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COMMUNITY ATTITUDES TOWARDS THE MENTALLY ILL: THE RESULTS OF A NATIONAL SURVEY OF THE TAIWANESE POPULATION

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ABSTRACT

Background: In Taiwan, to strengthen the psychiatric rehabilitation system has been one of the primary goals of the Department of Health since 1985. Unfortunately, this endeavor has not been successful and it is believed that one of the barriers is social stigma towards the mentally ill. However, to date no national survey has been conducted for Chinese population on the focal topic using a random sample.

Aims: In this study we explored the attitudes of the general population towards the mentally ill in Taiwan. Specifically, we examined the effect of contact on one's attitudes after controlling for demographic variables.

Methods: A national survey was conducted on 1,203 subjects drawn through a stratified proportional random sampling. Data were collected using the Computer-Assisted Telephone Interview System. We conducted MANOVA and multiple regression analyses to explore the correlates of the attitudes.

Results: The results revealed that the general population held relatively higher levels of benevolence, tolerance on rehabilitation in the community, and non-social restrictiveness. However, they held relatively less positive attitudes on non-authoritarianism and normalization. Overall, direct contact and age were the two most important correlates of community attitudes. Education and occupation were also significant.

Conclusions: Benevolent thoughts do not necessarily guarantee the acceptance of rehabilitation in the community or treating the mentally ill as a person like anyone else. However, the benevolent thought could be transformed into compassion and acceptance of another human being if people are given the opportunity to have direct contact with mentally ill persons. The results also indicated that community education should specifically target laborers of all age groups.

INTRODUCTION

Normalization has been the treatment philosophy of long-term care for persons with mental illness, and de-institutionalization has been the prevalent mental health policy. The success of this broad goal doesn't come easily, however. The success of de-institutionalization depends

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on a number of key conditions: the establishment of a comprehensive community support system, an environment that allows the mentally ill to experience all the rights of citizenship as other individuals do, and tolerance and non-discrimination in the local community (Hannigan, 1999). The last two relate to public attitudes towards the mentally ill. As cited in Bhugra, '. . . a prerequisite for an effective community care service is a community that cares' (1989, p. 8). Negative attitudes are likely to increase the stress already suffered by the mentally ill, and in turn, to reduce their quality of life (McKeown & Clancy, 1995; Lehane & Rees, 1996). Thus, research on attitudes towards the mentally ill is necessary to ensure quality of life for persons with mental illness (Cuomo & Ronacher, 1998).

Chinese culture holds an integrated point of view concerning body and mind. Due to the lack of knowledge of mental illness, moral judgment and supernatural attributions are usually attached to the mentally ill. Nowadays, psychosocial factors (61.2%) are the leading attribution to mental illness, biological factors the second (19.0%), and supernatural factors the third (15.7%), based on a survey to the caregivers of the mentally ill in central Taiwan (Chang & Song, 1998). Western psychiatry is the major treatment approach in Taiwan, but the mentally ill and their family caregivers have resorted to multiple treatment approaches, including western medicine, Chinese medicine, and folk therapy (Chang, 1998). It is believed that there are still many forms of prejudice or stigma towards mental illness in Chinese society (Sevigny *et al.*, 1999). However, it is an assumption left untested.

To strengthen the community psychiatric rehabilitation system has been one of the primary goals of the Department of Health in Taiwan since 1985 (Department of Health, 1992). However, this endeavor was not successful given the fact that only 1,304 persons with mental illness were served in the community rehabilitation facilities in 1996 (Department of Health, 1997). It is believed that one of the barriers is social stigma towards the mentally ill. For example, a coffee shop run by persons with mental illness was forced to shut down due to the protest of community residents. Residents of halfway houses finally gained acceptance after long-term good-will actions. The media usually covered stories associated with the negative events such as suicide, homicide, and disturbing behaviors committed by the mentally ill. They are portrayed as the 'unpredictable bomb'.

Concerning the focal topic among the Chinese population, Ng & Chan (2000) conducted a study on secondary school students in Hong Kong aiming at testing sex differences on attitudes toward the mentally ill. Yang (1989) conducted a survey in Beijing, China, to explore community attitudes towards psychosis and psychotic patients. Sevigny *et al.* (1999) examined the differences between psychiatric doctors and nurses on their attitudes in a sample from a large psychiatric hospital in Beijing, China. Given the general impression of public negative attitude towards the mentally ill, no national survey has been conducted for the Chinese population on the focal topic using a random sample. Nor has there been any survey conducted in Taiwan to fully understand the phenomena and its correlates. This study is motivated to fill this gap by using the data derived from a random sample of the general public. The survey is part of our experimental study that aims at enhancing community rehabilitation for a group of mentally ill people.

Causes and correlates of community attitudes towards the mentally ill

Labeling theory is the major theory used to account for public negative attitudes towards this population, although the reasons for these attitudes are still unclear. Hannigan (1999) tested

three of the nine propositions in Thomas Scheff's social theory of mental illness (1966) by reviewing the research conducted in the UK since 1990. His review supported two of Scheff's propositions: 1) The stereotypes of insanity are continually reaffirmed, inadvertently, in ordinary social interaction; 2) labeled deviants are punished when they attempt to return to conventional roles. However, a survey in Canada conducted by Aubry, Tefft and Currie (1995) suggested that behavioral presentation (level of disability) of the mentally ill rather than psychiatric labeling is the major factor of neighboring of the general public. Respondents expressed more favorable attitudes towards neighboring and behavioral intentions concerning close neighboring with mild disabled neighbors. Their findings also showed that more than 70% of the respondents reported intentions to participate in superficial neighboring activities, regardless of the tenant disability level. The willingness of superficial interaction with the mentally ill is also supported by a study on an urban Pakistani community in the UK (Tabassum, 2000). Nevertheless, superficial interaction is not conducive for the mentally ill to establish social networks and support systems in the community, which is essential for community tenure. In addition, the findings suggest that public attitudes depend on the level of disability, reflected by behavioral problems. A similar finding was revealed in the study by Eker (1985) as cited by Cuomo & Ronacher (1998). The results showed that the greater the degree of illness, the greater the type of social distance desired by the respondent. The population survey by Socall and Holtgraves (1992), however, indicated that attitudes towards the mentally ill partly correlate with the effect of label and partly with beliefs. Respondents reject the mentally ill significantly more than identically behaving physically ill persons, which supports labeling theory. Respondents also consider the mentally ill less predictable and to have less positive outcomes than those with physically illness. These findings suggest that both the effects of labeling and the behavioral presentation account for the attitudes towards the mentally ill.

Some demographic variables were found to be correlated with community attitudes towards mentally ill. Bhugra's review (1989) indicated that in general, younger people, people with higher social class and higher education, and Caucasians carry more favorable attitudes towards the mentally ill, although there were discrepancies in findings among studies. In Eker's study (1985), males were found to have a greater tendency to desire social distance from the mentally ill than their female counterparts (Cuomo & Ronacher, 1998). Nevertheless, Cuomo and Ronacher's study (1998) of college students did not find any gender difference. The study of secondary school students by Ng & Chan (2000) found boys tended to have more separatism, stereotyping and restrictive attitudes among those who had previous contact with people who were mental ill. They also found that girls had more opportunities to make contact with the mentally ill than boys. A review by Hannigan (1999) revealed that younger people display greater tolerance and less controlling attitudes towards the mentally ill. This might reflect an accumulative effect of negative attitudes along with aging. Educational level was found to correlate with public attitudes (Yang, 1989; Ng & Chan, 2000), with persons with a higher level of education seen to be more tolerant (Hannigan, 1999). Hannigan's review (1999) showed that higher social class tended to be less controlling.

Concerning the effects of socio-demographic variables on attitudes, Wolff, Pathare, Craig and Leff (1996a) compared their findings with Taylor and Dear's (1981) and Brockington,

Hall, Levings and Murray's (1993); these three studies all used the CAMI scale to measure attitudes towards the mentally ill. Across studies, it seems that age, education, occupation and class are the common correlates of authoritarianism; social class and having children are the correlates of community mental health ideology; education is the common one of benevolence (see Table 4).

Previous studies found that the lack of knowledge of mental illness was correlated with more controlling attitudes (Yang, 1989; Wolff, Pathare, Craig & Leff, 1996b; Hannigan, 1999; Ng & Chan, 2000). However, Ng & Chan (2000) argued that knowledge might not be sufficient to change attitudes. Students with knowledge about mental illness held more restrictive views on mental illness. Contact with the mentally ill is another important factor, but the nature and quality of contact could be more important (Angermeyer & Matschinger, 1996; Wolff, Pathare, Craig & Leff, 1996c; Ng & Chan, 2000). Direct contact (Murray & Steffen, 1999) and acquaintance with and closeness to the mentally ill (Hannigan, 1999) typically contributed to more tolerant and understanding attitudes.

Study framework

Due to the limited range of samples in the previous studies, it was hard to draw a conclusion on community attitudes towards the mentally ill in the general Chinese population. Previous research findings indicated that sex, age, education, social class, level of disability, knowledge and contact with the mentally ill were the correlates of the attitude. In this study, we specifically explore the effect of contact on one's attitude towards the mentally ill while controlling for sex, age, education, and occupation. Level of disability was specified in some items of the Community Attitude Towards Mentally Ill scale as a reference point. For example, item 3, 'The mentally ill *who are stabilized* should not be isolated from the rest of the community' (see Appendix). Knowledge of mental illness was not included due to two reasons: 1) It is hard to define the scope of the knowledge; 2) The telephone survey allowed only limited questions to be asked. We did include different types of contact, however, to understand the relative importance between direct and indirect contact. We hypothesized that females, younger people, highly educated people, professionals and people with direct contact with the mentally ill tend to hold more positive attitudes.

METHOD

Subjects

The target population of this study included residents aged 18 or above living in all administrative districts in Taiwan (i.e. 26 cities and counties). Operationally, the sampling frame is restricted to those residing in households equipped with a telephone. The sampling procedure follows a stratified proportional sampling design and has a target sample size of 1,200. This design is standard for studies based on the Computer-Assisted Telephone Interviewing (CATI) System and operated by the Center for Survey Research at Academia Sinica, Taipei, Taiwan.[1] The final sample size for the nation is 1,203. With 834 cases of refusal, the effective completion rate is 59%.

The dependent variable

Community Attitudes towards the Mentally Ill was tapped using the CAMI scale developed by Taylor, Dear and Hall (1979). It was used due to four reasons: 1) The scale was developed out of two other scales, The Opinion about Mental Illness questionnaire and The Community Mental Health Ideology questionnaire. 2) Previous studies showed that the scale had acceptable reliability (alpha =.68–.88) and concurrent validity (Sevigny *et al*. 1999). 3) Sevigny *et al*. (1999) adapted this scale in their study in Beijing with minor changes in wordings. 4) The scale has a dimension concerning societal acceptance of the mentally ill persons in the community, which is the main goal of our experimental study. According to Taylor *et al*. (1979), the scale includes 40 items with four dimensions: 1) Authoritarianism: refers to a view of the mentally ill persons as someone inferior and requires coercive handling. 2) Benevolence: corresponds to a paternalistic and sympathetic view of the mentally ill. 3) Social restrictiveness: refers to the belief that the mentally ill patients are a threat to society and should be avoided. 4) Community mental health ideology: concerns the acceptance of mental health services and mentally ill patients in the community (Sevigny *et al*. 1999, p. 61). Sevigny *et al*. (1999) had reviewed and ascertained the applicability of these dimensions to Chinese society. They also examined the factor structure of this scale in their data and resulted in three dimensions out of 16 items. Nevertheless, their factor structure was not adopted in our study since their sample size was quite small ($N = 100$) and included only 16 items. In this study, the scale was first translated into Mandarin; then modifications of the items and wordings were further completed after interviewing six persons to clarify their understanding and opinion of the scale. The pilot test was performed with 47 completed interviews. These interviews provided information for further modifications in the items. The process yielded a 33-item-scale and some changes on its wordings (in italic, see Appendix). Response categories ranged from 1 (strongly agree) to 4 (strongly disagree) and 7 (don't know). Eighteen items were in the reverse direction.

The independent variable: contact with the mentally ill

Contact with the mentally ill was measured using nine items designed by the authors (Table 3). These nine items vary in terms of two dimensions: indirect and direct. Some of the contacts refer to occasional, passive, and indirect, while others are constant, active, and direct. Indirect contact includes watching or reading media report, having heard people talking about the mentally ill, having seen the mentally ill, reading related books, having discussion with people about the mentally ill. Direct contact refers to talking with the mentally ill, being friends with the mentally ill, having a family member who is mentally ill, having cared or served the mentally ill. Each item has a yes (1)/no (2) response.

The control variables

Demographic variables included sex, age, education (illiterate, less than high school, high school, college and graduate), and occupation (professional, clerical, labor, other).

Data analyses

Examining factor structure of CAMI. Principal component factor analysis with Varimax rotation was conducted to examine the factor structure of CAMI. The number of factors was determined using Eigenvalue $\leqslant 1$ and factor loading $\leqslant 0.4$.

Multivariate analysis. Using MANOVA, we examined if the independent variables all together could differentiate the linear combination of the dimensions of CAMI. Further, we conducted regression analysis for each dimension of CAMI to examine the relative importance of the independent variables.

RESULTS

Sample characteristics

Among the 1,203 subjects, 51% were female. Age ranged from 19 to 89 years old, with a mean of 42.3 ($SD = 14.2$). The majority (36.2%) of the subjects had college or higher level of education, followed by high school (33.7%) and less than high school (26.2%). Concerning occupation, most (37.1%) of the subjects were in the 'other' category, including housewives, students, retired, unemployed and others. About a quarter (26.9%) had a clerical job and a fifth (20.6%) were laborers.

Contact with the mentally ill

The most common contact that people had with the mentally ill was 'on road or in a bus' (83.3%), followed by 'watched or read related media report' (78%). About two-thirds (68.8%) had heard people talking about mental illness. Over 40% (41.3%) had discussed with people about mental illness. Fewer people had direct contact with the mentally ill. However, the percentage was much higher than expected. More specifically, 48.2% actually talked with the mentally ill, had friends with mental illness (27.8%), had cared for the mentally ill (13.9%), and had a family member with mental illness (12.5%). In total, almost half of the respondents had direct experience with the mentally ill.

Attitudes towards the mentally ill

The Dimension of Community Attitudes. Factor analyses were conducted to explore the dimensions of the community attitudes towards the mentally ill. Percentage distribution for each item is presented in the Appendix. Eight items were excluded due to the following reasons: 1) Frequency distribution is too skewed to have discriminant ability, such as items 2 (97.3%), 25 (96.2%), 26 (94.4%), and 28 (97.2%). Given 16 subjects responded 'don't know' on item 31, this item was also excluded though its distribution was not extremely skewed (90.7%). 2) There are too many un-decisive answers, such as items 17 ($n = 167$, 13.9%), 21 ($n = 287$, 23.9%), and 27 ($n = 125$, 10.4%). According to an overall Kaiser-Meyer-Olkin measure of sampling adequacy (MSA) of 0.82 and Bartlette's test ($p = .000$), these 25 items were adequate for principal component analysis. Among them, 13 items had MSA over 0.80 and 11 items between 0.74 and 0.79. Item 9 is acceptable even though MSA is 0.65 (Stewart, 1981). Item 4 was excluded because it yielded the lowest commonality (0.302) and factor loading (0.359) after the first run of factor analysis. Item 18 and item 30 are further excluded because even though they together constitute one factor, the content does not seem to logically share a common core.

Principal component factor analysis with Varimax rotation was conducted to examine the factor structure of CAMI. The number of factors was determined using Eigenvalue $\leqslant 1$ and factor loading $\leqslant 0.4$. Factor analysis of the 22 items of attitude towards the mentally ill

yielded five factors which accounts for 43.14% of the variances (see Table 1). The five factors were: benevolence, rehabilitation in the community, non-authoritarianism, non-social restrictiveness, and normalization. The majority of variance was explained by the first and the second factors, 10.55% and 9.81%, respectively. Note that all items had a factor loading $\leqslant 0.4$, except item 20 (0.36). This item was kept since its commonality (0.39) was not too low and conceptually it correlated with other items within factor 3. Further, after dropping this item, the KMO and individual MSA decreased. The Cronbach's alpha of the third factor is also lowered down, from 0.52 to 0.465. The internal consistency (Cronbach's α) of the five dimensions ranged from 0.43 to 0.63, which is acceptable[2] given the number of items in each dimension. The correlation coefficients among these five dimensions were all significant, ranging from weak (0.09) to middle level (0.42). 'Rehabilitation in the community' correlated higher with non-authoritarianism (0.36) and non-social restrictiveness (0.42) than with others. Non-authoritarianism also had higher correlation with non-social restrictiveness (0.34).

The Status of Community Attitudes. The mean composite score (range = 1–4) for each dimension was computed for the comparison among the dimensions. The higher score indicated more positive attitudes towards the mentally ill. As can be seen in Table 1, benevolence dimension had the highest mean score (3.07), followed by rehabilitation in the community and non-social restrictiveness (2.68), normalization (2.48), and non-authoritarianism (2.36). These mean scores all fell into the middle range; the subjects revealed relatively higher level of benevolence, tolerance on rehabilitation in the community and non-social restrictiveness. But, they held relatively more negative attitudes on normalization and non-authoritarianism.

Correlates of Community Attitudes. In the analyses, the contact variable was computed by counting the 'yes' response of contact items. First, MANOVA was performed, and the results indicated that age, contact, education, and occupation were significantly associated with the linear combination of the four dimensions of community attitudes (see Table 2). Second, to explore the effects of different types of contacts on the attitude while controlling for other variables, regression analyses were performed. Dummy variables were created for the categorical variables. For education, 'college and higher level' was taken as the reference group. The 'professionals' was treated as the reference group for the occupation variable. Regression analyses were run in two ways concerning the contact variable. Initially, direct and indirect contact variables were created and put in the regression model. In another way, all the contact items along with the control variables were entered in the regression model. Outliers were excluded to attain more stable results. The number of outliers for benevolence dimension was 12, 10 for rehabilitation, 9 for authoritarianism, 21 for non-social restrictiveness, 0 for normalization, and 8 for overall attitude.

These two ways yielded very similar results in terms of explained variance and significant variables. As for contact variables, the results revealed the significance ($p < .05$) of direct contact on all the dimensions of attitudes. Indirect contact was significant ($p < .05$) only for normalization and the overall attitude. The higher the score in contact, the more positive the attitudes towards the mentally ill. Table 3 presents the results of using all the contact items in the model. As can be seen, it further revealed the relative importance of specific types of contacts. In general, 'have talked with mentally ill', 'have family member with mentally ill' and 'have cared or served mentally ill' were significant items within the direct contact domain. Within the indirect contact domain, 'read related books' was the only significant one

Table 1
Factor analysis on community attitude towards mental illness ($N = 948$)

		Factor Loading	Item-total Correlation
Factor 1: Benevolence, eigenvalue = 2.32, variance explained: 10.55%, $\alpha = .63$, Mean score = 3.07, Sd = .40			
I13	No one has the right to exclude the mentally ill from their neighborhood.	.62	.42
I10	The situation that mentally ill have been the subject of ridicule should be put to an end.	.59	.34
I16	The mentally ill should not be treated as if they are outcasts of society.	.58	.38
I24	Mental hospitals are an *inappropriate* means of treating the mentally ill.	.57	.35
I3	The mentally ill *who are stabilized* should not be isolated from the rest of the community.	.57	.34
I12	There should not be any over-emphasis that the mentally ill endanger the public.	.52	.37
Factor 2: Rehabilitation in the community, eigenvalue = 2.16, variance explained: 9.81%, $\alpha = .61$, Mean score = 2.68, Sd = .41			
I19	Residents have good reason to resist the location of mental health institutions in residential areas.	.71	.37
I8	Locating mental health institutions in a residential area downgrades the neighborhood.	.61	.36
I15	I wouldn't want to have a neighbor who has been mentally ill, *even though he/she has been stabilized.*	.56	.37
I33	It is frightening whenever to think of people with mental problems living nearby.	.52	.39
I23	Locating mental health facilities in the community does not endanger local residents.	.44	.28
I11	*It is very unwise* to marry a person who has suffered from mental illness, even though he/she seems to have regain normality.	.40	.29
Factor 3: Non-authoritarianism, eigenvalue = 1.77, variance explained: 8.04%, $\alpha = .52$, Mean score = 2.36, Sd = .43			
I1	As soon as a person shows a signs of mental disturbance, he should be hospitalized.	.66	.30
I14	Mental patients need *special* kind of control and discipline.	.61	.32
I9	It is very easy to tell the mentally ill from normal people.	.53	.24
I6	The mentally ill are a burden on society.	.49	.30
I20	The best way to handle the mentally ill is to keep them behind locked doors	.36	.29
Factor 4: Non-social restrictiveness, eigenvalue = 1.69, variance explained: 7.68%, $\alpha = .53$, Mean score = 2.68, Sd = .51			
I29	*We should let the mentally ill have the right to vote.*	.82	.33
I22	Anyone with a history of mental problems should be excluded from taking public office.	.59	.36
I32	Most women *who are mentally ill but have been stabilized* can be trusted to take care of babies.	.54	.34
Factor 5: Normalization, eigenvalue = 1.55, variance explained: 7.06%, $\alpha = .43$, Mean score = 2.49, Sd = .58			
I5	Mental illness is an illness like any other.	.60	.28
I7	The mentally ill are far less of a danger than most people imagine.	.60	.28

Table 2: MANOVA test on the community attitude towards mentally ill

I.V.	Wilks λ	Benevolence F value	Rehab. F value	Authoritarianism F value	Restrict. F value	Normalization F value
Age	.922***	.19	27.89***	69.38***	11.77***	1.47
Contact	.941***	23.94***	21.51***	17.12***	22.42***	18.20***
Edu	.970*	2.57	2.28	.42	2.93*	1.38
Occ	.967**	.94	3.47*	2.84*	.55	.23
Sex	.999	.10	.04	.67	.01	.13
Edu * Occ	.939*	.85	3.15**	.98	.49	.78
Edu * Sex	.984	1.31	.59	1.39	.13	1.56
Occ * Sex	.981	1.33	1.02	2.29	.95	.60
Edu * Occ * Sex	.951	.78	1.84	1.69	1.11	.62
Eta Squared	.25	.071	.065	.114	.017	.029

Note: ***: $p \leqslant .001$; **: $p \leqslant .01$; *: $p \leqslant .05$

for non-social restrictiveness, normalization and overall attitude. Those who had these types of contacts tended to have more positive attitudes.

Among the control variables, age was the most important one; younger people held more positive attitudes. Age was the most important variable among all the significant ones. Education and occupation were equally significant according to the standardized regression coefficient (Beta). People with college and higher education held more positive attitudes towards mentally ill than those with education lower than high school. Major differences were found between professionals and laborers in benevolence, non-authoritarian, non-social restrictiveness and overall attitude. Professionals had more positive attitude than laborers. The proportion of variance explained (adjusted R^2) was not high; the highest was for non-authoritarianism (12.7%), followed by benevolence (10.8%). The amount of variance explained for the normalization dimension was small (2.1%); the significance could be due to large sample size. The R^2 for the overall attitude was 14.7%.

For the *benevolence* dimension, demographic variables were the major correlates. Females were more positive than males (see Table 3). People with college and higher level of education tended to be more benevolent. There was no significant difference between the reference group and the other two groups. Professionals were more benevolent than laborers and those in 'other' category. Those who have cared or served mentally ill held more benevolent attitudes. The results showed that for *rehabilitation in the community*, age was the most important variable, with contact being the second. As for *non-authoritarianism*, professionals were less authoritarian than laborers. Age was more important than 'labor' and contact variables. For *non-social restrictiveness*, people with college or higher levels of education were more restrictive than the illiterate. Professionals held less restrictive attitude than laborers. 'Reading related books', 'talked with mentally ill' and 'have family members with mentally ill' were helpful for being less restrictive. Two contact variables, 'read related books' and 'have family member with mentally ill' significantly correlated with *normalization*. The analysis on *overall attitude* showed that age was the most important correlate. The significant contact variables included: 'Read related books', 'talked with mentally ill', 'have family member with mentally ill', and 'have cared or served mentally ill', with the first two being more important.

Table 3
Regression analyses on the community attitude towards mentally ill

I.V.	Benevolence		Rehabilitation		Non-Authoritarian		Non-Restrictive		Normalization		Overall Attitude	
	Beta	t	Beta	t	Beta	t	Beta	t	Beta	t	Beta	t
Age	−.02	−.75	−.21	−5.97***	−.30	−9.29***	−.13	−3.86***	−.06	−1.67	−.21	−6.30***
Gender (F = 0, M = 1)	−.08	−2.43*	.01	.17	.02	.56	−.04	−1.27	−.02	−.65	−.05	−1.41
Edu – Illiterate	−.05	−1.38	.05	1.29	−.02	−.54	.11	3.12**	.07	1.96	.04	1.21
Edu – < High sch	−.13	−3.40***	.05	1.24	−.05	−1.30	.05	1.21	.01	.26	−.11	−2.61**
Edu – High school	−.04	−1.22	.04	1.22	−.06	−1.85	.01	.24	−.02	−.41	−.07	−1.89
Occ – Clerical	−.07	−1.70	.02	.44	−.06	−1.55	−.06	−1.31	.03	.67	−.05	−1.22
Occ – Labor	−.18	−4.20***	−.07	−1.64	−.12	−2.88**	−.11	−2.42*	−.004	−.09	−.11	−2.43*
Occ – Other	−.19	−4.16***	−.03	−.70	−.04	−.78	−.07	−1.56	.01	.10	−.09	−1.83
Read media report	−.03	−.81	.03	.87	−.04	−1.16	.02	.44	−.03	−.85	−.003	−.10
Read books	−.05	−1.61	−.06	−1.88	−.03	−.86	−.12	−3.52***	−.09	−2.68**	−.11	−3.18**
Heard about	−.02	−.58	−.06	−1.78	.02	.47	−.02	−.48	.02	.52	−.04	−1.18
Discussed with	.06	1.55	.05	1.21	−.01	−.38	−.01	−.23	−.03	−.73	.000	.01
Have seen	−.01	−.45	−.05	−1.63	.01	.30	−.01	−.45	.02	.64	−.01	−.35
Talked with MI	−.05	−1.46	−.10	−2.73**	−.08	−2.33*	−.08	−2.24*	.03	.79	−.11	−2.97**
Friend with MI	−.05	−1.33	.02	.64	−.02	−.48	−.02	−.50	−.10	−2.72**	−.01	−.22
Family with MI	−.04	−1.24	−.03	−.85	−.07	−2.37*	−.07	−2.14*	−.05	−1.51	−.08	−2.40*
Cared mentally ill	−.11	−3.38***	−.07	−2.14*	.004	.12	.01	.25	−.02	−.59	−.07	−1.99*
Adjusted R^2 (F)	.108	(8.61)***	.069	(5.45)***	.127	(10.33)***	.053	(4.49)***	.021	(2.40)***	.147	(10.25)***

Note. *** $p \leqslant .001$; ** $p \leqslant .01$; * $p \leqslant .05$

DISCUSSION AND IMPLICATIONS

Similar to previous studies that used CAMI scale, we also found multiple dimensions of attitudes towards the mentally ill. Our finding partially confirms Taylor and Dear's (1981) factor structure but yielded one more dimension (normalization) (see Table 4). The discrepancy might be due to the fact that the number of items actually used in the analysis in each study was somewhat different. For example in Wolff *et al*. (1996a) the three factors comprised of 20 items and in our study five factors with 22 items. Benevolence and Rehabilitation scales were the most important factors of community attitudes in our study, but the other three dimensions were also important. This pattern is similar to Brockington *et al*.'s (1993). However, in Wolff *et al*.'s study (1996a) Fear and Exclusion was the predominant factor.

The multidimensional scale helps us identify both the negative and positive aspects of attitude, where we can work on to intervene, reinforce and enhance a more positive living environment for persons with mental illness. The results revealed that the general population in Taiwan held relatively more benevolent attitude, tended to be relatively tolerant in terms of having mentally ill rehabilitated in the community, and put less social restriction on mentally ill, e.g. the right to vote, etc. However, they were relatively more authoritative, for example the mentally ill need a special kind of control and discipline. Likewise, few of them thought that mental illness is like any other illness. Moreover, the correlations among the five subdimensions fell into lower middle range. Therefore, benevolent thought did not necessarily guarantee the acceptance of rehabilitation in the community or treating the mentally ill as a person like anyone else.

However, benevolent thought could be transformed into compassion for, and acceptance of, another human being if they are given the opportunity to have direct contact with persons with psychiatric disability. The results indicated that direct contact significantly correlated with more positive attitudes towards the mentally ill. The specific type of indirect contact, i.e. 'reading related books', was also an important correlate of the attitude. It implies an active action in trying to gain understanding of mental illness and people with this difficulty. Our results support the findings of previous studies (Angermeyer & Matschinger, 1996; Wolff, Pathare, Craig & Leff, 1996c; Ng & Chan, 2000), i.e. the nature and quality of contact are important. Community intervention could work on promoting the reading on related books on this topic. Also, by creating the environment where the general public has the natural context of direct conversations with the mentally ill and hopefully developing friendships with them will eventually move the attitude of the general public towards a more positive direction.

Our findings revealed that age, education, and occupation were the three important socio-demographic correlates of attitudes towards the mentally ill, which is consistent with previous studies (Hannigan, 1999; Ng & Chan, 2000). Compared with the three studies used the CAMI scale (see Table 4), our results yielded less significant socio-demographic variables, which might be attributable to three reasons. First, we included fewer variables to begin with; second, our model included contact variables; and third, the, population under study was different. Our findings in part support Taylor and Dear's. Nevertheless, we didn't find a significant effect of education on Authoritarianism, which contrasts with their finding in that education had the strongest effect on Authoritarianism and Social Restrictiveness (Wolff *et al*., 1996a). Age was the strongest correlate of Authoritarianism, which is consistent

Table 4
Comparisons of different dimensions derived from the CAMI scale and their socio-demographic and other correlates

Taylor & Dear (1981)[a]	Authoritarianism	Social Restrictiveness	Community Mental Health Ideology	Benevolence	
	Age	**Age**	Age	Age	
	Education	**Education**	Education	Education	
	Children	Children	**Children**	Children	
	Occupation	Occupation	Occupation	Occupation	
	Class	Class	Class	Class	
	Female		**Female**	**Female**	
	Marital status	**Marital status**	Marital status	Marital status	
	Income	Income			
	Tenure	Tenure	**Tenure**	Tenure	
Brockington et al. (1993)[b]	Authoritarianism		Fear/exclusion	Benevolence	
	Age		**Acquaintance**	**Acquaintance**	
	Acquaintance		**Class**	Class	
	Occupational class		Area	Age	
	Education			Area	
	Children				
Wolff et al. (1996a)[b]	Social Control		Fear and Exclusion	Benevolence	
	Social class		**Number of children**	**Education**	
	Ethnic origin			**Asian**	
	Age				
	Time in street				
	Number of children				
	Suffered mental illness				
This study[b]	Authoritarianism	Social Restrictiveness	Community Rehabilitation	Benevolence	Normal
Demographic var.	**Age**	**Age**	**Age**	**Other Occ.**	
	Labor	Illiterate		**Labor**	
		Labor		< High school	
				Gender	
Contact var.	Talked with MI	Read books	Talked with MI	Cared MI	Read books
	Family with MI	Talked with MI	Cared MI		Friend MI
		Family with MI			

Sources: Data adapted from Wolff et al. (1996a) and this study
Note:
[a] Variables are not listed in order of magnitude of effect as a regression analysis was not presented. Variables in bold type had a greater effect on their respective scales than those presented in normal type.
[b] Variables are listed in descending order of magnitude of influence with variables with γ (Brockington et al. 1993) and Beta (Wolff et al. 1996 & this study) greater or equal to 0.15 in bold type.

with Brockington *et al.*'s findings. Different from the findings of Wolff *et al.* (1996a), indicating education exerted the strongest effect on Goodwill (Benevolence), our finding revealed that occupation was the strongest correlate of this dimension. Gender was significant only on Benevolence, which contrasts with Taylor & Dear's but is consistent with the other two studies. Such findings also contrast with previous studies (Cuomo & Ranacher, 1998; Ng & Chan, 2000). The inconsistency might be due to the fact that their studies were based on college or high school students while our study was on the general population.

Age was correlated with three dimensions of the attitude, which also supports the previous studies reviewed by Hannigan (1999). Taking the effects of age and contact on attitude together, we speculate that the tendency towards labeling of the mentally ill was formed during people's growing up process, due to watching stigmatizing media reports or seeing the mentally ill who received the least care in the community. And most of the learning is based on superficial contact and lack of opportunity for sufficient understanding of persons with the disability. To prevent the formation of negative attitudes, we should target younger people and provide them with adequate information, and create opportunities for them to have good experiences with the mentally ill. As suggested by Bhugra (1989), the information should be delivered in a practical format in a simple language, accompanied by written material. Furthermore, as suggested by Aubry, Tefft and Currie (1995) the behavioral presentation of the mentally ill is the major factor affecting neighboring of general public, thus their ability to manage with daily life and social skills to deal with people is important to create a positive image of themselves in contact with others.

Generally, people with college and higher education held more positive attitudes towards the mentally ill, however they also hold more restrictive attitudes than illiterate people. This might mean that highly educated people have higher expectations of performance of social responsibility than illiterate people and therefore they couldn't trust the mentally ill. The psychiatric rehabilitation workers need to communicate with them and create opportunities for them to have contact with the mentally ill, thus, they might change such attitudes. Moreover, for people with less than a high school education, the rehabilitation workers could help them to attain more understanding of what the mentally ill have been through, so that they might have more compassion toward them. Finally, the results indicated that community intervention should specifically target laborers. This may raise another challenge for mental health workers since most laborers in Taiwan seldom pay attention to public speech or exhibits on mental health issues. Our findings and Wolff *et al.'s* (1996c) suggest that the more effective approach for changing attitudes is through direct contact with the mentally ill rather than community education. For example, an agency of community psychiatric rehabilitation could arrange field trips to factories for persons with psychiatric disability, or recruiting laborers as volunteers in the agency.

There are certainly some limitations in this study. First, the explained variances for each attitude dimension were not high, indicating that other important correlates were not included in this study, for example marital status, income, number of children, area, field of profession and knowledge about mental illness. This is the limitation of the telephone survey and quantitative cross-sectional study. It is especially worth noting that the significance on normalization might be due to relatively larger sample size. Second, some of the attitude dimensions had very few items (e.g. Normalization and Non-Social Restrictiveness), which might compromise the reliability of measurement. Future study is needed to expand

the subscale and therefore the psychometric properties of the scale could be enhanced. Third, given the cross-sectional survey of this study, the findings revealed only the correlates instead of the cause of the attitudes.

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NOTES

1. To facilitate the efficiency of random digit dialing, the system generated a preliminary operational sample of 5,400 phone numbers, which proved to be sufficient to reach the target sample size. Within-household sampling follows the standard stratified sampling procedure for CATI in Taiwan to produce a nationally representative sample of respondents. The interviewing of new cases stopped when 1,200 interviews had been successful completed. Due to practical constraints, however, the final completed number of cases is, as is usually the case, slightly higher than the target number.
2. Based on Nunnally's formula (1978), to achieve r?0.8, the number of items needs to be increased to 12 for Benevolence scale, 15 for Rehabilitation, 18 for Non-Authoritarianism, 11 for Non-Social Restrictiveness, and 10 for Normalization. His formula is as follows: $K = r_{kk}(1 - r_{ii})/r_{ii}(1 - r_{kk})$.

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