Community knowledge and attitudes toward recovering citizenship and mental illness: a telephone survey approach

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Abstract

Purpose – *This study aims to assess the knowledge and attitudes toward recovering citizenship (RC)/5 Rs and mental illness of people aged ≥ 18 years in Hong Kong using a telephone survey approach.*

Design/methodology/approach – *A questionnaire comprised the Mental Health Knowledge Schedule (MAKS), Short Form-Community Attitudes Toward Mental Illness (SF-CAMI) and questions on attitudes toward RC/5 Rs, was administered on the phone.*

Findings – *A total of 1,009 respondents completed the telephone survey. A high mean score of MAKS (4.37 ± 1.08) was found with 68%–94% answering the knowledge items correctly. The mean score of SF-CAMI was 46.50 ± 8.74 with the most positive attitude toward fear and exclusion. Approximately half had heard about a similar concept of RC and 79%–94.3% agreed with people in recovery to possess the 5 Rs. Those with greater knowledge or more positive toward mental illness, or knowing someone in recovery were more supportive toward 5 Rs. Those aged 18–44 years, attained a post-secondary education, were employed, and received a monthly income of US$3,861–6,434 were significantly more positive toward 5 Rs.*

Originality/value – *To the best of the authors' knowledge, this is the first study assessing the views of RC of people in the community. The sample had a good knowledge of mental illness but recognition of recovery from mental illness and a sympathetic view toward people in recovery can be further improved. Besides promotion programs, dissemination of the concept of RC and having people in recovery take up valued roles in the community could potentially facilitate the acceptance of social inclusion and acceptance in the community.*

Keywords *Recovery, Recovering citizenship, Mental illness, Community integration, Mental health knowledge, Attitudes*

Paper type *Research paper*

Introduction

Knowledge and attitudes toward mental illness have been widely studied across cultures. Studies involve identifying symptoms and causes of different mental disorders, social distance, reactions and behavioral intentions toward people with mental illness are commonly measured (Jorm, 2012; Link *et al.*, 2004). People with mental illness were still regarded as dangerous and potentially violent although the concept of mental health recovery has been promoted over 30 years (Davison and Strauss, 1992). In recent years, these attitudes have decreased somewhat although social distancing from and rejection of people with mental illness still exist (Angermeyer and Dietrich, 2006; Link *et al.*, 1999). Systematic reviews revealed the increase in public mental health literacy, however, this trend had limited positive impact on the public's attitudes toward mental illness (Morgan *et al.*, 2018; Schomerus *et al.*, 2012).

Previous studies that examined knowledge and attitudes toward mental illness in Hong Kong were usually targeted at particular populations such as secondary and university

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students and health-care professionals (Chung *et al.*, 2001; Fung *et al.*, 2016; Ng and Chan, 2000). Others focused on knowledge and attitudes toward specific mental illnesses (Chan *et al.*, 2018; Furnham and Wong, 2007; Lee *et al.*, 2016). Local studies on knowledge and attitudes toward general mental illness in the whole population are limited (Wong *et al.*, 2017).

In recent years, the new concept of recovering citizenship (RC) has received increasing attention in mental health services (Rowe and Davidson, 2016; Reis *et al.*, 2022). It is important to study the perspectives of the community on RC as well as its relations to attitudes and acceptance of people with mental illness. Rowe and his team from the Yale Program for Recovery and Community Health (Yale-PRCH) emphasize recovery as a process through which people reclaim their lives even while continuing to experience symptoms of mental illness (Rowe and Davidson, 2016). In the late 1990s, they developed the citizenship concept and began to articulate the responsibility that the community, not only the individual or mental health system of care, bears (Rowe and Davidson, 2016). Citizenship is defined as the person's strong connection to the 5 Rs of rights, responsibilities, roles, resources and relationships that society offers its members, and a sense of belonging in a society that both supports and is supported by a strong connection to the 5 Rs (Rowe, 1999; Rowe *et al.*, 2001). RC, therefore, is not simply recovery, but also possessing the 5 Rs and being welcomed and recognized as having equal status in society along with others (Rowe and Davidson, 2016). People's acceptance of the RC concept and the 5 Rs, therefore, are likely to have a positive impact on their tolerance of community integration of people in recovery.

The Citizens Project, a six-month program, was developed to support people with psychiatric disabilities to build and fulfill lives in their communities (Benedict *et al.*, 2019). It has been incorporated and studied in mental health projects of other countries, including the Citizenship project in Spain (Eiroa-Orosa and Rowe, 2017), Connecting Citizens project in Scotland (Turning Point Scotland, 2016), Project Citoyen in Quebec (Pelletier *et al.*, 2017) and Project Connect in the USA in addition to the Citizens Project (Bromage *et al.*, 2017). Since RC has never been investigated among the local Chinese general population, and our agency is going to replicate the Citizens project and adopt RC in its community mental health services, the acceptability and attitudes toward RC in Hong Kong require further exploration.

Global mental health movements have highlighted social integration as a key outcome for mental health services (WHO, 2006; WHO, 2007). In 2006, the United Nations adopted the Convention on the Rights of Persons with Disabilities to promote, protect and ensure full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities, and to promote respect for their inherent dignity (WHO, 2006). Community tolerance of people with mental illness is important for community integration. People with mental illness not being able to overcome discrimination is often due to a lack of opportunities and support rather than a lack of motivation and social skills to develop relationships (Mezzina *et al.*, 2006). The research aimed to study the knowledge and attitudes toward RC/5 Rs and mental illness, among a population aged 18 or above in Hong Kong, China, using a quantitative approach, to identify areas that needed further improvement and promotion of citizenship to facilitate social inclusion and acceptance in the community.

The objectives of this study were (1) to assess knowledge and attitudes toward mental illness, and attitudes toward RC of 5 Rs, among a population aged 18 or above in Hong Kong using a telephone questionnaire survey; and (2) to evaluate factors affecting views and attitudes toward RC and the 5 Rs, and knowledge and attitudes toward mental illness.

Methodology

Procedures and target population

Data collection from the telephone survey was conducted by a research center of a local university. Household and mobile phone numbers were randomly drawn from the Numbering Plan provided by the government. If the phone number was not a household phone number,

another phone number was randomly drawn. The target subjects to participate in the telephone survey were those aged 18 or above, able to communicate in Cantonese, and mentally capable of completing the survey. The last birthday method was used to select respondents from the household if there were more than one family member over 18 years of age (excluding housemaids). The purpose and procedures of the telephone survey were explained by the interviewers. Verbal consent was obtained before the telephone survey interview which lasted for around 10–15 minutes.

The telephone survey was conducted from late January to early February 2021. COVID-19-related social distancing measures and prohibition on gathering regulations were enforced at that time. The Hong Kong population size was 7.4 million at the end of 2020 (Census and Statistics Department, 2021). Assuming a prevalence rate of 50%, a sample size of 1,000 would provide a precision of 3.1% from the true values at a 95% confidence level.

Measuring instruments

A 40-item questionnaire was developed which comprised the Mental Health Knowledge Schedule (MAKS), Short Form-Community Attitudes Toward Mentally Illness (SF-CAMI) and question items related to attitudes toward the 5 Rs of RC, knowing people in the recovery journey and sociodemographics.

The original MAKS (Evans-Lacko *et al.*, 2010) consists of six items assessing mental health-related knowledge areas including help-seeking, recognition, support, employment, treatment and recovery. The Cantonese version translated and developed by Wong and his team was used (Zhu *et al.*, 2016). Respondents were asked to state whether each statement is "correct" or "incorrect." One point was given if the statement was correctly responded to with the highest score of six.

The Chinese version of SF-CAMI consists of 20 items assessing attitudes toward people with mental illness in terms of "Benevolence" (five items), "Fear and exclusion" (eight items) and "Support and tolerance" (seven items) (Tong *et al.*, 2020). A Cronbach's alpha of 0.85 and an intraclass correlation coefficient of 0.62 were obtained for internal consistency and test–retest reliability, respectively (Tong *et al.*, 2020). Good convergent validity was measured by construct reliability with the three subscales all above 0.70. Respondents rated the statements using a five-point Likert scale ranging from strongly agree (1) to strongly disagree (5). A high total score indicates negative attitudes toward mental illness. The highest possible total score is 100.

Regarding RC and 5 Rs, one item was developed to study whether the respondents had heard of the concept of 5 Rs in RC. The concept of RC could not be fully explained to the respondents on the phone, however, we tried to explain RC in an easily understandable way. First, the respondents were asked if they had heard about "people in recovery should possess rights, responsibilities, roles, resources and relationships in the society." Although this did not fully elaborate on the RC concept, it helped assess if they recognized a similar idea. Then the extent they agreed that people in recovery should possess rights, responsibilities, roles, resources and relationships in society were asked, with examples extracted from the Citizenship Measures (O'Connell *et al.*, 2017) to exemplify the concept of each of the 5 Rs. Respondents were asked to rate the statements using a five-point Likert scale ranging from strongly agree (5) to strongly disagree (1). The score ranges from 5 to 25. A high score indicates positive attitudes toward 5 Rs.

Two items were developed to study whether the respondents had ever known anyone with or had recovered from mental illness (i.e. people in the recovery journey), and their relationships. Six questions related to sociodemographics including gender, age, education level, marital status, employment status and monthly individual income were also included.

Statistical analysis

Statistical analysis for the telephone survey was performed using IBM SPSS statistics (version 26.0) (IBM Corp, 2019). All the analyses were weighted by gender and age from the mid-2019 census data. Descriptive analyses were performed to examine the scale scores and sociodemographic characteristics of participants. Correlations between knowledge, attitudes toward mental illness and RC/5 Rs were assessed using Spearman correlation. Differences in scale scores across different sociodemographics were assessed using one-way ANOVA.

Results

A total of 1,009 respondents (607 household phone numbers and 402 mobile phone numbers) completed the telephone survey with a response rate of 37%. The gender and age distributions of our sample were comparable to the Census data of Hong Kong in the mid of 2020 (Census and Statistics Department, 2021). More than half of the respondents were females (53.1%), married or cohabiting (59.1%), receiving a monthly individual income less than US$2,573 (HKD20,000) (53.1%) and claimed that they knew someone with or had recovered from mental illness (56.7%) (Table 1).

The respondents' knowledge of mental health, attitudes toward people with mental illness and attitudes toward 5 Rs are described below, followed by correlations among MAKS, SF-CAMI and 5 Rs, and factors affecting knowledge and attitudes.

Knowledge of mental health

The mean total score of MAKS was 4.37 ± 1.08 (Table 2). The percentages of respondents who answered the items correctly were as follows: Employment (67.8%), Support (81.9%), Treatment (78.4%), Recognition (93.7%), Recovery (44.3%) and Help-seeking (70.7%). 55.7%, which was the highest among the six domains, disagreed with the Recovery item "People with severe mental health problems can fully recover?"

Attitudes toward people with mental illness

The mean total score of SF-CAMI was 46.50 ± 8.74. A low score displayed positive attitudes. Respondents showed less fear and exclusion of people with mental illness (mean item score = 2.13 ± 0.49), followed by Support and Tolerance (mean item score = 2.39 ± 0.50) and Benevolence (mean item score = 2.54 ± 0.58).

There are items in the SF-CAMI related to attitudes toward community integration. In the subscale of benevolence, 93.0% strongly disagreed or disagreed with "(15) Keeping the mentally ill behind locked doors" (Table 3). Similarly, in the fear and exclusion subscale, 51.9% and 76.8% strongly agreed or agreed with "(11) The mentally ill should not be isolated from the rest of the community" and "(13) The most effective therapy is to let the mental patients go back to a normal community", respectively. In the support and tolerance subscale, 70.5% also supported "(12) Not to treat the mentally ill as if they are outcasts of society". These indicated that the respondents were generally positive toward the concept of community integration.

The respondents were unwilling or scared if the mentally ill were close by. Only 23.0%–38.1% strongly disagreed or disagreed with "(10) Not having a neighbor who has been mentally ill," "(16) Mental health facilities should be kept out of residential neighborhoods" and "(9) Frightened to have people with mental problems living nearby." In the subscale of support and tolerance, the respondents generally were not supportive of people who suffered from mental illness having a family role. Only 28.2% indicated that they strongly agreed or agreed with "(8) most women who were once in a mental hospital can be trusted to take care of babies", and 43.0% strongly disagreed or disagreed with "(5) a woman would be very unwise to marry a man who has suffered from mental illness but has regained normality".

Table 1 Sociodemographic characteristics of the respondents

Sociodemographic variables	N = *1,009*
Gender	
Male	473 (46.9%)
Female	536 (53.1%)
Age (years)	
18–24	87 (8.6%)
25–44	322 (32.0%)
45–64	380 (37.8%)
≥65	216 (21.5%)
Refused	*3*
Education	
Primary and below	101 (10.0%)
Secondary	409 (40.6%)
Post-secondary	94 (9.4%)
University or above	404 (40.1%)
Refused	*1*
Marital status	
Never married	290 (29.0%)
Married/Cohabiting	590 (59.1%)
Divorced/Separated	51 (5.1%)
Widowed	67 (6.8%)
Refused	*11*
Employment status	
Full-time	505 (50.4%)
Part-time	66 (6.5%)
Student	51 (5.1%)
Homemaker	67 (6.7%)
Retired	266 (26.5%)
Unemployed	47 (4.7%)
Refused	*7*
Individual monthly income (US$)	
No income	85 (8.9%)
≤643	124 (13.0%)
644–1,287	84 (8.8%)
1,288–2,573	214 (22.4%)
2,574–3,860	180 (18.9%)
3,861–5,147	93 (9.8%)
5,148–6,434	53 (5.6%)
6,435–7,721	56 (5.8%)
7,722–10,295	32 (3.3%)
10,296–12,869	13 (1.4%)
≥12,870	19 (2.0%)
Refused	*55*
Knowing anyone in recovery	
Yes	572 (56.7%)
No	422 (41.9%)
Don't know/Unsure	14 (1.4%)
Refused	1

Source: Table by authors

Attitudes toward 5 Rs

The mean total score of 5 Rs was 21.73 ± 2.69 (Table 2). More than half of the respondents (56.6%) had not heard about the basic concept of RC. 94.3% strongly agreed or agreed with people in recovery to have rights in the community, followed by resources (91.9%), relationships (90.6%), responsibilities (85.2%) and roles (79.0%) (Table 4).

Table 2 Scores of MAKS, SF-CAMI and 5 Rs

Scales	*Total score (Mean ± SD)*	*Item score (Mean ± SD)*
MAKS	4.37 ± 1.08	
SF-CAMI	46.50 ± 8.74	2.32 ± 0.44
Benevolence	12.71 ± 2.92	2.54 ± 0.58
Fear and exclusion	17.05 ± 3.95	2.13 ± 0.49
Support and tolerance	16.74 ± 3.51	2.39 ± 0.50
5 Rs	21.73 ± 2.69	4.34 ± 0.54

Source: Table by authors

Table 3 Prevalence of attitudes toward mental illness

SF-CAMI questionnaire item	*Strongly agreed/ Agreed (%)*	*Neutral (%)*	*Strongly disagree/ Disagree (%)*
Benevolence			
6. It is best not to have any contact with a person who has mental problems	9.9	22.0	*68.0*
7. The mentally ill don't deserve our sympathy	8.8	16.8	*74.4*
15. The best way to handle the mentally ill is to keep them behind locked doors	1.8	5.2	*93.0*
19. There have been sufficient existing facilities of mental health services	9.7	26.1	*64.2*
20. Increased spending on mental health services is a waste	2.6	12.0	*85.3*
Fear and exclusion			
3. The mentally ill are far less of a danger than most people imagine	*68.8*	19.4	11.8
9. It is frightening whenever to think of people with mental problems living nearby	24.2	37.7	*38.1*
10. I would not want to have a neighbor who has been mentally ill	27.2	49.8	*23.0*
11. The mentally ill should not be isolated from the rest of the community	*51.9*	25.3	22.8
13. The most effective therapy for many mental patients is to let them go back to a normal community	*76.8*	16.3	6.9
14. Mental patients need the same kind of control and discipline as a young child	44.7	32.0	*23.3*
16. Mental health facilities should be kept out of residential neighborhoods	27.5	42.3	*30.2*
17. Residents have nothing to fear from people coming into their neighborhood to obtain mental health services	*70.4*	22.4	7.3
Support and tolerance			
1. There should not be any over-emphasis that the mentally ill endanger the public	*65.3*	22.3	12.4
2. The situation that mentally ill have for too long been the subject of ridicule should be put to an end	*81.4*	11.0	7.7
4. Virtually anyone can become mentally ill	*82.7*	10.0	7.3
5. A woman would be very unwise to marry a man who has suffered from mental illness, even though he seems to have regained normality	14.4	42.7	*43.0*
8. Most women who were once patients in a mental hospital can be trusted to take care of babies	*28.2*	44.3	27.4
12. The mentally ill should not be treated as if they are outcasts of society	*70.5*	12.3	17.2
18. Residents should accept the location of mental health institutions in their neighborhood to serve the needs of the residents	*60.4*	31.1	8.4

Source: Table by authors

Correlations among MAKS, SF-CAMI and 5 Rs

The correlation between the mean total scores of MAKS and SF-CAMI was measured with Spearman correlation. A positive attitude was indicated by a low mean total score of SF-CAMI. A significant negative correlation between mental health knowledge and attitudes toward mental illness ($r = -0.160$, $p < 0.001$) indicated that respondents with greater knowledge of mental health tended to have a more positive attitude.

Table 4 Attitudes toward 5 Rs

5 Rs	*Strongly agree/Agree*	*Neutral*	*Strongly disagree/Disagree*	*Missing/Reject*
Attitudes toward				
Rights	950 (94.3%)	50 (5.0%)	7 (0.70%)	2
Responsibilities	856 (85.2%)	118 (11.7%)	31 (3.08%)	4
Roles	792 (79.0%)	174 (17.3%)	37 (3.7%)	6
Resources	921 (91.9%)	67 (6.7%)	14 (1.4%)	7
Relationships	915 (90.6%)	86 (8.5%)	9 (0.9%)	0

Source: Table by authors

A significant positive correlation was found between attitudes toward 5 Rs and the mean total scores of mental health knowledge ($r = 0.163$, $p < 0.001$). The correlation between attitudes toward the 5 Rs and mental illness was also statistically negatively correlated with each other ($r = -0.484$, $p < 0.001$). Those with greater knowledge of mental health, and those who were more positive toward mental illness, were more supportive of the 5 Rs.

Knowing people in recovery

One-way ANOVA analysis showed that respondents who claimed that they knew people with mental illness, or had recovered from mental illness had significantly better knowledge of mental health ($p = 0.036$), and more positive attitudes toward mental illness ($p < 0.001$) and 5 Rs ($p < 0.001$) compared with those who did not know anyone in recovery (Table 5).

Knowing of RC concept

Respondents who had heard of the basic concept of RC were found to have significantly greater knowledge of mental health ($p < 0.001$), and more positive attitudes toward mental illness ($p = 0.002$) and 5 Rs ($p = 0.001$) (Table 5).

Sociodemographic factors affecting knowledge and attitudes

Differences in the mean total scores of MAKS, SF-CAMI and 5 Rs across different sociodemographics were analyzed using one-way ANOVA (Table 6). For MAKS, significant differences across various age groups ($p = 0.002$) and individual monthly income levels ($p = 0.008$) were observed. Those aged 18–44 years showed better mental health knowledge than the older age groups. Those with an individual monthly income of US$3,861–6,434 (median in 2021: US$2,256) had the highest knowledge score while those with no income were found to have the lowest knowledge score.

Significant differences in the mean total score of SF-CAMI were also found across different age groups, education levels, marital statuses, occupations and individual monthly incomes ($p < 0.001$) (Table 6). Those who were 18–44 years old, with a university education, never

Table 5 Comparing MAKS, SF-CAMI and 5 Rs between respondents knowing and not knowing people in recovery, and heard of and not heard of RC concept using one-way ANOVA

	Knowing PIR (Mean ± SD)			*Heard of the RC concept (Mean ± SD)*		
Scales	*Yes*	*No*	p	*Yes*	*No*	p
MAKS total	4.44 ± 1.10	4.29 ± 1.06	0.036	4.52 ± 1.03	4.26 ± 1.11	<0.001
SF-CAMI total	44.52 ± 8.71	49.16 ± 8.13	<0.001	45.42 ± 8.62	47.19 ± 8.77	0.002
5 Rs total	22.05 ± 2.57	21.27 ± 2.78	<0.001	22.06 ± 2.45	21.48 ± 2.84	0.001

Source: Table by authors

Table 6 Sociodemographic factors affecting MAKS, SF-CAMI and 5 Rs

Sociodemographic variables	*MAKS total (Mean ± SD)*	p	*SF-CAMI total (Mean ± SD)*	p	*5 Rs total (Mean ± SD)*	p
Gender						
Male	4.38 ± 1.12	0.720	46.32 ± 8.56	0.560	21.68 ± 2.69	0.586
Female	4.36 ± 1.05		46.65 ± 8.91		21.77 ± 2.69	
Age (years)						
18–44	4.46 ± 1.09	0.002	44.58 ± 8.84	<0.001	22.05 ± 2.51	<0.001
45–64	4.39 ± 1.07		46.71 ± 8.33		21.76 ± 2.73	
≥65	4.15 ± 1.08		49.74 ± 8.31		21.01 ± 2.82	
Education						
Primary or below	4.19 ± 1.08	0.110	52.50 ± 7.10	<0.001	20.71 ± 3.07	<0.001
Secondary	4.32 ± 1.07		48.03 ± 8.32		21.45 ± 2.76	
Post-secondary diploma	4.42 ± 1.13		45.38 ± 8.21		22.17 ± 2.25	
University or above	4.45 ± 1.08		43.68 ± 8.53		22.16 ± 2.50	
Marital status						
Never married	4.37 ± 1.10	0.928	44.66 ± 8.43	<0.001	21.97 ± 2.66	0.087
Married/cohabited	4.36 ± 1.07		46.86 ± 8.73		21.69 ± 2.60	
Divorced/Separated	4.37 ± 0.99		46.42 ± 9.28		21.69 ± 3.09	
Widowed	4.46 ± 1.20		50.45 ± 7.40		21.06 ± 3.12	
Occupation						
Employed	4.44 ± 1.07	0.056	45.18 ± 8.59	<0.001	21.97 ± 2.63	0.001
Unemployed	4.40 ± 1.20		47.00 ± 8.99		21.39 ± 2.92	
Retired	4.22 ± 1.08		49.28 ± 8.44		21.21 ± 2.87	
Others	4.37 ± 1.07		46.08 ± 8.50		21.94 ± 2.29	
Individual monthly income (US$)						
No income	4.23 ± 1.27	0.008	48.07 ± 8.68	<0.001	21.35 ± 2.51	<0.001
1–1,287	4.31 ± 1.01		48.95 ± 8.49		21.29 ± 2.87	
1,288–2,573	4.28 ± 1.03		46.99 ± 8.57		21.44 ± 2.77	
2,574–3,860	4.37 ± 1.09		44.95 ± 8.63		21.90 ± 2.77	
3,861–6,434	4.67 ± 1.04		43.78 ± 8.39		22.53 ± 2.23	
6,435–12,869	4.55 ± 1.07		44.55 ± 8.10		22.07 ± 2.34	
≥12,870	4.41 ± 1.04		45.75 ± 9.05		22.47 ± 2.72	

Source: Table by authors

married, were employed and receiving an individual monthly income of US$3,861–6,434 showed a more positive attitude toward mental illness.

Similarly, significant differences in the mean total score of 5 Rs were found in age ($p < 0.001$), education levels ($p < 0.001$), occupations ($p = 0.002$) and individual monthly income ($p < 0.001$) (Table 6). Respondents aged 18–44 years, attained a post-secondary education, were employed and receiving an individual monthly income of US$3,861–6,434, were more supportive toward 5 Rs.

No significant difference was found in mental health knowledge and attitudes toward both mental illness and the 5 Rs between males and females.

Discussion

Knowledge and attitudes to mental illness could influence how people interact with the mentally ill and the extent they support community integration of people in recovery. Our respondents showed a high MAKS knowledge score with 68%–94% answering question items related to employment, support, treatment, recognition and help-seeking correctly. Only a low percentage of 44.3%, however, could correctly answer the recovery item, which

indicated that the general public did not realize or they did not believe that people with severe mental health problems could fully recover. Compared a telephone interview in 2014 targeting on a working population in Hong Kong, found that 55% of the respondents answered the recovery item correctly, which was also the lowest among the six knowledge items (Zhu *et al.*, 2016). The other five knowledge items varied between 69% and 97% which were similar to our results. If people have a general belief that those with severe mental problems could not recover, they would probably be reluctant to contact and provide support to these people as well as having more negative perspectives toward people in recovery. In our study, respondents who knew someone with mental health problems or were aged 18–44 years understood more about mental illness, probably because they had the opportunity to interact with people in recovery. Besides, the younger age groups are more willing to learn new things and have the belief to help people in recovery, which facilitate their willingness to learn more about mental illness (Al Omari *et al.*, 2020).

We used SF-CAMI Chinese version with 20 items for measuring attitudes toward mental illness because it has fewer items and is easier to implement in a phone survey, plus its psychometric properties had been confirmed in the Chinese population. This version of SF-CAMI is new, therefore, we could only compare our results with the original study from mainland China (Tong *et al.*, 2020). The attitudes of the medical students and primary health workers in Tong's study were more negative compared with our population sample (46.50 ± 8.74 vs 48.72 ± 9.46 and 46.71 ± 7.81). Regarding benevolence (12.71 ± 2.92 vs 9.74 ± 2.94 and 11.26 ± 3.78) and support and tolerance (16.74 ± 3.51 vs 15.70 ± 3.50 and 15.35 ± 4.51), our sample was less benevolent, and less supportive and tolerant, while both samples from mainland China were more reluctant to have close contact with people in recovery (Fear and exclusion: 17.05 ± 3.95 vs 21.27 ± 4.37 and 22.11 ± 5.28). Given the training and education, it might be expected that the medical students and primary health workers should be more supportive; however, their attitude tended to be unfavorable to the mentally ill. A systematic review and meta-analysis revealed that education only had a small to medium effect on improving stereotypes and prejudice among university students (Xu *et al.*, 2017). People with a medical or a health background are more familiar with and knowledgeable about the biological illness models, however, the biogenetic causal beliefs tend to increase stigma and negative attitudes toward mental illness (Angermeyer and Dietrich, 2006; Larkings and Brown, 2018).

Our participants were generally supportive of community integration; however, they were more reluctant and scared if people in recovery were nearby or living in the neighborhood, as well as if mental health facilities were situated in their neighborhood. People are less supportive because they do not know much about mental illness or they do not know how to respond to people in recovery (Wolff *et al.*, 1996). A previous survey conducted in Hong Kong also found that the majority of respondents were fearful for halfway house residents and refused to set up halfway houses in their neighborhoods (Lam *et al.*, 2006). It is not the specific mental illness or the severity of it that matters, but the perceived risks of aggressive behaviors that determine the public's acceptance (Lam and Sun, 2014). Our results also showed that the majority were less tolerant of the family roles or responsibilities of people in recovery. RC emphasizes the 5 Rs including roles and responsibilities that society offers; however, people in recovery had difficulty being part of the regular social network. More importantly, the adverse effect of discrimination may not only lead to patients not being referred for appropriate mental health care and treatment (Kumar *et al.*, 2012) but also obstruct both community integration and connection to the 5 Rs in the concept of RC, which would further hinder people's recovery. Global mental health movements have highlighted social integration as a key outcome for mental health services (WHO, 2006; WHO, 2007). People with mental disorders should have the right to full and effective participation and inclusion in society.

Our study found that gender was not a factor in determining mental health knowledge and attitudes toward mental illness and 5 Rs. Some previous studies reported more positive attitudes to mental illness in females as they were generally more tolerant and supportive of people with mental illness (Yuan *et al.*, 2016; Angermeyer and Dietrich, 2006); however, most of the studies found no significant difference between the two genders.

A review of population studies reported that people with a higher education level and at a younger age tended to be more positive about mental illness and expressed more liberal views, which are in line with our findings (Stuart and Arboleda-Florez, 2001; Angermeyer and Dietrich, 2006; Yuan *et al.*, 2016). The younger age group may have more access to information and resources through online programs and social media, and education at schools and universities. Studies from western countries showed that older participants endorsed more authoritarian, social restrictiveness and interpersonal ideology attitudes, while those with lower literacy in mental health showed intolerant attitudes toward mental illness (Kazantzis *et al.*, 2009; Todor, 2013; Stuart and Arboleda-Florez, 2001). In our study, the majority who were never married were in the younger age groups which explained why those who were never married were more optimistic about mental illness. People with higher education could be explained by their better understanding and acceptance and therefore, they had increased knowledge of mental illness (Yuan *et al.*, 2016). Concerning income, a Singaporean study showed that those who had lower individual income (monthly income $<$ SGD 2,000) were more prejudiced with higher misconceptions toward mental illness (Yuan *et al.*, 2016). Our respondents with individual monthly incomes less than US$2,573, and those who were unemployed or retired were more negative toward mental illness compared with people with higher incomes. Income is related to employment and both are indicators of socioeconomic status. Lower socioeconomic groups tend to have poorer access to mental health services, stronger stigma and weaker mental health-related knowledge which could lead to more negative attitudes (Potts and Henderson, 2020). To address these issues, especially for the old age and low-income groups, partnering with organizations in the community that provide services to these populations to facilitate their understanding and support to the mentally ill could be considered. In addition to reducing discrimination and stigmatization, sharing stories of individuals who have experienced mental illness, and interacting and developing relationships with the mentally ill, would probably dispel their myths.

In our study, those who knew someone in recovery were supportive of the 5R concept and mental illness as well as having a better knowledge of mental health. A Hong Kong study (Chung *et al.*, 2001) found that no previous contact with the mentally ill was associated with greater social distance. Another study by Wolff *et al.* (1996) found that knowing somebody with a mental illness or having suffered from mental illness was associated with less social control. Personal contact with people in recovery, however, can help reduce negative judgments toward mental ill patients (Chung *et al.*, 2001), and show sympathy through their experience in interacting with people in recovery.

Conclusion

This is the first study assessing the views of RC of people in the community. The acknowledgment of citizenship of people in recovery by society is important in the recovery process. RC is a novel concept in mental health worldwide, including in Hong Kong; therefore, it is not surprising that 57% of the respondents had not heard about the RC concept. The attitude to possession of the 5R's, however, was positive. Although more than half of our respondents were not familiar with the RC concept, over 90% were supportive of the 5R's. Similar to knowing people in recovery, those who heard about the RC concept tended to be more positive toward both mental illness and the 5R's as well as more knowledgeable about mental illness. Promoting the RC concept or its connection to the 5R's would potentially bring a positive attitude to mental illness. The acceptance of people in

recovery and the acknowledgment of their contributions are significant to the recovery journey.

The findings of this study showed that our samples generally had good knowledge of mental illness but recognition of recovery from mental illness and a humanistic and sympathetic view toward mentally ill patients (i.e. benevolence) can be further improved. Because of the lack of opportunity to know or contact people in recovery, many of our respondents were afraid of people in recovery in the community and hesitated to accept their roles and responsibilities in the community. According to the Convention on the Rights of Persons with Disabilities (WHO, 2006), "everyone is entitled to all the rights and freedoms set forth therein, without distinction of any kind," and "the need to promote and protect the human rights of all persons with disabilities is recognized." To recognize the valued existence and potential contributions made by persons with disabilities to the communities, dissemination of the concept of RC and having people in recovery take up valued roles in the community could potentially facilitate the acceptance of social inclusion and acceptance. Messages are better tailored to different population groups in promotion programs as knowledge and attitudes toward mental illness and the 5R's vary across age, education, occupational status and income. Emphasizing that discrimination against any person on the basis of disability is a violation of the inherent dignity and worth of the human person is important (WHO, 2006).

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