

## Regional Variation in Attitude of Mental Health Professionals towards Tackling Illicit Drug-use and Drug-related Disorders

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### ABSTRACT

This study sought to assess the attitudes of Mental Health Professionals (MHPs) towards tackling illicit drug use and drug-related disorders in Nigeria and to explore regional variations in attitude. Based on the validated Substance Abuse Attitude Survey (SAAS), a quantitative cross-sectional survey was conducted in a randomized sample of 292 MHPs practicing in neuropsychiatric hospitals and mental health departments of teaching hospitals from four geopolitical zones of Nigeria. A response rate of 81.1% was achieved. MHPs tended towards non-permissive, moralistic and stereotypic spectrum and exhibited distinctly defined attitude towards their professional role. The Kruskal-Wallis analysis established significant regional variation in the attitude of multidisciplinary MHPs,  $H(3) = 18.727$ ,  $p < .0001$  reflecting a stochastic domination across the region; therefore a step-down follow-up analysis was conducted. This analysis revealed that the distribution of attitude total-score varies significantly between the South-south and the Southwestern region ( $p < 0.0001$ ), the northeastern and southwestern region of the country ( $p < 0.028$ ). A holistic approach towards standardization of drug treatment and care that takes into consideration possible regional variation in attitudes of MHPs should be implemented to foster the reintegration and rehabilitation of drug-using populations into the mainstream society.

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## 1. INTRODUCTION

Mental health professionals (MHPs) play a pivotal role in enhancing treatment outcomes and minimizing the adverse consequences of illicit drug use posed by drug-using populations to the general public [1, 2]. The frequent contact by MHPs offers an increased opportunity for them to engage fully in the healthcare of patients dealing with drug-related problems [2, 3]. However, caring for these individuals by MHPs has been documented in the literature as problematic. Research has identified that MHPs often exhibit attitudes that are deeply held and sometimes attributable to their life history, culture, values, and beliefs [1, 2], [4-6]. It is worth noting that the rehabilitation of people who use drugs (PWUDs) and their reintegration into the mainstream society is dependent on the positive and accepting attitudes of MHPs [7].

Although the treatment and recognition of mental disabilities in Nigeria predates written records, not until the early 20<sup>th</sup> century was the mental health service delivery tailored according to western models [8]. The bulk of mental health services in the country is provided by departments of psychiatry, a number of general hospitals and eight regional federal neuropsychiatric hospitals [8]. Accessibility and availability of

mental health services reflect rural to urban and northern to southern skew as most mental health services are in the southern and urban centers of the country [8]. Several studies conducted in Nigeria focused primarily on substance use in Nigerian colleges [9-14] amongst adolescents [15], use of psychoactive substances among Nigerian inmates [16], and trends in the use and abuse of substances [17]. This much cannot be said about studies on mental health professionals' attitude towards the care of patients dealing with drug-related problems in Nigeria.

In order to establish an up-to-date data on treatment capacity as it relates to PWUDs within Nigeria, the researchers, Onifade *et al.* [18], conducted a cross-sectional descriptive survey of the characteristics, spread, and types of available Substance Abuse Treatment (SAT) centers within the country. The thirty-one (31) SAT units that responded to the survey participated in training sessions at TREATNET centers and were located in the Northeastern and Southwestern geopolitical zones of the country. Sixteen of the SATs (51.56%) were specialized residential units, 5(16.1%) SATs were located in a prison and 17(54.8%) SATs were specialized non-residential units [18]. Findings from the descriptive study indicate lack of funds from health insurance, as funding were received from international organizations, private income of clients, and charitable donations [18]. Onifade *et al.* [18] established a great gap in meeting the needs of individuals that presents with substance use disorders due to a lack of comprehensive treatments. The researchers recommended the incorporation of drug treatment evaluation into treatment policies and systems so as to plan evidenced and need-based interventions. In addition, to further establish the efficiency and effectiveness of interventions that are consistent with drug dependence treatment and care services [18].

Ekpenyong [13] assessed the perception, extent, and causes of drug use amongst Nigerian students. In addition to the study objectives, the researcher evaluated and analyzed the strategies employed to tackle illicit drug use and substance abuse generally, the shortcomings and effectiveness of the strategies in place to address this menace in the Nigerian secondary schools [13]. The study of Ekpeyong [13], guided theoretically by the modified social stress model [19], provided an in-depth understanding of the protective and risk factors that could predispose an individual to drug use and substance abuse. Pupils of four public secondary schools in the local government area of Southern Ijaw, Community secondary school Angiana, Government secondary school, Amassoma, Community secondary school, Eniwari and the Southern Ijaw secondary school Oporoma, all in Bayelsa state Nigeria, were purposively sampled.

Findings from the study revealed that over half of the study participants (60%, 222) had negative perception towards substance abuse and drug use generally; approximately 31% (116) of the respondents had positive perception while 8.6% of the respondents reflected indifferent perception towards the use and abuse of substances [13]. With a rate of 33.8% drug use amongst the secondary school students that were surveyed, the researchers documented the types of substances abused, and these includes bhang, marijuana and alcohol [13]. The effect of substance abuse on cognition and behavior of students documented by the researchers includes withdrawal, lack of concentration, indiscipline, lack of interest in schoolwork and poor relationship with others [13]. The researchers recommended educational intervention programs, punitive measures and behavioral modification techniques as ways of mitigating the threat and challenges of substance abuse amongst Nigerian secondary school students [13].

James and Omoregba [20] assessed the opinions and attitudes of Nigerian medical students towards individuals that use and abuse substances. Study participants were medical students of the Federal neuropsychiatric hospital, who had completed their ten-week psychiatry clerkship and are in their fifth year [20]. A response rate of 95.24% (210 students) was obtained and the respondents were provided a modified version of the substance abuse attitude survey (SAAS) [20]. Findings from the study reflected positive attitudes towards individuals that abuse and use psychoactive substances with an overall mean score of 86.18 (12.29). Female medical students had lower mean score (85.18) compared with their male colleagues (87.17) while respondents with family history of cannabis use ( $p<0.001$ ), nicotine ( $p<0.002$ ), tobacco ( $p<0.001$ ) and alcohol use ( $p<0.02$ ) showed less stigmatizing attitudes towards clients that use and abuse psychoactive substances [20]. The researchers suggested incorporating training on psychoactive substances in continuous professional developments beyond residency years and medical schools [20].

The researchers, Jack-ide *et al.* [21] explored the direct impact of the Nigerian mental health policy formulated in 1991 on the provision of mental health services at a federal neuropsychiatric hospital in Nigeria. To identify challenges, difficulties, and implications of mental health policy of delivering services, nurses working at the neuropsychiatric hospital, Rivers state, Nigeria were purposively recruited in the study [21]. Twenty nurses participated in a semi-structured in-depth interview, and information about their experiences in providing services was evaluated within the context of the policy [21]. Four domains for systematic evaluation, outcomes, resources, content and provision were identified as elements for mental health program implementation and service assessments [21]. Findings from the study reflected negative and stigmatizing attitudes amongst mental health nurses, policy failure, and lack of provision for the post of a director in the Nigerian Ministry of Health as a major obstacle to proper governance and high priority status

[21]. Inference deduced from the study suggests the need for the implementation of mental health treatment policies to reduce associated burdens, improve uptake and access to treatment [21].

Several studies have examined associations between attitude and MHPs' professional role identity. However, there's a notable absence of empirical studies that have examined regional variation in attitudes of MHPs. Given that the attitudes of healthcare workers play a major role in treatment retention and affect the quality management of illicit drug-related disorders [22, 23], It was, therefore, particularly important to understand possible regional variations in attitude of MHPs that could relatively explain the variance in treatment completion and retention of PWUDs.

## 2. MATERIALS AND METHODS

A quantitative cross-sectional survey was conducted in a randomized sample of 292 MHPs practicing in neuropsychiatric hospitals and mental health departments of teaching hospitals from 4 geopolitical zones of Nigeria. The group of MHPs surveyed included psychiatrists, addiction counselors, psychologists, psychiatric nurse, peer counselors, and social workers. Study participants were drawn from four geopolitical zones of the country (southwest and south-southern zones, northwest, and northeastern zones of the country). The states surveyed from each zone were selected through simple random sampling to have an unbiased representation of MHPs in the country. Hospitals selected per zone were federal neuropsychiatric hospitals, teaching hospitals, and state neuropsychiatric hospitals. The required sample size was computed a priori using ANOVA fixed effects, special main effects, and interactions.

### 2.1. Compliance with ethical standards

Ethics approval for this study was obtained from Walden University Institutional Review Board and the National Health Research Ethics Committee of Nigeria (NHREC). In addition, informed consents were obtained from MHPs who responded to the survey.

### 2.2. Instrumentation and operationalization of constructs

The instrument adapted in this study is the substance abuse attitude survey (SAAS) and permission to adapt the validated version of the questionnaire was granted by the copyright holder. In addition to this instrument, the demographic information of the participants served as the independent constructs of the study.

To allow for modification of wordings, for possible detection of ambiguity, and to identify wordings that might be too sensitive for the Nigerian culture, preliminary testing of the SAAS was conducted with 10 MHPs practicing in one of the zones that were excluded from the study (north central zone of the country). For the non-moralism subscale, the statement *clergymen should not drink in public* [24] was considered unidirectional and was removed from the questionnaire because the expected role and conduct of clergymen in the Nigerian society was to abstain both privately and publicly from illicit drug use. Because heroin and cannabis are considered illegal under the Nigerian law and attract the same punishment for trafficking and use, the statement classified under the subscale of non-moralism, *the laws governing the use of heroin should be the same* [24], was removed from the questionnaire. The statements *tobacco smoking should be allowed in high school* and *cannabis use can be healthy experimentation* under the subscale of permissiveness [24] were also removed from the questionnaire because they were considered too sensitive in the Nigerian culture.

For the subscale of non-stereotypes, *the statement chronic substance dependent people who refuse treatment should be legally committed to long-term care* [24], was removed from the questionnaire because of the absence of any law that legally commits an individual to any form of substance dependent treatment in the country. The preliminary testing of the questionnaire also revealed that the term *hippie style clothing* was not a commonly used term in the country [20]. Therefore, the statement *people who dress in hippy style clothing probably use psychedelic drug* under the subscale of non-stereotype was removed from the questionnaire [20]. Because this study was focused primarily on illicit drug use and not alcohol, questions from the SAAS were modified with permission from the copyright holders to reflect attitudes toward illicit drug use. Items, which reflected both "*alcoholism or drug addiction*", were made to read "*drug addiction*", which included factor 2, treatment intervention subscale (items 8, 9, 10, 13) and factor 4, treatment optimism subscale (items 23, 24, 25). Items from factor 1, permissiveness subscale that reflects only "*use of alcohol*" were made to read "*drug use*" (items 5 & 7). The SAAS was modified to a 31-item as a composite scale and was adopted for this study as shown in Table 1.

Table 1. Subgroup of Attitudes Identified by the SAAS

Permissiveness	Individual acceptance that illicit drug use is a continuum of typical human behavior. The subgroup consists of 7 questions (Q1-Q7).
Treatment Intervention	Implies the consistent and precise conceptualization of the extent to which drug-related treatment is received, delivered, and used as intended. The subgroup consists of 6 questions (Q8 - Q13)
Non-stereotypes	Describes the extent to which MHPs display lack of fixed or over generalized belief toward individuals that use illicit drugs. The subgroup consists of 8 questions (Q14 - Q21)
Treatment Optimism	Participants' display of positivity toward the successful outcome of drug dependence care and treatment. The subgroup consists of 4 questions (Q22 - Q25)
Non-moralism	Displays the degree to which the respondents are not being judgmental about a particular principle of conduct or system of values that defines the extent to which illicit drug use is deemed wrong or right. The subgroup consists of 6 questions (Q26 - Q31).

### 2.3. Statistical analysis

Descriptive statistics, consisting of numerical and graphical techniques for data summarization, were performed and used to analyze the frequency of data distributions on numerical and categorical variables (socio-demographic variables). The Kruskal-Wallis test was used to assess the hypothetical variation in MHPs' attitude from different regions of the country. It is noteworthy that the non-parametric analysis of MHPs' attitude total score (dependent variable) was conducted due to a violation of the assumption of Shapiro-Wilks test for normality ( $p < 0.0001$ ). In addition, the histogram of attitude total score for region reflected negatively skewed graphs that are platykurtic (Figure 1). Northwestern (NW) region had a skewness of -0.427 ( $S.E = 0.254$ ) and a Kurtosis of -0.136 ( $S.E = 0.503$ ), Northeastern (NE) region had a skewness of -0.229 ( $S.E = 0.311$ ) and a kurtosis of 0.333 ( $S.E = 0.613$ ), South-southern (SS) region had a skewness of -0.965 ( $S.E = 0.267$ ) and a kurtosis of 0.547 ( $S.E = 0.529$ ) while the Southwestern (SW) region had a skewness of -0.536 ( $S.E = 0.319$ ) and a kurtosis of 0.237 ( $S.E = 0.628$ ) (Figure 1).

Therefore, a rank-based Kruskal-Wallis non-parametric test was conducted to determine if MHPs' attitude total score from four different geopolitical zones (NE, NW, SS and SE zones of Nigeria) would be significantly different. The Kruskal-Wallis test was conducted based on the assumptions that the dependent variable (attitude total score) is measured at an ordinal level and the independent variable (region) consists of four categorical levels, with an independence of observation as shown in Table 2.

Table 2. Test of Normality for Attitude Total Score and Region

Variable (Region)	Shapiro-Wilk	
	df	Statistics
NW	90	0.911***
NE	59	0.879***
SS	81	0.859***
SW	56	0.887***

Note. NW=northwestern region, NE= northeastern region, SS= southwestern region, df=degree of freedom, \*\*\* $p < 0.0001$ . (The distribution of the data set was computed a-priori to establish the likelihood to have a normal distribution for the variables, attitude total score and region)

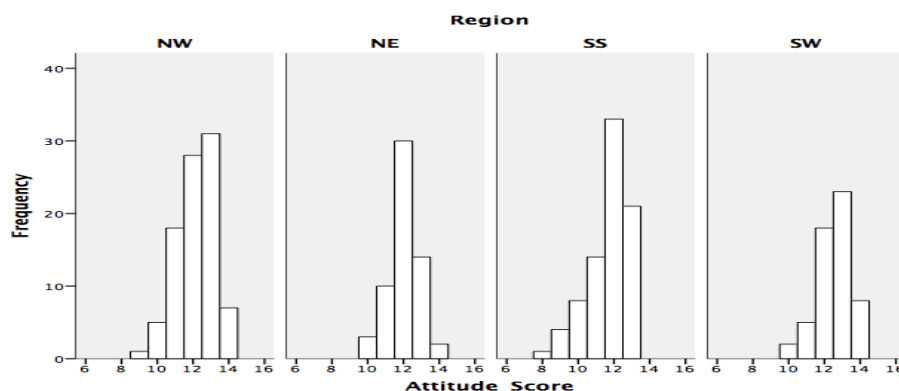


Figure1. Histogram of Attitude Total Score for Different Geopolitical Zones of Nigeria

Graphical representation for the distribution of attitude total score for four geopolitical zones of Nigeria reflects atypical distribution:

SS region: skewness of -0.965 (S.E= 0.267) and a kurtosis of 0.547 (S.E= 0.529),

SW region: skewness of -0.536 (S.E= 0.319) and a kurtosis of 0.237 (S.E= 0.628),

NE region: skewness of -0.229 (S.E= 0.311) and a kurtosis of 0.333 (S.E= 0.613),

NW region: skewness of -0.427 (S.E= 0.254) and a Kurtosis of -0.136 (S.E= 0.503).

#### 2.4. Kruskal-Wallis analysis

This part of the study outlines the main features of the Kruskal- Wallis analysis. For the purpose of this study, a rank-based non-parametric test was used to determine if there are statistically significant differences in region (independent variable of four groups) and attitude of MHPs.

$$H = \frac{12}{n(n+1)} \sum_{i=1}^k \frac{R_i^2}{n_i} - 3(n+1) \quad (1)$$

In this equation,  $n$  = total sample size of MHPs (where  $n$ = 286 valid responses from the 292 survey from the MHPs. Five surveys were removed because they were outliers. Another survey was removed when, after conducting residual diagnostics to validate the model fit, it was taken to be a univariate outlier).  $n_i$  is the sample size of each of the region surveyed (NE= 31.5%, NW= 20.6%, SS= 28.3%, and SW= 19.6%) and  $R_i$  is the sum ranks for each groups.

### 3. RESULTS AND ANALYSIS

Two hundred and ninety two (292) MHPs responded to the survey and a response rate of 81.1% was achieved. However, when evaluating the responses for outliers and missing cases and to ensure the surveys were completed accurately, five surveys were removed. Another survey was removed when, after conducting residual diagnostics to validate the model fit, it was taken to be a univariate outlier (extreme case). Thus, the responses from 286 participants were used for final data analysis.

#### 3.1. Baseline demographic characteristics of the study population

Just over half (51.7% [ $n$ =148]) of the MHPs who responded to the survey were male. The majority (63.3% [ $n$ =181]) was aged between 21 and 40 years. More than 80% ( $n$ =235) of the respondents had undergraduate degree, and 13.3% ( $n$ =38) and 4.5% ( $n$ =13) had obtained either a master's degree or PhD at the time of the survey. Majority of the participants (70.6% [ $n$ =202]) had practiced for less than 16 years. Just over half 58% ( $n$ =166) of the 286 MHPs included for final data analysis were psychiatric nurses, 7% ( $n$ =20) were psychologists, 18.9% ( $n$ =54) were social workers, 2.1% ( $n$ =6) were addiction counselors, 1.4% ( $n$ =4) were peer counselors, and 12.6% ( $n$ =36) were psychiatrists. Of the useable questionnaire, 31.5% ( $n$ =90) were obtained from the northwestern region, 20.6% ( $n$ =59) were filled by MHPs from the northeastern region. Approximately 28% ( $n$ =81) and 19.6% ( $n$ =56) were from the south-south and southwestern region of the country respectively. Frequency of distribution and demographics percentages are presented in Table 3.

The first research question assessed the extent to which Nigerian MHPs' exhibit positive versus negative attitude regarding their professional role identity in tackling illicit drug use in Nigeria. Attitudes of multidisciplinary MHPs were assessed using the substance abuse attitude survey (SAAS) developed by Chappel *et al.* [24]. The validated SAAS adopted in this study consists of 31 questions and responses were based on a four-point Likert scale to avoid neutral responses. All questions were associated with five-attitudinal subscale factors and these include: 1) permissiveness, 2) treatment intervention, 3) non-stereotypes, 4) treatment optimism and 5) non-moralism (Table 1).

MHPs who responded to the survey tended toward the non-permissive and stereotypic spectrum. Almost all the study participants, 93.7% ( $n$ =268,  $M$ =1.94,  $SD$ =0.243) disagreed that marijuana should be legalized and, 89.2% ( $n$ =255,  $M$ =1.89,  $SD$ =0.311) believed that the personal use of drugs should not be legal even in the confines of the homes of individuals use illicit drugs (Table 4). A substantial number of the participants, 86% ( $n$ =246,  $M$ =1.14,  $SD$ =0.347) expressed the opinion that people who smoke will indulge in marijuana use, and that it is almost impossible for addicts to recover because heroin is addicting. Although the participants were quite moralistic, majority, 73.1% ( $n$ =209,  $M$ =1.73,  $SD$ =0.444) were against angry confrontation when treating drug-using clients. Responses on treatment intervention and treatment optimism were fairly homogenous as MHPs displayed positivity toward successful outcome of drug dependence treatment and care as shown in Table 4.

Table 3. Frequencies of Distribution for Respondents' Demographics by Profession

Variables	Psychiatrist % (n=36)	Nurse % (n=166)	Addiction Counselor % (n=6)	Social Worker % (n=54)	Psychologist % (n=20)	Peercounselor % (n=4)	Total % (n=286)
Region							
Northeast (NE)	19.4	38.6	0.0	20.4	10.0	25.0	31.5
Northwest (NW)	47.2	17.5	33.3	9.3	30.0	0.0	20.6
South-South (SS)	19.4	27.7	16.7	31.5	45.0	25.0	28.3
Southwest (SW)	13.9	16.3	50.0	20.4	15.0	50.0	19.6
Age group							
21- 25	0.0	15.7	0.0	5.6	5.0	0.0	10.5
26-30	30.6	19.3	33.3	20.4	25.0	25.0	21.7
31-35	16.7	12.7	16.7	25.9	35.0	50.0	17.8
36-40	22.2	9.0	16.7	18.5	20.0	0.0	13.3
41-45	19.4	14.5	0.0	11.1	10.0	25.0	14.0
>45	11.1	28.9	33.3	18.5	5.0	0.0	22.7
Educ. Attainment							
First Degree	58.3	91.0	83.3	85.2	45.0	75.0	82.2
Masters	11.1	8.4	16.7	13.0	55.0	25.0	13.3
Ph.D.	30.6	0.6	0.0	1.9	0.0	0.0	4.5
Gender							
Male	22.2	58.4	50.0	40.7	30.0	50.0	48.3
Female	77.8	41.6	50.0	59.3	70.0	50.0	51.7
Years of practice							
<5	27.8	29.5	33.3	37.0	50.0	0.0	31.8
5-10	41.7	20.5	0.3	24.1	25.0	75.0	24.5
11-15	22.2	12.0	50.0	9.3	20.0	25.0	14.3
16-20	5.6	9.6	0.0	13.0	5.0	0.0	9.1
>20	2.8	28.3	16.7	16.7	0.0	0.0	20.3

Table 4. Frequency of Responses for Attitude Subgroups of the SAAS

Questions	Strongly Agree	Agree	Strongly Disagree	Disagree
Factor 1: Permissiveness				
1. Marijuana should be legalized	8	10	199	69
2. Personal use of drugs should be legal in the confines of one's home	13	18	130	125
3. Daily use of one marijuana cigarette is not necessarily harmful	9	17	62	198
4. It can be normal for a teenager to experiment with drugs	47	15	149	75
5. Lifelong abstinence is a necessary goal in the treatment of problematic drug use	113	126	17	30
6. Once a person becomes drug-free through treatment, he can never become a social user	32	42	89	123
7. Parents should teach their children how to use drugs	11	90	153	32
Factor 2: Treatment Intervention				
8. Family involvement is a very important part of the treatment of drug addiction	81	199	2	4
9. The best way to treat drug-dependent people is to refer them to a good treatment program	148	131	6	1
10. Group therapy is very important in the treatment of drug addiction	75	195	5	11
11. Urine drug screening can be an important part of treatment of drug misuse	186	58	3	39
12. Long-term outpatient treatment is necessary for the treatment of drug addiction	121	115	14	36
13. Paraprofessional counselors can provide effective treatment for drug misusers	95	122	49	20
Factor 3: Non-Stereotypes				
14. People who use marijuana usually do not respect authority	198	36	4	48
15. Smoking leads to marijuana use, which, in turn leads to hard drugs	96	150	18	22
16. Marijuana use leads to mental illness	196	78	8	4
17. Heroin is so addicting that no one can really recover once he/she becomes an addict	39	102	72	73
18. All heroin use leads to addiction	150	77	16	43
19. Weekend users of drugs will progress to drug misuse	201	52	13	20
20. A hospital is the best place to treat a drug addict	131	68	16	71
21. Recreational drug use precedes drug misuse	157	92	3	34
Factor 4: Treatment Optimism				
22. Drug addiction is a treatable illness	112	153	8	13
23. A drug-dependent person who has relapsed several times probably cannot be treated	62	26	97	101
24. Most drug-dependent persons are unpleasant to work with	199	97	23	57
25. A drug-dependent person cannot be helped until he/she has hit "rock bottom"	41	39	104	102
Factor 5: Non-moralism				

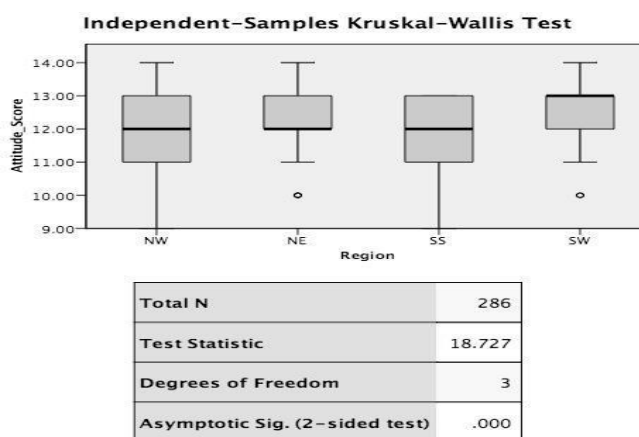
Questions	Strongly Agree	Agree	Strongly Disagree	Disagree
26. Street pushers are the initial source of drugs for young adult	111	109	14	14
27. Drug misuse is so dangerous that it can destroy the youth of our country if not controlled by law	183	95	2	6
28. Angry confrontation is necessary in the treatment of drug addicts	27	50	10	199
29. Drug misusers should only be treated by specialists in the field	144	94	36	12
30. Addiction to drug is associated with a weak will	113	113	18	42
31. Using any hard drug shortens one's life span	108	159	7	12

Research question 2: Is there a regional variation in attitude of multidisciplinary MHPs when handling drug-using populations in Nigeria.  $H_0$ : There will be no significant regional variation in attitude amongst multidisciplinary MHPs when handling drug-using populations in Nigeria. The Kruskal-Wallis hypothesis test summary with a degree of freedom of three ( $df=3$ ) and a  $p$  value of less than 0.05 established significant regional variation in the attitude of multidisciplinary MHPs,  $H(3)=18.727$ ,  $p<0.0001$  (Table 5). Therefore, the null hypothesis was rejected.

Table 5. Kruskal Wallis Hypothesis Test Summary

Null Hypothesis	H	df	p	Decision
The distribution of attitude score is the same across categories of region	18.727	3	.000	Reject the null hypothesis

Note.  $X^2$  = Chi-square,  $df$  = degree of freedom,  $p$  = statistical significance at 95% C.I.



1. The test statistic is adjusted for ties.

Figure 2. A rank-Based Kruskal-Wallis Non-Parametric Test of MHPs' Attitude Total Score

The rank-based kruskal-Wallis test revealed statistically significant difference in attitude score (attitude of MHPs) within the different geopolitical zones of Nigeria. The distribution of attitude score is therefore, not the same across categories of region

The significant Kruskal Wallis analysis ( $p<0.0001$ ) revealed that at least one of the four regions surveyed stochastically dominates another region; therefore a step-down follow up analysis based on the distribution of attitude total score was conducted.

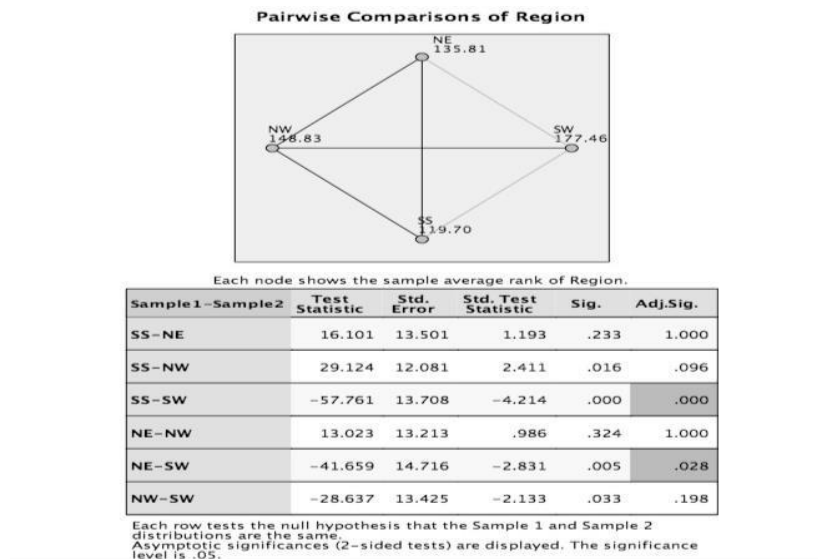


Figure 3. Kruskal-Wallis Step-Down Follow-up Analysis: Pairwise Comparisons of Region Based on the Distribution of Attitude Total Score

The results showed that the geopolitical region wherein the MHPs practice significantly affects their attitude towards the treatment of PWUDs. The step-down follow up analysis further revealed significant changes as you move from the SS and NE to the SW region of the country. Step-down follow-up analysis revealed that the distribution of attitude total score varies significantly between the South-south and the southwestern region ( $p < 0.0001$ ). There was also a significant variation in attitude between MHPs living in the northeastern and southwestern region of the country ( $p < 0.028$ ) (Figure 3).

#### 4. DISCUSSION

In this study, MHPs tended towards the non-permissive and stereotypic spectrum as almost all the study participants disagreed to legalizing marijuana and expressed the fact that it's abnormal for a teenager to experiment with drugs. The response from the study participants is in line with the studies conducted by Kelleher *et al.* [25] and Kalebka *et al.* [1] amongst healthcare practitioners in different emergency centers, as majority of the respondents in their study disagreed to legalization of marijuana. The MHPs that responded to the survey reiterated the importance of life-long abstinence and this is in line with the publications of the National Institute on Drug Abuse (NIDA), which advocates extended abstinence as a requirement for sustained drug recovery, due to increase in the odds of recovery from addiction after an extended period of abstinence [26].

Participants maintained a stereotypic principle of conduct as majority agreed that individuals who smoke would eventually use hard drugs while those that indulge in the use of marijuana would not respect authority. Numerous studies have established negative stereotypic attitudes towards individuals that misuse substance [27-29] and consequently reported lower regard and unwillingness to provide services to this population group. In addition to these opinions, almost all the respondents believe that marijuana use will lead to mental illness. This is in line with several studies that have established association of marijuana use with the risk of affective or psychotic mental health outcomes [30-32]. Research conducted by Galisky *et al.* [33] demonstrated the activation of stereotypic behavior and its strong effects on subtle overt behavior and hostile intent. Findings from their study established the importance of developing healthy bond to reduce prejudice and stereotyping. As described by Goldstein *et al.* [34], the ability to understand individuals' feelings, intentions, thoughts and motivations is embedded in perspective taking, which in turn can reduce the negativity of stereotypic attitude.

Majority of the respondents expressed the importance of controlling drug use by law because the use of drugs could totally ruin the lives of youths and pointed to the fact that street pushers expose young people to drug use. Although the respondents exhibited a high degree of moral conservatism and associated addiction to drugs as weak will, they disagreed to angry confrontation when treating individuals that misuse substances. This is in line with the brief intervention guidelines, motivating young adults towards substance abuse treatment and care as described by Miller *et al.* [35]. Research conducted by Vauclair *et al.* [36] established that moralistic attitudes displayed by individuals could be based on the discourse of a community



or a particular group that appraise themselves as been right or wrong based on social obligations, roles and interpersonal duties. These researchers explored the influence of cultural values against the backdrop of moral attitudes and demonstrated that individual moral attitudes, as expressed by MHPs in this study, could be due to several cultural 'embeddedness' [36].

Although there's a notable absence of empirical studies that have explored regional variation in attitudes of MHPs towards service provision to drug using populations, this current study established statistical significant regional variation in the attitudes of multidisciplinary MHPs towards non-moralism, treatment optimism, non-stereotypes, permissiveness and treatment interventions as measured by the SAAS when handling drug-using populations in Nigeria. Step-down follow up analysis, revealed that the distribution of attitude total score vary significantly between the South-southern and southwestern region. There was also a significant variation in attitude between MHPs living in the southwestern and northeastern region of Nigeria.

It can be argued that variations in attitudes based on structural systems within which MHPs work as barriers to optimum care and treatment is probably not peculiar to Nigeria. Todd *et al.* [37] established regional variation in service structures and treatment approaches as a major barrier that affects optimal care delivery to clients that presents with mental health disorders and coexisting substance use in New Zealand. The researchers pointed out structural deficits and uncoordinated treatment and care for individuals with coexisting disorders as barriers to optimum care [37]. Chu *et al.* [38] reiterated the importance of regional factors such as geographical variation and differences in healthcare settings as essential to comprehensively and accurately describe healthcare professionals' attitudes towards substance abuse and related disorders.

## 5. CONCLUSION

This study emphasizes the impact of regional variations on attitude based on possible different structural systems and treatment approaches in service delivery. A holistic approach towards standardization of drug dependence treatment and care that takes into consideration cultural differences, diverse religious and ethnic mix predominating in the different geopolitical zones of the country should therefore be implemented in order to foster the reintegration and rehabilitation of this population group into the main stream society. Lastly, drug dependence treatment, related interventions and policies should be targeted at reducing stereotypic attitude and stigmatization of drug-using populations that will translate into improved overall mental and physical wellbeing of individuals that presents with drug-related disorders.

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