Personality Dimensions as Predictors of Suicidal Ideation among Selected Prison Inmates in Anambra State, Nigeria: A Demographical Perspective

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Authors' contributions

This work was carried out in collaboration between both authors. Author OAO designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author OCE managed the analyses of the study. Both authors read and approved the final manuscript.

Original Research Article

ABSTRACT

The plights of prison inmates cannot be over emphasized and it has been one of much debate characterized with agitations by the civil liberties group and other human rights organizations owing to the increase in suicidal ideation rates globally, which have prompted unsuccessful attempt by the government and its institutions to correct this problem with little or no success until date. This study examined personality characteristics as predictors of suicidal ideation among a group of selected prison inmates in Anambra State. A cross-sectional survey design was adopted in the study. Accidental sampling technique was used to select two hundred and ninety-six (296) inmates from The Nigerian Prisons Service, Headquarters Amawbia, Akwa, and the Nigerian Prison in Amawbia and Onitsha. The Big-Five Inventory (BFI) and the Suicide Ideation Scale (SIS), were used to gather necessary information for the study with Cronbach's Alpha of .91 and .89 respectively. Three hypotheses were formulated and tested using Hierarchical Regression Analysis. The results showed that demographic variables gender, (β = -.03.), age (β = .14) and education (β = -.07.) were

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not significant predictors of suicidal ideation. The Big Five personality dimensions indicated that only openness inversely predicted of suicidal ideation (β = -.13). However, extraversion (β = .09.), neuroticism (β = .04.), conscientiousness (β = -.05.), and agreeableness (β = -.03.) did not predict suicidal ideation. Based on the findings of this study, it is recommended that Nigerian Prison Service should engage inmates into therapeutic programmes and clinical interventions that increase self-awareness and psycho-emotional development of personality to reduce ideation towards suicide.

1. INTRODUCTION

1.1 Background to the Study

The obliteration of the colonial influenced native authority prisons in 1968, and the successive consolidation of the prison service in Nigeria marked the commencement of Nigerian Prison Service as a federal parastatal. The Nigerian penal institution has suffered neglect in terms of poor government funding, shortage of personnel and inadequate facilities to cater for the already overcrowding experienced within the Nigerian prison system [1].

Globally, prisoners have to endure extended periods of incarceration, isolation and limited supply of basic facilities ranging from personal care needs, and access to healthcare facilities [2]. Though, the prison system is originally designed to provide rehabilitative and restorative functions for its inmates, this assertion has been one of much debate characterized by agitations by the civil liberties group and other human rights organizations owing to the increase in suicidal ideation rates globally, which have prompted government injunctions and unsuccessful attempt by the government and its institutions to correct this problem with little or no success until date [3].

Apart from slow and lengthy judicial processes, scientific literature is rife with assertions claiming that prison inmates suffer a plethora of social and psychological problems as several health issues plague prison inmates from mental related disorders to extra-judicial killings, prison torture, male rape, and a host of problems characteristic of prison life [4]. Although, the extent and degree to which these problems exist vary from one prison to another not only in the Nigerian context but it is also becoming a global phenomenon.

The rising rate of suicide and suicidal ideation within the Nigerian prison system is one to be described as having a long past with a relatively short history, this is true because, issues relating to prison death whether deliberate or not has only been recently documented, consequently, leading to scanty information regarding suicidal ideation within the confines of the Nigerian prisons.

There are no gold standards for the definition of suicidal ideation, several research scholars have attempted to define and differentiate the meaning of suicidal ideation and suicide itself. Suicide as a concept and as an act induces emotive and perceptive reaction across those who are affected and those who have incarcerated wards within the prison system [5].

Beck (1986) cited in, Beck, Steer & Carbin, [6] referred to suicidal ideation as cognitive considerations or contemplation about taking one's life or a desire to terminate one's natural life, but then, there are no accompanying physical action to carry-out this plan of action out, after these thoughts have been processed. The degree of suicidal ideation varies significantly from transient to meticulous preparation, bodily gestures and failed attempts, which may be purposefully fabricated to be unsuccessful or be revealed by observant individuals [7].

Within prison confinement, authors have suggested that suicidal ideation is common among certain personality type even in the absence of psycho-active substance use, therefore, it is imperative to state here that, suicidal ideation and behaviors are a significant indicator of Co-morbid disorders, such as personality predispositions, post-traumatic experience, major depression, bipolar disorder, schizophrenia, and psycho-active substance use in prison inmates [8]. As a result, some researchers have suggested with empirical emphasis that suicide ideation has a co-morbidity with some personality types that directly or

indirectly increases the susceptibility to suicidal behavior among prisoners [7].

Personality refers to a dynamic and organized set of characteristics possessed by a person that uniquely influences how they perceive their environment, direct their cognitions, reflect emotions, and motivations [9]. Personality also may refer to the pattern of thoughts, feelings, social adjustments, and behaviors constantly demonstrated over time that intensely reflects in one's expectations, self-perceptions, values, and attitudes [10]. Hence, personality is based on the crucial perception that people are generally similar in a number of ways, yet diverse in some other aspects [9].

However, according to the Diagnostic and Statistical Manual of the American Psychiatric Association [11], personality traits are enduring patterns of recognizing, connecting and thinking about the one's self within a contextual environment in a wide range of social and personal situations. Also, Anastasi, [12], emphasized that traits are relatively stable over time, traits differ among individuals, and traits influence behavior which they are consistently used in order to help describe people, also Feist, & Gregory, [13] described personality as traits that are relatively constant, and do not usually change but insteadvary along a continuum between one extreme and the other.

In addition, the importance of the study of personality in relation to suicidal ideation among prisoners cannot be over-emphasized. Several research studies have been conducted within the confines of personality in relation to suicide and suicidal ideation however, only a handful have delved into the criminal justice system and penal institutions in Nigeria [14].

1.2 Statement of Problem

The Nigerian prison system is fraught with difficulties related to and connects with issues bothering around humanitarian problems. Recently, prisons in Nigeria have witnessed unprecedented increase in the rate of prison inmates exceeding the recommended capacity of admissions. Ogwezzy, Adebayo & Kekere [3]. However, Youssef, Fahmy, Haggag, Mohamed, &Baalash [15] suggest that suicide rates are common in every country usually and it accounts for nearly 1% of all prison deaths, this assertion is quite alarming in developed societies. This surge in prisoners have led to a plethora of problems ranging from housing, and providing basic amenities and welfare for the incarcerated, and this have led to economic burden for both government and families of those incarcerated, thereby hindering the objectives of reforming inmates, providing rehabilitation and societal re-integration for the incarcerated. Suffice to say this, the rate of suicidal related injuries and death has also called for concern among scholars and it has attracted global attention among various governments, civil liberty groups and human rights organizations such as amnesty international and so [3]. This study serves as a response to the growing concern of suicidal and suicidal ideation increase in Nigerian and indeed Afrique noir.

In spite of this enduring relevance of personality theory in the explication of behavioural dispositions, social scientists have not totally agreed on the predicates of personality characteristics within the purview of suicidal related problems for several decades [16]. However, extant literature concerned with studies carried-out within penal institutions and among inmates have suggested that suicidal ideation is common among certain personality type even in the absence of psycho-active substance use, therefore, it is imperative to state here that, suicidal ideation is a significant indicator of co-morbid disorders, such as personality predispositions, post-traumatic experiences, major depression, bipolar disorder, schizophrenia, and psycho-active substance use in prison inmates [17,8].

As a result, some researchers have suggested with empirical emphasis that suicide ideation has a co-morbidity with some personality types that directly or indirectly increases the susceptibility to suicidal behavior among prisoners [7]. However, despite this assertion only a handful of literature have suggested consistency with this research point in Nigeria, as result this study with all intent and purpose will attempt to bridge this gap by producing empirical results to ascertain the state of affairs in this given area of inquiry.

In Africa, the economic burden placed by suicide related problems on the government and families of those so affected is enormous. In recent times, literature have suggested the surging rate of suicidal related problems within the African context, which was before now almost alien to African cultures have been a source for concern for governments and humanitarian organizations, more disturbing is the surge in number of young

adolescents who have been reported to engage in suicidal ideation in recent times [15]. The cause for this surge have been blamed on socio-economic indices such as illiteracy, poverty and unemployment ravaging the African continent, however, social scientist are of the opinion that other behavioural or lifestyle factors are likely responsible for the sudden increase, plausible as this may sound, only a few studies have attempted to provide understanding on this subject matter [18]. It therefore, behooves that empirical studies are conducting to address the situation and also provide understanding into the roles of personality in suicidal ideation with an African perspective; this will provide increase knowledge in the understanding and management of suicidal ideation scant literature within Africa.

1.3 Review of Related Studies

Some earlier studies in European authors have been conducted to examine the role of personality disorders and suicidality, these studies have used Costa and McCrae's Five-Factor Model [19] to explore associations between personality traits (neuroticism, extraversion, openness to experience, agreeableness, conscientiousness) and different dimensions of suicidality among older adults. Also, empirical studies such as, De Young, Quilty & Peterson [20] revealed that the Big-Five personality traits show consistent outcomes, when less scientific procedures were inculcated such as in interviews, self-descriptions and observations.

In a similar study by, Jahn, Poindexter and Cukrowicz [21] who conducted a study on personality disorder traits, risk factors, and suicide ideation making use of non-parametric bootstrapping procedure among 143 adults reported that perceived burdensomeness, thwarted belongingness, and depressive symptoms mediated the relationship between personality trait and suicide ideation.

In a study conducted among college students, Hilary, Raymond, O'Keefe, Mullins-Sweatt and LaRicka [22] stated that low extraversion and high neuroticism were significantly related to suicide ideation. In addition, Hawton, Houston, Haw, Townsend, and Harriss, [23], compared the suicide attempter's characteristics with and without co-morbid mental and personality disorders to ascertain factors that may further explain increased suicide risk linked with psychiatric co-morbidity. Hawton, et al., [23]

found that co-morbidity of psychiatric and personality disorders were present in patients, and that more patients with co-morbid disorders had made previous suicide attempts and repeated attempts during the follow-up period.

Raymond, O'Keefe, Ashley, Rhodadees-Kerswill, David, Ashley, et al., [24] found that the significant inverse relationship between suicidal ideation and extraversion and the relationship between neuroticism and suicidal ideation also indicated inverse correlations. Iliceto, Fino, Sabatello, and Candilera, [25] who conducted a study using multi-group confirmatory factor analysis reported a similar pattern of association between suicidal ideation and personality across both groups. The participants comprised 316 young adults and 339 older adults.

Segal, Marty, Meyer and Coolidge [26] conducted a study to ascertain the role of personality traits on suicidal ideation, among 109 adults. Segal, et al. [26] reported that personality showed strong link with suicidal ideation. Segal and his colleagues suggested that personality showed negative relationship with suicidal ideation, except from neuroticism which indicated a positive association.

1.4 Hypotheses

1. Openness to experience will significantly predict suicidal ideation, such that increase in perceived openness to experience will lead to increase on suicidal ideation among prison inmates in Anambra State.
2. Extraversion will significantly predict suicidal ideation, such that an increase in perceived extraversion will lead to higher chances in suicidal ideation among prison inmates in Anambra State.
3. Neuroticism will significantly predict suicidal ideation, such that an increase in perceived neuroticism will lead to higher chances in suicidal ideation among prison inmates in Anambra State.
4. Conscientiousness will significantly predict suicidal ideation, such that as perceived conscientiousness increases, the greater the tendency towards suicidal ideation among prison inmates in Anambra State.
5. Agreeableness will significantly predict suicidal ideation, such that as perceived agreeableness increases, the greater the tendency towards suicidal ideation among prison inmates in Anambra State.

2. METHODS

2.1 Research Design

This study was a cross-sectional survey design. The dependent variable was suicide ideation and the independent variables were personality characteristics that comprise five dimensions; extraversion, openness, neuroticism, conscientiousness and agreeableness.

2.2 Research Setting

The beginning of modern Prison Service in Nigeria was in 1861. The locale of the research was in Amawbia Prisons Service and Onitsha Prisons centered in Eastern Nigeria, Anambra State. The Nigerian Prisons Service, headquarters Amawbia, is located in Akwa South Local Government Area of Anambra State. The Onitsha Federal Prison which was originally meant to accommodate 326 inmates now has 877 inmates [27]. The Ministry of Internal Affairs is the Ministry is saddled with the responsibility of Prison services in Nigeria.

2.3 Participants

Using proportionate and accidental sampling techniques two hundred and ninety-six (296) inmates within The Nigerian Prisons Service, Headquarters Amawbia, Akwa, and The Nigerian Prison in Anambra State. The participants were drawn from the Nigerian Prison in Amawbia and Onitsha, all in Anambra state. Participants consist of both male (186) and female (110) prison inmates. They comprised 186 (52.7%) males and 110 (47.3%) females with an age range between 20 years and 58 years. Their mean age was 39.30 which the Standard Deviation was 8.36. On the type of religion been practiced by the participants, 180 (54.6%) of them practiced Christianity and 116 were Muslims (45.4%). The marital status of the participants showed that 88 (23.2%) were single while 208 (76.8%) were married.

2.3.1 Inclusion criteria

1. The inmates/respondents must be prisoners currently convicted for crimes at least six weeks prior to the time of this study.
2. The inmates/respondents must have the capacity to give informed consent.
3. The inmates/respondents must be able to read and understand English language.

2.3.2 Exclusion criteria

1. The respondents/inmates must not have history of neurological illness e.g., seizures or any form of physical challenge (i.e., blind, lame, deaf and dumb).
2. The respondents/inmates must not be chronologically older than 60 years of age.
3. The respondents/inmates must not be a non-literate in English language.

2.4 Instruments

Two instruments were used for the study. They are; Big five inventory (BFI-44) [28] and Suicidal ideation scale (SIS) [29].The Big-Five Inventory (BFI) developed by John, Donahue & Kentle, [28] was used to measure personality characteristics. The Big-Five Inventory (BFI) measures an individual's personality traits or characteristics and validated for use with Nigeria sample by Umeh [30]. The original instrument contains 44 items designed to measure personality from a five point Likert type scale, that comprise dimensions; extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience). Direct and indirect scoring is used for the items. It is scored on a 5-piont scale ranging from 1-5, 1-Disagree strongly, 2-Disagree a little, 3- Neither agree nor disagree, 4-Agree a little and 5-Agree strongly. Values of the numbers shaded are added to obtain the clients scores in each of the subscales. Separate norms have been reported by Umeh [30] for male and female Nigerian sample. The coefficients of reliability provided by John *et al*. [28] are Cronbach alpha .80 and 3-months test-retest of .85. Big Five Inventory has mean convergent validity coefficient of .75 and .85 with the Big Five Instrument authored by Costa and McCrea (1992) and Golberg (1992) respectively. The divergent validity coefficient obtained by Umeh [30] with University Maladjusted Scale (Kleinmuntz, 1961) are Extraversion .05, Agreeableness .13, Conscientiousness .11, Neuroticism .39, Openness .24. the present study obtained reliability coefficient for each of the subscales as extraversion .44, neuroticism .36, openness to experience .77, conscientiousness .56, and agreeableness .54.

The Suicidal Ideation Scale (SID) was developed by Rudd [29] is a 10 item scale measuring the severity of suicidal ideation in the subject. The scale utilizes a five-point Likert scale, with responses ranging from "never" (scored as 1) to

"always" (scored as 5). Full scale scores are calculated by summing the values of the responses. Possible full scale scores ranges from a low 10 (indicating no suicidal ideation) to a high 50 (indicating a high level of suicidal ideation). Its items exhibit face validity, looking as if they measure suicidal ideation in subjects. Rudd [29] reported a Cronbach's Alpha of .86 and the SIS has been found to be correlated moderately with measures of depression (r=.55, p<.001) and hopelessness (r=.49, p<.001), providing evidence for its construct validity and has extensively been used in Nigeria.The present study reported a Cronbach alpha of .89.

2.5 Procedure

Permission to conduct this research in the two prison yards was obtained from the controller, Anambra prisons using a letter from the Department of Psychology. When permission was granted, the researcher then went to each of the prison yards with the questionnaires. The purpose of the study wasexplained to the prisoners and participants were assured that information provided will be treated confidential and no identifying information will be required and that questionnaires will be destroyed after the data has been analyzed. Prisoners were given opportunity to ask questions. Afterwards, questionnaires were shared with the help of a research assistant and with a prison warden who introduced the research teams to different sections involved. The criterion for the inmate inclusion in the study as specified ab initio. After the completion of the questionnaires, it was collected and analyzed subsequently.

2.6 Data Analysis

Data collected was analyzed using Pearson Product Moment Correlation (PPMC) and the Hierarchical Multiple Regression. Statistical

Package for the Social Sciences 20.0, (SPSS 20) was used for the data analysis.

3. RESULTS

3.1 Test of Relationships among Variable

Pearson Product Moment Correlation (PPMC) analysis was conducted to test the relationship among the variables of the study. The results are presented in Table 1.

The results in Table 2, indicate that none of the demographic variables: gender (r = -.04.), marital status (r = -.07.), age (r = .03.), and education (r = -.08.) correlated significantly with suicidal ideation. However, with respect to personality, extraversion (r = .11.), openness (r = -.27, p < .001) and conscientiousness (r = .15, p = .012) significantly correlated with suicidal ideation in negative and positive directions, respectively.The remaining personality dimensions: neuroticism (r = -.11.), and agreeableness (r = -.09) did not significantly correlate with suicidal ideation.

The results of the hierarchical multiple regression in Table 2, indicate that the demographic variables (gender, marital status, age, and education), entered in step 1 of the equation collectively accounted for only 1% of the variance in suicidal ideation, with only marital status significantly and negatively contributing to the prediction of suicidal ideation (β = -.17, p = .038), whereas gender (β = -.03.), age (β = .14) and education (β = -.07.) were not significant predictors of suicidal ideation. When the Big Five personality dimensions were entered at step 3 of equation, they collectively accounted for only 1.6% of the variance in suicidal ideation, only openness significantly and negatively contributing to the prediction of suicidal ideation

Table 1. Correlation matrix showing the relationship mean, standard deviation and the relationship among the study variables

	Variable	1	2	3	4	6	7	8	9	10	11
1	Gender	1									
2	Marital status	.03	1								
3	Age	-.06	.68***	1							
4	Education	.03	.03	-.03	1						
6	Extraversion	-.02	.02	.07	.03	1					
7	Openness	.02	.07	-.08	.07	.06	1				
8	Neuroticism	.03	.07	-.01	.08	-.71***	.05	1			
9	Conscientiousness	-.08	-.09	.00	-.10	.41***	-.27***	-.33***	1		
10	Agreeableness	-.07	.01	-.03	-.04	-.08	.15**	.22***	.09	1	
11	Suicidal ideation	-.04	-.07	.03	-.08	.11	.27	-.11	.15*	.09	1

Note: N = 296, = p< .05(two-tailed), ** = p ≤ .01.Gender was coded 1 = male, 2 = female; marital status: 1 = single, 2 = married; age: 1 = 18-38, 2 = 39-59, 3 = 60 and above; educational: 1 = primary school, 2 = secondary school, 3 = tertiary education*

Table 2. Summary of hierarchical regression analysis showing the Influence of personality characteristics on suicidal ideation

Variable	Step 1B	Step 2B	Step 3B	Step 4B
Controls				
Gender	-.03	-.06	-.06	-.06
Marital status	-.17*	-.02	-.02	-.01
Age	.14	-.03	-.04	-.05
Education	-.07	-.05	-.06	-.05
Extraversion			.09	.06
Openness			-.13*	-.11
Neuroticism			.04	.02
Conscientiousness			-.05	-.02
Agreeableness			-.03	-.04
Adjusted R^2	.010	.192	.195	.216
ΔR^2	.023	.183	.016	.024
ΔF	1.74	66.66***	1.17	8.88**

Note: * = $p < .05$, ** = $p \leq .01$, *** = $p \leq .001$

(β = -.13, *p* = .035). However, extraversion (β = .09.), neuroticism (β = .04.), conscientiousness (β = -.05.), and agreeableness (β = -.03.) did not contribute significantly to the prediction of suicidal ideation.

Furthermore, the personality domain sub domains showed thatopenness to experience inversely predicted suicidal ideation. This implies that the lower the perceived openness to experience, the higher the chances of the suicidal ideation. This finding is in concordance with [26]. Therefore, hypothesis 1 was accepted. Hypothesis 2, Extraversion did not significantly predict suicidal ideation, such that an increase in perceived extraversion will not lead to higher chances in suicidal ideation among prison inmates in Anambra State. Therefore, hypothesis 2 was rejected. Also, in hypothesis 3, there was no significant prediction between neuroticism and suicidal ideation; as a result hypothesis 3 was rejected. In hypothesis 4, conscientiousness did not predict suicidal ideation, the hypothesis was not confirmed, as such hypothesis 4 was rejected. Finally, agreeableness also did not show predictions for suicidal ideation.

However, extraversion, neuroticism, con-scientiousness and agreeableness were not significant predictors of suicidal ideation as shown in the results of the hierarchical multiple regressions in Table 2. The hypotheses formulated for the extraversion and suicidal ideation, neuroticism and suicidal ideation, conscientiousness and suicidal ideation, agreeableness and suicidal ideation were all rejected. It is no surprise however, that suicidal ideation was not predicted by extraverted individuals but it has been known to be strongly associated with suicide attempt and not suicidal ideation within the prison inmate's population [26]. Conscientiousness and agreeableness have received little or no recognition on their predictability on suicidal ideation, as demonstrated in most recent research publications [10] and also the findings of this study signifies that conscientiousness and agreeableness are not predictors of suicidal ideation.

Research studies have demonstrated in-consistent result in terms of the relationship between neuroticism and suicidal ideation, this situation has been the same across other research populations. The finding from this study conducted among prison inmates' population indicated that neuroticism did not predict suicidal ideation. One reason for this is that though neuroticism is being associated with suicide, neuroticism may decrease risk for a suicide attempt among individuals with suicidal ideation [31].

3.2 Implications of the Study

The participants/inmates used for the study were 296 which may be considered too meager and may not be sufficient for generalization. Further study should try to inculcate larger sample size across various populations such as, those with chronic disorders i.e., coronary heart disease, diabetes, cancer, other group of people such as, war veterans, commercial prostitutes and so on. Also, the study was survey design and the use of questionnaire were employed and this may lead to response bias social (desirability issues) or the desire to 'fake good'. Lastly, this study used proportionate and convenient sampling which

may not proffer more rigorous scientific explanation, as this may have some implications for generalizability as well as such further studies may adopt more rigorous sampling technique. Longitudinal studies are also recommended in other to provide more understanding in terms of effect of maturation and time into the management of suicidal ideation, perhaps this may open insightful areas into the study of suicidal ideation.

3.3 Recommendations for Future Studies

Based on the findings of this study, it is recommended that The Nigerian Prison Service should try as much as possible to engage inmates into therapeutic programmes and clinical interventions that increase will help them gain self-awareness and enhance the psycho-emotional development.

However, specifically the following are hereby recommended;

1. Inmates in penal institutions should be adequately and continuously trained using psychological principles and behavioural modification techniques to best deal with suicidal ideation from a behavioural standpoint. This would change the overall perception of suicide attempt in making value judgment.
2. Prison inmates should be encouraged through therapy and counseling to exhibit personality characteristics that promote wellbeing and institute systemic checks and balances that regulate the activities of inmates as to avoid or reduce the problem of suicidal attempt especially in the prison system.
3. Finally, symposiums and seminars including workshops should be organized to sensitize and equip inmates on best practices to reduce ideation towards suicide. Motivational vocations should be organized to engage inmates in meaningful vocations (artisans) to as to be re-integrated into the society.

4. CONCLUSION

Suicidal ideation is often accompanied by thoughts about terminating one's life, but there is no accompanying self-destructive action related to these thoughts. Suicidal ideation arises through a cognitive process which often leads to suicidal attempts, which may be deliberately constructed to fail or be discovered, or may be fully intended to succeed. This study has established that openness to experience has significantly predicted suicidal ideation among prison inmates. This implies that when assessing individuals who have attempted suicidal contemplation, the clinician or therapist should identify and harness factors that possess positive psycho-therapeutic outcome.

CONSENT

As per international standard, respondents' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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