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EC PSYCHOLOGY AND PSYCHIATRY
Research Article

Psychosocial Factors as Predictors of Infertility-Related Stress among Female Secondary School Teachers in Ibadan, North Local Government Area, Oyo State, Nigeria

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Received: January 10, 2018; **Published:** March 09, 2018

Abstract

Purpose: The purpose of this study was to examine the extent to which age, coping style and psychological distress predict infertility-related stress among childless female secondary school teachers in Ibadan North Local Government Area, Oyo State, Nigeria.

Methods: This study adopted a descriptive research design of correlational type. The sample consisted of forty-seven (47) childless female teachers who were selected based on convenience, availability and willingness to participate. The mean age was 27(SD = 0.31). Participants responded to standardized self-report measures regarding demographic data, Psychological Distress, Coping Style and Infertility-related Stress. Descriptive statistics (mean, SD, frequency and percent), Pearson Product Moment Correlation and Regression statistics were used to analyze data at 0.05 level of significance using SPSS version 17.0.

Result: The result indicated that most of the respondent (65.9%) experience a high level of infertility-related global stress. According to the Pearson Correlations, a significant negative relationship was found between age ($r = -0.780$; $p < 0.01$) coping style ($r = -0.576$; $p < 0.01$) and participants' infertility-related global stress, while psychological distress ($r = 0.699$; $p < 0.01$) had a significant positive relationship with the criterion measure. The selected variables accounted for 85% of the variance in prediction of infertility-related stress. Psychological distress ($\beta = 0.492$, $t = 7.794$, $P < 0.05$) made the highest contribution, to the prediction of infertility-related stress of participants followed by Age ($\beta = -0.410$, $t = -5.815$, $P < 0.05$), while coping style ($\beta = -0.347$, $t = -5.441$ $P < 0.05$) made the least contribution.

Conclusion: The need for viable measures be taken to define the changing emotional needs of childless female teachers, empower them with healthy coping skills and make individual and group action plans towards crisis management was recommended from this outcome.

Keywords: *Infertility-Related Stress; Coping Style; Psychological Distress; Childlessness*

Introduction

Childlessness is a stigmatized reproductive health morbidity and a public health concern that is shored up by the fact that, in Nigeria precisely, society places a passionate premium on continuity of lineage via procreation in any family setting. Notwithstanding the various changes in social, economic and families living arrangements in Nigeria, such as urbanization, increase in level of education, increase in unemployment and under-employment, poverty, single-family housing units, less interference from extended family members, in the last couple of decades, childlessness is still a palpable problem among couples and its negative impact on the identities, interpersonal

relationships, peace and stability of the affected individuals, most especially women, is conspicuously on the increase. Childless women are described in a deficient or negative light, abandoned and cast aside as infertile, unfit or unwilling to fulfill maternal role [1-3]. In some cases, the childless woman is viewed as inferior, evil and self-serving and thus, hardly pitied. Although, in recent times, movements such as voluntary childlessness, abortion rights and improvements in contraception now made childlessness a choice, rather than being presumed to be infertile or unhealthy. Yet, childlessness, and a decision to maintain it, is still met with great disparagement from a majority, making childlessness a grave concern for women living in Nigeria.

Childlessness is a term used to refer to couples, having no children. In recent times, childlessness has been considered in terms of voluntary and involuntary childlessness. Voluntary childlessness apply to both fertile men and women who have never had children, desire to remain childless and without any underlying assumption that they are advantaged or disadvantaged in relation to those with children [4]. In most sub-Saharan regions and developing nations, voluntary childlessness is rare with less than one percent of men and women stating zero as their ideal number of children (this most likely includes men and women with confirmed infecundity and that have accepted their status as such). In these regions, childlessness is usually involuntary, which mostly as a result of infertility related problems. Infertility, according to the epidemiological definition recommended by the World Health Organization, is a disease of the reproductive system defined by failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse" [5]. Infertility can either be primary or secondary. Infertility is regarded primary if the couples are unable to conceive, while secondary infertility is the inability to conceive after an earlier pregnancy [6].

Globally, it is generally quoted that approximately 60 to 80 million people are experiencing infertility [7]. However, studies show that the incidence of infertility and childlessness among couples varies from one region to the other. For instance, a review of population-based surveys estimated the international prevalence of infertility to be 9% on the average [8]. In sub-Saharan Africa, prevalence of infertility ranges from 20% to 46% [9]. Correspondingly, infertility and related complaints have been identified as the highest cause for gynaecological consultations in Nigeria [10]. A result from an institutional-based studies of incidence of infertility in Nigeria reported about 4.0%, 15.4%, 15.7%, 21% and 48.1% from Ilorin, Abakaliki, Sokoto, Mbano and Oshogbo respectively [10,11-14]. Also, other studies demonstrated 77.5% for a high rate of secondary infertility, while primary infertility was 22.5% in the South-West [15] and 67.2% for a high rate of secondary infertility and 32.8% for primary infertility in the North-West [10].

Furthermore, researchers and clinicians have reported varied causes and consequences of infertility amongst couples in Nigeria. Most of the findings on the occurrence of infertility have been attributed to high rate of sexually transmitted diseases, complications of unsafe abortions, and puerperal pelvic infections [9,16]. Although, apparent causes of childlessness among couples have been observed to vary; voluntary or involuntary [17,18] both male and female partners are affirmed to have equal probability of being infertile [19,20]. However, regardless of the varied established biomedical and environmental underpinnings of infertility and childlessness among couples, in sub-Saharan regions and many under-developed and developing nations, childless women all too frequently are assumed to be the architect of their condition. Consequently, childless women within these societies are mostly subjected to physical, mental and psychological torture, economic deprivation, threats from husbands and husbands' family, stigmatization, marital instability, rejection, abandonment and divorce [3,17,21].

Studies have reported that the psychosocial discomfort experienced by infertile women are often similar to those described by patients with life-threatening diseases, such as cancer and coronary failure [22,23]. The feeling of distress, sometimes combined with an experienced lack of social support, may result in several physiological and psychological symptoms of distress, such as health complaints, depression, anxiety and even complicated bereavement [24-26]. As is evident in literature, although both sexes experience strong feelings of sorrow, isolation, urgency, guilt, low self-esteem and lack of confidence, depression, sexual dissatisfaction and powerlessness, women appear to experience greater stress and pressure as well as higher rates of anxiety and depression [7,27-29]. However, the most underlying causes of the high levels of stress, anxiety and depression among childless women, have been the loss of motherhood and reproductive ability, greater negative self-concept, social stigma and loss of genetic continuity [30-33].

While men engage in avoidance, minimization, distancing and denial, women generally respond to infertility with deep sorrow and mourning, which can lead to the adoption of emotion-focused coping strategies such as crying, praying, and a belief in God [28,32,34].

More so, studies found women to be mostly verbal, tend to seek out support during times of stress and are most times desperate for solutions [3]. Most often, this desperation takes different forms such as engaging in extra-marital affairs as well as surrogate marriage or surrogate mother hood [13]. Furthermore, other studies found that women who do not successfully cope often develop unhealthy beliefs and behaviours, such as believing that a miracle is their only hope, feeling unable to share feelings or opinions, and avoiding children [35,36].

Caring is mostly seen as a feminine characteristics and as such caring professions which involves looking after children, the sick and the elderly, are mostly dominated by women. Teaching is a profession which links to the notion of care quite strongly. Female teachers are strongly associated with the assumption of care in education. In Nigeria, the position of female teachers with regards to assumption of care in schools, proceeds from societal expectation of care which is strongly associated to motherhood rather than fatherhood. This leads to a situation where female teachers, regardless of their personal inclination, may possibly face societal pressures associated with childlessness more emphatically than their male colleagues. For example, a study by [37] revealed that most childless female teachers feel insecure dealing with parents, pupils and others within the school climate. The author further suggested that the feeling of insecurity were not connected to knowing how to deal with children, but rather to how they were perceived by others. This could be seen to connect to the wider phenomenon of having, or not having, children being a very sensitive issue, and thus very open for criticism.

Despite a growing body of evidence demonstrating the incidence of childlessness and infertility in sub-Saharan Africa, majority of studies have focused on causes, prevalence, societal perceptions of childlessness and the deluge of adversity faced by the affected individuals. However, there has been no in-depth qualitative investigation of psychosocial problems of childless female teachers in Nigeria. Consequently, policies, programmes and interventions geared towards supporting childless female teachers across Nigeria are unobtainable. Moreover, it could be argued that the problem of childlessness might have a potential negative effect on female teachers and as such influence their professionalism. Therefore, this study aims at bridging the gap in literature by examining psychosocial characteristics (such as, infertility-related stress, coping style, and psychological distress) of childless female teachers in Ibadan North Local Government Area, Oyo State, Nigeria. The outcome of this study will undoubtedly benefit behavioural scientists, social workers, programme designers and policy makers.

Purpose of the Study

The major objective of this study is to examine the psychosocial characteristics (infertility-related stress, coping style, and psychological distress) of childless female teachers in Ibadan North Local Government Area, Oyo State, Nigeria.

Research Questions

The following research questions generated from literature review guided the study:

1. What is the level of infertile-related global stress among childless female secondary school teachers?
2. What is the significant relationship between age, coping style, psychological distress and infertility-related stress among childless female secondary school teachers?
3. What is the joint contribution of age, coping style, psychological distress on infertility-related stress among childless female secondary school teachers?
4. What is the relative contribution of age, coping style, psychological distress on infertility-related stress among childless female secondary school teachers?

Materials and Method

Research Design

The study adopted a descriptive research design of correlational type aimed at, examining, analyzing and evaluating the characteristics of a particular group or a certain phenomenon of interest as it exists without any form of manipulation.

Population

The target population from which the sample was selected consist of all the female secondary school teachers that are married, divorced or separated, residing in Ibadan.

Sample and Sample Technique

A sample of fifty childless female teachers within secondary schools in Ibadan, North Local Government Area, Oyo State, participated in the study. The sampling was based on convenience, availability and willingness to participate.

Procedures

In order to contact respondents from the target group, six PhD students from the department of Guidance and Counselling, University of Ibadan, were engaged to support this study and to act as research assistants to help approach respondents from the target group. With an introduction letter from the Head of Department of Guidance and Counselling, University of Ibadan, these research assistants helped in distributing leaflets with information about the study around secondary schools within Ibadan North Local Government Area, Oyo state. Respondents who were interested to participate could request a questionnaire either over phone or by email. The written questionnaires could be sent back by mail or in person and were anonymous. In total, 58 respondents requested a questionnaire, however, 47 sent back the filled questionnaire.

Ethical issues

In order to adhere to ethical standard of confidentiality of responses, the researchers did not include any identifier information such as name, address, phone number on the questionnaire. Also, to ensure voluntary participation, the researchers explained the purpose of the research and made the option for participations to be either 'opt in or opt out'.

Measures

Brief Symptom Inventory

The Brief Symptom Inventory-18 (BSI-18) developed by [38], which is a short version of the Symptom Checklist 90-R (SCL 90-R) was used to measure psychological distress among participants. The BSI-18 has 18 items, measuring psychological distress in three aspects, somatization, anxiety and depression. The items are structured in a five-point scale, ranging from 1= not at all to 5= extremely. The BSI-18 has demonstrated high internal consistency with Cronbach's ranging from 0.79 to 0.90.

Coping Style Scale

Coping style was assessed using the multidimensional coping inventory developed by [39]. The scale consists of 53 item questionnaire measuring conceptually distinct aspects of problem-focused coping (active coping, planning, suppression of competing activities, restraint coping, seeking of instrumental social support), emotion-focused coping (seeking of emotional social support, positive reinterpretation, acceptance, denial, turning to religion) and coping responses (focus on and venting of emotions, behavioral disengagement, mental disengagement). The items are structured in a four-point Likert scale ranging from "I usually don't do this at all" to "I usually do this a lot". A typical item on the scale read; "take additional action to try to get rid of the problem", "keep myself from getting distracted by other thoughts or activities". This scale has been shown to be reliable and valid (alpha = 0.86).

Fertility Problem Inventory

Infertility-related stress among childless female teachers was assessed using the fertility problem inventory, developed by [40]. It is a 46 item questionnaire measuring infertility-related stress in five subscales; social concern, sexual concern, relationship concern, need for parenthood, and rejection of childfree lifestyle. The items are structured in a six-point Likert scale ranging from "strongly disagree" to "strongly agree". Higher scores indicate severe concerns related to involuntary childlessness. A global scale could be calculated from the 5 subscale reflecting the global stress caused by infertility. The scale has reported an internal consistency of 0.83 and for the subscales 0.86, 0.77, 0.81, 0.80, 0.84, respectively.

Data Analysis

Data analysis was carried out using the Statistical Package for Social Sciences (SPSS) version 17.0. Percentage distribution and Pearson Product Moment Correlation (PPMC) was used by the researcher to explain the pattern of relationship between background characteristics, the independent variables and the criterion measure. Regression analysis was used to ascertain both joint and relative contribution of independent variables to dependent variable.

Results

Sample Characteristics

A total of 47 respondents' participated in the study. The mean age of the study sample is 27 years with a standard deviation 0.31. Age was divided into three age-groups (less than 25, 25 to 30, more than 30). From the total sample, 40.4% were less than 25 years old, 44.7% were between 25 to 30, and 7% more than 30 years old. Results evinced that twenty one respondents (44.7%) were married, twenty (42.7%) divorced and six (12.8%) separated. With regards to type of family, twenty eight (59.6%) live in a nuclear family, while nineteen respondents live in an extended family representing 40.4%. Furthermore, the study analysis also reveal twenty two respondents (46.8%) living together with their spouse, while twenty five respondents (53.2%) not living together with their spouse. The analysis of marriage duration show respondents' marriages to be between 1 to 5 years (23.4%), 6 to 10 years (63.8%) and 11 years and above (12.8%).

Distribution of the Sample Population according to Type of Infertility

The result on figure 1 revealed thirty one (31) respondents to have secondary type of infertility representing (66%) of the total respondents, while primary infertility is seen in sixteen (16) respondents representing (34%) of the total respondents.

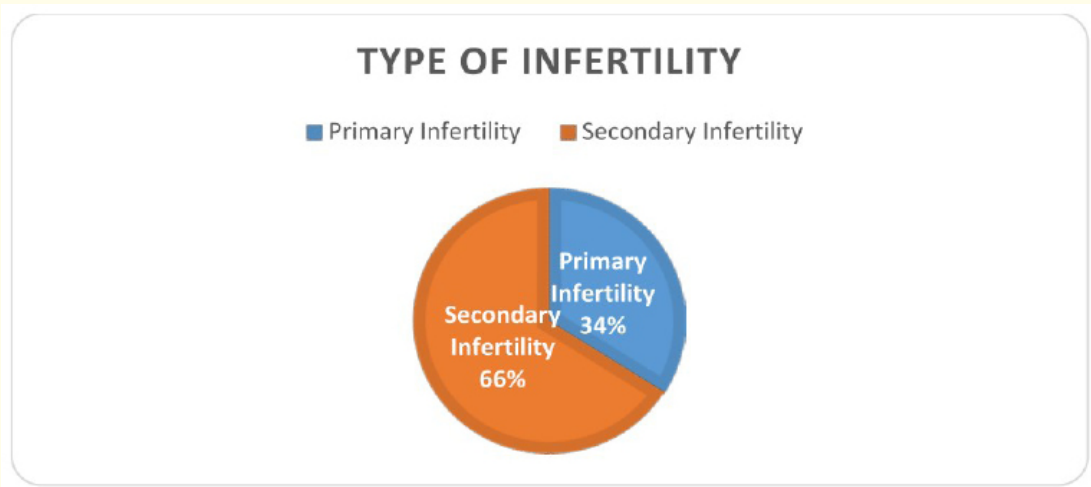

Figure 1: *Distribution of the sample according to Type of Infertility.*

Research Question One: What is the level of infertile-related stress among childless female secondary school teachers in Ibadan?

The result presented in table 1 describing the level of infertility-related stress among childless female secondary school teachers in Ibadan indicates that, six (6) respondents constituting 12.8% of the study sample experience average infertility-related stress, ten (10) respondents representing 21.3% experience moderately high infertility-related stress, while most of the sample (65.9%) experience very high infertility-related stress.

	Level of infertility-related stress	Frequency	Valid Percent
Valid	Average stress	6	12.8
	Moderately high stress	10	21.3
	Very high stress	31	65.9
	Total	47	100

Table 1: *Percentage of Level of Infertility-related Stress.*

Research Question Two: What is the significant relationship between age, coping style, psychological distress and infertility-related stress among childless female secondary school teachers?

Pearson Product Moment Correlation (PPMC) presented in table 2, infertility-related stress is negatively correlated with Age ($r = -0.780$; $p < 0.01$) and Coping style ($r = -0.576$; $p < 0.01$). This implies that Age and coping style are inversely active, that is, the younger in age, couple with inappropriate coping strategies, the more likely the experience of high level of infertility-related stress. Also, the table evinced that infertility-related stress correlated significantly and positively with psychological distress ($r = 0.699$; $p < 0.01$). This implies that high level of psychological distress will most likely lead to high level of infertility-related stress.

Models	Infertility-related stress	Coping style	Psychological distress	Age
Infertility-related stress	1		.	
Coping style	-.576**	1		.
Psychological distress	.699**	-.088	1	
Age	-.780**	.453**	-.433**	1
X	47	47	47	47
Mean	139.51	88.23	34.00	1.75
SD	40.45	16.69	13.67	.71

Table 2: *Summary of Correlation Matrix Showing the Relationship between Independent and Dependent Variables among Respondents.*

***: Correlation is significant at the 0.01 level (2-tailed).*

Research Question Three: What is the joint contribution of coping style, age, psychological distress on infertility-related stress among childless female secondary school teachers?

Multiple Regression result presented in table 3 show that the independent variables (Age, psychological distress and coping style have composite contribution to the prediction of infertility-related stress of childless female secondary school teachers. This is confirmed by the result of coefficient of multiple correlations (R); = 0.929; (R^2) = 0.863, and multiple adjusted R^2 = 0.854. The outcome is indicative of the fact that the independent variables jointly accounted for about 85.4% variation in the prediction of infertility-related stress of the respondents while other variables not examined in this study accounts for 14.6%. In addition, Analysis of variance produced an F- ratio value significant at 0.000 level alpha level ($F = 90.662$; $df = 3,43$: $p < 0.05$). This result suggests that the four hypothesized variables are significant predictors of infertility-related stress among childless female secondary school teachers.

R = 0.929[a] R Square = 0.863Adj. R Square = 0.854 Std. Error of the Estimate = 15.45984					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	65006.456	3	21558.819	90.662	.000[b]
Residual	10277.289	43	239.007		
Total	75283.745	46			

Table 3: *Summary and ANOVA of the Composite contribution of the Independent Variables to the Prediction of the Dependent Variable.*

Research Question Four: What is the relative contribution of coping style, age, psychological distress on infertility-related stress among childless female secondary school teachers?

In order to find significant predictors for infertility-related global stress, a multiple linear regression analysis was performed. Table 4 provide the regression results for global infertility-related stress in the total sample. Each of the independent variable made significant individual contributions to the prediction of the criterion measure (infertility-related stress) in varying weights. The following beta weights

represent the predictive strength of the independent variables observed in accordance to the most effective to the least; psychological distress (β = 0.492, t = 7.794, P < 0.05), Age (β = -0.410, t = -5.815, P < 0.05) and Coping style (β = -0.347, t = -5.441 P < 0.05). This result shows that psychological distress is the most potent factor in predicting infertility-related stress among childless female secondary school teachers while coping style is the least potent.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Rank	Sig.
	B	Std. Error	Beta			
(Constant)	205.248	14.440		14.214		.000
Coping style	-.842	.155	-.347	-5.441	3rd	.000
Age	-23.482	4.039	-.410	-5.815	2nd	.000
Psychological distress	1.455	.187	.492	7.794	1st	.000

Table 4: *Relative Contribution of the Independent Variables to the Prediction of Infertility-related Stress.*

Discussion

This study is an attempt to find out prevalence of childlessness among female secondary school teachers in Ibadan, North Local Government Area, Oyo State, Nigeria and analyze the demographic and psychosocial factors behind it. The prevalence of childlessness by demographic variables such as age of respondent, marital status, type of family and living arrangement of the respondents. Similarly, psychosocial variables such as psychological distress, coping style and infertility-related stress are analyzed. In the analysis of type of infertility, the study demonstrated a high rate of secondary infertility (66%) among participants. This study agrees with previous findings in South-West Nigeria Community where secondary infertility account for 59 - 77.5% of cases [15,18], but contrasts the findings in most Western societies where primary infertility is predominant [41,42]. The high prevalence of secondary infertility in Nigeria and other Sub-Saharan regions has been attributed to the sequel of poorly managed pelvic inflammatory disease, high rate of sexually transmitted diseases and complications of unsafe abortions [10,16]. Also, the results of the study showed that most of the participants (65.9%), experience high level of infertility-related stress which indeed requires urgent medical and counselling intervention. The high level of infertility-related stress can be as a result of the potential social stigmatization and the risk of serious physical, social and emotional consequences associated with childlessness in Nigerian settings.

Analysis on the existing relationship between age, coping style, psychological distress and infertility-related stress among respondents as presented on the correlation matrix table, indicates that age and coping style showed a significant negative relationship with global infertility-related stress, while psychological distress evinced a significant positive relationship with global infertility-related stress. The outcome suggest that women that are younger in age, couple with unfitting coping strategies and a high level of psychological distress are more likely to experience high level of infertility-related global stress. The result obtained for the research question three, evinced the combined potency of age, coping style, psychological distress to the prediction of global infertility-related stress. This is not surprising, because increase in infertility-related stress is not as a result of any single factor, but is an association among several large collections of factors ranging from biological, psychological, community and societal exigencies.

With regards to the potency of contribution made by age, coping style, psychological distress to the prediction of global infertility-related stress, it was evident as presented in table 4 that psychological distress was the most potent predictor of infertility-related stress among the four factors considered while coping style was the least. This study agrees with previous findings that increase in all domain of fertility problem concern is as a result of experienced health complaints and complicated grief [43-45]. This result is plausible given that in Nigerian settings, the primary function considered for married women is childbearing and their economic and social status is often hinged on their ability to have children. As a result of this existing social and gender norms, women are often blamed if a couple is childless and this makes infertility a prerequisite for psychological problems in Nigeria.

The research analysis shows age to be the second most potent predictor of infertility-related stress. This result supports the findings of [20] that women are conscious of their reproductive age range and this is shored up by societal perceptions that if a woman do not

give birth within the earlier periods of their reproductive age, then there is a problem. More so, infertility-related stressed is heightened when a childless woman compares herself with her younger friends or peers. Furthermore, coping style made the least contribution to the prediction of global infertility-related stress. This outcome implies that women coping with infertility may be at risk for self-depreciation and isolation because of their choice of coping strategies and the meaning they ascribe to the infertility. As a result, they are likely to experience more heightened infertile related global stress. This result gives credence to previous studies which found that women who adopt better coping strategies are more socially active and tend to share their feelings and opinions. On the other hand, women who do not successfully cope often develop unhealthy beliefs and behaviours, feeling unable to share feelings or opinions and avoiding children [32,34,35].

Conclusion and Recommendation

The outcome of this study empirically demonstrates that female secondary school teachers that are childless experience very high infertility-related stress. More so, the study findings revealed that the demographic and psychosocial variables investigated individually and collectively predicts infertility-related global stress among childless female secondary school teachers. These findings should be an invaluable data resource because they reveal the necessity of counselling psychologist's active role in secondary schools. There is a dire need for psychological intervention for infertile female secondary school teachers to minimize their suffering and promote their health conditions. In addition, the resultant psychological problems, social pressure and stigma encountered by female secondary school teachers within and outside the school environment due to the inability to have children, makes it imperative that viable measures be taken to define the changing emotional needs of childless female teachers, empower them with healthy coping skills and make individual and group action plans towards crisis management. Although the findings of this study cannot be generalized, however, the study findings provide some important insights into the psychosocial problems experienced by teachers who are childless and also heralds further research within the context of this study.

Acknowledgements

The researchers are thankful to all the teachers in Ibadan, North Local Government Area, and Oyo State, Nigeria who devoted their time and participated in this study. The researchers also appreciate the PhD students from the Department of Guidance and Counselling, University of Ibadan, Nigeria who served as research assistants for this study.

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