

# Development of a tool to assess the knowledge of mental illness among the family members of mentally ill

## Abstract

**Background:** Knowledge of family members or caregivers regarding mental illness plays a vital role in treatment for persons with mental illnesses. There are limited numbers of standardised tool that measure the existing knowledge of family members regarding mental illness. The present study aimed to develop a valid and reliable tool to assess the knowledge of family members regarding mental illness. **Methods:** A 46-item questionnaire was structured following the scientific tool development steps. Six domains, namely basic information, need of treatment, medication administration, side-effects and management, consequences of non-adherence, and psychosocial treatment were included in the tool. Content validity of the questionnaire was established by accepting more than 80% validity index for each item. To test the reliability, questionnaire was applied to 100 family members of persons with mental illnesses. **Results:** Statistical analyses showed good internal consistency by Chronbach's alpha ( $r=0.831$ ) and Spearman Brown-Proficiency formula ( $r=0.88$ ). Score of all the six individual domains were significantly correlated with the total score of the tool indicating acceptable sensitivity. Significant correlation was found among the score of domains indicating good construct validity of the structured questionnaire. **Conclusion:** The constructed questionnaire can be used in research studies of related field by considering its acceptable psychometric properties.

**Keywords:** Caregivers. Questionnaire. Validity. Reliability.

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## Introduction

Mental illnesses are common non-communicable diseases. Prevalence of mental disorders is found to be 73 per 1000 population.[1] Lifetime prevalence of mental disorder is found to be 5.03% in urban population.[2] Treatment of mental illness comprises early detection, prompt treatment, rehabilitation, and prevention of relapse. Involvement of family members is essential in the treatment process. Family members have a major role in re-socialisation, vocational and social skills training of the patient.[3] Awareness regarding mental illnesses is much lesser than other non-communicable diseases. Studies showed poor knowledge of mental illness among the community people.[4,5] At the same time, negative views of mental illness was found to be widespread, with as many as 96.5% with standard deviation 0.05.[4] Negative views on mental illness are found to be prevailed in the Indian community also.[6] Study shows that the family members of person with mental illness being admitted to hospital had significant lack of information regarding nature and aetiology of mental illness.[7]

The common people are unable to recognise the symptoms as a part of mental illness even though treatment process has become advanced. Knowledge of mental illness is

related to insight and medication adherence.[8] Inadequate knowledge of mental illness is found to be associated with poor treatment compliance.[9,10] Better knowledge of mental illness is found to be the predictor help-seeking behaviour.[11] Knowledge regarding mental illness among the caregivers aid in early identification of symptoms and early help-seeking for the mentally ill person, and that leads to better outcome in treatment process.[12] Increased knowledge about mental illness help the family members to cope with the symptoms and solve the problems related to mental illness. Family members with inadequate knowledge about mental illness are often reluctant to seek help and which ultimately make the illness chronic.

Even though many of the research studies have intended to measure and improve the knowledge of mental illness in family members and community people, most of the studies have used the self-structured measurement tools as per the socio-cultural context of the particular population. There is no standardised valid tool to measure the existing knowledge of mental illness of family members in North-East region of India. So, it becomes imperative to develop a tool to measure knowledge of mental illness in local language by considering the belief system and socio-cultural context of the region.

This tool will help to identify areas of weakness in people's understanding of mental illness and will also provide useful baseline data for family education in the treatment process.

## Aim

The study was aimed to develop a valid and reliable tool to assess the knowledge of family members regarding mental illness.

## Objectives

1. To select appropriate items for the questionnaire assessing knowledge of family members regarding mental illness
2. To establish content validity of the tool
3. To establish reliability of the tool.

## Materials and methods

### Setting

The tool was developed at LGB Regional Institute of Mental Health, a tertiary mental health care institute in North-East India.

### Developing the questionnaire

The tool has been developed with the following scientific steps-

#### Step 1

**Item pool and item selection:** An extensive review of literature related to knowledge of mental illness among the public as well as the relatives was performed. With the clinical experience of the researchers along with the information from the existing literature, a total of 52 items were constructed considering the area 'Basic information', 'Need of treatment', 'Medication administration', 'Side-effects and management', 'Consequences of non-adherence', and 'Psychosocial treatment'.

The items were written in English language in the form of interrogative sentences. Every item has three answer option namely yes, no, and do not know. The grammatical correction was made by the expert. Every correct answer for the items denote one score each.

#### Step 2

**Establishing validity:** Content validity was checked by seven experts in the field of psychiatric nursing, psychiatry, psychology, and psychiatric social worker. A total number of 46 items were short listed following the expert suggestion and calculating validity index for each item. The items with validity index 80-100% were accepted for the tool. Total 11 items in the domain 'Basic information', five items in 'Need of treatment', nine items in 'Medication administration', six items in 'Side-effects and management', six items in 'Consequences of non-adherence', and nine items were included in domain 'Psycho-social treatment'. Reliability of the tool in English language was established by split-half method in ten samples.

#### Step 3

The tool was then translated to Assamese language by three bi-lingual experts and also back translation was confirmed

by another expert. The back translated tool was found to be almost similar with the original sentences without changing the meaning. Content validity of the translated tool was ensured.

#### Step 4

**Tool testing:** The tool was piloted with ten family members of person with mental illness. The time taken to complete the questionnaire was eight to 12 minutes. The subjects did not find any difficulty in understanding the items.

#### Step 5

**Reliability assessment:** The tool was applied to 100 family members of person with mental illness who were receiving treatment from outpatient department (OPD). A master datasheet was prepared from the collected data and analysed with the help of Statistical Package for the Social Sciences (SPSS) 16.0 version.

## Analyses and result

### Sample characteristics

Demographic data, in nominal level, of the family members of person with mental illness are described in terms of frequency and percentage in Table 1, and the data in continuous level are described in Table 2.

### Score description for the tool

The description of total scores of the six domains along with the description of the total score is shown in the Table 3.

### Item difficulty

Item difficulty was assessed for the accepted 46 items. 21.7% of the items (ten items) were found to be easier, i.e. scored by more than 80% of the respondents. All the items were included in the tool by considering the importance in the validity.

### Internal consistency

Internal consistency of the tool was established by split-half method. The items were divided into odd and even numbers and Spearman Brown-Proficiency formula was computed for both the group. Chronbach's alpha was also computed for the tool (Table 4).

### Sensitivity

Tool sensitivity was assessed by item discrimination. Item discrimination was assessed by finding correlation between the each item score with the total score of the tool. Total 43 items among 46 items were found to be satisfactorily discriminated. Item no. 22, 23, and 25 was found to be non-discriminating among the subjects (correlation is less than 0.2). Correlation between total score and the score of six domains were computed to assess the sensitivity of the domains with the total score. The result in Table 5 shows statistically significant correlation between the total score with the score in individual domains.

**Table 1:** Frequency and percentage of selected socio-demographic variables of family members

N=100		
Variables	Frequency	Percentage
Gender		
Male	46	46
Female	44	44
Religion		
Hinduism	88	88
Islam	9	9
Christianity	3	3
Education		
Primary	20	20
Secondary	49	49
Higher secondary	18	18
Graduate	12	12
Post graduate	1	1
Family type		
Nuclear	62	62
Joint	38	38
Habitant		
Rural	81	81
Urban	19	19
Relation with patient		
Parents	30	30
Children	22	22
Siblings	21	21
Spouse	23	23
Other	4	4
Occupation		
Nil	18	18
Homemaker	31	31
Agriculturist	8	8
Business	11	11
Employee, Private sector	7	7
Employee Govt. sector	17	17
Daily wage earner	8	8

N=Number

## Construct validity

Construction of the tool was established by the correlation between the domains. The correlation between the domains is found significant as shown in Table 6.

## Discussion

The aim of the study was to develop a valid and reliable tool to assess the knowledge regarding mental illness among the population. Total 46 items were included from 52 items by considering the more than 80% validity index. The tool was administered in 100 family members of persons with mental

**Table 2:** Description of age and duration of care giving of the family members of persons with mental illness

N=100				
Variables	Minimum (years)	Maximum (years)	Mean (years)	SD
Age of family member	15	81	40.1	15.005
Duration of care giving	1	29	7	6.79

N=Number, SD=Standard deviation

**Table 3:** Range, mean, and standard deviation for the total score and the score in individual domains

N=100				
Domains of the tool	Minimum	Maximum	Mean	SD
Total score of knowledge tool	9	44	32.4	6.67
Basic information	0	11	7.1	2.19
Need of treatment	0	5	3.73	1.196
Medication administration	4	9	7.01	1.47
Side-effect and management	0	6	3.38	1.56
Consequences of non-adherence	0	6	4.11	1.61
Psychosocial treatment	1	9	7.01	1.7

N=Number, SD=Standard deviation

illness. Total score range found in the respondent was from nine to 44 with mean  $32.4 \pm 6.67$ . This indicates that the respondents' score toward higher knowledge of mental illness. The result may be due to the experience of having a person with mental illness in the family. Mukherjee *et al.*[13] observed the positive impact on knowledge about mental illness and attitude or reaction towards persons with mental illness in those who had personal experience or contact of persons with mental illness.

Spearman-Brown Proficiency reliability coefficient was found to be 0.88 in split-halves among odd and even items. Chronbach's alpha was found to be 0.83. As the reliability coefficients above 0.7 are considered satisfactory,[14] the results for the constructed knowledge questionnaire indicate good internal consistency.

For the present constructed questionnaire, item discrepancy was calculated. All the items, except item no. 22, 23, and 25 were found to be sensitive to the tool ( $r \geq 0.2$ ). These less sensitive items were also included in the tool by considering the validity importance. General nutrition knowledge questionnaire developed by Parmenter and Wardle[15] had also included some item with lacked consistency by considering its content validity.

The items of the tool were divided in six domains, namely Basic information, Need of treatment, Medication administration, Side-effects and management, Consequences of non-adherence, and Psychosocial treatment. The score of all individual domains are significantly correlated with the total score which indicates the sensitivity among the individual domains.

Convergent validity is the degree to which two measures of construct are related[16] and which can be estimated by

**Table 4:** Internal consistency of the questionnaire

N=100					
Total item	Mean	SD	Pearson correlation	Reliability (Spearman Brown-Proficiency formula)	Chronbach's alpha
Odd items	23	15.88	3.9	0.786	0.88
Even items	23	16.49	3.13		0.831

N=Number, SD=Standard deviation

**Table 5:** Correlation between total score and individual domains of the tool

N=100				
Variables	Mean	SD	Pearson's r	Significance
Total score of knowledge tool	32.4	6.67	0.696	0.01
Score of basic information	7.1	2.19		
Total score of knowledge tool	32.4	6.67	0.657	0.01
Score of need of treatment	3.73	1.196		
Total score of knowledge tool	32.4	6.67	0.687	0.01
Score of medication administration	7.01	1.47		
Total score of knowledge tool	32.4	6.67	0.679	0.01
Score of side-effect and management	3.38	1.56		
Total score of knowledge tool	32.4	6.67	0.626	0.01
Score of consequences of non-adherence	4.11	1.61		
Total score of knowledge tool	32.4	6.67	0.750	0.01
Score of psychosocial treatment	7.01	1.7		

N=Number, SD=Standard deviation

**Table 6:** Correlation among the domains of the tool

N=100					
	Need of treatment	Medication administration	Side-effect and management	Consequences of non-adherence	Psychosocial treatment
Basic information	0.336**	0.328**	0.302**	0.197*	0.438**
Need of treatment		0.408**	0.327**	0.429**	0.383**
Medication administration			0.421**	0.331**	0.427**
Side-effect and management				0.349**	0.437**
Consequences of non-adherence					0.356**

\*=Significant at 0.05 level, \*\*=Significant at 0.01 level

using correlation coefficient.[17] The significant correlation among the score of the various domains (Table 6) indicates good convergent construct validity for the tool.

## Limitations

The current study included only one group of sample which makes difficulty in construct validity. Stability of the tool was not assessed. Some items were found to be too easy for the participants, but the same items were found to be essential for the population in the setting.

## Conclusion

Assessing the knowledge regarding mental illness is essential in providing psycho-education and in total management

of a person with mental illness. The 46-item questionnaire was developed to assess the knowledge of family members regarding mental illness. The psychometric properties of the tool were found to be satisfactory to accept for any research study in the same related areas.

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