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Associative stigma among mental health professionals in Singapore: a cross-sectional study

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ABSTRACT

Objectives (1) Investigate and explore whether different classes of associative stigma (the process by which a person experiences stigmatisation as a result of an association with another stigmatised person) could be identified using latent class analysis; (2) determine the sociodemographic and employment-related correlates of associative stigma and (3) examine the relationship between associative stigma and job satisfaction, among mental health professionals.

Design Cross-sectional online survey.

Participants Doctors, nurses and allied health staff, working in Singapore.

Methods Staff (n=462) completed an online survey, which comprised 11 associative stigma items and also captured sociodemographic and job satisfaction-related information. Latent class analysis was used to classify associative stigma on patterns of observed categorical variables. Multinomial logistic regression was used to examine associations between sociodemographic and employment-related factors and the different classes, while multiple linear regression analyses were used to examine the relationship between associative stigma and job satisfaction.

Results The latent class analysis revealed that items formed a three-class model where the classes were classified as 'no/low associative stigma', 'moderate associative stigma' and 'high associative stigma'. 48.7%, 40.5% and 10.8% of the population comprised no/low, moderate and high associative stigma classes, respectively. Multinomial logistic regression showed that years of service and occupation were significantly associated with moderate associative stigma, while factors associated with high associative stigma were education, ethnicity and occupation. Multiple linear regression analyses revealed that high associative stigma was significantly associated with lower job satisfaction scores.

Conclusion Associative stigma was not uncommon among mental health professionals and was associated with sociodemographic factors and poorer job satisfaction. Associative stigma has received comparatively little attention from empirical researchers and continued efforts to address this understudied yet important construct in conjunction with future efforts to dispel misconceptions related to mental illnesses are needed.

Strengths and limitations of this study

► This is the first study to explore associative stigma among mental health professionals in Asia.
► Latent class analysis was used to classify associative stigma on patterns of observed categorical variables.
► Multinomial logistic regression and multiple linear regression analyses were used to examine associations between sociodemographic factors and associative stigma and the relationship between associative stigma and job satisfaction.
► The study has some limitations including the cross-sectional design, it may be subjected to social desirability bias and it lacks generalisability due to inclusion criteria.

INTRODUCTION

Stigma is a complex and multifaceted construct and often results from misunderstandings and misperceptions society has about people with mental illnesses. Link and Phelan describe stigma as an overarching construct that exists when five inter-related components occur: (1) labelling, (2) negative attributes, (3) separation (4) status loss and (5) discrimination.[1] People with mental illnesses are frequently viewed or labelled as incompetent, irresponsible, unpredictable and dangerous.[2] The consequences of this prejudice and discrimination can result in people with mental illnesses avoiding care and treatment, preferring denial or choosing not to disclose their condition.[3] This can then have damaging effects on other aspects of their lives including employment and job opportunities, relationships, housing opportunities, life satisfaction as well as self-esteem and self-efficacy.[4–7] The impact of stigma is significant for people with mental illnesses, their families, caregivers and even health professionals providing mental healthcare.

To date, there has been extensive literature surrounding stigma towards those with a mental illness; however, stigma does not only affect those who are being stigmatised but can also emanate from close association to these people. Associative stigma otherwise referred to as affiliate stigma, courtesy stigma or secondary stigma describes the process by which a person experiences stigmatisation as a result of an association with another stigmatised person.[3 8] This stigma by association may be experienced by parents, spouses, siblings, children, friends, caregivers or coworkers of the stigmatised. More recently, there has been a growing interest in associative stigma experienced by mental health professionals, whereby they or the psychiatric discipline is judged along the same stigmatising stereotypes as their patients.[9] Negative and stigmatising beliefs relating to mental health professionals not only discredit the valuable contributions these individuals make, but more importantly, these beliefs discredit the needs of people who access mental healthcare. Furthermore, negative perceptions of mental health professionals may in fact further exacerbate the stigma of mental illnesses.[8]

There is a dearth of literature concerning associative stigma experienced by mental healthcare professionals. Verhaeghe and Bracke[10] investigated the link between associative stigma and burn-out and job satisfaction among mental health professionals in Belgium, and found that associative stigma was related to more depersonalisation, more emotional exhaustion and less job satisfaction. In a second study, Ben Natan *et al*[11] compared attitudes and stigma among psychiatric and non-psychiatric nurses in Israel and found that non-psychiatric nurses held more stigmatising views towards mental illnesses, individuals with a mental illness and the role of psychiatric nursing, although associative stigma did not differ between the two groups. A recent qualitative study among mental health clinicians from varying professional backgrounds including allied health staff, psychiatrists and law enforcement, found that these professionals commonly endorsed experiences of associative stigma from community members.[12]

There have also been a few earlier studies which have explored associative stigma among nurses,[8 13 14] while to our knowledge, besides the qualitative study described above, there has only been one other study that included allied health staff working in mental healthcare,[10] and none of which have been undertaken in Asian settings. Less is, therefore, known about the extent of associative stigma among health professionals working in Asia and how this may compare to Western cultures. Despite the lack of research in this field, numerous studies have explored perceptions, attitudes and stigma towards psychiatry and psychiatrists among medical students in various parts of the world.[15] It is, therefore, possible that these negative perceptions are a result of public stigma, media portrayal of psychiatry and people with mental illness or even influences by medical teaching staff and such perceptions may contribute to associative stigma among mental health professionals.

At the time this study was conducted, there was no developed or validated tool to specifically measure associative stigma among mental health professionals and accordingly comparisons across studies are difficult. A recent study, however, has explored the validity and factor structure of associative stigma via the Clinician Associative Stigma Scale (CASS).[16] Findings revealed that among a sample of clinicians in the USA, the CASS displayed good internal consistency and evidence of convergent validity and is an effective tool for measuring associative stigma among mental health professionals who work with people with serious mental illness. A second study has also validated this scale among a sample of clinicians in China, with results revealing how cultural differences can impact associative stigma.[17]

The current study investigated associative stigma experienced by staff working at the Institute of Mental Health (IMH). IMH is the only tertiary psychiatric hospital in Singapore and encompasses a 2000-bed inpatient facility as well as specialist outpatient clinics and employs over 1500 doctors, nurses and allied health staff including psychologists, pharmacists, occupational therapists, physiotherapists, case managers and medical social workers. The aims of this study were to: (1) investigate and explore whether different classes of associative stigma could be identified using latent class analysis; (2) determine the sociodemographic and employment-related correlates of associative stigma and (3) examine the relationship between associative stigma and job satisfaction, among mental health professionals (doctors, nurses, psychologists, pharmacists, occupational therapists, physiotherapists, case managers, counsellors and medical social workers) working at IMH.

In order to explore associative stigma in the current study, latent class analysis was used. Previous research has mainly been conducted to develop and validate stigma scales that measure stigma towards those with a mental illness. However, much of this research has validated these scales using a variable-centred approach, such as exploratory and confirmatory factor analysis. Such methods measure stigma as a total community or population score and this mean score may not give the full picture of the complex phenomena of stigma, which is often multifaceted within individuals and populations.[18]

An alternative approach that can enhance understanding of the varying characteristics and levels of stigma within a population is latent class analysis. Latent class analysis is a respondent-centred approach that aims to group individuals into class groups based on their responses to a set of observed variables. It has been widely used in behavioural and social science research to uncover unobserved heterogeneity in a population and to find substantively meaningful groups of people that are similar in their responses to measured variables or growth trajectories.[19] Once individuals are assigned to their most likely class, based on their responses to observed variables, it is then possible to examine other features such as

sociodemographic correlates of each class, to determine predictors of these classes.[20]

METHODS
Participants and procedure

All doctors, nurses and allied health staff (psychologists, pharmacists, occupational therapists, physiotherapists, case managers and medical social workers) working at IMH were invited to participate in the survey, which was administered via QuestionPro, an online survey application. Staff were informed of the study and the inclusion criteria via email and were sent a link to the online survey. Inclusion criteria required respondents to be: (1) Singapore citizens, permanent residents ornon-residents with an employment or work permit; (2) doctors, nurses or allied health staff currently working at IMH and (3) aged 21 years and above. Staff who were willing to participate in the survey were required to read and accept an online consent form thus indicating their willingness and consent to participate in the study.

In order to explore employment-related correlates such as occupation, it was estimated that a sample size of approximately 200 nurses and 200 allied health staff would be needed to explore differences in associative stigma among the two groups, where sample size calculations were performed using PS (power and sample size calculation) software for comparing means. Doctors were not included in the sample size calculation as at the time of the survey we knew that less than 100 doctors were currently employed at IMH, and therefore, a small number of doctors were expected to participate in the study. As reported in a previous study, Ben Natan *et al*[11] found there to be significant mean difference in stigma scores between psychiatric and non-psychiatric nurses, with psychiatric nurses having more positive attitudes towards mental illness (mean=2.5; SD=0.76 vs mean=2.25; SD=0.71), individuals with mental illness (mean=3.33; SD=0.6 vs mean=3.57; SD=0.7) and the role of psychiatric nursing (mean=1.79; SD=0.6 vs mean=2.5; SD=0.5). Assuming a significance level at p<0.05% and 80% power of the study, the minimum sample size required to replicate these analysis is was 146 subjects per group (ie, group 1=nurses and group 2=allied health (psychologists, pharmacists, occupational therapists, physiotherapists, case managers, counsellors and medical social workers)). Taking into account a 40% rate of incomplete or partial completes a sample size of 200 per group (400 in total) was required. Accordingly, once this limit was reached, subsequent staff, who wished to participate in the survey, were sent a message informing them recruitment had ceased. Data were collected between February and April 2016, with a total of 470 participants completing the study; eight cases were removed due to unreliable data or staff not meeting the inclusion criteria.

Patient and public involvement

There was no patient or public involvement in the study design, however, staff at IMH will be informed of the study findings.

Measures

At the time this study was conducted, there was no developed and validated instrument which measured associative stigma. Two recent studies[10 11] derived items to measure associative stigma, based on their own literature reviews. Modified versions of some of these items were used and additional items were also added based on our own literature review. Five items were answered using a 5-point Likert scale (ie, never, rarely, sometimes, often and all the time)[10]:

1. People react negatively when they know I work in a mental healthcare setting.[10]
2. People make jokes about me for working in a mental healthcare setting.[10]
3. I feel ashamed to be working in a mental healthcare setting.[10]
4. I am reluctant to tell people I work in a mental healthcare setting.[10]
5. I have been treated unfairly by others when they learn I work in a mental healthcare setting.

An additional six items were answered using the following response categories and similar to those used by Ben Natan *et al*[11]: strongly agree (1); slightly agree (2); neither agree nor disagree (3); slightly disagree (4); strongly disagree (5). Items included:

1. Most people think less of a person who works in a mental healthcare setting.
2. Once they know a person works in a mental healthcare setting, most people will take their opinions less seriously.
3. Mental healthcare contributes to the health of people, families, communities and society in unique and meaningful ways.[11]
4. The mental health profession lacks a scientific basis.[11]
5. Working in a mental healthcare setting does not require special skills.[11]
6. Mental health work is dangerous.[11]

Sociodemographic information was captured including age, gender, ethnicity, marital and residency status and education. In addition, staff were asked to indicate how long they had worked at IMH, their occupation, and to rate their job satisfaction on a scale from 1 to 10, where 1 indicated they were very dissatisfied and 10 indicated very satisfied.

Statistical analysis

All statistical analyses were done using SAS V.9.2 (SAS Institute). Mean and SD were calculated for continuous variables, and frequencies and percentages for categorical variables. Missing data were very low (0.2%–0.6%) and only in relation to associative stigma items. Listwise deletion methods were applied for all analyses.

Latent class analysis

Latent class analysis was used to classify associative stigma on patterns of observed categorical variables. Latent class analysis is a 'respondent-centred' approach that seeks to group individuals into 'classes' based on their responses to a set of items,[20] and in this case, their responses to 11 associative stigma items. All associative stigma item responses were dichotomised such that for the first five questions, 'sometimes', 'often' and 'all the time' defined endorsement of the items; and for the remaining six questions, 'strongly agree' and 'slightly agree' defined endorsement. Responses 'rarely' and 'never' from the first set, and 'neither agree nor disagree' 'slightly disagree' and 'strongly disagree' from the second set defined non-endorsement. Latent class analysis is a mixture model that posits that there is an underlying unobserved categorical variable (ie, associative stigma) that divides a population into mutually exclusive and exhaustive latent classes. It is used to identify homogeneous subgroups, which share a common pattern of responses within a heterogeneous population. It relates a set of observed categorical variables to a set of latent variables. A latent class model with the optimal number of classes was determined using model fit statistics, including the likelihood ratio G^2, Akaike Information Criterion (AIC, smallest value preferred) and Bayesian Information Criterion (BIC, smallest value preferred), entropy (highest value preferred) values and interpretability of the derived classes.[21] All latent class analyses were conducted by PROC LCA in SAS V.9.4 software.

Multinomial logistic regression and muliple linear regression

Multinomial logistic regression was used to examine associations between sociodemographic factors including age, gender, ethnicity, marital and residency status, education, years of employment and occupation and the different classes. Multinomial logistic regression analysis was chosen instead of ordinal regression as it is an appropriate statistical test when analysing outcome variables with more than two categories. We found that the proportional odds assumption of the ordinal regression model has been was violated using the Brant test.[22] These were tested independently and in a hierarchical manner and were found to be significant. We also used multiple linear regression analyses to examine the relationship between associative stigma and job satisfaction with and without adjustment for sociodemographic correlates. Statistical significance was reported at $p < 0.05$.

RESULTS

The distribution of sociodemographic characteristics is presented in table 1. The sample (n=462) comprised 58 doctors, 201 nurses and 203 allied health staff. The majority were female (63%), of Chinese ethnicity (60.2%) and had been working at IMH between 1 and 5 years (42.2%).

Table 1 Characteristics of the study sample

Characteristics	n	%
Age (mean years, SD)	36.4	10.6
Minimum to maximum	21 to	71
Gender		
Female	291	63.0
Male	171	37.0
Ethnicity		
Chinese	278	60.2
Malay	36	7.8
Indian	64	13.8
Filipino	59	12.8
Myanmar	16	3.5
Others	9	1.9
Marital status		
Never married	205	44.4
Ever married	257	55.6
Education level		
Secondary/'O/N'* level	18	3.9
'A'† level/diploma	49	10.6
Bachelor	241	52.2
Master or above	154	33.3
Residential status		
Singapore citizen	320	69.2
Permanent resident	59	12.8
Non-resident	83	18.0
Occupation		
Doctor	58	12.6
Nurse	201	43.5
Allied health	203	43.9
Years worked at Institute of Mental Health		
Less than 1 year	52	11.3
1–5 years	195	42.2
6–10 years	103	22.3
More than 10 years	112	24.2
Job satisfaction (mean , SD)	7.2	1.6
Minimum to Maximum	1 to	10

*'O' and 'N' levels indicate 10 and 11 years of education, respectively.
†'A' level indicates 12 years of education.

Eight unconditional models ranging from two to nine classes were compared with one another using fit statistics to determine the appropriate class structure (table 2). The AIC value was lowest for the seven-class model (AIC=549.33) and the BIC value was lowest for the three-class model (BIC=762.48), followed by four-class model (BIC=769.79). The BIC value typically is considered a better measure of model fit because it penalises for model

Table 2 Model comparisons and fit indices

Classes	AIC	BIC	CAIC	ABIC	Entropy
2	711.02	806.14	829.14	733.14	0.77
3	617.74	762.48	797.48	651.40	0.80
4	575.42	769.79	816.79	620.63	0.78
5	571.02	815.02	874.02	627.77	0.79
6	589.06	882.69	953.69	657.35	0.68
7	549.33	892.58	975.58	629.16	0.78
8	550.76	943.64	1038.64	642.13	0.80
9	567.26	1009.77	1116.77	670.18	0.80

These model comparison measurements were used for choosing the optimal number of classes in latent class analysis, where the models with the smallest values indicate a better fit.

AIC, Akaike Information Criterion; ABIC, Adjusted BIC; BIC, Bayesian Information Criterion; CAIC, Consistent AIC.

complexity more than the AIC.[20] A careful examination of both the three and four-class model solutions led us to select the three-class model because it was more easily identified, had greater parsimony, and its parameter estimates presented a solution with a more interpretable and distinct set of classes than the four-class model (figure 1).

The parameter estimates depicted in figure 1 and table 3 provide the three-class model of associative stigma prevalence and item-response probability (IRP). IRP values range from 0 to 1, where numbers closer to 0 represent a low probability of endorsing a specific associative stigma item, whereas values closer to 1 represent a high probability of endorsing the item. Each class then consists of different probabilities of endorsement for each of the 11 associative stigma items.

For example, the first latent class is characterised by a low IRP of endorsing the following items: 'I feel ashamed to be working in a mental healthcare setting'(Item 3), 'I am reluctant to tell people I work in a mental healthcare setting' (Item 4), 'I have been treated unfairly by others when they learn I work in a mental healthcare setting' (Item 5), 'Most people think less of a person who works in a mental healthcare setting' (Item 6), 'Once they know a person works in a mental healthcare setting, most people

will take their opinions less seriously' (Item 7), 'Mental healthcare contributes to the health of people, families, communities and society in unique and meaningful ways' (Item 8), 'The mental health profession lacks a scientific basis' (Item 9) and 'Working in a mental healthcare setting does not require special skills' (Item 10). The IRP ranged from 0.001 to 0.16, thus, we labelled this subgroup 'no/low associative stigma'. Class 2 comprised staff who were more likely to report higher response probabilities for items 1 ('People react negatively when they know they work in a mental healthcare setting'), 2 ('People make jokes about me for working in a mental healthcare setting'), 7 and 11 ('Mental health work is dangerous') than the 'no/low stigma' and accordingly, we labelled this class as 'moderate associative stigma' (IRP ranges from 0.59 to 0.70). Finally, the high probability of endorsing 'sometimes', 'often' or 'all the time' to items 1 and 2, and 'strongly agree' or 'slightly agree' to items 6, 7, 8, 9 and item 11 (IRP ranges from 0.66 to 0.91) were associated with class 3, which was labelled as 'high associative stigma'. Within these three class groups, 48.7%, 40.5% and 10.8% of the population comprised no/low, moderate and high associative stigma classes, respectively.

The results of the multinomial logistic regression for the moderate and high associative stigma groups, with low stigma as the reference group, are presented in table 4. We found that staff working at IMH for less than 1 year (p=0.040), and between 6 and 10 years (p=0.029) were less likely to have moderate associative stigma (vs staff working at IMH for more than 10 years). Occupation was also a significant predictor; doctors (p=0.007) and nurses (p=0.006) were significantly more likely to experience moderate associative stigma compared with allied health staff. Factors associated with high associative stigma were lower education (p=0.042), Indian ethnicity (p=0.043) and being a nurse (p=0.001).

Table 5 shows the results from multiple linear regression analyses. After adjusting for sociodemographic variables, high associative stigma remained significantly associated with lower job satisfaction scores (p<0.0001).
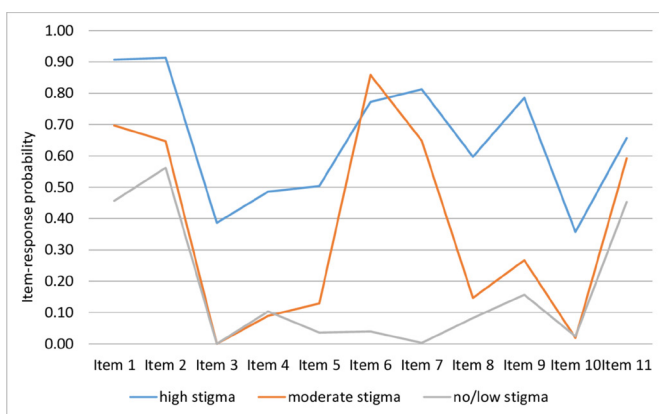
Figure 1 Three-class unconditional latent class analysis of associative stigma.

Table 3 Three-latent class model of associative stigma prevalence and item-response probabilities

Item	Statement	Endorsement rate* (n=462)	Latent class (Model 3)		
			Class1	Class 2	Class 3
			No/low	Moderate	High
			48.7% (n=225)	40.5% (n=187)	10.8% (n=50)
			Item-response probabilities†		
1	People react negatively when they know I work in a mental healthcare setting	60.61	0.46	0.70	0.91
2	People make jokes about me for working in a mental healthcare setting	63.85	0.56	0.65	0.91
3	I feel ashamed to be working in a mental healthcare setting	4.76	0.00	0.00	0.39
4	I am reluctant to tell people I work in a mental healthcare setting	14.50	0.10	0.09	0.49
5	I have been treated unfairly by others when they learn I work in a mental healthcare setting	12.99	0.04	0.13	0.50
6	Most people think less of a person who works in a mental healthcare setting	28.14	0.04	0.86	0.77
7	Once they know a person works in a mental healthcare setting, most people will take their opinions less seriously	20.13	0.00	0.65	0.81
8	Mental healthcare contributes to the health of people, families, communities and society in unique and meaningful ways	91.99	0.08	0.15	0.60
9	The mental health profession lacks a scientific basis	14.94	0.16	0.27	0.79
10	Working in a mental healthcare setting does not require special skills	2.81	0.02	0.02	0.36
11	Mental health work is dangerous	40.69	0.45	0.59	0.66

*Endorsement rate was determined if respondents provided the following responses: sometimes, often, all the time, slightly agree or strongly agree.

†Item-response probability values range from 0 to 1, where numbers closer to 0 represent a low probability of endorsing a specific item, whereas values closer to 1 represent a high probability of endorsing the item.

DISCUSSION

There is paucity in the current literature which investigates associative stigma experienced by mental health professionals. This is the first study to examine associative stigma among mental health professionals using latent class analysis and endeavours to expand and build our knowledge and understanding of the patterns of associative stigma among each of the classes. The findings reveal that among the study sample, three distinct classes exist; no/low, moderate and high associative stigma which were associated with unique sociodemographic correlates. Moderate associative stigma was significantly associated with years of service and occupation, while high associative stigma was associated with Indian ethnicity, lower education and occupation.

Findings revealed that 48.7%, 40.5% and 10.8% of staff working at a psychiatric hospital experienced no/low, moderate and high associative stigma, respectively. While almost half of the staff experienced no or low associative stigma (48.7%), the remaining experienced moderate or high associative stigma, which is of concern. The moderate associative stigma class comprised staff who were more likely to report higher response probabilities for the following items 'People react negatively when they know they work in a mental healthcare setting', 'People make jokes about me for working in a mental healthcare setting', 'Once they know a person works in a mental healthcare setting, most people will take their opinions less seriously' and 'Mental health work is dangerous'. These items are similar to those in the CASS scale which comprised items relating to the negative perceptions and stereotypes of mental healthcare, psychiatry and people with mental illnesses and people's reluctance to disclose working in this field.[15] These items relate largely to how other people perceive them and how they react towards them as a result of their profession and therefore efforts to better educate the general population as well as interventions targeting medical and nursing students are needed to dispel such misconceptions and stigma surrounding psychiatry and mental healthcare.[23] High associative stigma comprised staff that were also more likely to endorse items about other people's reactions;

Table 4 Sociodemographic and employment-related correlates of associative stigma among mental health professionals versus the reference group (no/low associative stigma)*

| | Moderate associative stigma | | | | High associative stigma | | | |
| | | 95% CI | | | | 95% CI | | |
	OR	Lower	Upper	P value	OR	Lower	Upper	P value
Age	0.98	0.95	1.00	0.092	0.98	0.94	1.02	0.345
Sex								
Female (Ref)								
Male	1.23	0.78	1.94	0.369	1.18	0.57	2.43	0.655
Residency status								
Singapore citizen (Ref)								
Permanent resident	1.34	0.64	2.82	0.443	0.72	0.21	2.48	0.607
Non-resident	1.12	0.47	2.65	0.801	0.36	0.08	1.66	0.189
Ethnicity								
Chinese (Ref)								
Malay	0.59	0.22	1.55	0.282	0.97	0.29	3.26	0.965
Indian	1.61	0.80	3.27	0.186	**2.97**	**1.04**	**8.53**	**0.043**
Filipino	0.88	0.31	2.45	0.802	3.00	0.63	14.38	0.170
Myanmar	1.69	0.43	6.62	0.450	0.92	0.07	11.56	0.947
Others	1.13	0.25	5.19	0.874	.	.	.	.
Marital status								
Never married (Ref)								
Ever married	1.13	0.70	1.83	0.625	1.06	0.48	2.37	0.885
Education								
Secondary/ 'O/N' level†	3.06	0.77	12.10	0.111	**6.18**	**1.07**	**35.89**	**0.042**
'A' level‡ & diploma	1.61	0.62	4.21	0.333	2.50	0.61	10.28	0.203
Bachelor	1.22	0.71	2.11	0.470	1.28	0.44	3.74	0.656
Masters or above (Ref)								
Occupation								
Doctor	**2.74**	**1.31**	**5.71**	**0.007**	2.22	0.46	10.84	0.324
Nurse	**2.44**	**1.29**	**4.64**	**0.006**	**6.62**	**2.23**	**19.63**	**0.001**
Allied health (Ref)								
Years worked at IMH§								
<1 year	**0.36**	**0.13**	**0.95**	**0.040**	0.23	0.03	1.71	0.151
1–5 years	0.53	0.25	1.09	0.083	0.98	0.28	3.39	0.977
6–10 years	**0.45**	**0.22**	**0.92**	**0.029**	0.79	0.24	2.55	0.689
>10 years (Ref)								

*Multinomial logistic regression model. Bold values represent those that are statistically signifant as reported at p < 0.05 .
†'O' and 'N' levels indicate10 and 11 years of education, respectively.
‡'A' level indicates 12 years of education.
§IMH, Institute of Mental Health; Ref, reference group.

however, it also encompassed items about the mental health profession including 'The mental health profession lacks a scientific basis' and 'Working in a mental healthcare setting does not require special skills'. Given the higher positive endorsement of the latter items, this indicates that even among mental health professionals, there is a level of stigma, uncertainty and even negative perceptions relating to mental healthcare and psychiatry and similar findings have also been previously reported.[9 11] It is therefore possible that a consequence of experiencing ongoing associative stigma, results in these staff holding more discriminatory views, whereby they internalise this stigma or may have higher perceived stigma. Efforts within mental healthcare are needed to build self-esteem and self-confidence, while at the same time, taking the opportunity to highlight success stories

Table 5 Relationship between associative stigma and job satisfaction

Latent classes	Job satisfaction			Model 1				Model 2			
	n	Mean	SD	Beta coefficient	95% CI Lower	Upper	P value	Adjusted beta coefficient	95% CI Lower	Upper	P value
No/low associative stigma	225	7.24	1.52	Ref.				Ref.			
Moderate associative stigma	187	7.26	1.51	0.02	− 0.28	0.32	0.9132	−0.18	−0.49	0.12	0.2337
High associative stigma	50	6.46	1.79	−0.78	− 1.26	−0.30	**0.0013**	−1.08	−1.57	−0.59	**<0.0001**

Model 1=Simple linear regression.
Model 2=Multiple linear regression after adjusting for sociodemographic and employment-related correlates including age, gender, ethnicity, residency status, marital status, education, occupation and years worked at Institute of Mental Health.
Job satisfaction scores were based on a single item (how satisfied are you with your job?) using a scale from 1 to 10, where 1 indicates very dissatisfied and 10 indicate very satisfied.
Ref, reference group. Bold values represent those that are statistically signifant as reported at p<0.05.

in mental health must be highlighted to the public more frequently.[24]

Various sociodemographic differences were associated with moderate and high associative stigma. For example, Indians (compared with Chinese) were nearly three times more likely to experience high associative stigma. While it is difficult to postulate why this may be, some possible explanations are provided. First, high associative stigma was associated with higher probability of endorsing positive responses to items relating to (1) how staff perceive the mental health profession and (2) how people react towards them. Regarding the latter, we do not know about the specific people stigmatising these staff and therefore gaining a greater understanding of the types of people that judge and stigmatise mental health professionals would allow future antistigma efforts to be targeted towards these population subgroups. For the former (how staff perceive the mental health profession), this relates to the individual's own personal views, whereby they perceive the discipline lacks a scientific basis, the profession does not require special skills or that mental healthcare does not contribute to the health of people, families and communities in a meaningful way. This could be an embedded cultural belief where in India psychiatry is still not considered an important medical specialty due to societal apprehensions and ignorance.[25] This is further substantiated by a recent study among a general population sample in India which found that one third of participants believed that psychiatrists specialise in psychiatry because they are not good enough for other specialties.[26] Mental illness stigma needs to be studied within its sociocultural context in order to understand its origins, meanings and consequences[27] and in doing so, this may provide great insight into the ethnic differences observed in relation to associative stigma. Future interventions designed to address associative stigma among mental health professionals should consider the impact of sociocultural influences.

Given the study sample comprised doctors, nurses and allied health professionals, the overwhelming majority were highly educated, with over 85% having a tertiary qualification or higher. Those with the least education, which still equates to approximately 10–11 years of education, were six times more likely to experience high associative stigma and these findings resonate with those of a recent study which also explored associative stigma among mental health professionals in China and the USA.[17] Research locally and internationally has shown that those who are less educated tend to hold more stigmatising views towards the mentally ill.[28–30] While these studies are related to stigma towards people with a mental illness and not stigma by association, the two are inter-related and therefore could explain this finding. Another possible explanation could be that those working in mental healthcare are perceived to not 'require special skills' and therefore those with lower education are predominantly working in this profession. Alternatively, given that high associative stigma was related to a higher likelihood of positively endorsing items such as 'The mental health profession lacks a scientific basis' and 'Working in a mental healthcare setting does not require special skills' this may suggest that staff with less education perceive that being highly educated is not essential to this profession.

The number of years of service in a mental health hospital was associated with moderate associative stigma. Staff working at the psychiatric hospital for less than 1 year and those with 6–10 years of service were less likely to experience moderate associative stigma, compared with those with over 10 years of service, while no significant differences were observed for those with 1–5 years of service. For newer staff (less than 1 year), their association via a professional capacity with people who have a mental illness would be minimal compared with those with over 10 years of experience. Therefore, they would have only been exposed to possible associative stigma for

this short period and hence less likely to experience any form of stigma, discrimination or prejudice. It is difficult, however, to postulate why staff with 6–10 years of service would experience less moderate associative stigma, versus those with over 10 years of service. Halter[8] in her study among nurses found that age was positively correlated with viewing psychiatric nurses as skilled, logical, dynamic and or respected. The author speculated that years of experience increased the likelihood of contact with people with a mental illness, thus mediating the influence of stigmatising attitudes.[31] We predicted, that as a result of working in mental healthcare for an extended period, staff would no longer be confronted with associative stigma and people would be less likely to 'react negatively' or 'make jokes' about where they work, while at the same time they would be 'acclimatised' to working in this setting. It could also be a result of some form of 'stigma resistance', whereby these staff can resist or ignore the stigma associated with their profession, however, this does not explain why staff with 6–10 years of service are less likely to experience associative stigma compared with those with over 10 years of service. Further research exploring the impact of the number of years or experience in mental healthcare and associative stigma are needed.

The strongest predictor of moderate and high associative stigma was occupation. Nurses were significantly more likely to experience both moderate and high associative stigma, while doctors were significantly more likely to experience moderate associative stigma, when compared with allied health staff. Numerous studies have recently investigated stigma towards mental health nursing,[14 32] psychiatrists[33 34] and the discipline of psychiatry and mental health in general,[24 35] which is often perpetuated by nurses, doctors, medical and nursing students and health professionals working in other sectors, as well as the general public.[31] Studies among medical students have shown that the overall status of psychiatry is low,[23] where perceived low prestige and low respect among other medical disciplines are among the main reasons for not choosing psychiatry.[36–40] Similarly, a recent study among nursing students in Singapore found that only 5.2% of students would 'definitely decide to do' psychiatric nursing.[41] A study among doctors which assessed reasons why they left the specialty they had initially chosen found that among psychiatrists, the most common reasons reported included the specialty's poor public image and the perceived lack of respect among other doctors.[42] It is, therefore, possible that for some doctors, psychiatry was not their first preference, while for others the sense of being 'looked down on' by other health professionals resulted in increased associative stigma.

Several studies among nurses and nursing students have found that psychiatry is ranked as one of the least preferred, attractive and respected disciplines in nursing.[8 43] Halter[8] explored the characteristics attributed to nurses in multiple disciplines, where psychiatric nurses were often described as unskilled, illogical, idle and

disrespected. While it could not be concluded whether these attitudes and perceptions were a consequence of associative stigma, such perceptions about nurses working at the only tertiary psychiatric hospital in Singapore could explain why nurses were significantly more likely to experience associative stigma. An alternative explanation could be related to how nurses are perceived. Previous research in Singapore has shown that the local population often possesses low perceptions of nurses,[44] which may further exacerbate the stigma they experience.

It is also possible that this stigma experienced by psychiatrists and nurses operates in two directions; the first being the stereotypic attitudes or perceptions projected out by them, while the second is the associated attributes projected on them, which they may internalise.[14] Irrespective of the type of stigma, it is important that mental health professionals are aware of this and how this may impact their role and work-related tasks. In order to address moderate and high associative stigma associated with nurses and psychiatrists, these mental health professionals need to explore and challenge such cases of stigma experienced by them. Associative stigma devalues the individual and the profession as a whole, and therefore, mental health professionals play an important role in dispelling stigma related to mental illnesses.[14]

Associative stigma was found to be associated with job satisfaction. After adjusting for sociodemographic correlates, we found that high associative stigma was associated with poorer job satisfaction. Verhaeghe and Bracke[10] found associative stigma was associated with depersonalisation and emotional exhaustion among mental health professionals in Belgium, with the latter leading to decreased job satisfaction. The consequences of stigma in relation to job satisfaction have been well documented. Similarly, associative stigma among mental health professionals can contribute to job stress and poorer outcomes not only in terms of staff well-being but the quality of care provided to patients, and therefore, the implications can be detrimental to both staff and their patients. Due to the cross-sectional nature of this study, the relation between job satisfaction and associative stigma could be bidirectional and therefore exploring this association over time would be beneficial. Interventions exploring how associative stigma contributes to the development of emotional exhaustion, burn-out and or job satisfaction and the impact this has for patients, the quality of care they receive and the relationship they have with mental health professionals are needed. Furthermore, developing programmes with a particular focus on associative stigma and coping strategies to deal with this among mental health professionals would be beneficial.[12]

The findings of this study should be viewed in light of the following limitations. First, at the time the study was conducted, there was no developed and validated psychometric associative stigma measure, and therefore, items used to measure associative stigma were based on previous research. While such items have previously been used to measure associative stigma among various healthcare

professionals, the settings have varied and therefore a detailed pilot or expert review in the local setting, would have been beneficial. There are now psychometric instruments that do measure associative stigma, such as the CASS, which have been validated in various populations and are contributing to what was an under-researched field. This was a cross-sectional study among staff working at IMH, and therefore, these findings are not generalisable to all mental health professionals in Singapore, nor could causal relationships be established. However, given that this hospital is the primary provider of tertiary psychiatric care in Singapore, and all staff included in the study are involved with the care of patients with a mental illness, it provides valuable insight into the stigma associated with the mental health profession. The study was limited to doctors, nurses and allied health staff and therefore associative stigma of other staff including healthcare attendants, patient services associates and administrative staff was not gathered and may differ. While one of the primary aims was to explore differences in associative stigma between occupations, we did not include doctors in the sample size calculation. At the time of the survey, we knew that less than 100 doctors were working at IMH, and therefore, efforts were made to recruit as many doctors as possible, given the small numbers in comparison to numbers of nurses and allied health staff. Data were not collected on response rates, but rather once the desired quota of nurses and allied health staff was reached (ie, 200 of each group) recruitment ceased, therefore, it is difficult to ascertain the degree of selection bias. Furthermore, data were not collected on those people that were invited to participate but chose not to respond, and therefore, it is possible that responders and non-responders experiences of associative stigma may differ. The invitation emails were sent to eligible staff through their institution email addresses. Data collected were based on self-report and therefore respondents may have provided socially desirable responses or may not have felt comfortable disclosing possible stigma they may have experienced. Finally, it is important to acknowledge that stigma in general is a complex and multifaceted construct which has been theorised and defined in many ways and can present in different forms such as personal stigma, perceived stigma, self-stigma, structural stigma or associative stigma. This in itself poses various challenges as there may be some overlap in these constructs and how they are measured.

These limitations notwithstanding, this is one of just a few studies to explore associative stigma among mental health professionals, and to our knowledge the only study to explore this within a multiethnic Asian setting, and has thus added to the existing sparse literature. Using latent class analysis, the current study has provided a greater understanding of the extent of associative stigma among psychiatrists, nurses and allied health staff working at a psychiatric hospital. A three-class model of associative stigma was found to have the best fit, where classes were labelled as no/low, moderate and high associative stigma. Based on these classes, it would be beneficial to further explore this construct via longitudinal studies or repeatedly measuring associative stigma over time to compare outcomes such as quality of life and burn-out, as well as different types of job satisfaction across the different classes in order to determine effective interventions to reduce associative stigma among mental health professionals. At the same time, there is also a scarcity of literature relating to the development and evaluation of interventions to combat stigma experienced by health professionals.[23] Research has, however, shown that increment or improvement in knowledge, as well as actual contact with people who have a mental illness, can help to reduce stigma, while improving the image of psychiatry and psychiatrists[24] and therefore future interventions addressing associative stigma should incorporate such strategies. Furthermore, in order to reduce stigma, interventions should also include information and education related to the stereotypes (eg, dangerousness) healthcare providers may experience, which can further exacerbate associative stigma.

There is a need to further explore the outcomes of associative stigma, not just from the perspective of those experiencing this stigma (in this case mental health professionals) but the impact this stigma may have on their patients and potentially the wider community. Given that high associative stigma was associated with poorer job satisfaction, which has been shown to have poorer outcomes for patients,[10] the implications of this finding are important to the well-being of staff and patients. As stigma towards people with a mental illness, psychiatrists and the mental health profession is highly inter-related, the ongoing process and difficult task of combating stigma related to mental illnesses continues. Associative stigma has received comparatively little attention from empirical researchers and continued efforts to address this understudied yet important construct in conjunction with future efforts to dispel many of these misconceptions are needed.

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