Training Types Associated With Knowledge and Experience in Public Health Workers

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Research

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Abstract

Background

Training non-specialist workers in mental healthcare improves knowledge, attitude, skills, confidence, and clinical practice. However, still little information is available on which type of mental health training is specifically associated with the improvement of these capacities.

Methods

We studied web-based survey data of 495 public health workers to examine training types associated with knowledge and experience to support individuals with mental illness. Multivariable logistic regression analysis was conducted to evaluate the association between a lack of knowledge and experience (outcome) and mental health training (exposure). We fitted three regression models. Model 1 evaluated unadjusted associations. Model 2 adjusted for age and sex. Model 3 adjusted for age, sex, years of experience, mental health full-time worker status, and community population.

Results

For all training types, the association between a lack of knowledge and experience and mental health training attenuated as the model developed. In Model 3, a lack of knowledge and experience was significantly associated with training in specific illness and screening and assessment (OR, 0.54; 95% CI, 0.33-0.90: and OR, 0.63; 95% CI, 0.40-0.97, respectively). Non-significant results were produced for training in counseling, psychosocial support, collaborative work, and law and regulation in Model 3.

Conclusions

We believe that the present study provides meaningful information that training in specific illness and screening and assessment may lead to knowledge and experience of public health workers. Further studies should employ a longitudinal design.

Background

The coronavirus disease 2019 (COVID-19) global pandemic highlights the importance of mental illness as one of the significant causes of disability and the global burden of disease [1–4]. Mental illness has the longest years lived with disability and is the same level as cardiovascular and circulatory diseases in disability-adjusted life-years [5]. Across all regions of the world, mental illness is highly prevalent and affecting individuals [6]. Approximately one-fifth of individuals in a general population experiences 12-month mental illness [6]. Previous data suggested that the global direct and indirect economic costs of mental illness were estimated at US$2.5 trillion [7]. Thus, adequate management of mental illness is crucial for social recovery in the post-COVID-19 era.

Mental health care underwent significant changes in many countries worldwide during the past decades [8]. Of these, the development of community-based care was one of the essential changes [8]. In communities, non-specialist workers, such as primary care and public health workers, need to manage individuals with mental illness. Integrating mental health services at the primary care level is the most viable way to decrease the treatment gap and ensure that people undergo the mental health care they need [9].

Certain skills and competencies are required to assess, diagnose, treat, support, and refer individuals with mental illness. Therefore, non-specialist workers need to be adequately prepared and supported in their mental health work [9,10]. The World Health Organization (WHO) Mental Health Action Plan (2013-2020) and the WHO Mental Health Gap Action Programme (mhGAP) recommended adequate training in non-specialist workers in diagnosing and treating mental illness [11,12]. This is specifically of relevance in communities with small or previously non-existent budgets for mental health [13].

Previous studies for community mental health demonstrated that mental health training had a significant effect on non-specialist workers' capacities such as knowledge and clinical practice [14–16]. A previous systematic review including 29 studies showed that non-specialist training in mental healthcare improved knowledge, attitude, skills, confidence, and clinical practice [13]. Nevertheless, still little information is available on which type of mental health training is specifically associated with the improvement of such capacities. Japan reportedly has a poor quality of community mental health [17,18], and such information is crucial to improve the mental health service. In the present study, we studied web-based survey data of 495 public health workers in Japan to examine training types associated with knowledge and experience to support individuals with mental illness.

Methods

Sample

We analyzed data from public health workers working at community centers in Japan who underwent a cross-sectional, web-based survey in 2018. Participants were recruited by the National Center of Neurology and Psychiatry. All participants provided written informed consent. A total of 643 public health workers were asked to participate. Of these, 77.0% completed the survey, which is a reasonable response rate as a web-based survey [19]. Thus, we analyzed data of 495 public health workers. The survey was approved by the National Center of Neurology and Psychiatry Institutional Review Board (A2018-097).

Lack of knowledge and experience

Participants self-reported if they had a lack of knowledge and experience enough to support individuals with mental illness. They were asked to select one of seven response options regarding how much percentage of cases they had a lack of knowledge and experience: (1) 100-80%, (2) 79-60%, (3) 59-40%, (4) 39-20%, (5) seldom, (6) not at all, or (7) not sure. Endorsing (1), (2), or (3) was regarded as a lack of knowledge and experience.

Mental health training

Participants self-reported which type of mental health training they underwent. They were asked to select all that apply in six response options of training in (1) specific illness, (2) screening and assessment, (3) counseling, (4) psychosocial support, (5) collaborative work, or (6) law and regulation.

Sociodemographic factors

Sociodemographic factors that may confound the relationship between each training and knowledge and experience were included in analyses as covariates. Participants self-reported sociodemographic factors, including age (29 years or younger, 30-39 years, 40-49 years, 50 years or older), sex, years of experience, mental health full-time worker status (yes/no), community population (50,000 or smaller, 50,000-200,000, 200,000-500,000, 500,000-1000,000, 1000,000 or larger).

Statistical analysis

All statistical analyses were conducted by using R version 4.1.0. Baseline characteristics of participants who lacked knowledge and experience and those who did not were compared using independent-sample t-tests and chi-square tests. Multivariable logistic regression analysis was conducted to evaluate the association between a lack of knowledge and experience (outcome) and mental health training (exposure). We fitted three regression models. Model 1 evaluated unadjusted associations. Model 2 adjusted for age and sex. Model 3 adjusted for age, sex, years of experience, mental health full-time worker status, and community population. The results are presented as odds ratios (OR) with 95% confidence intervals (CI). The significance level was set at a p-value less than 0.05.

Results

Baseline characteristics

Table 1 shows the baseline characteristics of participants. A total of 308 participants (62.2%) had a lack of knowledge and experience. Individuals with a lack of knowledge and experience showed fewer years of experience ($p < 0.001$), lower proportion of mental health full-time workers ($p = 0.001$), training in specific illness ($p < 0.001$), screening and assessment ($p = 0.005$), psychosocial support ($p = 0.03$), and law and regulation ($p = 0.001$). Two groups significantly differed in age ($p < 0.001$). No significant difference was shown in sex, community population, and training in counseling and collaborative work.

Relationship between knowledge and experience and training types

Table 2 summarizes the results of multivariable logistic regression analyses. For all training types, the association between a lack of knowledge and experience and mental health training attenuated as the model developed (i.e., Model 1 showed the smallest odds ratio). In Model 3, a lack of knowledge and experience was significantly associated with training in specific illness and screening and assessment (OR, 0.54; 95% CI, 0.33-0.90: and OR, 0.63; 95% CI, 0.40-0.97, respectively). Training in psychosocial

support and law and regulation showed a statistical significance in Model 1 and Model 2, which disappeared in Model 3. Non-significant results were produced for training in counseling and collaborative work in all Model 1, Model 2, and Model 3.

Discussion

To our knowledge, this is the first study evaluating the efficacy of specific types of mental health training in public health workers in Japan. Among various types of mental health training, training in specific illness and screening and assessment was significantly associated with the sense of knowledge and experience after the adjustment of various potential confounders. These findings are in line with past reports showing significant effects of mental health training on non-specialist workers' capacities, e.g., knowledge and clinical practice [13–16]. The present study may provide knowledge improving the management of mental illness, which is specifically crucial for social recovery in the post-COVID-19 era.

Although our finding is based on the data from a Japanese sample and may not be readily generalizable to other countries, the present study implies that the concept-/assessment-oriented training may enhance public health workers' capacities. Indeed, the mhGAP intervention guide for non-specialist workers recommends conducting an assessment as an essential clinical practice in mental health [20]. Our finding supports this recommendation from the viewpoint of training efficacy. To note, training in specific illness and screening and assessment may improve knowledge directly related to mental illness, and hence, may effectively enhance the confidence of public health workers.

Japan has the highest number of psychiatric beds per capita in the world [21], which may co-occur with polypharmacy and long-term hospitalization [22,23]. Hospital discharge and transition to the communities have been warranted to achieve patient-centered care [24]. To achieve this, the "Reform Vision of Mental Health and Welfare" was released in 2004 [25]. However, Japan still has long-term psychiatric hospitalization (mean, 265.8 days) as of 2019 [26], partly resulting from insufficient community support [18,27]. The potential approach to improve public health workers' capacities shown in the present study may have clinical implications in enhancing the quality of community mental health in Japan.

Limitations

Several limitations should be acknowledged here. First, a lack of knowledge and experience was measured in a subjective manner, which may not reflect the actual capacity of public health workers. It may have been vulnerable to recall and social desirability biases. Second, both a lack of knowledge and experience and mental health training were self-reported via a single-item questionnaire. The cut-off for having a lack of knowledge and experience was arbitrary. Future studies should employ validated outcome measurements to address these issues. Third, this study is based on cross-sectional web-based survey data that does not ascertain the temporal order of events or make causal inferences. Studies with longitudinal data are warranted to understand the causal relationship. Fourth, it is unclear if public health

workers' subjective knowledge and experience result in an improved outcome for patients with mental illness.

Conclusions

Despite these limitations, we believe that the present study provides meaningful information that training in specific illness and screening and assessment may lead to knowledge and experience of public health workers. Further studies should employ a longitudinal design.

Abbreviations

COVID-19, coronavirus disease 2019; WHO, World Health Organization; mhGAP, Mental Health Gap Action Programme

Declarations

Ethics approval and consent to participate

The present study was approved by the National Center of Neurology and Psychiatry Institutional Review Board (A2018-097). Informed, written consent was obtained from each study participant.

Consent for publication

Not applicable.

Availability of data and materials

Not applicable.

Competing interest

None.

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Authors’ contributions

Initial research questions were devised by YK. Analyses were conducted by ZN. The manuscript was written by ZN and finalized by YK and with substantial text contribution from all authors.

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Tables

Table 1 Baseline characteristics of study participants

	Lack of knowledge and experience		*P* value
	Yes (*n* = 308)	No (*n* = 187)	
Sex, No. (%)			0.08
Male	47 (15.4)	40 (21.5)	
Female	259 (84.6)	146 (78.5)	
Age, No. (%)			< 0.001
-29	77 (25.0)	14 (7.5)	
30-39	99 (32.1)	49 (26.3)	
40-49	78 (25.3)	60 (32.3)	
50-	54 (17.5)	63 (33.9)	
Years of experience, mean (SD), y	13.2 (9.6)	19.5 (10.3)	< 0.001
Mental health full-time worker, No. (%)			=0.001
No	202 (66.2)	95 (51.4)	
Yes	103 (33.8)	90 (48.6)	
Community population, No. (%)			
-50,000	120 (39.0)	56 (30.1)	0.09
50,000-200,000	106 (34.4)	62 (33.3)	
200,000-500,000	42 (13.6)	33 (17.7)	
500,000-1000,000	17 (5.5)	21 (11.3)	
1000,000-	22 (7.1)	14 (7.5)	
Training type, No. (%)			
Specific illness	212 (68.8)	153 (82.3)	< 0.001
Screening and assessment	72 (23.4)	55 (34.9)	0.005
Counseling	191 (62.0)	126 (67.7)	0.20
Psychosocial support	97 (31.5)	76 (40.9)	0.03
Collaborative work	135 (43.8)	91 (48.9)	0.27
Law and regulation	90 (29.2)	81 (43.5)	0.001

Table 2 Associations between a lack of knowledge and experience and mental health training

	Lack of knowledge and experience Odds ratio [95% confidence interval]				
Model 1, unadjusted					
Training type					
Specific illness	0.48** [0.30-0.74]				
Screening and assessment		0.58** [0.38-0.88]			
Counseling			0.78 [0.53-1.14]		
Psychosocial support				0.67* [0.46-0.97]	
Collaborative work					0.81 [0.57-1.17]
Law and regulation					0.54** [0.37-0.78]
Model 2, adjusted for age and sex					
Training type					
Specific illness	0.51** [0.32-0.82]				
Screening and assessment		0.62* [0.42-0.95]			
Counseling			0.83 [0.56-1.25]		

Psychosocial support			0.67* [0.45-0.9998]		
Collaborative work				0.94 [0.64-1.38]	
Law and regulation					0.63* [0.42-0.93]
Model 3, adjusted or age, sex, years of experience, full-time worker status, and community population					
Training type					
Specific illness	0.54* [0.33-0.90]				
Screening and assessment		0.63* [0.40-0.97]			
Counseling			0.76 [0.49-1.18]		
Psychosocial support			0.73 [0.48-1.12]		
Collaborative work				0.98 [0.65-1.47]	
Law and regulation					0.73 [0.48-1.12]

* $p < 0.05$.

** $p < 0.01$.