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EXPLORATION OF RELIABILITY AND VALIDITY OF PSYCHOLOGICAL COUNSELLING NEED SCALE (PCNS) FOR USE AMONG SECONDARY LEVEL STUDENTS OF UTTARAKHAND

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Abstract

The aim of this study is to explore reliability and validity of Psychological Counseling Need Scale (PCNS) for use among secondary level students of uttarakhand. This PCNS is developed by Chouhan and Arora published by Manasvi Agra. The scale consists of 25 items with 5 point ratings. This scale was administered on 200 secondary level students of Raipur block, Dehradun. The data obtained was subjected to reliability analysis and factorial analysis. The internal Consistency reliability was found to be 0.54 which shows poor internal consistency and Split half Reliability was also found to be 0.54 which shows poor level. Factor analysis was used to assess validity in which 9 factors were obtained that explained 55.81% of variance. It meant that data varied under influence of some other factors, which are not covered by the items of PCNS. It indicates relatively low construct validity of PCNS. Hence, it is suggested to use this tool very cautiously in the perspective of uttarakhand, where socio-cultural situations are different from rest of the country.

***Keywords**: Psychological Counseling Need Scale (PCNS), reliability, validity, Factor analysis.*

Introduction

Counselling is the service offered to the individual who is undergoing a problem and needs professional help to overcome it. The problem keeps him disturbed and under tension. Unless solved, his development is hampered or stunted. Counselling is a specialized service requiring training in personality development and handling exceptional groups of individuals. Student's life is getting complex day by day. Guidance and counselling is needed for students for optimization of achievement and adjustment in life situations. There is a need of guidance and counselling services in educational, professional, social, health, ethical, personal areas.(Roy,2011)

Kumari,J (2004) has cited Smith(1955) as defining Counselling as "a process in which the counsellor assists the counselee to make interpretations of facts relating to a choice; plan, or adjustments which he needs to make" and, Rogers (1952) describing Counselling as "a process by which the structure of the self is relaxed in the safety of the client's relationship with the therapist." Counselling involves a lot of time to unfold the problem of a client and to gain an insight into the complex situation. Counselling techniques involves active listening, emphatic understanding, releasing the unfold feelings by the client in front of counsellor.(Roy,2011)

There is a great need of tools for measuring counselling need of students. There are many tools available to measure the counselling need of students. Psychological Counselling Need Scale is among one of them. The norms of tool are established for adolescents (13 to 18 years), both boys and girls, of Udaipur, Rajasthan. In order to use this tool in prespective of students of Uttarakhand, researcher felt it is necessary to explore its reliability and validity in his settings.

Cheung D(2007), Ozturk M.A(2011) and Ugulu I.(2013) has proposed confirmatory factor analysis for testing reliability and validity of attitude scales and found that their tools can serve as valuable tool to assess the attitudes of related population.

The Psychological Counselling Need Scale (PCNS) was developed by Chouhan and Arora by administering it to 50 boys and 50 girls(100 adolescents) in the age group 13 to 18 years from the city of Udaipur, Rajasthan. The reliability and validity are given as 0.90 and 0.82 respectively. The researcher was initially interested to use this tool for a specific study on Students of Uttarakhand. However, after going through the manual, researcher found certain inconsistencies in the reported validity and reliability of PCNS. This motivated the researcher to assess its validity and reliability in Uttarakhand where Socio-cultural situations are totally different. Hence, researcher decided to explore its validity and reliability for use among students of Uttarakhand.

Objectives of the study

The main objectives of study are as follow:-

To assess the internal consistency reliability of items included in PCNS.

To test the Split Half Reliability of PCNS.

To factor analyze the responses obtained on PCNS with a view to assess the validity of PCNS.

Research Questions

1 What is Internal Consistency of items included in PCNS?

2 What is Split Half Reliability of PCNS?

3 How many factors underlie in PCNS and how much variance is explained by these factors?

4 Is the tool reliable and valid for use among secondary level students of Uttarakhand?

Research design

For proposed study, the method used by the investigator is descriptive -- survey method. The population consisted of all adolescents studying in classes 9th to 12th in Government Inter Colleges of Raipur block, district Dehradun. Dehradun is one of the district among 13 districts of Uttarakhand. In Dehradun there are six blocks namely Chakrata, Doiwala, Raipur, Kalsi, Sahaspur and Vikasnagar. In Raipur block there are total 25 government inter colleges, of which 17 schools are boys inter colleges and 8 schools are girls inter colleges. Among these schools, 3 boys and 3 girls schools were selected randomly and cluster sampling was used for gathering the data from students. Data was collected from 200 students.

The research tool under study

In the present study, Psychological Counseling Need scale developed by Chouhan and Arora is the tool under study. This is an attitude scale for measuring the psychological counselling need of adolescents. This is five point(Always, Often, Sometimes, Rarely, Never) rating scale and consists 25 questions. The tool is developed by applying it to a sample of 100 adolescent boys and girls, aged 13-18 years.It is mentioned in manual that for

reliability, split half method was used and the split half reliability coefficient was found to be 0.90, Validity of the research tool was calculated by product moment method and was found to be 0.82.

Statistical Procedure

Keeping in mind research questions, Item analysis, Cronbach's alpha formula, Pearson Product Moment formula, Spearman Brown's Formula and Factor Analysis were used.

Data Interpretation and Findings

Item Analysis- Item analysis was done to select the appropriate items. The table of item analysis is given below:-

Table 1- Results of Item Analysis

Questions	Sum of Scores of Higher group	Sum of Scores of Lower group	t-value	Result
1	185	133	4.06	SELECTED
2	140	133	0.71	REJECTED
3	166	135	2.94	SELECTED
4	185	164	1.56	REJECTED
5	100	55	4.11	SELECTED
6	175	110	5.79	SELECTED
7	139	74	5.30	SELECTED
8	156	120	3.63	SELECTED
9	170	153	1.17	REJECTED
10	185	143	3.40	SELECTED
11	166	130	2.16	SELECTED
12	197	201	0.26	REJECTED
13	201	116	7.45	SELECTED
14	198	137	5.05	SELECTED
15	198	121	5.42	SELECTED
16	174	86	6.97	SELECTED

17	223	189	2.72	SELECTED
18	232	206	1.96	REJECTED
19	169	121	3.78	SELECTED
20	103	101	0.16	REJECTED
21	191	107	7.78	SELECTED
22	163	116	3.36	SELECTED
23	196	124	5.99	SELECTED
24	191	96	6.67	SELECTED
25	208	131	6.49	SELECTED

After item analysis, it was found that out of 25 items, 6 items were invalid, namely item no. 2,4,9,12,18 and 20. It is interesting to note that out of 25, there are only 4 negative statements (item no. 2,9,12,20) in PCNS and all of them were found invalid in item analysis.

Table 2-Result of Internal Consistency of items included in PCNS

Total number of questions (k)	∑σi2	σt	σt2	α
25	40.26	9.197	84.585	0.54

σi {\displaystyle \sigma _{X}^{2}}= {\displaystyle \sigma _{Y_{i}}^{2}}standard deviation of students score for ith question

σt = standard deviation of the observed total test scores

By using Cronbach's α formula, Cronbach's α value was found to be 0.54. From the Table of Internal Consistency, the value 0.54 lies in between 0.6 and 0.5, which falls under poor category. Hence the internal consistency of items included in PCNS is poor. It means items included in PCNS are poorly related to each other.

Table 3-Result of Split Half Reliability of PCNS

r (Pearson product moment correlation coefficient)	rsb (spearman brown formula reliability)
0.37	0.54

By using Pearson Product Moment Correlation formula, obtained r value is 0.37. Split half reliability was calculated by Spearman Brown formula and was found to be 0.54, which shows that PCNS has poor split half reliability.

Factor Analysis

An exploratory factor analysis (EFA) was performed to examine the structure of PCNS with 25 items. In order to determine the structure of the scale, principal components factor analysis method was applied to scores obtained from answers given by 200 students and varimax rotation method was used. The suitability of the data for factor analysis can be tested by Kaiser-Mayer-Olkin (KMO) coefficient and Barlett Sphericity Test (Ugulu, 2011). KMO value was found to be 0.642 which was of mediocre level (according to classification given by Hutcheson and Sofroniou,1999) and acceptable in principal components factor analysis. Another indicator of the strength of the relationship among variables is Bartlett's test of sphericity. In this study, the observed significance level was $p < 0.001$. It is concluded that the strength of the relationship among variables was strong as per George and Mallery, 2001 as quoted in (Ugulu,2013).

The exploratory factor analysis was performed on 25 items. First of all, a principle components factor analysis was used on all the data in order to extract the appropriate number of factors. The initial solution revealed that 9 factors had an eigen value greater than 1. These factors altogether explained 55.811% of variance of total variance.

Table 4 gives the Eigen values and total variance explained. Table 5 shows the different factor loadings on items. As seen in Table 5, there are nine factors in the PCNS. Factor 1 explained 8.615% of total variance, factor 2 explained 6.566% of total variance, factor 3 explained 6.293% of total variance, factor 4 explained 6.261% of total variance factor 5 explained 6.164% of total variance, factor 6 explained 5.953% of total variance, factor 7 explained 5.653% of total variance, factor 8 explained 5.332% of total variance and factor 9 explained 4.974% of total variance. These 9 factors explained 55.811% of total variance. After the factor numbers of PCNS were determined, the 25 items were distributed among nine factors. Factor 1 includes 5 items, item no. 24,5,21,7 and 13. Factor 2 includes 3 items, item no. 6, 8 and 10. Factor 3 includes 2 items, item no. 9 and 11. Factor 4 includes 4 items, item no. 14,15,17 and 23.Factor 5 includes 3 items, item no.

1,2 and 4. Factor 6 includes 2 items, item no. 12 and 19. Factor 7 includes 2 items, item no. 18 and 25. Factor 8 includes 2 items, item no. 3 and 20. Factor 9 includes 2 items, item no. 22 and 16. Hence, from all the analysis done above it may be concluded that tool has poor reliability and 9 factors

Table 4- Eigen Values and Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.125	12.502	12.502	3.125	12.502	12.502	2.154	8.615	8.615
2	2.015	8.061	20.563	2.015	8.061	20.563	1.642	6.566	15.181
3	1.600	6.399	26.962	1.600	6.399	26.962	1.573	6.293	21.474
4	1.415	5.658	32.620	1.415	5.658	32.620	1.565	6.261	27.735
5	1.352	5.408	38.028	1.352	5.408	38.028	1.541	6.164	33.899
6	1.221	4.885	42.913	1.221	4.885	42.913	1.488	5.953	39.852
7	1.137	4.547	47.460	1.137	4.547	47.460	1.413	5.653	45.506
8	1.054	4.217	51.677	1.054	4.217	51.677	1.333	5.332	50.837
9	1.033	4.134	55.811	1.033	4.134	55.811	1.243	4.974	55.811
10	.976	3.904	59.715						
11	.936	3.746	63.461						
12	.900	3.598	67.059						
13	.879	3.514	70.573						
14	.829	3.315	73.888						
15	.801	3.203	77.091						
16	.745	2.981	80.072						
17	.707	2.829	82.901						
18	.648	2.590	85.491						
19	.628	2.514	88.005						
20	.589	2.355	90.360						
21	.568	2.270	92.630						
22	.519	2.077	94.707						
23	.515	2.060	96.767						
24	.437	1.747	98.513						
25	.372	1.487	100.000						

Extraction Method: Principal Component Analysis.

are involved in scale which explain only 55.811% variance in the data.

Table 5 – Factor Loading on items

	Component								
	1	2	3	4	5	6	7	8	9
Item no. 24	.620	-.006	.182	.130	-.172	.086	.278	-.196	.149
Item no. 5	.608	.264	-.033	-.005	-.160	.086	-.113	.008	.076
Item no. 21	.571	.112	-.196	-.104	.237	.076	.133	.211	-.113
Item no. 7	.547	-.144	-.112	.136	.171	.107	-.254	.185	.158
Item no. 13	.495	.092	.258	.255	.167	.099	.038	-.070	-.154
Item no. 6	.063	.713	-.019	.151	.060	-.026	.024	.007	.077
Item no. 8	.252	.471	.121	-.269	.449	.041	-.044	-.238	.120
Item no. 10	.104	.464	.026	.097	-.036	-.194	.143	.453	.065
Item no. 11	.014	.078	.689	.032	-.017	.026	-.057	.088	-.028
Item no. 9	.038	.086	-.562	-.028	-.033	-.145	-.120	.087	-.149
Item no. 15	.161	-.028	.160	.677	-.057	.011	.091	-.099	.257
Item no. 23	.124	.332	-.254	.571	-.006	.202	-.111	-.007	-.095

Item no. 17	-.340	.324	.191	.463	.328	.030	.112	-.041	.049
Item no. 14	.217	.215	.253	.300	-.139	-.074	.270	.278	-.081
Item no. 1	.128	.122	-.229	.016	.650	.039	-.016	-.125	.112
Item no. 2	.139	.029	-.243	.021	-.536	.050	-.234	-.144	.032
Item no. 4	.087	-.249	.336	.320	.436	-.136	-.210	.075	-.321
Item no. 19	.129	-.114	-.007	.202	.145	.778	-.001	-.027	-.092
Item no. 12	-.127	-.026	-.259	.087	.182	-.699	.015	-.062	-.116
Item no. 18	-.039	-.023	.052	.041	.100	-.060	.777	-.114	-.048
Item no. 25	.162	.335	-.063	-.010	.016	.399	.492	.080	-.028
Item no. 3	.024	.003	.061	-.062	.015	.112	-.089	.748	-.031
Item no. 20	-.007	-.195	-.276	-.241	-.103	-.090	-.220	.433	.330
Item no. 22	.031	.192	.160	.111	.048	-.036	-.116	-.016	.758
Item no. 16	.374	-.173	-.144	.176	.240	.190	.282	.176	.444

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization.

Conclusions

It can be concluded that result of Reliability test shows that items are poorly correlated with each other. Calculated Split half reliability is also poor. Result of Factor analysis shows that 9 factors are involved in PCNS which explain only a relatively small variance in the data. It also indicates that the data also varies under influence of other factors which are not covered by the items of PCNS. Therefore, the scale may be said to possess relatively low construct validity. After getting the results, it is recommended to use this tool very cautiously in the prespective of Uttarakhand, where socio-cultural situations are different from other parts of the country.

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