

# DEVELOPMENT AND VALIDATION OF CHRISTIAN MINISTERS PSYCHOPATHOLOGICAL SCALE (CMPS)

## Abstract

This paper describes the development and validation of a Christian Ministers Psychopathological Scale to facilitate early diagnosis of mental health challenges among Christian Ministers especially in Nigeria. The study was a cross sectional design to develop and validate a scale called Christian Ministers Psychopathological (CMPS). The research work was carried out in four stages, namely item generation stage where a total of 124 items were generated from literature and concerns raised from a focused group discussion among Christian ministers with Pentecostal affiliation, these concerns are perceived as possible predictors of mental health challenges among the ministers. Using content validity and expert assessments in the second stage the 124 items was reduced to 38, which was administered to fifty-two (52) ministers within Ede community in Osun State. Refinement through an Exploratory Factor Analysis and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity (BTS) to measure factorability was the third stage of this work. The fourth stage was Scale validation. Four hundred and fifty-six Christian ministers (456) responded to the 15-item online version of (CMPS) and Depression Anxiety and Stress Scale (DASS-14) respectively across Nigeria. The observed KMO measure was 0.47 and a significant sphericity test was observed ( $X^2=1258.495$ ,  $df= .703$ ,  $p = .000$ ). The Principal Component Analysis extracted ten (10) components from items whose eigenvalues exceeded 1. All the 15 items extracted from the PCA were within the very good discrimination values. The CMPS has a Cronbach's alpha of 0.79. Concurrent validity coefficient of ( $r=.368$ ,  $p=.035$ ); was observed between CMPS and DASS-14. Authors conclude that the CMPS is gender-sensitive, has acceptable psychometric properties and is recommended as a diagnostic tool for assessing psychopathological symptoms among Christian ministers.

**Comment [S1]:** Is the subject from Ede of Osun state or Nigeria?

**Keywords:** Scale Development and validation, Psychopathological symptoms, Christian Ministers

## 1. Introduction

Mental illness is becoming a major health concern in Nigeria with recent statistics of one in every four Nigerian, [1]. Those committed to a religious cause are not exempted from this major concern as depression, loneliness and anxiety are becoming recurring health issues even among Christian ministers. In the research report by Lifeway it was reported that 23% of pastors or Christian ministers had personal struggles with mental health, of this proportion about 49% of these are not willing to talk about it to their congregation [2].

There is no denying of the fact that Christian ministers like others in the service or care giving industry face stressful situations and may consequently have serious psychological problems. The demands placed on pastors by themselves and others, put pastors at far greater risk for depression and other mental health challenges than individuals with other occupation. A study comparing the level of depression among various groups United States reported 11.1% among the clergy as against 5.5% which was the national average, this higher incidence of depression and other mental health challenges has to do with the stress associated with the ministerial work. [3]. In another report, by Schaefer Institute in 2013, it was reported that nothing less than 1,700 pastors leave ministry each month as a result of mental health issues such as depression, burnout, for being overworked. The stress that ministers undergo is enormous, they are expected most of the time to show outstanding and exemplary leadership, the congregants want to see an unusual level of compassion exuding from them all the time. They are to be ever ready to give inspiring messages, offer prayers and words of encouragement over and over, without consideration for whatever they are passing through even at their individual family level [4]. There is so much dependence on religious bodies, spiritual houses and ministers particularly in developing countries; the reason for this

**Comment [S2]:** Kindly rewrite the abstract to add the thrust of the study, reduce the research method and add more findings

**Comment [S3]:** The key word is either only three words or the 'and' should place at last but one word. Eg scale development, validation, psychopathological symptoms and Christian ministers: which will make it four words.

may not be un connected with the failure of governments to provide the necessary social amenities and infrastructure for the populace. The people therefore look for spiritual intervention for most of their problems and challenges and the leadership of these religious organizations particularly in Christianity who are called minsters are therefore overburdened and have to interface with the people even when they are having their own share of the challenges. It is therefore very important that if they are going to provide quality service in any area of need of the people, they must at least be psychologically balanced to do so. The effect of these enormous burden of work on the ministers in addition to affecting their psychological health, it also affects affect their relationships at work and at the family level.

**Comment [S4]:** The point is not captured in the sentence.

Many Christian organizations in developing countries do not place serious attention on the importance of psychological or mental health status of their frontline work force; recently many casualties have been reported among ministers on active service. A few instances of ministers who slumped on duty have been reported [6]. Several reasons may be adduced for this but it is possible that some of these events may have been averted if closer attention is being given to the psychological health of the ministers. Also, there are several reports of actions and characters that are quite unhealthy that some ministers have displayed that may possibly suggest that such ministers have mental health challenges, instances of corporal punishment been given to members of the congregation and inflicting of body injuries and having to burn members and their belongings with fire for any offence whatsoever [7], cases like these calls for closer examination of the psychological health profiles of such ministers. These extremes of behaviour and actions cannot be compared with several others which other members under the leadership of such organizations may have suffered but which were not given publicity possibly because they are viewed as normal spiritual treatments for the situations or challenges, they complained of.

Concerted efforts must be made to reach out to religious organizations on the importance of a balanced psychological health for those who relate with the people but more importantly is the need to focus on those being recruited to be trained as future workforce (trainee ministers). Emphasis is usually only on their educational qualifications and confirmation of the call of God on the applicants. There is a need to deliberately assess the psychological health of those seeking opportunity to become ministers, this will further help to improve the quality of services that they will give; if only those who are psychologically balanced are selected. Beyond this, effort should be put in place to assess from time to time the mental health profiles of ministers as some ministers had abandoned their assignment temporarily or permanently because of visible or underlying psychopathologies [8]. Some of the common mental health challenges of the Christian ministers are stress, depression and anxiety [3], resulting from marital and occupational issues. Christian ministers have been reported to be at a higher risk of depression than people in other occupations [3]. As it is with many other professions, anxiety disorder results from work related problems [9] which Christian clerics are not exempted from.

**Comment [S5]:** This seems to be like recommendation. Such vital point are not properly place in the work. Work on it.

### 1.1 Justification of the study

With the development of this scale early diagnosis of psychopathological symptoms particularly among Christian ministers will be enhanced and this may in a way reduce the incidence of Mental health conditions particularly in Nigeria with a present report of one in every four, that is about 25% in a population of over 200 million people [1], this is a major concern to all.

One of the categories of occupation in the care giving or service profession are pastors or Christian ministers. The nature and the demands of the work placed on the ministers by themselves and others put them at far greater risk for depression and other mental health challenges than individuals with other occupations, according to recent study [3].

The CMPS would also provide medium of data collection on psychopathological symptoms among Christian ministers and help in solving the challenge of dearth of data for this condition in Nigeria and similar socio-cultural settings. More importantly is the need for an indigenous scale to assess

**Comment [S6]:** This phrase, will be suitable when is place at the beginning of the sentence.

psychopathological symptoms with considerations for unique socio-cultural elements that affect Nigerians.

## 2. Materials and Methods

### 2.1 Study Design

This was a cross sectional study that involved four steps to generate and refine items, exploratory factor analysis(EFA) and validation of the instrument. The study was conducted in Ede, Osun State, south west Nigeria. Only fifty-two participants out of eighty-six Christian ministers within the area indicated their willingness to participate in the study and returned the instrument sent to them. The four thematic areas employed in the development of the scale are those perceived to be critical to the life of the Christian ministers and the discharge of his duties and those highlighted by focus group discussion among ministers, these are; personal, occupational, marital and relational.

The 124 initial items of the CMPS were subjected to a face assessment and expert judgment. The experts (N= 7) were required to respond with a "YES" or "NO" to each of the items to indicate which to include in the scale. Items with percentage score of  $\geq 70\%$  were accepted while those less than 70% were rejected. 38 had a percentage score of  $\geq 70\%$  and were accepted for the final scale while 86 were rejected and therefore dropped. The 38 items accepted had a  $\geq 70\%$ . To reduce the data to a smaller set of summary variables and explore the underlying theoretical structure of psychological health, the initial 38 items of the CMPS were also subjected to An Exploratory Factor Analysis (EFA). Factors with eigenvalues  $>1$  were extracted at the first stage of EFA. Next, the statistics for factors with eigenvalues  $> 1$  were scrutinized. Stevens (2009) recommended 0.40 as the least factor loading. Items having loadings of less than 0.45 were deleted to improve the CMPS's interpretability. The different plausible factor solutions were evaluated considering the items' content and the proportional construct of interest.

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### 2.2. The setting and participants

The study was conducted in Ede town, Osun State Nigeria, among Christian ministers with pastoral oversights over congregation in the same town. The inclusion criteria were Christian ministers, who have been in ministry for more than five (5) years and willingness to participate in the study. The exclusion criteria for this study were free-lance ministers, who are not overseeing any congregation, with numbers of years in ministry less than five years and with no willingness to participate in the study. A purposive sample of Eighty (80) participants were selected for this study out of which only fifty-two (52) agreed to participate. The participants comprised of thirty-nine males and thirteen females aged between 21 and 64 (Male-39; Female-13) were administered. The participants' ages ranged between 21 and 64 years (Mean= 44.6250; S.D = 7.0364. 2 of the participants are single, while 1 widowed, 49 are married. 10 are Full Pastors, 23 are AP, 14 are Deacons, while 5 are unordained.

A fresh sample of four hundred and fifty-six (456) Christian ministers comprising of one hundred and eighty-four males and two hundred and seventy-two females, were purposively selected across the six geo-political zones of Nigeria, was used to determine the psychometric properties of the 15-item CMPS. The same inclusion criteria were used.

**Comment [S8]:** If AP mean associate pastor, please state it clearly.

### 2.3 Data collection

Data collection was done through administration of instruments on participants and they were given opportunity to fill the instruments and return when completed however some instruments were returned without been filled. The Google form versions of the CMPS and DASS-14 were used to collect data from the four hundred and fifty-six participants.

**Comment [S9]:** It seem two or multiple data collection method was use but only Google form is clearly stated.

### 2.4 Data Analysis

When data is analyzed, it becomes manageable, meaningful and better organized (21).The data were analyzed using SPSS 23 pack.

### 3.Results

#### 3.1 Exploratory Factor Analysis

According to Pallant [10], the Bartlett's Test of Sphericity (BTS) should be significant ( $p < 0.05$ ), and the Kaiser-Meyer-Olkin (KMO) index should have a range of 0 to 1, with 0.06 defined as the minimum value for adequate factor analysis. The results of the tests are shown in Table 1 below.

**Table 1.** Summary of Kaiser-Meyer-Olkin (KMO) and Bartlett's Test Sphericity (BTS) on the factorability of the 15-Item measure for Christian Ministers Psychopathological Scale (CMPS)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.47
Approx. Chi-Square		1258.495
BTS	Df	703
	Sig.	.000

Table 1 indicated that the KMO measure of sampling adequacy was .47, and it is within the recommended range of 0 to 1. The BTS was significant ( $X^2=1258.495$ ,  $df=703$ ,  $p=.000$ ). Therefore, the results support the correlation matrix's factorability, and the Principal Components Analysis (PCA) was conducted. The principal component extraction method's test indicated ten components extracted with eigenvalues  $> 1$ , and the summary is presented below in Table 2

**Component Matrix**

	Component									
	1	2	3	4	5	6	7	8	9	10
F7	.722									
F30	.717									
F9	.689									
F22	.670									
F19	.640									
F20	.632									
F23	.621									
F31	.620						.444			
F27	.617									
F26	.609									
F15	.600									
F18	.600									
F16	.581			.424						
F11	.574									
F8	.573									
F33	.573									
F21	.566									
F6	.557			.546						
F32	.555									
F34	.550									
F29	.547		-.422							
F28	.542									
F3	.509				-.431					
F25	.506				.414					
F4	.476							.416		
F13		.696								
F10	.580	.625								
F14	.487	.623								
F2	.404	.539								

F12	.478	.505								
F5	.467		-.581							
F35	.272		.513	.455						
F38	.392		.480	-.405				.405		
F37	.447	.329	.449							
F17	.514			.545						
F1	.404	.414			.431					
F36	.430			.441		.550				
F24	.528					-.533				
%	30.191	11.463	7.778	6.760	4.607	4.323	4.060	3.511	3.160	2.817
Eigenvalue	11.472	4.356	2.956	2.569	1.751	1.643	1.543	1.334	1.021	1.070

**Table 2**  
**Principal**  
**compon**  
**ent matrix**  
**of the**  
**CMPS**

**Table 2 :Extraction Method: Principal Component Analysis.**  
**a. 10 components extracted.**

Table 2 summarizes principal component matrix analysis showing extracted ten components with eigenvalues above 1 for the 38-Item measure for CMPS. The loading of the 38 items under the ten components is presented in Table 2. The 10 components extracted summarized in Table 3 were because the items loaded on these 10 components with eigenvalues exceeding 1. The eigenvalues of the 10 components range between 11.472 to 1.070, with a percentage ranging from 30.191 to 2.817.

However, only one dimension was retained as items in the other nine components either loaded more than once, rendering them complex structures or standalone items. The eigenvalues of the included component explained a total of 30.19% of the total variance.

### 3.2 The Measure of Reliability of CMPS.

Values of the corrected item/total correlations (point-biserial) were used to indicate discriminations in the items of CMPS. Values between 0 and 0.19 indicate that an item is not discriminating well. Values between 0.2 and 0.39 indicate good discrimination. In contrast, values 0.4 and above indicate very good discrimination. As observed in Table 3, all the 15 items extracted from the PCA were within the very good discrimination values.

**Table 3. Item – Total Statistics of CMPS**

Reliability Statistics					
Cronbach's Alpha		N of Items			
.79		15			
Item-Total Statistics					
Items of CMPS		Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I experience shaking in my body that I can't explain.		23.8750	79.035	.718	.873
I lose my patience easily		23.5250	78.974	.494	.876
I get quickly agitated on issues		23.7250	77.743	.632	.872
I enjoy withdrawing from the crowd all the time		22.7750	75.512	.416	.881
I talk more to myself.		22.9250	72.584	.496	.878
I talk more because people don't understand spiritual things.		22.9750	74.948	.455	.879
I have noticed my short temper		23.1500	74.849	.509	.876
My partner has noticed/complained about my reduced interest in sex		23.7750	77.358	.606	.872
I feel very tired when it comes to sex		23.5250	77.487	.555	.874
I have challenges when it comes to meeting the needs of the congregation		22.7000	71.703	.568	.874
I know many people are against my ministerial activities.		23.7500	75.321	.621	.871

I know I may end up poor or unable to meet my needs.	23.8250	78.199	.583	.874
I feel worried during transfer over the welfare of my spouse	23.6500	71.823	.678	.867
I feel worried during transfer over the welfare of my children	23.5500	72.049	.620	.870
People are envious of my achievements in ministry.	23.6750	76.892	.599	.872

### 3.3 Reliability Coefficient of the 15 Item CMPS

In other to determine the reliability and verify the internal consistency of the items of the CMPS, Cronbach's alpha (or alpha coefficient), Spearman-Brown coefficient, and Guttman Split-Half coefficient were used.

The internal consistency of CMPS among the Nigerian sample revealed a Cronbach coefficient ( $\alpha$ ) of .79, a Spearman-Brown coefficient of .78, and Guttman Split-Half coefficient of .78.

### 3.4 The Measure of Validity of the CMPS.

Making use of the concurrent validity technique, CMPS was validated Depression, Anxiety and Stress Scale (DASS) [11].

The result shows that there is a significant positive correlation between CMPS and DASS ( $r = .368$ ,  $p = .035$ ). This finding made (CMPS) valid as a diagnostic tool for measuring psychopathological symptoms among the Christian ministers in general Nigerian population.

### 3.5 Norm for CMPS

The 95% confidence interval (CI) was used to determine the cutoff points for CMPS. The derived CI based on a sample of 184 male participants was between a range of 34.4 and 40.6. On the other hand, the derived CI for females based on 272 samples was between a range of 40.3 and 46.8. The mean plus one standard deviation of  $\geq 58.87$  and  $\geq 70.63$  was considered the cutoff points (norm) for the male and female samples. Scores above the norm implied emotion dysregulation. This is summarized in Table 5.

Table 4. 95% confidence interval of cutoff point determination for CMPS by gender

	Individual Male	Individual Female
Margin of error	3.09	3.22
Sample size	184	272
Sample mean	37.5	43.5
Standard deviation	21.369	27.130
95% confidence interval	37.5 (95% CI 34.4 to 40.6)	43.5368 (95% CI 40.3 to 46.8)
Cut off	$\geq 58.87$	$\geq 70.63$

## 4. Discussions

This study is a development and validation of Christian Ministers Psychopathological Scale (CMPS). The scale measures behavioural disorders that may precipitate psychological symptoms among Christian ministers. In scale creation, [12] proposed a two-stage strategy. The first step included generating an initial pool, and the second stage involving validation (evaluation of the instruments item performance).

The diagnostic and statistical manual of mental disorders (DSM-5) and the International Classifications of Diseases (ICD10) were used to review clinical aspects of common conditions identified with Christian ministers such as (Depression and anxiety) [13, 14]. The generation of items relating to the agreed themes resulted in 124 items used for scale purification purposes. The ability of CMPS to measure opinions, beliefs, and attitudes, a 5-point Likert scale was utilized. In other words, each CMPS item is a

declarative statement hence the decision to employ a Likert answer format [15].

The purification of CMPS was done using a combination of reliability analysis and EFA, as proposed by Flynn and Percy [16] and Pecheux and Derbaix [17]. A team of specialists checked the content validity of the initial items generated by the authors. According to [18], content validity represents current knowledge in the construct of interest. It is also a vital sign of an instrument's validity and may give insight into viability and practicability of an instrument [19].

This research exercise on CMPS development afforded the opportunity to analyze its validity and reliability. Cronbach's alpha was 0.79 and item-total correlation ranged from 0.41 to 0.71. This finding implies a good item inter-relatedness, unidimensionality, and homogeneity of the construct [18, 20] among the Nigerian population. To put it another way, Cronbach's alpha, Spearman-Brown coefficient, and Guttman Split-Half coefficient scores were not too high to make some items redundant [21, 22].

In conclusion, the high alpha score indicates that CMPS has a high level of reliability. The CMPS was verified using the concurrent validity approach, as [23] advised. A standardized scale, DASS-14 for measuring depression, anxiety and stress in the general population, was positively linked with CMPS. This tool is useful and suitable for measuring psychopathological symptoms among Christian Ministers within the Nigerian population, in Nigeria and other climes with similar socio-cultural circumstances, based on its exploratory factor analysis and acceptable psychometric qualities.

## 5. Conclusion

The CMPS is 15-item scale with a single factor created by subjecting an initial 124 items generated through, expert appraisal (content validity) of the initial pool of items, and expository factor analysis for item purification. Internal consistency (reliability coefficient) of the CMPS items is acceptable. DASS-14 had strong positive correlations with CMPS, indicating a satisfactory validity coefficient.

CMPS is gender-sensitive, as the 95% Confidence Interval (CI) revealed that male participants had a lower cutoff point than female participants. It is therefore recommended as a diagnostic tool for assessing psychopathological symptoms among Christian Ministers in Nigeria and other countries with similar socio-cultural situations.

## Limitations of the study

This study was carried out within the context of the Nigerian population's, a distinct psychosociocultural environment. A scale re-validation, is therefore necessary before using this scale on other populations and generalizing the findings of this study on other populations with distinct social-cultural traits must be addressed with caution.

## Ethical Consideration

This study relied on human subjects for its investigation, to this extent the Helsinki Declaration was followed in terms of research ethics for human beings. The research purpose was assessed by Redeemer's University's Internal Research Ethics Committee, which advised protocols. The ethical requirements for this type of research are not applicable (National Code of Health Research Ethics; Nigerian National Health Research Ethics Committee) (NHREC). Section B, item A. <http://www.nhrec.net/nhrec/NCHRE10.pdf>. Participants' consent was obtained before the

**Comment [S10]:** Consider add more recommendations such as captured in the last paragraph of the introduction.

**Comment [S11]:** Not in harmony with the journal in-text citation method.



administration of the instruments. Participation was voluntary, confidentiality was assured, and the participants were free to leave at any stage of the study

#### COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

**Comment [S12]:** Kindly read the work and make some necessary correction. There are many grammatical mistakes.

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