



## Development And Validation of Redeemer's University Psychological Distress Questionnaire (Rupdq)

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### **Abstract**

The Redeemer's University Psychological Distress Questionnaire (RUPDQ), a fourteen-item diagnostic instrument, was validated among residents of Osogbo/Owode Ede community, Osun State, Nigeria. An initial set of thirty items for the Redeemer's University Psychological Distress Questionnaire (RUPDQ) were created based on the clinical features of psychological distress in both the DSM and ICD, as well as a review of theories of psychological distress. After that, the items were reviewed by ten experts, eight clinical psychologists, one developmental psychologist, and one industrial/organizational psychologist with at least ten years of expertise in the field. A Yes/No nominal scale's Content Validity Ratio (CVR) was used to assess the items. Using the 70% item inclusion, 28 items were retained while the remaining two items were discarded. The 28 PDQ items were subjected to an Exploratory Factor Analysis (EFA). The first step of the EFA procedure involved extracting factors with eigenvalues greater than one. The sampling adequacy KMO value, as indicated by Table 1, was .80, falling within the recommended range of 0 to 1. There was a significant BTS ( $X^2 = 7748.07$ ,  $df = 378$ ,  $p = .000$ ). Consequently, the Principal Components Analysis (PCA) was performed, and the outcomes confirmed that the correlation matrix was factorable. Seven components were identified with eigenvalues  $> 1$  according to the main component extraction method's test. The results of the study showed that the 14-item PDQ had good internal consistency and validity scores to measure psychological distress. The Psychological Distress Questionnaire is reliable and valid when used with Nigerian people, according to this study.

**Keywords:** Psychological distress, development, validation, Nigerians.



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## **Introduction**

Psychologists and provider groups dealing with mental health issues must find reliable and easy-to-use measures of therapy success as patient outcomes become more and more important. Concise symptom assessments that are now in use, such as the Beck Depression Inventory (Beck et al., 1996), have limited application in clinical settings that treat patients with a range of diseases since they are typically disorder-specific. Stress, anxiety, and depression symptoms that are not particular are frequently linked to psychological distress (Sun et al., 2021). Prior research indicates that a number of variables may increase the likelihood of experiencing psychological distress. These include unhealthy lifestyles like alcoholism (Li et al., 2020), smoking (Ranjit et al., 2019), and psychoactive substance use (Olasubomi et al., 2024), low levels of job satisfaction (Faragher et al., 2003), and a lack of social and emotional support (Kendler et al., 2005).

Women are more likely than men to experience psychological stress, depression, and anxiety, according to earlier research conducted in Western nations (Markkula et al., 2015; Viertiö et al., 2021). Social, psychological, and biological risk factors can all have an impact on the gender gap (Seekles et al., 2020). Roles in society can vary, so can expectations for men and women. This highlights the necessities for an indigenous scale to assess psychological distress in Nigerians, since the majority of the nation's standardized psychological distress measures are imported and, at most, validated by Nigerian authors before application. Nigerians possess unique sociocultural components, something that these imported scales typically overlook. In light of this history, the author set out to develop and assess an indigenous version of the Psychological Distress Questionnaire.

It might be difficult to identify psychological discomfort in medical professionals since they are frequently under time pressure to give their patients the best care possible. This has definitely increased the need for easy-to-use, understandable, repeatable, trustworthy, and efficient screening technologies. The Redeemer's University Psychological Distress Questionnaire (RUPDQ), a fourteen-item diagnostic instrument, was validated among residents of Osogbo/Owode Ede community, Osun State, Nigeria. In order to gauge the degree of psychological



distress symptoms in clinical and research settings, the fourteen-item Psychological Distress Questionnaire (PDQ) was developed. According to Naragon-Graney (2019), a standardized anxiety diagnostic tool is required to detect psychological distress among Nigerians, as the country's citizens are increasingly experiencing psychological distress resulting from frustration, poverty, unemployment, insurgencies, and insecurity. This will lead to a more accurate statistics and beneficial policy recommendations.

### **Justification**

In public health, population surveys, epidemiological research, and, ultimately, clinical trials and intervention studies, psychological distress is frequently utilized as an indicator for problems in mental health of the general public (Ranjit et al., 2019). Despite its high frequency and potentially dangerous effects—such as a decreased quality of life, a host of physical symptoms, maladaptive personality traits, and an increased risk of dying from cardiovascular, cerebrovascular, and suicide causes psychological distress has not received much attention as a mental health issue (Viertiö et al., 2021; Markkula et al., 2015).

Effective therapy has been shown to be significantly hampered by inaccurate or nonexistent assessment (Negi et al., 2019). People who experience psychological distress often receive insufficient diagnosis and/or treatment (Naragon-Graney, 2019). To get over these obstacles, there's a need for a valid, and reliable screening tool for psychological distress. To assess the level of psychological distress symptoms in clinical and research settings, the 14-item Redeemer's University Psychological Distress Questionnaire (RUPDQ) was developed.

To evaluate psychological distress among Nigerians, an indigenous scale is required because the most popular standardized psychological distress scales in the country are imported and, at most, validated by Nigerian authors before being utilized. Nigerians place a high value on distinctive sociocultural elements, which these imported scales usually ignore. Given this context, the authors set out to develop and validate an indigenous version of the Redeemer's University Psychological Distress Questionnaire (RUPDQ).

### **Research Design**

For this study, a cross-sectional research design was used. A primary reason for adopting this design was because it allows the researcher to collect the research data at a single period of time among residents of Osogbo/Owode- Ede community, Osun State, Nigeria.



### **Study setting**

This study was carried out among residents of Osogbo/Owode Ede community, Osun State, South-Western Nigeria.

### **Sample Size Determination**

The total population of residents of Osogbo/Owode Ede community, Osun State are estimated to be five thousand (5, 000). The table provided by Glenn (1992) for sample size determination was used as the basis for the sample size computation. A population sample size of 370 was determined using a 95% confidence level,  $\pm 5\%$  precision levels. The Psychological Distress Questionnaire (PDQ) was established as a psychometric feature assessment, and an Exploratory Factor Analysis (EFA) was conducted with a sample size of 400 willing participants to account for attrition.

### **Item Generation for Redeemer's University Psychological Distress Questionnaire (RUPDQ)**

An initial set of thirty items for the Redeemer's University Psychological Distress Questionnaire (RUPDQ) were created based on the clinical features of psychological distress in both the DSM and ICD, as well as a review of theories of psychological distress. After then, the items were reviewed by ten experts, eight clinical psychologists, one developmental psychologist, and one industrial/organizational psychologist with at least ten years of expertise in the field.

The expert technique is suitable for content validity when paired with a thorough identification process, which is the rationale behind using the face validity method (Nunnally, 1978). A Yes/No nominal scale's Content Validity Ratio (CVR) was used to assess the items. The researcher simply totaled the Yes and No answers for each item (question) to get the percentages of items that are up to 70% in order to examine the data collected using a Yes/No scale. Using the 70% item inclusion, 28 items were retained while the remaining two items were discarded. This process resulted in a final version of 28 valid items used for item refinement.

### **Item Refinement**

The 28 PDQ items were subjected to an Exploratory Factor Analysis (EFA). The first step of the EFA procedure involved extracting factors with eigenvalues larger than one. After then, the statistics for factors



with eigenvalues larger than one were examined. The lowest factor loading of 0.40 was suggested by Stevens (2009).

### **Participants**

A cross-sectional technique was used to purposively sample four hundred (400) residents (132 male and 268 female) from the population of Owode-Ede community, Ede, Osun State, Nigeria. The age range was between 21-60 (Mean = 2.03; SD = .90). The demographic characteristics of respondents based on marital status revealed that 66%, 22.3%, 10.3% and 1.5% were married, unmarried, single parent and others respectively.

### **Inclusion/ Exclusion Criteria**

The inclusion and exclusion criteria were only met by residents who were physically present in the Owode-Ede community. It was hoped that this inclusion would yield reliable study results by taking into consideration the possibility of response mistakes resulting from people who were not present when the instrument was given. Furthermore, the study only included residents who consented to fill out and give the researcher the questionnaires. This inclusion criterion allowed the researcher to ensure that all possible participants were aware of the goals of the study and encouraged to give honest responses.

### **Study Instruments**

The participants completed the Kessler Psychological Distress Scale (K10) developed by Kessler et al., (2003) and the Redeemer's University Psychological Distress Questionnaire (RUPDQ). The K10 was rated on a five-point Likert scale. The K10 scale involves 10 questions about emotional states each with a five-level response scale 'All the Time' to 'None of the Time'. The measure can be used as a brief screen to identify levels of distress. The tool can be given to patients to complete, or alternatively the questions can be read to the patient by the practitioner.

### **Statistical analysis**

The data was analyzed using SPSS version 26, a statistical package for the social sciences. Reliability analysis was used to evaluate Cronbach's alpha, and Pearson correlation analysis was used to determine the concurrent validity of the scale that was being developed.



### Exploratory Factor Analysis

In order for factor analysis to be considered acceptable, it is necessary that the Bartlett's Test of Sphericity (BTS) be significant ( $p < 0.05$ ) and have a Kaiser-Meyer-Olkin (KMO) index range of 0 to 1, with a minimum value of 0.06 for sufficient factor analysis, according to Pallant (2005). The tests' results 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 28-item measure for the Redeemer's University Psychological Distress Questionnaire (RUPDQ)*

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.80
	Approx. Chi-Square	7748.07
Bartlett's Test of Sphericity	df	378
	Sig.	.000

**Source:** Authors' fieldwork

The sampling adequacy KMO value, as indicated by Table 1, was .80, falling within the recommended range of 0 to 1. There was a significant BTS ( $\chi^2 = 7748.07$ ,  $df = 378$ ,  $p = .000$ ). Consequently, the Principal Components Analysis (PCA) was performed, and the outcomes confirmed that the correlation matrix was factorable. Seven components were identified with eigenvalues  $> 1$  according to the main component extraction method's test; the summary is shown in Table 2 below.

Table 2 Total variance explained

Components	Eigenvalues	% of variance	Cumulative %
1	10.270	36.678	36.678
2	2.619	9.352	46.030
3	1.815	6.482	52.513
4	1.664	5.942	58.454
5	1.378	4.923	63.377
6	1.171	4.183	67.560
7	1.007	3.595	71.155

**Source:** Authors' fieldwork

Table 3 presents an overview of the principal component matrix analysis of the 28-item PDQ measure, highlighting seven extracted components with eigenvalues greater than one. As indicated in Table 2, the eigenvalues factor one to seven ranges from (10.270 and 1.007). The scree plot in Figure 1 further revealed the breaking point after the



first component of the entire components of the analysis. The scree plot analysis in Figure 1 retained only one component while items in the other four components were loaded many times, resulting in stand-alone or complex structures.

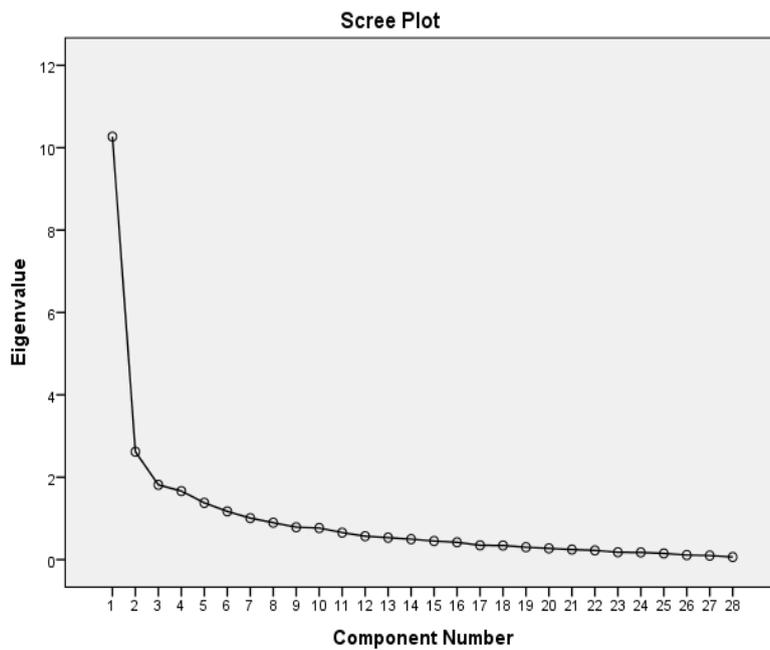


Figure 1: Scree Plot Showing 20 Items of Redeemer's University Psychological Distress Questionnaire (RUPDQ)

Table 3 provides a summary of the seven components that were extracted, as each of the items put on these components had an eigenvalue greater than 1. The lowest factor loading of .40 while items loading that are less than .40 on the RUPDQ items were eliminated as suggested by Streiner&Norman (2008).

Items	Component					
	1	2	3	4	5	6
I am usually sad and unhappy		.535	.492	.438		
I often lose interests in things that I used to love	.478				.430	
I feel that life isn't worthwhile	.514	.450				
I feel like there is nothing to look forward to	.451				.471	
My sleep pattern hasn't been consistent	.455		.434			.482
I sometimes feel I should end my life	.608					
I usually feel helpless	.682					
I feel bad about my appearance	.696					
I feel sad about how others see me	.763					
I have experienced significant weight loss	.551	-.556				
I cry over almost everything	.724					
My appetite is poor	.531	-.525				
I prefer keeping to myself	.550		.444			
I usually have difficulties deciding for myself, nearly every day	.611					
I do not feel much better even when something good happens	.663					
I easily worry about almost everything	.597			-.462		
I often fear that something awful may happen	.599					
I feel unusually restless and tensed	.768					
I have difficulty concentrating because of worry	.693					
I do feel that I might lose control of myself	.654					
I over react in all situations	.564					-.584
I feel headaches and difficulty in sleeping	.691	-.509				
I worry too much about different things	.722					
I have trouble relaxing my nerves	.608					
I am not able to stop or control worrying	.595			-.455		
I lose pleasure in all, or almost all, activities.	.587					
I feel significant loss of appetite & weight loss	.527	-.456				
I do not feel much better, even temporarily, when something good happens	.548			-.426		

Note: Extraction Method: Principal Component Analysis.  
\*7 components extracted.

**Table 3**  
*Component Matrix of 28 Items of the Redeemer's University Psychological Distress Questionnaire (RUPDQ)*  
**Source:** Authors' fieldwork

Table 3 indicated that 14 out of the 28-items of the Redeemer's University Psychological Distress Questionnaire (RUPDQ) loaded best in the first component while items in the other four components were loaded many times, resulting in stand-alone or complex structures. Hence, Confirmatory Factor Analysis was used further to narrow the scale into a uni-dimensional scale, leaving only fourteen (14) items on the scale.

**Reliability of the Redeemer's University Psychological Distress Questionnaire (RUPDQ)**

To determine the psychometric properties of the 14-item Redeemer's University Psychological Distress Questionnaire (RUPDQ), a fresh sample

of three hundred (300) residents of Owode-Ede community, Ede, Osun State, Nigeria was purposively selected (Male = 155; Female = 145). The demographic characteristics of respondents based on the residency revealed that 64.7% were urban, 33% were suburban while 2.3% of the participants were rural. The psychometric properties of the Redeemer's University Psychological Distress Questionnaire (RUPDQ) were determined using the data collected.

The Redeemer's University Psychological Distress Questionnaire (RUPDQ) items showed discriminatory values according to the Corrected Item-Total Correlations (Point-Biserial) method. Values ranging from 0 to 0.19 represent inadequate discrimination, 0.2 to 0.39 suggest adequate discrimination, and  $> 0.4$  indicate exceptionally good discrimination. The items on the Psychological Distress Scale, as shown in Table 4, are all greater than 0.4, suggesting excellent discrimination and the absence of any unclear or perplexing questions for participants.

**Table 4**

<i>Item - Total Statistics of Psychological Distress Scale</i>				
Reliability Statistics				
Cronbach's Alpha	N of Items			
.80	14			
Item-Total Statistics				
	Scale Mean if Scale Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I sometimes feel I should end my life	30.52	56.479	.216	.800
I usually feel helpless	30.73	56.532	.211	.800
I feel bad about my appearance	30.61	54.850	.336	.792
I feel sad about how others see me	31.06	54.916	.396	.788
I cry over almost everything	30.36	51.085	.536	.776
I usually have difficulties deciding for myself, nearly everyday	29.53	51.049	.431	.785
I do not feel much better even when something good happens	30.34	54.321	.316	.794
I often fear that something awful may happen	30.23	53.576	.373	.789
I feel unusually restless and tensed	30.23	51.963	.475	.781
I have difficulty concentrating because of worry	30.13	51.691	.514	.778
I do feel that I might lose control of myself	30.51	53.653	.482	.782
I worry too much about different things	30.17	49.889	.604	.769
I have trouble relaxing my nerves	30.09	50.078	.523	.776
I lose pleasure in all, or almost all, activities.	30.34	50.681	.427	.786

Source: Authors' fieldwork

Table 4 also displays the item-total statistics and Cronbach's alpha for the 14-items that make up the Redeemer's University Psychological



Distress Questionnaire (RUPDQ). The scale had a 0.80 reliability coefficient.

**Concurrent Validity of Redeemer's University Psychological Distress Questionnaire (RUPDQ)**

The Psychological Distress Questionnaire (PDQ) was validated using the concurrent validity technique, which also established the PDQ's relationship to the Kessler Psychological Distress Scale (K10) developed by Kessler et al., (2003). PDQ and K10 showed significant positive correlation coefficient ( $r = .60, p = .000$ ). This finding made Redeemer's University Psychological Distress Questionnaire (RUPDQ) valid as a diagnostic tool for measuring psychological distress among the Nigerian population.

**Table 5**  
*The 95% Confidence Interval of cutoff point determination for RUPDQ by gender*

	Group Sample	Individual Male	Individual Female
Margin of Error	0.88	1.06	1.40
Sample size	300	155	145
Sample mean	32.68	33.84	31.45
Standard deviation	7.77	6.73	8.59
95% Confidence Interval	32.68 (95% CI 31.8 to 33.6)	33.84 (95% CI 32.8 to 34.9)	31.45 (95% CI 30.1 to 32.9)
Cut off point	≥ 40	≥ 41	≥ 40

**Source:** Authors' fieldwork

The RUPDQ cut-off points are presented in Table 5. To find it, the 95% Confidence Interval (CI) approach was applied. The group population mean, with 95% confidence was based on 300 samples (32.68 [95% CI 31.8 to 33.6]); 155 samples (33.84 [95% CI 32.8 to 34.9]) provided a mean for the male population between 32.8 to 34.9, and 145 samples (31.45 [95% CI 30.1 to 32.9]) produced a mean for the female population between 30.1 to 32.9 respectively. For each group and gender category, the mean score plus one standard deviation was used to calculate the cut-off points. Based on the results, the group, male and female samples' corresponding cut-off points (norms) were  $\geq 40$ ,  $\geq 41$ , and  $\geq 40$ .

**Discussions**

The purpose of this research is to develop and validate the Redeemer's University Psychological Distress Questionnaire (RUPDQ).



The scale measures the severity of symptoms of psychological distress in situations such as clinical and research settings. Using the DSM-5 and ICD-10, the clinical characteristics of psychological distress were examined. The creation of the thirty items that were utilized for scale purification came from the development of items pertinent to the agreed-upon issues. Since the Psychological Distress Questionnaire was used to measure opinions, beliefs, and attitudes, a five-point Likert scale was used. To be explicit, all RUPDQ questions are declarative statements, which are why the Likert response format was chosen (DeVellis, 2003). EFA was combined with reliability analysis to purify the Psychological Distress Questionnaire, as recommended by Flynn and Pearcy (2001). Experts in the field confirmed that the initial items the authors wrote had valid content. According to Streiner et al. (2015), content validity in the pertinent concept represents what is known at the moment. According to DeVon (2007), it also shows the instrument's viability and practicability, which is an important sign of its validity.

The development of the Redeemer's University Psychological Distress Questionnaire (RUPDQ) paved the way for additional study into the validity and reliability of the instrument. The Cronbach's alpha was 0.90. This finding implies that the Nigerian populace has a fairly uniform and one-dimensional grasp of the construct (Streiner, 2003). The high alpha score so indicates that the PDQ is quite dependable. The Psychological Distress Questionnaire was validated using the concurrent validity technique, as suggested by Cronbach and Meehl (1955). There was a strong correlation found between the PDQ and one standardized measure of psychological distress in the general population. The Psychological Distress Questionnaire is a useful tool for measuring psychological distress in adults and adolescents in Nigeria and other nations with comparable sociocultural contexts, according to its strong psychometric qualities and EFA.

### **Conclusion and recommendations**

The results of the study showed that the 14-item PDQ had good internal consistency and validity scores to measure psychological distress. The Psychological Distress Questionnaire is reliable and valid when used with Nigerian people, according to this study. The scale is gender-sensitive and can be self-administered both individually and in group research, according to norms for the group and individual (male and female) samples.

It is therefore recommended as a diagnostic tool for psychological distress in adults and adolescents in therapeutic settings. It can also be used to assess psychological distress in group research settings, which helps to collect data on psychological distress among the general



population and aid in the establishment of policy in the field of mental healthcare. Since the Psychological Distress Questionnaire was created with the Nigerian sociocultural context in mind, it is recommended that it be utilized not only in Nigeria but also in other countries with similar sociocultural circumstances.

### **Limitations of the study**

The Nigerian population's distinct psycho-sociocultural context served as the backdrop for this study. Without doing a scale re-validation, generalizing the findings and using this scale to other groups with different sociocultural traits should be done carefully.

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## **Appendix I**

Final Draft of Redeemer's University Psychological Distress Questionnaire (RUPDQ)

Instruction

Please select the response that best describes the way you felt or behaved in the past few weeks

S/N	Items	None of the time	A little of the time	Some of the time	Most of the time	All of the time
1	I sometimes feel I should end my life	1	2	3	4	5
2	I usually feel helpless	1	2	3	4	5
3	I feel bad about my appearance	1	2	3	4	5
4	I feel sad about how others see me	1	2	3	4	5
5	I cry over almost everything	1	2	3	4	5
6	I usually have difficulties deciding for myself, nearly everyday	1	2	3	4	5
7	I do not feel much better even when something good happens	1	2	3	4	5
8	I often fear that something awful may happen	1	2	3	4	5
9	I feel unusually restless and tensed	1	2	3	4	5
10	I have difficulty concentrating because of worry	1	2	3	4	5
11	I do feel that I might lose control of myself	1	2	3	4	5
12	I worry too much about different things	1	2	3	4	5
13	I have trouble relaxing my nerves	1	2	3	4	5
14	I lose pleasure in all, or almost all, activities.	1	2	3	4	5

**Scoring:**

Sum the scores of all items.

Individual Scores (male and female) 0 = 14 implies absence of Psychological Distress (PD).

Male >14 – 40 implies mild to moderate PD. >40 - 70 implies moderate to severe PD

Female: >14 – 39 implies mild – moderate PD. >39 - 70 implies moderate to severe PD.