiety and depression were associated with higher levels of avoidance problem-solving style. (Maddoux *et al.*, 2014). (Yen *et al.*, 2011). This result is congruent with the past studies (Ranjbar *et al.*, 2013; Yen *et al.*, 2011; Gellis & Nezu, 2011; Emam, 2013; Erdley, 2013). These studies reported that rational problem solving style is inversely related to depression, while impulsive careless and avoidance styles were positively associated with depression.

Avoidance problem-solving style and negative solving orientation were not specific predictors to the severity of depression. On the other hand, avoidance problem-solving style and impulsiveness-careless style predicted suicidality (Becker-Weidman *et al.*, 2010). Similar findings were obtained by Anderson, Goddard and Powell (2011) who found insignificant correlation between impulsive-careless style and depressive cognition behavior. These numerous studies investigated problem solving styles and depression outside postpartum period, but the relationship have not been extended to depression during postpartum period. It has been reported that postpartum period is highly vulnerable for the development of postpartum depression (Tissot *et al.*, 2013).

Therefore, this study investigated:

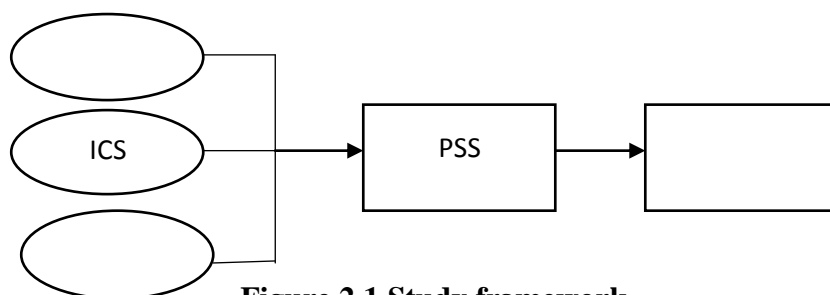
1. The relationship between rational problems solving style (RPS) and postpartum depression (PPD).
2. The relationship between impulsive careless problem solving style (ICS) and postpartum depression (PPD).
3. The relationship between avoidance style (AS) and postpartum depression (PPD) to fill the gap left by the past studies.

Based on this objective, the followings hypotheses were tested

H<sub>1a</sub>: There is a significant relationship between rational problem solving style (RPS), and postpartum depression (PPD).

H<sub>1d</sub>: There is a significant relationship between impulsive careless skill (ICS) and postpartum depression (PPD).

H<sub>1e</sub>: There is a significant relationship between avoidance skill (AS) and postpartum depression (PPD).



**Figure 2.1 Study framework**

Relationship between three dimensions of problem solving style (RPS, ICS and AS) and postpartum depression. Note: PSS Problem solving style PSS (RPS: Rational problem style, ICS: Impulsive careless style, AS: Avoidance style, PSS: Problem solving style

### 3. METHOD

This is a co relational cross-sectional design that used 80 postpartum women from 4 – 10 weeks after childbirth from the Abubakar Tafawa Balewa University teaching hospital, Bauchi Nigeria. The samples were collected through two sets of self-report questionnaires by systematic random sampling. Out of 276 populations in the hospital record, 115 screened for having postpartum depression according to Edinburgh Postnatal depression scale (EPDS) and 80 met the study criteria and used for the study analysis throughout. Table 3.1 shows the response rate of the participants.

**Table 3.1 Response rate of the questionnaires**

Response	Frequency	Rate (%)
Distributed questionnaires	115	100
Returned questionnaires	91	79
Returned and used questionnaires	84	73.0
Returned but rejected	7	6.08
Not returned	24	20.8

#### 3.1 Instrument

1. Edinburgh Postnatal Depression scale (EPDS; Cox et al., 1987) was used for measuring postpartum depression. It has ten items and each item is scored on 4-Likert scale from 0 lowest to 3 highest. The increase in the score increases the depression level. The cutoff point of 10 and above signified mild depression, 15 to 20 as moderate depression and from 20 and above indicates severe depression. Previous study reported a Cronbach's alpha reliability of .80. See table 3.1 for the reliability in this study. Descriptive statistics and regression analysis were used via SPSS in analyzing the demographic variables and the relationship between the four constructs respectively

2. Social problem solving inventory revise short form (SPSI-R-SF: D'Zurilla et al., 2002) measured the three dimensions of RPS, ICS and AS. Each dimension has five items and 5-Likert scale from 0 not true of me to 4 extremely true of me. Increase in the score signified the increase in the construct. Previous studies reported a Cronbach's alpha reliability of RPS = .80 (Vasilevskaia, 2010), ICS = .83 (Robichaud, 2005) and AS = .88 (Vasilevskaia, 2010). The details of the Cronbach's alpha reliability of this study can be seen in table 3.2 below.

**Table 3.2 Total number of items of each instrument and their reliability coefficient**

Constructs	No. of items	Cronbach's alpha
Postpartum depression (PPD)	10	.887
Rational problem style (RPS)	5	.830
Impulsive careless style (ICS)	5	.833
Avoidance style (AS)	5	.788

#### 4.0 Analysis and Discussion

Table 4.3 showed the descriptive statistics of the categorical variables of this research. The rate of the married postpartum depressed women is higher 54 (67.5%), followed by widows 14 (17.5%) and then 12 (15.0%) among divorced women. This can be attributed to the financial problem and lack freedom for decision making by the women to seek for medical care. The husbands control the economy and power that which delayed the women for making timely decision on antennal care. As for the number of employment, unemployed respondents have the highest of 51 which is equivalent to 63.8% as compared to employed women with 29 (36.3%).

**Table 4.3: Descriptive statistics or profile of the respondents**

Demographic variables	Frequency	Percentage (%)
<b>Marital status</b>		
Married	54	67.5
Divorced	12	15
Widow	14	17.5
<b>Employment status</b>		
Employed	29	36.3
Unemployed	51	63.8
<b>Age</b>		
18-27	31	38.8
28-37	43	53.8
38-47	6	7.5
<b>Educational Level</b>		
O-Level	50	62.5
A-Level	30	37.5
<b>Delivery mode</b>		
Normal delivery	52	65.0
Cesarean section	28	35.0

The educational attainment is categorized into O-Level (primary to secondary education) and A-Level (tertiary to university education), those with O-Level education constituted a higher frequency of 50 (62.5%) compared with those with A-Level that has a lower frequency of 30 (37.5%). This indicates that postpartum depressed women with lower education were reported more in the hospital than those with higher education. This may be attributed to the awareness of depression because their level of education. This pointed out clearly that the majority of postpartum depressed women are the holders of primary and secondary school certificates.

With regards to the number of age, the women from 28-37 years were more victims of depression after birth with a frequency value of 43 (53.8%) followed by 31 (38.8%) and then the least from 38-47 years of frequency of 6 (7.5%). This is because 28-37 years are the more productive age and majority of them were not employed to face the daily life problems. On the side of mode of delivery, the study showed that postpartum depressed women with normal delivery were higher 52 (65.0%) than those with cesarean section 28 (35.0%). The number of women undergoing surgery for delivery is alarming considering the percentage rate which needs to be addressed by the hospital authority.

Mean refers to the average value of the study's data set and standard deviation is a measure of spread or dispersion, which provides an index of variability in the data set and it is the square root of variance. The recommended scores of less than 2.33 are considered low level, 2.33 to 3.67 are considered moderate while from 3.67 and above is regarded as high level. Table 2.3 represents the mean and standard deviation of the entire variables used in this study. Impulsive careless style (ICS) recorded the highest mean (ICS=2.67, SD = .827) while the rational problem style has the lowest mean (RPS=1.87, SD=.744). Conclusively, the two variables means were in the range of moderate and one is below the lowest.

Descriptive statistics of the study variables can be seen in table 4.4

**Table 4.4: Descriptive Statistics of the variables**

Constructs	N	Mean	SD
Postpartum depression	80	1.92	.483
Rational problem style	80	1.88	.744
Impulsive careless style	80	2.67	.826
Avoidance style	80	2.56	.681

Multiple regression analysis was conducted in determining the relationship between rational problem style, impulsive careless style, avoidance style and postpartum depression. The results as indicated in table 2.2 revealed that two of the predictors (ICS and AS) were significant (0.05),  $R = .558$ ,  $R^2 = .311$ ,  $\text{Adj. } R^2 = .284$ ,  $F\text{-Change} = 11.455$ . The multiple correlation coefficients between the predictors and the criterion variable was .558. The predictor accounted for 31.1% of the variance in depression. Cohen (1988) classified  $R^2$  as 0.02 as weak, 0.13 as moderate and 0.26 as substantial. Based on the Cohen (1988) classification of  $R^2$ , this study has a substantial value of  $R^2$  31.1%. The significant F-test shows that the relationship (11.445,  $p < 0.000$ ) signified the overall significant prediction of independent variables to the dependent variable. But did not explain the relative contribution of each independent variable to the dependent variable (Greer, & Salkind, 2008). Among the three predicting variables AS is the variable that best predict the criterion with the value ( $\beta = .464$ ,  $t = 4.799$ ,  $p (.000) < 0.001$ ), then the ICS with a value ( $\beta = .287$ ,  $t = 2.983$ ,  $p (.004) < 0.01$ ) and finally, RPS with value ( $\beta = -.189$ ,  $t = -1.974$ ,  $p (.052) > 0.05$ ).

**Table 4.2: Regression results between rational problem style, impulsive careless style, avoidance style and postpartum depression.**

Constructs	Unstandardized coefficient (B)	Standardized coefficient (β)	t	Sig.
Postpartum depression (PPD) DV				
Rational problem style (RPS)	-.123	-.189	-1.974	.052
Impulsive careless style (ICS)	.168	.287	2.983	.004
Avoidance style (AS)	.329	.464	4.799	.000
<b>R</b>	<b>R<sup>2</sup></b>	<b>Adj. R<sup>2</sup></b>	<b>R<sup>2</sup> change</b>	<b>F-change</b>
.558	.311	.284	.311	11.455

Table 2.2 revealed that there exist a negative relationship between rational problem style (RPS) and postpartum depression (PPD). The beta coefficient between PPD and RPS is 0.052. The obtained relationship coefficient is insignificant at the 0.05 level of significance. So, as the level of RPS increases the level of PPD decreases among postpartum depressed women. High level of RPS is related with low level of postpartum depression. A woman with high level of postpartum depression has low rational problem style as shown by this study.

However, the research showed a significant positive relationship between impulsive careless style (ICS) and postpartum depression. The relationship coefficient between PPD and ICS is 0.004. The obtained correlation of coefficient is significant at the 0.01 level of significance. Therefore, as the level of ICS increases so as postpartum depression increases among postpartum women. High level of ICS is related with high level of postpartum depression. A woman with high level of ICS has a high level of PPD as shown by this study.

Similarly, the outcome of the study indicates a significant positive relationship between avoidance styles (AS) postpartum depression (PPD) at 0.000 significant. The correlation coefficient is significant at the 0.001 level of significance. As such, as the level of AS increases so as postpartum depression (PPD) increases among postpartum women. High level of AS is related with high level of postpartum depression. A woman with high level of AS has a high level of PPD as shown by this study.

Avoidance problem style and postpartum depression were significantly and positively related as found in this research. This relationship signifies that postpartum women with high avoidance style in problem-solving are more likely to suffer postpartum depression. This supported previous studies (Visser, 2015; Reinecke *et al.*, 2001; Emam, 2013; Maddoux *et al.*, 2014; 2013; Vasilevskaia, 2010; D'Zurilla, 1998). However, the results AS were found non-specific predictors for the chronicity of depression

(Beck-Weidman *et al.*, 2010) and it reported as a weak predictors of depression in sample of patients with sight problem (Emam, 2013). These different findings could be attributed to the methodological differences in terms of measurement instruments and the unit of the analysis of study population.

In this research, AS was found the strongest predictor to postpartum depression. This signified that postpartum women in this study approached their problem solving more in an inactive, procrastinated manner and shifted their responsibility to others. This individual behaviors towards problem solving is important and supported by the cognitive model of depression which assert that negative cognitions are vital risk to depressive disorder (Beck 1993).

It has been equally established in this study that impulsive-careless style (ICS) was positively and significantly related to postpartum depression. This indicated that the participant during problem solving has some elements of using merely little alternatives solution that were impulsively going with the first idea that come into their mind. They viewed alternative solution and its consequences quickly, haphazardly and randomly. Outcomes of solutions were evaluated by such persons inadequately with carelessness. This is because of the participants conditions of stressful demand of the new born baby and their depression situation. This result supported the assertion that impulsive-careless skill was positively related with depression and was a predictor to predictive of depressive symptoms (Ranjbar *et al.*, 2013; Vasilevskaia, 2010; Hasegawa *et al.*, 2015).

An inverse relationship was established between rational problem style (RPS) and postpartum depression in this study though insignificant. Rational problem skill is the component of problem-solving style whose deficiency lead to depression (Yen *et al.*, 2011). This finding could be attributed to the fact that, postpartum mothers in this study might be inhibited to utilize their good rational problem-solving styles since they scores high on the dysfunctional problem-solving dimensions of ICS, and AS. It was also attributed to the fact that the participants met the requirement of postpartum depression whose thinking toward problem solving was negative.

## 5. CONCLUSION AND POLICY IMPLICATION

Based on this study results has indicated that problem solving style (PSS) was related to postpartum depression via increasing, impulsive careless skill and use of an avoidance problem solving skill. Thus in decrease in rational problem solving skill suggesting that PPD is related to active problem solving styles. This study theoretically contributed to the knowledge on the phenomena of postpartum depression and offers specific insight into problem-solving ability in predicting postpartum depression among Muslims postpartum women. This creates basis for more investigation and progress connected to cause and treatment for postpartum depression in clinical and community settings. The practical implications of this study will be of particular interest to clinical obstetrics and gynecology, psychiatrists, psychologist professionals, social workers as well as health-care institutions, government and health policy makers. The consequences of depression among postpartum mothers are far-reaching and can result in a level of disturbance that extends beyond individual suffering, but also to the family and society.

### 5.1 Limitation and Suggestions for further studies

This study is a cross sectional which focused only on depression among postpartum mothers from 4-10 weeks after childbirth with small sample size. There need to carry out longitudinal study from third trimester to one year after delivery with large sample size. This will give details information on the impacts of problem solving style and maternal depression at large. Additionally, since all the dimensions of problem solving styles (RPS, ICS and AS) are predictors to postpartum depression, there is need to carry out study on the treatment interventions on how to reduce postpartum depression, impulsive careless style, avoidance style and to increase rational problem solving style.

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