ISSN 2348-3156 (Print)
International Journal of Social Science and Humanities Research ISSN 2348-3164 (online)
Vol. 4, Issue 1, pp: (281-291), Month: January - March 2016, Available at: www.researchpublish.com

Evaluation of Internal Consistency and Factor Structure of General Health Questionnaire (GHQ-28) on a South Indian Sample

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Abstract: **The aim of this study was to assess the reliability and to evaluate the factor structure of General Health Questionnaire (GHQ-28) with reference to the inclusion and exclusion criteria in subscales. 260 university and college students responded for the General Health Questionnaire -28 and Split-half Reliability and Cronbach's Alpha were used to assess the reliability of the instrument. Factor Structure was assessed using Factor analysis. The results of the study revealed that the instrument is having higher level of Split-Half reliability(0.76) and Good Internal Consistency(a=0.85) The Factor analysis of factor structure revealed that item factors were loaded in to three main factors where those three factor accounted for a cumulative variance of 33.217%, whereby the items belonging to Somatic Symptoms were loaded to the same component (with one item variation), the items belonging to Social Dysfunction and Severe Depression scales were also preserved. But the Items belonging to Anxiety Insomnia subscale were distributed among other subscales, suggesting a possibility of three scales GHQ.**

Keywords: **General Health Questionnaire (GHQ-28), evaluate the factor structure, Split-Half reliability.**

1. INTRODUCTION

The GHQ-28 was developed by Goldberg in 1978 and has since been translated into 38 languages (Sterling, 2011) , over 50 validity studies have been published (Nagyova et.al, 2000) and described in over 700 articles currently listed in the 'Medline' database of medical journals maintained by the National Library of Medicine of the United States (Gibbons, de Arévalo, & Mónico, 2003). Goldberg Describes General Health Questionnaire as a tool designed to be a self administered screening test aimed at detecting psychiatric disorders among respondents in community settings and non- psychiatric clinical settings (Goldberg & Williams, 1988, Gibbons, de Arévalo, & Mónico, 2003). Usually it is assumed that the distribution of psychiatric symptoms in a given population is in a continuum at varying degrees of severity which makes the distinction between "Normals" and "Cases" (Goldberg and Williams, 1988). General Health questionnaire is assessing the probability that a person becoming a psychiatric case. This probability or the "caseness" is usually called as "threshold score" which is determined through the normative data obtained during standardization procedures of the scale. The instrument examines functioning in two main areas, firstly of one's ability to carry out one's usual healthy activities, and secondly of the recent development of subjective symptoms of psychological distress (Goldberg and Williams, 1988).

It has been extensively tested in various cultures and linguistic groups in primary care and other Settings generally showing good validity results (Alhamad & Al-Faris 1998). Quoting Tarnopolsky et al (1979), (Alhamad & Al-Faris 1998) says that the GHQ should be standardized on the population where it is to be applied, because validity coefficients obtained in one setting do not necessarily hold in another.

Several authors have examined the factor structure and other Psychometric properties of the GHQ, but the findings have been diverse and contradictory (Aguado et. al, 2012). For example, Gibbons, de Arévalo, and Mónico (2003) assessed both the factor structure and the reliability of the 28-item scaled version of the General Health Questionnaire (GHQ-28) in a non-clinical population in El Salvador(n=714). A principal components analysis results corresponded closely to the original factor structure, though with a relatively higher inter-correlation found between the resulting scales, especially the 'anxiety and insomnia' and 'somatization' scales. The test-retest and internal consistency measures reached values .70 or higher in each case. Gibbons, de Arévalo, and Mónico (2003) concluded that the findings indicated a remarkable consistency in the factor structure of the GHQ-28with result from other cultural settings, supporting Goldberg's hypothesis of a common language of psychological distress between cultures. But, in the assessment of Slovak version of GHQ, Nagyova (2000) found that though the results indicated that the psychometric qualities of the GHQ-28 in Slovakia are satisfactory. However, when taking into consideration the factor structure of the scale, as identified through Principal Component Analysis, there are several differences. They concluded that At least six out of the twenty eight items appear to fit better to another subscale than originally was found. Here it is noteworthy that thought the contextual differences in Europe are not too much different from the English culture where GHQ was originated, we can assume more deviations(based on the definitions of psychopathology as well as Mental Health) can be seen in the South Asian countries if the GHQ is applied.

Thought the reliability and validity is higher in most of the administrations of GHQ in different cultures, inter scale variations are there indications that the groupings of factor structure are changing according to the contexts in which the instrument is applied. Khan, Shah, khan and Suhail(2013) in a study aimed at determining the reliability and validity of self administered General Health Questionnaire (GHQ: 12) among Pakistani university teachers(N=400) results showed that Inter-Items Correlations ranged from (0.60 to 0.90), similarly the Cronbach alphas also ranged between (0.80) to (0.95), where as inter scale Correlations ranged from (0.52 to 0.90).

Sometimes though the reliability and validity of the studies are congruent with the original research, the way different groups with diverse origin respond to the individual items of the GHQ-28 has varied making it difficult to make between group comparisons. Prady et.al 2013) evaluated the psychometric properties of GHQ-28 in a multi ethnic maternal sample in Bradford, UK. It was found that 17 out of 28 have been related to the each group. So the conclusions made by different studies are contradictory in the responses for the subscales though the instrument carries considerable reliability and validity in General. It indicated that the evaluation of the underlying factor structure in different context is important. Cheung & Spears (1994) stated in their evaluation of Psychometric properties of Cambodian Version of GHQ-28 that though the reliability and concurrent validity is satisfactory the Present Status Examination (PSE) by a psychiatrist on the same sample showed they provided additional information regarding somatic symptoms and anxiety, but not about social dysfunction and depression. This indicates that the representation of factor structure is not consistent across cultures. So the context specific investigation of factorial validity is needed. This idea is further supported by the findings of Bhogale and Jayprakash (1993) who studied Factor structure of the scaled GHQ for an Indian population (N=857). They found through factor analysis using the principal Varimax rotation and Cattell's scree test yielded 4 factors accounting for 46% of the variance. It was also found that multidimensional properties of the GHQ and suggest that the factors that emerge, as well as their salience, differ from culture to culture.

Intergroup comparisons among different samples across cultures in GHQ scores have produced group differences in the factor structure remarkably. Elton, Patton, Weyerer, Diallina and Fichter (1988) administered the 28 item version of the GHQ to 15 years old school girls in London who belong to Greek, Munich and Indian Sub continental nationalities. In Principal Component analysis Varimax rotation produced different components for different groups. Analysis of variance of factor score of PCA produced significant group differences in Overall scores. So, though Goldberg et. al (1997) said There was no tendency for the GHQ to work less efficiently in developing countries, the way the instrument's composition become compatible with the particular context varied considerably. Supporting this idea, the need of context specific validation and other psychometric properties evaluation was shown by Molavi (2002) who studied validity, reliability, and factor structure of the General Health Questionnaire (GHQ-28) on Irani students. The principal component analysis of GHQ-28 responses with oblique rotation showed a 3 factor solution. The Chronbach's alpha and the concurrent validity coefficients between the three scales were also found satisfactory. However, these studies on Psychometric properties of the tool were conducted mainly in Western European countries and the USA. Nevertheless, the number of published articles is remarkably small, i.e. only one or two publications from each country (Nagyova et. al, 2000).

2. METHODS

Research Problem:

The present study was to determine whether the GHQ-28 can be applied as a measure of psychological wellbeing and psychological morbidity also in south Indian Context or whether there are some differences.

Objectives of the present Study:

So the researcher intended to achieve following objectives in this study.

- To assess the reliability of General health Questionnaire-28 in Indian population.
- To evaluate the factor structure of GHQ-28 with reference to the inclusion and exclusion criteria in subscales (to understand whether each item forms same groups according to subscales).

Hypotheses:

Based on the above objectives the researcher hypothesized in this study that,

H_{a1}: The GHQ-28 will show higher Reliability in this sample.

H_{a2}: The GHQ items will group in to same subscales as in the original sample.

Participants:

The study sample was identified using a simple random sampling method, so as to be representative of the overall student population of the undergraduate and postgraduate students in Mysore, India. The sample consisted of the students belonged to both sexes and different socio economic groups. The international students were excluded from the study sample. The total sample consisted of 260 undergraduate and postgraduate students in which the male vs. female, Undergraduate vs. postgraduate students were equally distributed.

Measures:

GHQ has several versions. They are GHQ-60, GHQ-30, GHQ-28 and GHQ-12. The "scaled version" or GHQ-28 is used in the present study. The questionnaire assesses psychiatric "caseness" under four subscales called Somatic Symptoms (Items 1-7), Anxiety/Insomnia(items 8-14), Social Dysfunction(items 15-21) and Severe Depression(items 22-28)(Sterling, 2011). The respondent is provided with four alternative responses. GHQ relies on several methods of scoring too. They include Traditional GHQ method, Likert method, and CGHQ method and modified Likert method. But for the present study, the author adopted the simple Likert method where the four alternative responses can be scored as 0, 1, 2, and 3.

Procedure:

The General Health Questionnaire-28 was administered both in a formal class room situation and outside the class room. The objectives of the study were explained to the respondents and were asked to seek clarification on any concept that was not clear to them. Each respondent received a printed set of questionnaire and the sheet to fill demographic details. Before proceeding in to the questionnaire sections the informed consent was taken. It was assured that the respondent completed the questionnaire within given time limits. The average time taken for filling the questionnaire was 15 minutes. When filling the questionnaire instructions were given at the beginning of the scale.

The researchers ensured that data collected was cleaned before carrying out the analysis. This involved checking unfilled questionnaires. After cleaning, the researcher formulated a coding scheme corresponding to the scoring of the scale, whereby codes were assigned to each likely answer. Data was analyzed using the Statistical Package for Social Sciences (SPSS) version 16. As the score of each item carries same weight or same level of disturbance (the higher the score in each item means higher the psychological distress in that dimension), the data for each item were scored in same direction.

Analyses were conducted in two steps. First, the cronbach's alpha was computed to understand the internal consistency of the instrument and the split half reliabilities were also computed. Second, the correlation matrix approach and factor analysis were used to assess the latent construct's factor loadings.

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3. RESULTS

The first task of the present study was to assess the reliability of the instrument. This involved two phases. The first was to calculate the Split-half Reliability of the instrument and the second was to assess the Internal Consistency. The Split-Half reliability scores are given in the following table.

Table-01

Reliability Statistics

Spearman-Brown Coefficient	Equal Length	.760
	Unequal Length	.760
Guttman Split-Half Coefficient		.755

Table-02

Reliability Statistics

Cronbach's Alpha	N of Items
.846	28

The table-01 shows the Spearman-Brown Coefficients for GHQ-28 scale, where, r=0.760 and the Guttman Split-Half Coefficient=0.755, between the first half and the second half of the scale in a sample of N=260 to whom the instrument was administered.

Then the Cronbach's Alpha was computed to assess the internal consistency of both the whole scale consisting total of items as well as the subscales. Those statistics for the Cronbach's alpha for whole scale are given in the following table-02.

The Cronbach's alpha calculated for the 28 item General health Questionnaire shows that the internal consistency of the items across the whole scale is, *a=0.846.* The item total statistics on how the inclusion of each item accounts for internal consistency of the scale is given in the table-03.

In the table number-03, the third column is the correlation between a particular item and the sum of the rest of the items. The item with highest correlation is shown as item number twelve (12) where the r=0.533. The item numbers 1, 15, 16 and 17 have shown relatively lower correlations with the rest of the items where in item 1(r=0.116), item 15(r=0.177), item 16(0.137) and item 17(r=0.111). Though the item correlations for these items were low, removal of these items doesn't cause a decrease in total Cronbach's Alpha in the scale (as shown in the fourth column of the table), where for item 1(a=847), for item 15(a=846), for item 16(a=847) and for item 17(a=848) were reported as Cronbach's Alphas (if the items were deleted from the scale).

Table-03

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Item01	21.9769	120.123	.116	.847
item02	21.9000	113.658	.419	.839
item03	21.8423	114.643	.374	.841
item04	21.9500	113.121	.456	.838
item05	21.7500	112.482	.431	.839
item06	21.6731	110.792	.500	.836
item07	21.7885	114.638	.363	.841
item08	21.6654	114.208	.339	.842
item09	21.8692	114.863	.370	.841
item10	21.7192	114.156	.376	.841

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item11	21.7000	113.037	.422	.839
item12	21.8000	110.693	.533	.835
item13	21.5692	110.903	.474	.837
item14	21.7731	111.991	.496	.837
item15	21.7769	118.622	.177	.846
item16	21.6462	119.372	.137	.847
item17	21.8346	119.590	.111	.848
item18	21.7923	115.331	.324	.842
item19	21.6615	117.823	.205	.846
item20	21.7731	116.130	.291	.843
item21	21.7500	116.582	.276	.844
item22	22.0962	113.454	.464	.838
item23	21.8731	112.034	.354	.842
item24	21.9192	111.704	.505	.836
item25	21.5962	111.840	.450	.838
item26	21.9654	113.794	.436	.839
item27	22.0192	112.529	.484	.837
item28	21.4154	111.719	.403	.840

The internal consistency of the subscales was also assessed using Cronbach's alpha. The following table shows those Alpha statistics for each subscale.

Table-04

Subscale	Cronbach's Alpha	Number of Items
Somatic Sy:	.672	7
Anxiety-Insomnia	.698	7
Social Dysf:	.542	7
Severe Depression	.743	7

Table-05

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.817
Bartlett's Test of Sphericity	Approx. Chi-Square	1.613E3
	df	378
	Sig.	.000

The above table-04 shows the subscale Cronbach's Alphas for each subscale, where, for Somatic Symptoms (a=0.672), for Anxiety Insomnia (a=0.698), for Social Dysfunction (a=0.542) and for Severe Depression (a=0.743). The highest internal consistency for subscales was reported "Severe Depression".

In evaluation of the factor structure of the GHQ-28 in the present study sample, the sample adequacy for factor analysis was checked using, Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's test of sphericity. The statistics are given in the table-05 shown right above.

The table-05 shows that the KMO is 0.817(in the range of 0-1) and the Barlett's test significance level is, p=0.000. As KMO is above 6, it shows the present sample as an adequate sample for factor analysis. The Barlett's "P" value is below 0.05 which shows a significant sample adequacy.

In the factor analysis, the number of components for the analysis was derived using O' Conner's Parallel Analysis Syntax for raw data. The "Scree plot" derived through parallel analysis is given below.

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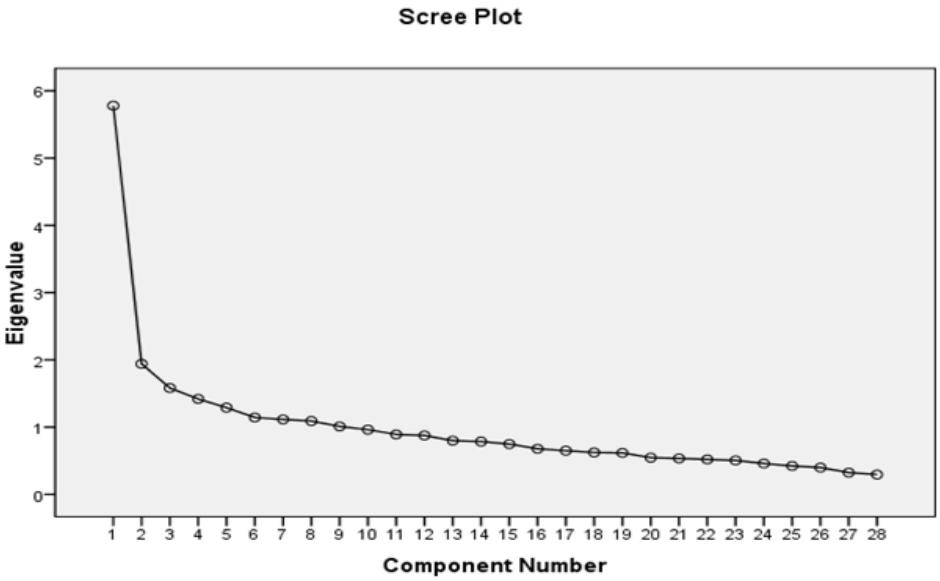

Usually the factors which score above Eigenvalues "1" is taken for factor analysis. It can be seen that the slope of the plot levels out at three factors. The fourth factor was not extracted for factor analysis as it shows slight higher score above the threshold Eigenvalue. The actual factors that were extracted are shown in the above table-06 with their variances accounted for. The factor 01, accounts for 14.120% of the variability in all 28 variables, and Factor 2 accounts for 11.702% of the variability in all 28 variables, as well as Factor 3 accounts for 7.394% of the variability in all 28 variables. The next step was the analysis of Factor rotation which was done using the "Varimax" Rotation Method. The table-07 shows the factor loadings for each variable. The strongest factor loadings for each variable are highlighted with "Bold" font. The items for factor 1 are Item 8, 11,12, 13, 22,23,24,25,26,27, and 28. The items 2, 3, 4,5,6,7,9,10 and 14 are grouped with factor 2. It shows that item 01 is grouped with factor .The other items for factor 3 are item 15-21.

Total Three Factors were extracted.- Table-06

Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.779	20.638	20.638	3.954	14.120	14.120
2	1.941	6.931	27.569	3.277	11.702	25.823
3	1.581	5.647	33.217	2.070	7.394	33.217
4	1.419	5.069	38.286			
5	1.290	4.607	42.893			
6	1.143	4.083	46.976			
7	1.114	3.980	50.956			
8	1.091	3.896	54.853			
9	1.010	3.608	58.461			
10	.962	3.436	61.897			
11	.891	3.184	65.081			
12	.876	3.128	68.209			
13	.799	2.853	71.061			
14	.785	2.805	73.866			
15	.748	2.673	76.539			
16	.678	2.421	78.960			
17	.650	2.320	81.280			

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18	.623	2.224	83.504			
19	.616	2.201	85.706			
20	.546	1.949	87.654			
21	.535	1.909	89.564			
22	.519	1.854	91.418			
23	.505	1.803	93.221			
24	.459	1.638	94.859			
25	.422	1.508	96.367			
26	.398	1.423	97.790			
27	.324	1.156	98.946			
28	.295	1.054	100.000			

Extraction Method: Principal Component Analysis.

Table-07

Rotated Component Matrix[a]

	Component		
	1	2	3
Item01			**.641**
item02	.204	**.566**	
item03	.245	**.365**	.133
item04	.119	**.640**	.151
item05	.178	**.532**	.126
item06	.338	**.504**	
item07	.166	**.515**	
item08	**.319**	.224	
item09	.285	**.353**	
item10	.228	**.433**	
item11	**.441**	.302	
item12	**.553**	.341	
item13	**.596**	.168	
item14	.202	**.596**	.180
item15	.328	-.292	**.513**
item16	-.143	.224	**.401**
item17		-.167	**.591**
item18		.414	**.417**
item19		.190	**.403**
item20		.253	**.411**
item21	.112	.155	**.478**
item22	**.602**	.166	
item23	**.452**	.203	
item24	**.658**	.134	.101
item25	**.559**	.113	.154
item26	**.460**	.291	
item27	**.704**		
item28	**.592**		

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

a. Rotation converged in 6 iterations.

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4. DISCUSSION

At the outset of the present study, the researcher hypothesized that the General health Questionnaire will show higher reliability in the sample drawn. The analysis of Spearman-Brown Coefficient and Gutman Split-Half reliability shows that the reliability score for Spearman-Brown coefficient is r=0.76 and the Guttman Split Half-Reliability as 0.755. This indicates that the General health Questionnaire Carries acceptable level of Reliability across cultures. This higher Split half Reliability is consistent with the findings of Taghavi(2002), Rezaei et. al (2013) and Thabet & Vostanis (2005) where in all studies. The Split-Half reliabilities have been reported as high (above 0.75).

The researcher ran a reliability analysis to assess the internal consistency of the items across the scale. For this, it was shown in the results that the Croanbach's Alpha for the whole scale was reported as, a=0.846. Quoting' George and Mallery (2003), Gliem and Gliem(2003) have provided a rule of thumb for interpreting Cronbach's Alpha. According to them, _ > .9 – Excellent, _ > .8 – Good, _ > .7 – Acceptable, _ > .6 – Questionable, _ > .5 – Poor, and _ < .5 – Unacceptable". So, According to the results of the present study, the Scores on GHQ-28 in this Indian Sample, shows high internal Consistency which falls in the "Good" category and the scale has achieved probably a reasonable goal. This level of internal consistency is in accordance with Nunally's (1978) findings too.

Internal consistency is concerned with the interrelatedness of a sample of test items, whereas homogeneity refers to unidimensionality. A measure is said to be unidimensional if its items measure a single latent trait or construct (Tavakol & Dennick, 2011). It has been well documented that a multidimensional test does not necessary have a lower alpha than a unidimensional test. In this sense, as the internal consistency is good, the results of the present study indicate that the General Health Questionnaire-28 defends the constructs measured across items rather than measuring a single latent construct.

The interpretation of the output of a Cronbach's alpha analysis is determining how each item individually contributes to the reliability of the questionnaire is also important (Hof, 2012). This shows the corrected item correlations for each item and the possibility of increased or decreased level of Alpha of that particular item is deleted. The item numbers 1, 15, 16 and 17 have shown relatively lower correlations with the rest of the items but removal of these items doesn't cause a much difference in the total Alpha in the scale. So it seems it is advisable to retain those items because no researcher may be interested in removing items that doesn't cause much difference to the internal consistency of the scale. The reliability of a scale is heavily dependent on the number of items composing the scale. Even using items with poor internal consistency you can get a reliable scale if your scale is long enough (DeCoster, 2000). As a whole, these Cronbach's Alpha statistics in the preset study is consistent with the findings of Sriram, Chandrashekar, Issac & Shanmugam(1989), Gibbons , de Arévalo, & Mónico(2003), Sterling(2011), Mortazavi et.al(2013) and Saiful & Yousoff(2010). So the researcher has to accept the first alternative hypothesis ($_{Ha}1$) which says that "the GHQ-28 will show higher Reliability in this sample". The subscale Cronbach's Alphas also satisfactory.

When the subscale Cronbach's Alpha was computed all four subscales except Social Dysfunction scale, showed acceptable internal consistency scores. The internal Consistency scores of Severe Depression Scale is the highest among those four. This finding is exactly in accordance with the finding of Cheung and Spears (1994), who reported that "There were satisfactory internal consistencies for the whole scale and the subscales except the C scale". "C" is the Social Dysfunction scale and their Sample was based on a Cambodians living in New Zealand. But, it seems that the reliability scores for each subscale have varied from subscales to scale. The Cronbach's Alphas are not so high for each subscale. This is Contradictory to the research findings of Nagyova et.al(2000) who say that, in their Slovak sample the Cronbach's alpha coefficients of reliability of the subscales vary around 0.82 and the highest is for subscale anxiety/insomnia. Here it shows that the internal consistency of the items was taken separately, not all subscales are compatible to this context.

The second need of the present study was to evaluate the factor structure of the General Health Questionnaire-28. So the second hypothesis was the factor loadings for each variable in GHQ-28 will group in to same subscales as the original study of Goldberg. As the sampling adequacy tests have shown that the sample is adequate to run factor analysis for the present study sample, the factor analysis using "Varimax" rotation has grouped 3 components which are above the "Eigenvalues" 1. These three components have grouped the items in following manner.

Item 2-7 (which are the items of traditional Somatic Symptoms Subscale) have been grouped into Component 2 with highest factor loadings for those items. This indicates that those items fall in to the same subscale as with the original

sample. Item 9, 10 and 14 have also been grouped in to the same factor component indicating that those items (which are the items of traditional Anxiety Insomnia subscale) can be grouped along with somatic symptoms items. Here instead of the item number 1, other three items from the Anxiety Insomnia Subscale has been grouped with the Somatic Symptom subscale where the item number one is left.

The factor analysis has grouped 22-28(which are the items of traditional Severe Depression Scale) into Component 1 indicating those factors group together. Along with that the items, 8, 11, 12 and 13 have been grouped in to this component suggesting the possibility of grouping those items into a similar subscale.

For the component three, the items 15-21(which are the items of traditional Social Dysfunction scale are grouped together, the factor analysis suggested that the item number 1 fits with this scale rather than first scale.

These findings indicate that the individual items of the GHQ-28 can be grouped in to a three component scale rather than a four scaled version. Presence of Subscales: Somatic symptoms, Social Dysfunction and Severe Depression can be traced according to the factor loadings. But the items for subscale: Anxiety Insomnia can be included in either one of the other subscales: Severe Depression and Somatic Symptoms. Almost half of the items belonging to this subscale are loaded to both those subscales. So the researcher has to reject the second hypothesis (H_a2) of the study. The ability to reduce GHQ-28 subscales or items based on factor loadings was previously put forward by Smith et.al (2010). Those ideas are further supported by the finding of the present research. The fact that 8 of the 28 items of the GHQ-28 load significantly onto two components, indicates that the underlying factors are significantly correlated. This is consistent with the ideas of Gibbons, de Arevalo and Monico(2003). This is also consistent with the findings of Nagyova et.al (2000) who say that some of the factors have not been loaded on to the predicted components. For example, first few items belonging to the Somatic Symptoms subscale and some items in the Anxiety Insomnia subscale had not been loaded on to the predicted by those researchers. This has also provided with the similar findings to those of Molavi (2002) who says that three factor structure seems a better fit for GHQ-28. But in contrast to his idea, the items have been loaded to Somatic Symptoms Subscale along with other two instead of loading on to Anxiety Insomnia scale. Also this study showed that the subscales are not fully independent of each other confirming the ideas of Goldberg and Hillier (1979). The study done by Prady et.al (2013) who says that there are variations in the factor loadings depending on the ethnic group is also confirmed by these findings.

But this study provided partially or totally contradictory findings of those done by Thabet & Vostanis (2005) and Kilic et.al (1996) whose study same four factors consistent with the original GHQ-28, Goldberg et.al (1997) whose study says that the GHQ may not function differently in Different contexts, and Mortazavi, Mousavi, Chaman and Khosravi's (2013)research findings.

5. CONCLUSIONS

This study assessed the reliability, mainly the internal consistency and the Factor structure of General Health Qestionaire-28 items version. The findings of the study revealed that the instrument is having higher level of Split-Half reliability and Good Internal Consistency which is measured by Cronbach's Alpha. The Factor analysis of factor structure revealed that item factors were loaded in to three main components where those three factor accounted for a cumulative variance of 33.217%, whereby the items belonging to Somatic Symptoms were loaded to the same component (with one item variation), the items belonging to Social Dysfunction and Severe Depression scales were also preserved. But the Items belonging to Anxiety Insomnia subscale were distributed among other subscales, suggesting a possibility of three scales GHQ.

ACKNOWLEDGEMENT

I am very thankful to Dr.N.L.Srimathi and Iman Askari for their keen interest and enormous support in guiding me.

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