Topic: Preventive Health: Significance of the Five-Factor Model among Selected Psychology Undergraduates in Adekunle Ajasin University, Akungba-Akoko, Ondo State

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Abstract
Preventive health has received enormous attention in scientific literature. The proliferation in number death as a result of disease, coupled with, huge cost of healthcare expenditure have further increased the agitation for preventive measures rather than treatment of diseases. This study examined the role of Five-Factor Model on preventive health among selected Psychology undergraduates. Survey design was adopted for this study, and responses were collected using the Five Factor Model Rating Form (FFMRF) and Preventive Health Behaviour Scale. Data was analyzed using Multiple Regression analysis to test research hypotheses. The result of the study revealed significant prediction among extraversion [β = .39], openness [β = .44], agreeableness [β = .28], and conscientiousness [β = .36]. However, neuroticism [β = -.26], showed negative significance on preventive behaviour among undergraduates. The implication of these results demonstrates that the Five-Factor Model predicts preventive health behaviours among Psychology students. Therefore, the study recommends that undergraduates should be exposed and sensitized to embrace preventive health behaviour and practice, public and non-governmental healthcare agencies should adopt approaches backed by healthcare policies to enlighten students on the benefits of preventive health. Also, Psychologists should play advisory role in the formulation of public health policies at the primary, secondary and tertiary level of healthcare.

Keywords
Preventive Health; Five Factor Model; Undergraduates

Introduction
Globally, management of health problems has been the front burner of government and other healthcare stakeholders for a long time. The social and economic cost of healthcare burden have led to an outcry for research intervention and programs geared towards preventive health practices that proffer long-term clarifications to prevailing health issues encountered by various healthcare agencies among countries of the world [1]. Preventive health behaviors have been the focused on by different fields of academic endeavor. Attempts have been made by clinical psychology and behavioral medicine to understand the roles of psychological and behavioural variables that increase the tendency towards preventive health practices [2].

Healthcare practice in the 21st century has witnessed the transition from treatment to preventive health practices [3]. Schwarzer and Fuchs, recapped that Kasl and Cobb, referred to preventive health behaviors as active practices embark on by a person who believes...
himself to be healthy for the purpose of preventing disease. For example, individuals who are considered as being conscientious avoid unhealthy practices such as, smoking behaviours so as to avoid health problems in the future. Also, control of sugar, cholesterol or fat consumption by eating balanced diet by people of certain personality type further buttress the significance of preventive health behaviour [1].

The Five-Factor Model (FFM) of personality distinction has been replicated across a range of human societies, suggesting that the FFM is a universal construct [1]. The five-factor model (FFM) is a widely accepted construct describing personality distinctions in five dimensions (i.e., extraversion, openness, conscientiousness, neuroticism, and agreeableness). These personality constructs go by different definitions and all of them possess distinct meanings [4].

Extroversion is also one of the personality characteristics that have found in some studies to be more representative of behaviours directed toward others or ones environment rather than oneself [5]. Dennis and Oluwatelure, [6] further explained that extraversion is a psychological state that a person interested and taking pleasure more in activities outside him than in his/her own emotions or state of mind. One of the most consistent results in the study of health behaviours and personality is that extroversion has indirect effect on a variety of health related behaviours [6]. Individual differences have been linked to discrepancies in personality and relationships especially with tendency to engage in behavioural health practices [7].

Openness is characterized in individuals who are curious and overtly expressive across situation in terms of appreciating art and creativity, exploring various avenues of thoughts and emotion [8]. Highly open people are original, cultured, broadminded and intelligent [6]. Conscientiousness refers to individuals who are self-conscious, have increased tendency towards moral disposition [4]. Studies have also linked conscientiousness with perceived psychological wellbeing [9]. Costa and McCrae [4] suggested that a dimension of self-control to conscientious personality, are now recognizable forms of variation of conscientiousness. Also, neuroticism connotes negative effect, anxiety related behaviours or basic nervousness. Studies such as Magnus, Diener, Fujita, and Pavot [10], have reported that individuals high in neuroticism experience more negative life event than others. Agreeableness is a trait often characterized as being kind, considerate, generous, trusting and optimistic in nature. Agreeable individuals are often referred to as selfless and would generally please someone else other than themselves, and project coherence in social gatherings [11].

Despite these contributions of personality characteristic to preventive health behaviour, studies have demonstrated deficiency in the examination of personality factors on preventive health practices among undergraduates in Nigeria. As a matter of fact, there are only a handful of studies on personality dispositions and preventive health in academic settings [12]. One reason for this could be that the study of preventive health provides novel and systematic direction of healthcare discourse and scholars have not been given deserve attention to it as much as other areas of medico-psychological literature. In view of this gap in literature, this study explores the collective and self-determining influence of personality factors as predictors of preventive health behaviour among undergraduates in Adekunle Ajasin University, Akungba-Akoko, Ondo State.

Statement of Problem

The direction of scientific literature in healthcare has extensively evolved towards preemptive ways of containing disease and has turn out to be a ‘thingamajig’ for understanding how individuals engage respective personality characteristics that portend preventive healthcare behaviours. These behaviours actually define collective construct of preventive healthcare and provide improved understanding of precautionary behavioural process that reduces the overall economic cost of healthcare expenditure. However, only a few studies have aimed at the extent or degree to which the Five-Factors of Personality (extraversion, neuroticism, openness, conscientious and agreeableness) significantly contribute to behaviour that have tendencies towards preventive health within academic settings.

Although there have been some studies on preventive among diverse populations [13, 14]. similar studies carried out among populations from tertiary institutions are scarce. This scarcity in literature is witnessed in the few number of scientific inquiry that provide systematic explanation in terms of empirical evidence in preventive health among populations within tertiary institutions. Thus far, it is not clear what personality characteristic determines the demand for preventive health care practices among the students of tertiary institutions.
In addition to that, the economic cost of treating diseases and training health workers in new technologies have taken enormous toll on the economy of developing nations especially in Afrique noir, rather look for ways to prevent diseases, public expenditure is directed towards a treatment or curative approach to healthcare management. The proposed study intends to provide alternative perspectives by examining the predictive roles of personality factors on preventive health behaviour among students in tertiary institutions.

The Five Factor Model has been widely used in investigating the role of personality on psychological literature. Factors of personality traits are extraversion, neuroticism, agreeableness, openness to experience and conscientiousness. A number of studies have pointed to the importance of personality traits in understanding psychological factors such as health-seeking, health locus of control among others [9]. In study by Jayanti and Burns, [15] and Lopes, et al. [9], extraversion and neuroticism were found to be the strongest predictors of increased psychological disposition towards healthy behaviours.

**Research Hypothesis**

1. Extroversion will significantly predict preventive health behaviours among Psychology Students in Adekunle Ajasin University, Akungba-Akoko.

2. Agreeableness will significantly predict preventive health behaviours among Psychology Students in Adekunle Ajasin University, Akungba-Akoko.

3. Openness will significantly predict preventive health behaviours among Psychology Students in Adekunle Ajasin University, Akungba-Akoko.

4. Conscientiousness will significantly predict preventive health behaviours among Psychology Students in Adekunle Ajasin University, Akungba-Akoko.

5. Neuroticism will significantly predict preventive health behaviours among Psychology Students in Adekunle Ajasin University, Akungba-Akoko.

**Method**

**Research Design**

A cross-sectional survey design was adopted in the study. The dependent variable was preventive health behaviour. The predictor variables were the Five Factor personality variables; extraversion, openness, agreeableness, conscientiousness and neuroticism.

**Participants**

The participants for the study comprised (216) two hundred and sixteen, 100-400 level Psychology students in Adekunle Ajasin University, Akungba-Akoko (AAUA). A total of male 118 (53.3%) males and 98 (46.7%) females, Christians, 167 (70.2%) and Muslims 49 (29.8%).

**Inclusion Criteria**

1. Only students who were registered for a B.sc in Pure and Applied Psychology in the Department of Pure and Applied Psychology as at the time of this research study.

2. Only psychology students who volunteered were selected and those not willing to participate were considered outliers in the study.

**Exclusion Criteria**

1. Students who were not studying Psychology as a core discipline could not participate in the study.

2. Student who present any form of handicap (i.e., visual or auditory), pre-degree and post-graduate students were not included in the study.

**Sampling Technique**

Convenient sampling technique was adopted to select each of the respondents (Psychology undergraduates) who volunteered to participate in the study.

**Instruments**

The study made use of self-report questionnaire, which comprise three sections.

**Section A: (Socio–Demographic Information) this includes; Age, Sex, and religious orientation.**

**Section B: Five Factor Model Rating Form (FFMRF).**

The FFMRF is a one-page rating form consisting of 30 items representing each of the 30 facets of the FFM developed by [16]. The 30 items are organized with respect to the five domains. For example, under the heading Neuroticism are six items. Each item is rated on a 1 to 5 scale where 1 is extremely low, 2 is low, 3 is neither high nor low, 4 is high, and 5 is extremely high. For example, the neuroticism facet of anxiousness was assessed with the descriptors; fearful, apprehensive versus relaxed, unconcerned, cool” and the openness facet of ideas was
assessed with the descriptors “strange, odd, peculiar, creative versus pragmatic, rigid. Samples of items include ‘I am open to new experiences’, ‘I am a sociable person’ and so on. Lloyd, reported Cronbach’s alpha of .89.

Section C: Preventive Health Behaviour Scale (PHBS)

Preventive health behaviour was measured using Preventive Health Behaviour Scale developed by Jayanti and Burns, a modified version of a scale originally developed by Moorman and Matulich cited in, Jayanti et al. Specifically, pre-tests indicated six of the items from the Moorman and Matulich’s original scale to be ambiguous. Consequently, these items were deleted from the scale, resulting in a 17-item scale. Pre-tests also warranted slight format and style changes. For instance, subjects indicated that the 7-point scale anchored by 1 = none of the time and 7 = all of the time was confusing. So it was deemed necessary to change the format to a 3-point scale, where 1 = never, 2 = sometimes, and 3 = always. The modifications resulted in a 17-item scale, which was summated to arrive at a measure of preventive health care behaviours. Sample of item is how often you eat a well-balanced diet. Jayanti and Burns, reported at the reliabilities ranged from a low of .71 to a high of .91, reflecting acceptable internal consistency.

Procedure

In order to get Psychology students who participated in the study, the researcher informed the students of the benefits and relevance of the study to each of the participants. Also, the undergraduates where assured of confidential of their responses and identity and adequate steps were taken in the questionnaire to only assess responses that could be classified as anonymous.

Data Analysis

In order to determine the extent and direction of associations among the study variables, hypothesis 1, 2, 3, 4 and 5 was statistically analyzed with multiple regression analysis.

Results

Table 1, showed that the F value was =37.6, R = .06 and R² =.05. The result demonstrate that extroversion was a significant predictor of preventive health [F (1, 265); β = .39,]. Therefore, hypothesis one was supported. The result showed that agreeableness was a significant predictor of preventive health among undergraduates in Adekunle Ajasin University, Akungba-Akoko, Ondo State [F (1, 215); β= .28, p <.05]. Consequently, hypothesis two was accepted. For hypothesis three, the result showed that openness was a significant predictor of preventive health among undergraduates in Adekunle Ajasin University, Akungba-Akoko, Ondo State [F (1, 215); β=.44, p <.05]. Hypothesis four, the findings suggest that conscientiousness was a significant predictor of preventive health among undergraduates in Adekunle Ajasin University, Akungba- Akoko, Ondo State [F (1, 215); β= .36, p <.05] and consequently hypothesis four was confirmed. However, from Table 1 above, the result indicated that neuroticism showed negative prediction on preventive health among undergraduates in Adekunle Ajasin University, Akungba- Akoko, Ondo State such that, students who show increased perception towards neuroticism characteristics, tend to have reduced perception towards preventive health behaviours [F (1, 215); β= -.26, p <.05]. This result suggests that hypothesis five was confirmed.

Table 1: Showing the Result of Multiple Regression Analysis on Preventive Health Behavior among Undergraduates in Adekunle Ajasin University, Akungba-Akoko, Ondo

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>t</th>
<th>R</th>
<th>R²</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extroversion</td>
<td>.39*</td>
<td>3.73</td>
<td>0.66</td>
<td>0.054</td>
<td>37.64*</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>0.28</td>
<td>2.41</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Openness</td>
<td>.44*</td>
<td>4.31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>.36*</td>
<td>3.67</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neuroticism</td>
<td>-0.24</td>
<td>-1.87</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*p (216)< .05 (p value is .05 and number of participants were 216)

Discussion

The study examined preventive health and the significance of the Five-Factor Model of personality among selected undergraduates. The findings of the study generally revealed significant relationship among the five personality factors (extroversion, openness, agreeableness, conscientiousness while, neuroticism showed negative correlations with preventive among undergraduates) on preventive health.

Similar studies conducted by Mroczek, Almeida, Spiro, and Pafford. [17] demonstrated that personality structures are a set of pliable behaviors due to this, inter-individual differences in personality influences health related behaviours. Mroczek, et al., [17] further suggested that individual’s response to health issues differently, where some show stable personality trait on given issues
and for others they react differently under the different circumstances. In addition, Mroczek and Spiro indicate that this change in personality pattern portends important consequences on health. For instance, literature on personality describes specific personality characteristics that predispose people to unhealthy practices such as smoking; Oluwatelure [18] revealed that there is a positive association between extroversion and substance misuse. He further stated that, individuals who are socially inclined have a higher tendency to experiment illicit drug intake which may be through peer influence or bad models. However, in a similar study by Ifeagwazi [19], who examined the role of personality characteristics of a group of arrested drug users and non-users, discovered that there was inconsequential relationship between extroversion and healthy behaviours among stable individuals. This discrepancy within personalities and health behaviours further sheds light on the unstable nature of personality traits across diverse constructs including preventive health.

Furthermore, Spain, et al., [8] and Lopes, et al., [9] suggested that openness personality significantly influences preventive health and they explained that individuals who score high on openness measure tend to be curious, expressive in their opinion, with a forward-thinking predisposition, thus have a tendency to depict pre-emptive behaviours. This illustrates the nature of openness personality construct, in that; individuals who are inclined towards being expressive are motivated to execute behaviours of a preventive nature especially towards situations that may become inimical.

Oluwatelure [18] and Ifeagwazi [19] who found a strong relationship between neuroticism and those who engage in unhealthy behaviours explained that high scorers on neuroticism, demonstrate a number of adverse emotions comprising nervousness, melancholy, and despondency, and these negative unpleasant states have been linked with alcohol and drug use, at the expense of healthy behaviours. Therefore, it can be inferred that people who score high on measure of neuroticism are at greater risk of indulging in unhealthy behaviours. One reason for this could be neuroticism is epitomized by uncharacteristic behavioural predispositions.

In addition, conscientiousness has been significantly linked to healthy behaviours such as exercising, proper dieting and so on [20]. These authors suggest that there is significant corroboration between low conscientiousness and health risk behaviour. The implication of these findings suggests that conscientious individuals are more likely to engage in preventive health behaviours. Moreover, the direction of scientific research has indicated that agreeableness and conscientiousness are positively correlated with healthy diets. Both-Kewley and Vickers, [21], established that highly conscientious persons demonstrate healthy behaviours, including eating healthy diets. Studies have also suggested that individuals who partake in unhealthy behaviours like smoking are regarded as recalcitrant were rated by their significant others as being low on agreeableness.

Lemos-Giraldez and Fidalgo-Alist [22] found that conscientious individuals were positively associated with health behaviours most notably a diet high in fruit, and fiber, low fat, and salt. Explanation for this may be that individuals who are highly conscientious have greater feelings of self-control and are more likely to pursue and achieve meaningful goals in life. This implies that, students who are conscientious are more likely to engage in, protective health - related behaviours.

Conclusion

Scientific literature has examined the role of personality across a gamut of psycho-socio variables, and most studies have demonstrated progress in understanding and management of human behaviour. Defined by dynamic organization, personality holds important solutions to the understanding of preventive health behaviours. The importance of preventive health and personality to psychology does not only provide proactive management to health related problems, it as well, portends enormous benefits for public healthcare. The significance of the Five-Factor Model of personality (i.e., openness, agreeableness, extraversion, conscientiousness and neuroticism) does predict preventive health behaviours among selected students. This position further illustrates the importance of personality characteristic to health related behaviours within educational context.

Limitations of the Study

Like other research studies, this study has various limitations as well. The limitations noted were: One, findings in this study should be generalized with cautiousness owing to the following reasons; (1) data might be open to response set because data were collected using self-report questionnaires, hence the tendency to fake good is plausible (2) the study only made use of 216 undergraduates which may not be enough for making a sweeping statement, and (3) participants
were drawn from only one Department in Adekunle Ajasin University, Akungba-Akoko Ondo State Nigeria. Also, this study considered only the Five Factor Model (openness, agreeableness, conscientiousness, extraversion and neuroticism) as predictor variables on preventive health behaviour. The influence of other variables such as subjective optimism, cultural relativity, and self-constructs should be considered in future research.

Engaging more undergraduates across disciplines located within the six-geo political zones in Nigeria should be considered in future research and should, therefore, test the extent to which psycho-socio variables interact with the preventive behaviours among students. Future researchers should also embark on comparative study as this will tell if the independent variables are actually responsible for predicting and promoting preventive health behaviours among academic populations. Lastly, studies in the future should engaged the use of post-hoc studies to further shed light into the particular personality variables that most predict preventive health behaviours.

**Recommendation**

Based on the findings of the study, recommendations are directed towards identifying and understanding preventive health behaviours in light of the Five-Factor personality. Below are the following recommendations;

1. Psychologists should be play advisory role in the formulation of public health policies at the primary, secondary and tertiary level of healthcare. This will provide public sensitization of the importance of developing and learning personality characteristics that best proactively safe health. This position will help reduce healthcare expenditure on a long-term basis.
2. Psychologists in educational settings should offer vocational behavioural workshops that would expose students to proactive ways of dealing with health issues. Workshops such as these would provide enlightenment, reduce the dependence on medication and encourage healthy lifestyles.
3. Lastly, future research could conduct a comparative study to examine the extent of direction among pubescent populations, in other to shed more light, in the understanding of preventive health behaviours.

**References**


