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Development of the Attitudes towards Depression and Schizophrenia Scale (ADSS)

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Abstract

Research into Chinese people's attitudes towards mental illness is significant given the increasing cultural diversity of our population and the unfortunate but alarming increase in the prevalence of mental illness, particularly depression and schizophrenia which inevitably resulted in anxiety disorder. Research results show that Chinese people under-utilised mental health services in Australia when compared with their Western counterparts.

Keywords: Mental illness; depression; schizophrenia

1. Introduction

Research directed at examining attitudes towards mental illness was either focusing on examining patients' experience of schizophrenia in China[1] or in determining knowledge and preferences regarding schizophrenia in Australia[2] while caregivers' burden was examined specifically in relation to face concern when family members suffer from a mental illness (without specifying a particularly condition) in Hong Kong[3].Studies specifically aimed at examining acculturation effect among Chinese immigrants in Australia either focusing on a single condition of depression[3] or compared stigmatizing attitudes towards mental illness (non-specific condition)between Chinese people in Taiwan, Chinese immigrants to Australia, Australian-born Chinese and Anglo-Australians[4].These studies (did not compare a case of schizophrenia from depression) used instruments, originally developed in English Language and translated into Chinese version to suit those who could not comprehend English. Other studies indicated that labelling effect, cultural knowledge on the sufferers and their care givers were underlying factors in the help-seeking process[5][6].

During the design of a larger PhD study of uncovering socio-cultural factors influencing Chinese people's perception of mental illness, we were astonished by the paucity in the literature of an instrument applicable of measuring significant interpersonal approaches from the viewpoint of Chinese individuals. The Attitudes towards Depression and Schizophrenia Scale (ADSS) was developed to fill this vacuum. In this paper we report the development of a new measure, the ADSS.

2. Methods
- **Subjects**

One hundred and thirty-eight Chinese professionals participated in this study. They were selected for the purpose of a larger study on the influence of cultural factors towards mental illness. As a result the sample was composed of only four Australian-born subjects (2.9%)and the other134 subjects (97.1%) were

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all immigrants. Participants were professionals working in health-related sector including nurses, doctors and social workers (41.2%), commercial, legal, information technology and engineering (36.6%), teaching and learning sectors including teachers, tertiary students, researchers and translators (22.1%).Ninety-six (69.6%) were females compared with 42 males (30.4%).

Age range was from 18 to 65.The mean age was 39.3.Due to the diverse age range of participants (n=138) in the sample, participants were categorized into three ascending age groups: Age Group 1, AGE1 (18-34), Age Group 2, AGE2 (35-49) and Age Group 3, AGE3 (50+). Exact p-values for the Chi-Square test of association were examined using Monte Carlo methods when the assumption of less 20% of cells having expected counts below five was violated. Otherwise, Chi-square asymptotic p-values were reported. Table 1 shows the sample demographics.

- **Item Development of the ADSS**

A questionnaire with twenty-one items was created(available from the first author upon request). Item construction took into account the behaviour of a person with depression and schizophrenia, adapted from the Nursing Relationship Scale (NRS) reported in a thesis by Ku[7]. The overall content of this section of the questionnaire included persuasion in communication (e.g., advising parents to take May Lin/David to see a GP or a psychiatrist; encouraging May Lin/David to talk about the problem with a counsellor), perception of illness severity (e.g., I would worry a little more so than usual that May Lin/David may end up killing herself/himself), restrictive effort (e.g., I would attempt to spend extra time with May Lin/David than with other people; I would make a special effort to visit May Lin/David if I were her/his friend or relative; I would be more gentle in my approach to May Lin/David than I am with other people), behavioural avoidance (Compare with other people, I would avoid letting May Lin/David know about my private life; feel 'barrier' between me and May Lin/David more so than with other people), social avoidance (May Lin/David may be discriminated against in getting a job; it may be difficult for May Lin/David to get married) and emotional avoidance (Others may think less of May Lin/David because of her/his illness; others may think less of May Lin/David's family because of her/his problem). A number of items were negatively worded (e.g., Associating with May Lin/David would be no fun versus be friend with May Lin/David would be a challenge that I would look forward to) to avoid temptation in random responding.

Responses were on a five-point bi-directional scale with a score representation of '1' for 'disagree', '2' for 'tend to agree', '3' for 'neither', '4' for tend to disagree' and '5' for 'agree' regarding each approach item. As evident in the examples given above, many items took into account the schema held in association with people in general, using terminology such as 'compared with other people' and 'more so than with other people' in order to contrast the responses in relation to the vignette case (depression versus schizophrenia) being rated. Thus, most of the items measure the extra time, special efforts, attitudes and proposed actions might be expressed in relation to the illness being rated. Furthermore, extra effort was taken in constructing those items which measured negative characteristics, so that they were not too extreme in the wordings. For example, the item 'It must be difficult for May Lin/David to get married because of her/his illness' was changed to 'It may be difficult for May Lin/David to get married because of her/his illness'. This was undertaken to avoid the influence of social desirability that would probably result in the reduction in item variance by skewing responses towards one end of the scale. Because the target of this evaluation was between a case of depression (affective disorder) and schizophrenia (psychotic disorder), the scale was called the Attitudes towards Depression and Schizophrenia Scale (ADSS).

- **Procedure**

After ethics approval for the study was granted by RMIT University Human Research Ethics Committee (Project No.26/09), Chinese people were invited to participate and the purpose and nature of the study were explained. The recruitment method was through a snowballing technique. An initial pool of Chinese (n=20) was identified to be asked to participate in the study and to provide access to other participants.

The initial pool known to the researcher, Ku, was asked to speak with other potential participants and ask permission for the researcher to approach them to introduce the study formally. Chinese people who expressed an interest in participating were invited to meet with the researcher for the purpose of further explanation of the nature, purpose and procedure of the study. All participants returned the questionnaires consenting to anonymous participation. Data were collected in 2010 -2011. The depression vignette preceding the schizophrenia vignette (of the same questionnaire) was given to Chinese individuals to score their responses.

- **Response Rate**

Two hundred and fifty-three questionnaires were distributed either in person or via mail after initial contact with the prospective participants by the researcher. One hundred and forty-four were returned, among them, six were incomplete and excluded from the analysis. A total of 138 participants out of the 144 relevant respondents returned complete questionnaires giving a response rate of 55%.

- **Statistical Analysis**

A number of preliminary principal components analyses (PCA) were conducted to explore the dimensionality of the ADSS within each patient type – depression and schizophrenia. The initial exploration revealed generally seven factors having eigen values greater than or equal to one. Screen plots indicated that three or four factor solutions were reasonable to examine further for their coherence. Prior to performing PCA for both vignettes, the suitability of data for factor analysis was assessed. The Kaiser-Meyer-Olkin value were .74 and .68 exceeding the recommended value of .6[8][9][10] and Bartlett's Test of Sphericity[10][11] reached statistical significance (p<.001) and Chi-square value of 870.00 and 986.71 for depression and schizophrenia respectively, supporting the factorability of the correction matrix.

However, due to inconsistency in responses, the two vignettes were factor analysed separately. The variability in responses could be influenced by gender issue. For example, in the Australian setting, male maybe more stigmatised than female in view of having a mental illness. This pattern maybe more prominent in Chinese community when males are expected to be breadwinners, and could be more stigmatised if unable to take care of family due to mental illness. Examination of the correlation matrix between factors revealed four 'conceptual' dimensions reflecting the following constructs: Readiness to provide Care or Extra Support; Diagnosis or Prognosis Concern, Potential for Social Challenge such as Avoidance, Prejudice or Discrimination. All analyses were conducted using the Statistical Package for the Social Sciences (SPSS Version 20).

3. Results

- **Dimensions of the ADSS**

➢ **The Depression Vignette**

Three items were dropped due to low loadings. These are item 2 ('no fun associating with May Lin'), 12 ('not expecting May Lin to follow advice) and 15 ('avoid confronting her in comparison with other people'). Table3 shows the rotated component matrix (varimax rotation). Four factors were identified explaining 24.8%. 13.8%, 9.6% and 7.6% of the variance respectively.

The first factor was labelled as Potential for Social Prejudice (DV_SP) consisting of five items associated with avoiding someone with depression, extending this attitude by avoiding her family as well (item 20, 21, 19 and 18). The person with depression is likely to be discriminated against from getting a job (item 9). Factor two identified four items labelled as Prognosis Concern (DV_PC) indicating 'worrying the depressed person may suicide 'and 'won't trust her to be left alone, her condition may get worse and encourage parents to take her to see a doctor').

The third factor consisted of five items indicating that although a depressed person may not require extra time for support (item 6 reversed code) and not foreseeing any challenge to be friend with a depressed

person (item 5 reversed code) but it may pose as a potential for social avoidance (DV_SA) as this person 'may be difficult to get married ', and 'feeling barrier to discuss private life with such a person'. Item 5 'challenge to be friend with' and Item 6 'spend extra time' were reversed scored and resulted in negative loading.

The last factor was labelled as support and care (DV_SC) suggesting that 'more care and gentle approach can be given to a depressed person and willingness to make an effort to visit such a person and would encourage the engagement of a counsellor'. Treating the factors as scales, reliability analysis showed moderately good internal consistency among scale items. Alpha coefficients are summarised in Table 2.

➢ **The Schizophrenia Vignette**

Two items were dropped due to low loadings. These are item 14 'avoid telling my private life' and item 15 'when comparing with other people, avoid confronting David if he did something against me'. Conceptually, these item contents might have caused ambiguity to the respondents as to what actually constitute ' avoid confronting someone if he has done something against me'. Table 3 shows the rotated component matrix (varimax rotation). Four factors were identified, explaining 21.7%, 16.7%, 9.7% and 7.1% of the variance respectively.

Factor one comprised items similar to the Depression Vignette, labelled as SV_SD(Potential for Social Avoidance) with the inclusion of item 17 'difficult to get married' for a person with schizophrenia. Factor two was labelled SV_SA (Potential for Social Avoidance) consisting of five items indicating that despite a special effort to visit and in spending extra time with someone with schizophrenia could be rather challenging, there is the element of feeling a barrier associating with such a person (Item 6, 5, 3, 2 and 16). Item 2 'no fun associating with David' and item 16 ' feel barrier' were reversed scored and resulted in negative loading, suggesting it may be challenging to associate with a person with schizophrenia, and thus, can minimise a barrier between establishing contact with such a person.

Factor three was labelled SV_SC (Extra Care and Support) which consisted of six items, similar to those items of the depression vignette, with the addition of two items. These two additional responses for the Care and Support Scale suggested that despite the possibility of the patient 'refusing help' and 'won't follow advice', support and care should be readily available to someone with schizophrenia.

Factor four was labelled SV_PC (Prognosis Concern) consisting of three items (that is, 'potential for suicide if left alone and likely to be discriminated against getting a job'). Two of these items for the Diagnosis Concern Scale are similar to the depression vignette. However, in the schizophrenia vignette, the concern includes discrimination against job opportunity indicating more severity in the condition of schizophrenia, when comparing with depression.

Treating the factors as scales, reliability analysis showed moderately high internal consistency among scale items. Alpha coefficients are summarised in Table 3.

Due to the inconsistent factor structures across the two vignettes (depression versus schizophrenia) as shown in Table 2 and Table 3, Descriptive Statistics were obtained on each item to compare the responses to the two vignettes. The mean score of each item is shown inTable4indicating a general trend (higher score for schizophrenia than for depression) on 19items (except for item 3 'special effort to visit', item 7 'encourage to care more' and Item 13 'more gentle approach' when responses were higher for depression than for the schizophrenia vignette. A paired-samples t-test was then conducted on each item using an adjusted Bonferroni significant level to control for Type 1 Error caused by multiple comparisons. To achieve a more stringent alpha level, the standard 0.05 level of significance was divided by 21, the number of comparisons to be made. The adjusted significance level was therefore, $\alpha = 0.002$.The same adjustment was made by setting the Confidence Interval of 99.8%.The differences in scores on the items were calculated by taking the schizophrenia ratings subtracting the depression ratings. Therefore, higher scores indicated participants' scored More highly on the schizophrenia vignette. The effect size was calculated using Cohen criteria[12].

4. Discussion, Recommendation and Conclusion

- **Discussion**

There was a statistically significance in scores in 12 of the items with a p-value of <.001 (2-tailed). These were items indicating a combination of concern: 1. Needing extra care and support (Item 1'parents take him to Dr, 'refuse help will get worse', 'encourage to care more'), 2. Presenting as potential for social challenge (Item 2 'no fun associating with', Item 3 'special effort to visit', Item 16 'feel barrier', 3. Potential for social discrimination (Item 17 'difficult to get married', Item 18 'others think less of her', Item 19 'may avoid her', Item 20 'may think less of her family', and Item 21 ' may avoid her family') and 4. Ultimately posed as a concern if the person (David) described in the vignette was diagnosed with schizophrenia is suggestive that he 'may be discriminated against, e.g., in getting a job' (Item 9).

Item 11 'worry more as may suicide' was one of the nine items which was not statistically significant which indicated an overall moderately positive response in view of the vignette description (depression versus schizophrenia) given that the incidence of depression is higher than schizophrenia and that 25% of people with schizophrenia also suffered from depression.

Item 17 'difficult to get married' scored the highest (0.75) in mean rating among all items which could be related to Chinese cultural values of relating marriage as an important indicator in one's life, which if failed to fulfil this role (perhaps due to mental illness) could bring shame and guilt not only to the individual, but to the whole family. Detailed discussion of this particular issue will be documented in the PhD thesis based on a conceptual model incorporating 'Saving Face', ' Labelling Theory', 'Individualism-Collectivism Construct', 'Confucianism' , 'Social Comparison Theory' and 'Contact Level" for exploration of which are the interrelated factors influencing Chinese Community's attitudes towards mental illness.

- **Recommendation**

There is a need to extend ADSS by examining a broader range of item content, i.e., test-retest reliability and indictors of validity other than those available to us in the present study to capture additional dimensions with other stigmatised patients such as HIV-AIDS and compare with mental illness. The ADSS can be modified and used to explore how social comparison and labelling may vary between hypothetical cases and in actual cases by combining vignette and direct interaction in social situation. This may help to explore how pre-conceptions may be modified by direct exposure with a person with mental illness.

- **Conclusion**

Psychometric evaluation of the ADSS suggests it is a reliable instrument for measuring four key dimensions of interpersonal approaches of Chinese people's attitudes towards mental illness and enables the study of this relationship in large samples.

Competing Interests

The authors declare that they have no competing interests.

References

Lv Y., Wolf, Achim & Wang, Xiaoping. Experienced stigma and self-stigma in Chinese patients with schizophrenia. General Hospital Psychiatry, 2013, 35, 83-88

Wong DFK, Lam YKA & Poon A. Knowledge and preferences regarding schizophrenia among Chinese-speaking Australians in Melbourne, Australia. Social Psychiatric Epidemiology 2010, 45:865-873.

Mak Winnie W.S. & Cheung, Rebecca Y.M. Psychological Distress and Subjective Burden of Caregivers of People with Mental Illness: The Role of Affiliate Stigma and Face Concern. Community Mental Health Journal 2012, 48:270-274.

Mellor David, Carne, Lucy, Shen Yu-Chun, McCabe, Marita & Wang Liwei. Stigma Toward Mental illness: A Cross-Cultural Comparison of Taiwanese, Chinese Immigrants to Australia and Anglo-Australians. Journal of Cross-Cultural Psychology 2012, 44(3), 352-364.

Hsiao FH, Klimidis S, Minas HI, Tan ES. Cultural attribution of mental health suffering in Chinese

societies: The views of Chinese patients with mental illness and their caregivers. Journal of Clinical Nursing, 2006, 15(8), 998-1006.

Klimidis S, Hsiao FH, Minas HI. Chinese-Australians' knowledge of depression and schizophrenia in the context of their under-utilization of mental health care: an analysis of labelling. The International Journal of Social Psychiatry 2007, 53(5), 464-470.

Ku TK. Culture and stigma towards mental illness: a comparison of general and psychiatric nurses of Chinese and Anglo-Australian background. University of Melbourne, DepartmentPsychiatry. 2008.

Kaiser H. A second generation Little Jiffy. Psychometrika 1970, 35, 401-415.

Kaiser H. An index of factorial simplicity. Psychometrika, 1974, 39, 31-36.

M. Ha, U. Siriwan, C. Ramabut, N. Thitikalaya, T. Thitikanlaya, C. Kiatnarong. "Key Factors for Successful Entrepreneurship in Thailand." Open Journal of Social Sciences, ISSN: 2327-5952, Volume 2, Number 9, September 2014, 116-121. http://dx.doi.org/10.4236/jss.2014.29020

Barlett MS. A note on the multiplying factors for various chi square approximations. Journal of the Royal Statistical Society, 1954, 16(Series B), 296-298.

Cohen J.W. Statistical power analysis for the behavioural sciences (2nd edn). Hilldale. NJ: Lawrence Erlbaum Associates 1998.

Tables

Table 1: Characteristics of the Sample (N=138)

	DECOA 1 (1950-1979) n=25	DECOA 2 (1980-1999) n=53	DECOA 3 (2000-2009) n=56	χ^2/F value
Mean Age (SD)	55.3 (9.4)	42.2 (13.4)	30.6 (10.4)	F (2, 131) = 41.2***
Sex (male/female)	10/15	14/39	18/38	1.5ns
Education Level (%)				22.7** [1]
Primary	4.0	0	0	
Secondary	8.0	0	0	
Completed secondary	8.0	11.3	25.0	
Completed trade	12.0	9.4	5.4	
Undergraduate	52.0	52.8	35.7	
Postgraduate	16.0	26.4	33.9	
Professional role (%)				32.9*** [1]
Health worker	76.0	47.1	20.0	
Business	16.0	19.6	18.2	
Education	4.0	3.9	7.3	
Other professional	4.0	21.6	21.8	
Other – low income	0	7.8	32.7	

DECOA Decade of Arrival; # Four subjects were born locally; **p <.01, ***p<.001; ns, not significant; [1] Exact p- value

Table 2: Rotated Component Matrix for the ADSS Scale – the Depression Vignette

Item	F1	F2	F3	F4	Communality
QC20 may avoid her family	.86				.74
QC21 may think less of her family	.81				.68
QC19 may avoid her	.78				.68
QC18 others think less of her	.73				.72
QC 9 may be discriminated against	.56				.48
QC11 worry more as may suicide		.85			.74
QC10 won't trust her to be alone		.84			.73
QC8 refuse help will get worse		.64			.50
QC 1 parents take her to Dr.		.55			.41
QC 6 spend extra time#			-.71		.58
QC 5 challenge to be friend with#			-.61		.52
QC14 avoid telling my private life			.59		.45
QC17 difficult to get married			.55		.62
QC16 feel barrier			.53		.45
QC 3 special effort to visit			.66		.47
QC 4 encourage to talk to counsellor				.64	.44
QC 7 encourage to care more				.59	.47
QC 13 more gentle approach				.56	.35
Percent variance	24.8	13.8	9.6	7.6	Total variance = 55.8
Cronbach's alpha	.84	.74	.63	.50	

Reverse code QC5 and QC6 (1=5), (2=4), (3=3), (4=2), (5=1) into QC5_R & QC6_R.
F1:DV_SP (Potential for Social Prejudice); F2: DV_PC (Prognosis Concern)
F3 :DV_SA (Potential for Social Avoidance); F4: DV_SC (Support and Care)

18

Table 3: Rotated Component Matrix for the ADSS Scale – the Schizophrenia Vignette

Item	F1	F2	F3	F4	Communality
QE20 may avoid her family	.87				.79
QE21 may think less of her family	.84				.79
QE19 may avoid her	.77				.69
QE18 others think less of her	.71				.63
QE17 difficult to get married	.56	-.44			.59
QE 6 spend extra time		.81			.70
QE 5 challenge to be friend with		.71			.55
QE 3 special effort to visit		.70			.63
QE 2 no fun associating with#		-.65			.48
QE16 feel barrier#		-.42			.36
QE 4 encourage to talk to counsellor			.67		.56
QE 8 refuse help will get worse			.59		.46
QE 7 encourage to care more			.56		.35
QE11 parents take her to Dr.			.52		.34
QE13 more gentle approach			.48		.29
QE12 won't follow advice			.43		.26
QE10 won't trust her to be alone				.85	.75
QE11 worry more as may suicide				.83	.76
QE 9 may be discriminated against				.57	.50
Percent variance	21.7	16.7	9.7	7.1	Total variance = 55.1
Cronbach's alpha	.84	.73	.60	.70	

Reverse code QE2 & QE 16 (1-5), (2=4), (3=3), (4=2), (5=1) into QE2_R and QE16_R.
F1: SV_SP (Potential for Social Prejudice); F2: SV_SA (Potential for Social Avoidance) ;
F3 : SV_SC (Extra Care & Support); F4: SV_PC (Prognosis Concern).

Table 4 : Paired Sample T-test on Responses towards Depression and Schizophrenia Vignette

19