

# Measuring depression for individuals with chronic illness



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The main intend of present study was to develop a reliable self-report indigenous measure of depression in people with chronic illnesses. Early detection of depression may decrease the risk of increment of disease burden and may provide insight for future coping skills to manage diseases in patients with chronic illnesses. Currently used scales for screening depression in Pakistan originated in Western countries. These scales are used as in original version, translated and/or in adaptive version (Naeem, 1990). Regardless of the high reliability and validity of the scales, there have been certain limitations in their capacity to identify depressive symptoms in Pakistani population. That is because of many cultural and regional differences that have an effect on mental disorders. These limitations of presently used Western scales possibly will increase the risk of mislaid symptoms in local population. By keeping these reviews in mind, it becomes visible that there is need to develop a new measure to assess depression in people with chronic illnesses with multivariate psychometric properties. That enables the clinician or researcher to measure the depression and its complicated effects on various chronic illnesses or vice-versa. Therefore this study attempted to develop a culturally receptive scale to measure depression as well as the assessment of validity and reliability of this scale named Depression in Chronic Illnesses Scale (DCIS).

The Depression in Chronic Illnesses Scale is a 31-item, four points rating scale. Results ascertain Depression in Chronic Illnesses Scale as a reliable and valid apparatus with significant psychometric properties such as high internal consistency, test re-test reliability, sufficient convergent validity with other similar constructs and adequate discriminant validity with non-clinical

population. The DCIS require respondents to report feelings that they experienced in last six months. Item number 10, 18, 26 and 31 are an Urdu adaptation of Beck Depression Inventory- (1961).

The DCIS subjected to principal axis factor analysis. Factor analysis is most important method of test development because it provides the dimensionality of the factors and reveals underlying factors of the data (Field 2005; Widaman & Floyed, 1995; Guilford, 1948). Consistency of the factor analysis reliant on the attribute of data that have to be checked its aptness before analyzing, and sample size is one of them. Sizes of the sample may vary according to the requirement (Field, 2005). Sample size of more than 200 cases is sufficient for the factor analysis (Guilford, 1956). Whereas another decisive factor for factor analysis is communalities after extraction will be greater than . 5 (Field 2005). The present study fulfills these requirements (Table 2). Table 2 indicates that most of the items show communalities greater than . 5. To test the sample adequacy and Sphericity, KMO and Bartlett's test was also carried out. The acceptable range of KMO value must be greater than . 5 (Field, 2005). In present study the KMO value is . 8 (Table 1) which falls within the moderate range (Field, 2005) and fulfill the requirement to produce reliable and distinct factors while analyzing. Finally Bartlett's test of Sphericity is also highly significant ( $p < . 001$ ) and indicating that data is suitable for factor analysis

Factor analysis was carried out to estimate the strength of the relationship of individual items with the concepts and to determine the possible essential structures of Depression in Chronic Illnesses Scale. Factor analysis quickly enables to take decision regarding item retention on the basis of good

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indicator of the construct and item deletion on the basis of poor indicator of the construct. After the assessment of decision making for factor analysis, specific criteria has been used that guide factor analytic decision making. That is based on the magnitude of the factor structure loading of one item on a factor opposed to another. When an item loaded on more than one factor the difference between the loadings must be at least .10 and an item needed .30 factors loading to be retained for further analysis (Nunnally, 1978). For the present study table 3 and 4 shows six distinct factors with Eigen Value greater than 1, whereas one strong factor with an eigen value of 11.01 that is explaining 35.5% of the variance in the items. All items showed high loading on factor one ranging from .42 to .79. On the other hand rotation of factors extracted six factors by using Varimax Rotation Method. Though most of the items including items 1 (hopelessness), 2 (sadness), 3 (worthlessness), 4 (feeling of being rejected), 8 (pessimism), 12 (self-criticalness), 22 (hopelessness) are loaded on factor one which fall within the category of negative thinking. While items 5 (loss of energy), 6 (fatigue), 7 (fatigue), 17 (loss of pleasure) and 21 (loss of sleep) are loaded on factor two which is the category of lack of motivation. On the other hand third factor regret feelings comprised of item 9 (past failure), 18 (loss of pleasure) 28 (feeling of punishment) and 29 (loneliness). While item 10 (worry), 11 (self dislike), 14 (hesitant), 15 (lack of confidence), 16 (uncertainty) and 19 (inability to make decision) are loaded on factor four fall within the category of indecisiveness. While item 13 (feebleness), 20 (obsessed thoughts), 25 (crying), 26 (despondent) and 30 (self criticalness) are loaded on Factor five and this category is labeled as helplessness. While item 23 (agitation), 24 (anger), 25 (crying), 27 (loss of appetite) and 31

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(criticalness) are loaded on factor six and fall within the category of irritability. In present study item 25 (crying) loaded on factor five (helplessness) and factor six (irritability) simultaneously because the content of this item related to both factors.

Almost all the item-total correlations of Depression in Chronic Illnesses Scale (Table 6) are highly positive within the suggested range of .30-.70 (Ferketich, 1991). Item number 1, 2, 3, 4, 8, 9, 10, 12, 13, 15, 17, 18, 20, 22, 23, 24, 25, 28, 29, 30 and 31 showed strong positive correlation with the total scores. Their correlations with the total scores ranging between .5 to .7 and considered to be better-quality items for assessing depression in chronically ill patients. Item number 5, 6, 7, 11, 14, 16, 19, 21, 26 and 27 showed moderate positive correlation with the total score. Their correlations with the total scores ranged in between .49- .39. The reasonably high levels of item-total correlation suggest that the items are sufficiently related.

Inter-item correlations of Depression in Chronic Illnesses Scale are also calculated. Result indicates that item 1 (hopelessness) is highly correlated with worthlessness to feeling of being rejected to pessimism to past failures to self criticalness to feebleness to lack of confidence to uncertainty to loss of pleasure to obsessed thoughts to loss of sleep to anger to crying to feeling of punishment to loneliness and to criticalness. Furthermore item 2 (sadness) is significantly correlated with worthlessness to feeling of being rejected to pessimism to past failure to self criticalness to uncertainty to loss of pleasure to obsessed thought hopelessness to agitation to crying to despondent and to feeling of punishment. Item number three worthlessness significantly related to feeling of being rejected to pessimism to past failure to worry to <https://assignbuster.com/measuring-depression-for-individuals-with-chronic-illness/>

uncertainty to loss of pleasure to inability to make decision to obsessed thoughts hopelessness to agitation to anger to crying to feeling of punishment to loneliness to guilt. Item 4 feeling of being rejected is highly correlated with pessimism to past failure to worry to self criticalness to feebleness to lack of confidence to uncertainty to loss of pleasure to feeling of punishment to loneliness. Item 5 loss of energy is related to fatigue to feebleness to loss of pleasure to loss of sleep to feeling of punishment. Item 6 fatigue is highly related to feebleness to loss of pleasure to loss of sleep to feeling of punishment. Item 7 fatigue is highly related to self dislike to feebleness to loss of pleasure to loss of sleep to hopelessness to feeling of punishment. Item 8 is related to past failure significantly related to past failures to worry to self dislike to self criticalness to feebleness to lack of confidence to uncertainty to loss of pleasure to inability to make decisions to obsessed thoughts to hopelessness to agitation to crying to feeling of punishment to loneliness. Item 9 past failures is highly related to worry to self dislike to self criticalness to feebleness to lack of confidence to uncertainty to loss of pleasure to inability to make decisions to obsessed thoughts to loss of sleep to hopelessness to agitation to crying to despondent to loss of appetite to loneliness to feeling of punishment. On the other hand self dislike, self criticalness, hesitant, lack of confidence, uncertainty, loss of pleasure, inability to make decisions, hopelessness, crying, feeling of punishment and loneliness are significantly relates with item 10 worry. Item 11 self dislike relates with hesitant to lack of confidence to loss of pleasure to obsessed thoughts to loss of sleep to hopelessness to agitation to loss of appetite to feeling of punishment. Item 12 self criticalness is highly related to feebleness to hesitant to lack of confidence to uncertainty

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to loss of pleasure to loss of sleep to hopelessness to agitation crying to loss of appetite to feeling of punishment. Item 13 feebleness is highly related with hesitant to lack of pleasure to uncertainty to loss of pleasure to inability to make decision to obsessed thoughts to hopelessness to agitation to anger to crying to despondent to loneliness to feeling of punishment. Item 14 hesitant is significantly related to lack of confidence to uncertainty to loss of pleasure to inability to make decision to hopelessness to agitation to anger to crying to despondent to loneliness. Item 15 lack of confidence is related to uncertainty to loss of pleasure to inability to make decision to hopelessness to agitation anger to crying to loneliness. Item 16 uncertainty is significantly related to loss of pleasure to inability to make decision to crying. Item 17 loss of pleasure is significantly related to inability to make decision to obsessed thoughts to loss of sleep to hopelessness to agitation to anger to crying to despondent to loss of appetite to feeling of punishment to loneliness. Loss of pleasure (item 18) is moderately related to inability to make decision to loss of sleep to hopelessness to agitation to anger to crying to loss of appetite to feeling of punishment to loneliness. Item 19 inability to make decisions are related crying and despondent. Item 20 is highly related to hopelessness to agitation to anger to crying to loneliness to criticalness. Loss of sleep (item 21) is significantly related hopelessness to agitation to anger to loss of appetite to feeling of punishment to self-criticalness. Hopelessness (22) is significantly related to agitation to anger to crying to feeling of punishment despondent to loneliness. Anger is significantly related to crying to feeling of punishment to loneliness. Crying and despondent are more closely linked with self punishment and self-criticalness. Moreover feeling of punishment made its significant link with loneliness and self-

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criticalness. Link can be explained in the way that feeling of punishment arises when people have critical attitude for self and others and this attitude inculcate more criticalness towards self and the person entrap in vicious circle.

Depression in Chronic Illnesses Scale displayed its strength by providing significant test re-test reliability (table 8). Test re-test reliability was estimated by administration of Depression in Chronic Illnesses Scale twice with the interval of one week between two administrations. Result establishes a high temporal stability of the scale i. e. a significantly high Pearson Product Moment Correlation of . 716. It represents that the people with chronic illnesses maintain their relative position over a given period of time. Another reason of high test re-test reliability is those items that have significant item-total correlation in the Depression in Chronic Illnesses Scale. Because those items momentarily contribute in enhancing reliability of the scale. In addition people with depression usually consistent with their opinion about the feelings, experiences and illness.

For estimation of internal consistency of the Depression in Chronic Illnesses Scale, Cronbach's alpha coefficient and split half reliability were computed. Cronbach's alpha and split half reliability of Depression in Chronic Illnesses Scale was found to be . 902 and . 875 respectively indicate that Depression in Chronic Illnesses Scale highly internally consistent. Moreover high alpha range indicate that every single item of the scale assess the same construct as the total does. Therefore Depression in Chronic Illnesses Scale provides an excellent support for measuring depression in chronic illnesses.



Convergent validity is demonstrated by high positive correlations between different measures of the same traits (Campbell & Fisk, 1959; Domino & Domino, 2006). The Depression in Chronic Illnesses Scale indicated good convergent validity in that it revealed significant and strong correlations with previously validated scales such as the CES-D i. e. . 823 and HRDS i. e. . 718 (table 9). To assess convergent validity, scores of the DCIS were compared to the scores of CES-D and HRSD scales. A positive correlation was expected between these three scales because of the superior clinical relevance of the CES-D and HRSD. A positive correlation between the DCIS, CES-D and HRSD provides an empirical support of the convergent validity of the newly established scale.

Discriminant validity of a scale corresponds to the extent to which a test does not correlate considerably with that variable from which it ought to diverge (Campbell & Fisk, 1959; Domino & Domino, 2006). In order to explore discriminant validity, means, standard deviations and correlations between the scores of clinical population and non-clinical population were assessed (table 10, 11). The results demonstrated that there is a considerable difference in the means and standard deviations for both groups. The results further demonstrated significantly poor correlations between them, suggested that the DCIS can discriminate well between patients with chronic illness and normal peoples.

## Conclusion

Depression in Chronic Illnesses Scale is constructing to provide a psychometrically reliable and valid self-report indigenous screening test for

depression in people with chronic illnesses. There was no validated measure for screening the depression in chronically ill patients' available indigenously. To fill that gap, the Depression in Chronic Illness Scale developed and is the first indigenous test which is culturally sensitive for screening depression in chronic illnesses. Findings of the study suggested that the DCIS captures several important areas of depression in patients with chronic illnesses. The scale will help clinician and primary care practitioners to diagnose unnoticed depression missed due to the chronic disease burden.

The scale has demonstrated good psychometric properties. Internal consistency for the overall scale was .902 falling within the recommended range, suggesting the scale is internally highly reliable. The factor analysis also supported the concept of depression as a multidimensional construct and consistent with the literature review. Significant input from chronically ill patients and health care professionals that guided in scale development.

The scale is of four point likert type response system with high test retest reliability and sufficient convergent validity with Centre of Epidemiologic Study-Depression and Hamilton Rating Scale for depression. DCIS is a 31 items and 4 point likert type scale where each item scores on 0-3 rating system such as strongly agree 3, agree 2, disagree 1 and strongly disagree rated as 0. The collective sum of score is 93. The administration of the scale do not required much time i. e. five to ten minutes. Classificatory indices of the scores are, 0-30 indicates minimal depression, 31-41 indicates mild depression, 42-55 indicates moderate depression and more than 55 points indicates severe level of depression.

The language of the DCIS is understandable and concise and does not require specific educational level. The only requirement is understanding and comprehension of Urdu language. Instructions of the scale are clearly stated without any ambiguity. The administration and scoring of DCIS does not need a skilled and trained interviewer. DCIS has hand scoring with little time consuming. In general, the DCIS is a useful test to provide a quick and proficient approach to assess depression in people with chronic illnesses. Furthermore, DCIS can also be use in research settings and will be as useful as in clinical settings.

There are certain limitations that have a tendency to cloud the issue. The sample is to some extent small, containing only 220 chronically ill patients and the socioeconomic status of the participants is not accounted. However, as the DCIS was developed and validated only in Karachi, further studies need to evaluate its applicability in more demographically and culturally diverse samples of Pakistan. Gender differences may exist in terms of depression but present study did not address the issue. Future studies have to explore this possible gender difference. Another limitation of DCIS could be its applicability that is solely dependent on respondent's mutual aid and their comprehension regarding Urdu language. Future studies can develop and validate the DCIS clinician rating scale to address this issue. There is need to control false positive and false negative responses from patients and the present study does not cater this issue. Further studies have to explore and control this issue.