

Original Research

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Abbreviations:

ARTIC-10, Attitudes Related to Trauma Informed Care Scale 10-item short form; DMAT, Disaster Medical Assistance Team; DPAT, Disaster Psychiatric Assistance Team; PFA, Psychological first aid; SAMHSA, Substance Abuse and Mental Health Services Administration; STROBE, Strengthening the Reporting of Observational Studies in Epidemiology; TIC, Trauma informed care

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Association Between Attitudes Toward Trauma Informed Care and Psychological First-Aid Training Experience Among Health Care Professionals in Japan

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Abstract

Objective: Trauma informed care (TIC) is an important approach for people who have experienced trauma. Although psychological first aid (PFA) may be effective training in TIC, no study reported an association between PFA training and TIC. This study aimed to investigate the association between PFA training and attitudes toward TIC among health care professionals in Japan.

Methods: Japanese health care professionals were recruited for a survey conducted from May 21 to June 18, 2021. TIC was assessed by the Attitudes Related to Trauma Informed Care Scale 10-item short form (ARTIC-10). A question about PFA training participation was originally developed through discussion among researchers. Univariate and multiple linear regression analyses were used to examine the association between the PFA experience and ARTIC-10.

Results: In total, 484 (3.6%) health care professionals completed all questions. Among them, 77 (15.9%) had experienced PFA training. Univariate and multiple linear regression analyses showed that PFA experience ($B = 0.19$, 95% CI: 0.02–0.36, $P = 0.03$; $B = 0.17$, 95% CI: 0.01–0.34, $P = 0.04$) was significantly associated with ARTIC-10.

Conclusions: This study was the first to show an association between PFA training and attitudes toward TIC among health care professionals, which was a significant result for future research on PFA training, TIC, and trauma care.

Experience of trauma is a public health problem due to its high prevalence and association with poor health outcomes, and care and countermeasures for the experiences of trauma are essential.^{1,2} Trauma informed care (TIC) is designated by the Substance Abuse and Mental Health Services Administration (SAMHSA) as an approach that realizes, recognizes, and responds in meaningful ways to individuals who have experienced trauma.³ TIC is defined as a strength-based service delivery approach to make chances for trauma survivors recovery the senses of control and empowerment based on the understanding and responsiveness to the influence of trauma with the emphasis on physical, psychological, and emotional safety for both providers and survivors.⁴ The intention of TIC is not to treat issues or symptoms related to sexual, physical, or emotional abuse or any other form of trauma but rather to provide support services in a way that is accessible and appropriate to people who may have experienced trauma.⁵ TIC is a helpful approach for those who might have experienced trauma, especially in health and human services settings.

Given the daily challenges of working in a health care setting, health care professionals and support staff have many opportunities to provide care and treatment to people who experience traumatic events. A recent global general population survey revealed frequent traumatic exposure, such as witnessing death or serious injury, the unexpected death of a loved one, being mugged, adverse childhood experiences, and experiencing a life-threatening illness or injury, proportions exceeding 70%, with 30.5% reporting exposure to 4 or more such events in one person's life.⁶ Trauma-informed care minimizes the potential for medical care to become traumatic or trigger trauma reactions, addresses distress, provides emotional support for those who experienced traumatic events, encourages positive coping, and provides anticipatory guidance regarding the recovery process.⁷ The application of a trauma-informed approach to medical care has the potential to mitigate the negative consequences in a health care setting for people who experienced traumatic events. In addition, implementing TIC has been reported to reduce stress levels and burnout not only in the general population but also in health care professionals and support staff.^{7,8} Health care professionals can experience trauma related to

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their work because they are often responsible for conducting medical procedures that cause patients to experience pain, discomfort, or fear. Depending on the intensity and duration of exposure to these potentially traumatic events, health care professionals involved in medical care may experience serious adverse outcomes, including compassion fatigue and burnout.^{9,10} The application of a trauma-informed approach to medical care has the potential to mitigate these negative consequences. Thus, TIC enhances the quality of care for people who experienced traumatic events and mitigates burnout and stress levels of health care professionals and support staff in a health care setting. It has been reported that increased experiences of trauma and mental health problems such as posttraumatic stress disorder (PTSD) and burnout occurred among health care professionals during the outbreak of the novel coronavirus infection (COVID-19),^{11,12} and it may be more important for health care professionals to implement TIC during an outbreak of COVID-19. Successful implementation of TIC requires health care professionals to understand and be sensitive to trauma. More mental health professionals need to experience a personal transformation of their attitudes toward TIC to facilitate the implementation of TIC into clinical practice.^{3,13,14} In addition, the review suggested that barriers to routine integration of TIC into health care settings include a lack of available training and unclear best-practice guidelines.⁷

A previous study suggested that applying the psychological first aid (PFA) approach among health care professionals may provide a valuable foundation to build a proactive trauma-informed approach to patients at all points of contact across the health care system, including critical care settings.¹⁵ Another study suggested that PFA training is an ideal program that may be delivered by all members of a trauma-informed organization, even by those without advanced mental health training.¹⁶ PFA was originally developed to mitigate acute distress for people in the immediate aftermath of a disaster and assess the need for continued mental health care through a compassionate and supportive presence.¹⁷ PFA aims to reduce stress and assist in a healthy recovery following a traumatic event, disaster, public health emergency, or even a personal crisis.¹⁸ PFA can be provided anywhere that trauma survivors can be found, such as in shelters, schools, hospitals, private homes, and workplaces. PFA can help everyone, including children, adolescents, adults and older adults, and families who have been exposed to a traumatic or emergency incident, including responders and support service providers. Nowadays, PFA provides a framework that has been applied to other personal adverse experiences such as interpersonal violence and family trauma.¹⁹ A systematic review of PFA training participation for first responders, such as health care professionals, showed improved skills and knowledge of PFA for people who experienced traumatic events.²⁰ In addition, the 6 key principles fundamental to TIC are safety; trustworthiness and transparency; peer support; collaboration and mutuality; empowerment, voice, and choice; and cultural, historical, and gender issues.³ PFA training models adhered to Hobfoll's 5 principles of an immediate trauma intervention: safety, calming, efficacy, connectedness, and hope.²¹ Many similarities can be found between the 6 key principles of TIC and the PFA principles. Thus, PFA is considered effective training for health care professionals in attitudes toward TIC. However, to our knowledge, no study reported an association between PFA training participation and attitudes toward TIC among health care professionals.

This study aimed to investigate the association between PFA training participation and attitudes toward TIC among

health care professionals in Japan. We hypothesized that PFA training participation is significantly and positively associated with attitudes toward TIC.

Method

Participants

The recruited participants in this study included Disaster Medical Assistance Team (DMAT) and Disaster Psychiatric Assistance Team (DPAT) members in Japan who met the following inclusion criteria: (a) native Japanese speaker or nonnative speaker with Japanese reading and writing skills, (b) age 18 years or older, (c) able to receive an e-mail with the written guide for this study from the DMAT office or the DPAT office, and (d) physically and psychologically capable of understanding and providing consent for study participation. DMAT and DPAT members are trained health care professionals who have the mobility to work in an acute phase of a disaster in Japan.²² DMAT and DPAT are among Japan's major disaster medical relief teams who respond at the onset of a disaster. DMAT members respond at the onset of a disaster and for longer periods when needed.²³ DPAT members respond at the onset of a disaster for a few days to some months.²⁴ DMAT and DPAT members (physicians, nurses, medical office workers, and other health care professionals such as pharmacists and occupational therapists) usually work at their base hospitals. At a time of need, the national or prefectural government requests their deployment to disaster base hospitals. The selected members provide rescue efforts to the affected areas or major accident sites, including multi-casualty incidents, for several days and return to regular work in their hospitals after the rescue activity.

Study Design

Health care professionals belonging to DMAT or DPAT in Japan were recruited for this Internet-based study. The survey was conducted from May 21 to June 18, 2021. For DMAT members, an e-mail for this study was posted to the mailing list by the DMAT office and for DPAT members by the DPAT office. The e-mail recruiting for this study sent to the mailing list was sent to almost all DMAT or DPAT members in Japan, and members voluntarily participated in this study. The e-mail contained a written explanation of the study and the URL of a web page containing a questionnaire and a consent form. Participants accessed the URL, read a detailed explanation of the study, and responded online to the consent form and the questionnaire.

This study was ethically approved by the research ethics committee of the Graduate School of Medicine and Faculty of Medicine at the University of Tokyo (No. 2019164NI-(1)(2)(3)) and the research ethics committee of the National Hospital Organization Disaster Medical Center (No. 2019-19). Informed consent was obtained by the participant reading an ethical document and completing a consent form on this study's web page. This study was conducted in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement.²⁵

Measurement Tools

The outcome of this study was evidence of an attitude toward TIC, which was assessed by the Attitudes Related to Trauma Informed Care Scale 10-item short form (ARTIC-10). The ARTIC-10 is the scale assessing attitudes toward TIC implementation and support of TIC adoption in human service organizations.^{26,27} The

ARTIC-10 comprises 10 items reflecting 5 core subscales within the Attitudes Related to Trauma Informed Care Scale 45-item scale (ARTIC-45): (a) underlying causes of problem behavior and symptoms, (b) responses to problem behavior and symptoms, (c) on-the-job behavior, (d) self-efficacy at work, and (e) reactions to the work. These 5 core subscales (a–e) evaluate attitudes toward TIC implementation. Respondents were asked to rate their personal beliefs about TIC during the past 2 months at their job on a 7-point bipolar Likert scale. The mean scores of overall items are calculated to determine the participants' average attitudes toward TIC. The mean ARTIC-10 total scores range from 1.0 to 7.0, with higher scores indicating a more favorable attitude toward TIC. A sample bipolar question response is, "I am most effective as a helper when I focus on a client's strength," whereas its opposite is, "I am most effective as a helper when I focus on a client's problem behavior."

The Japanese version of the ARTIC-10 scale was created using back-translation,²⁸ and the reliability and validity of the Japanese version have been recently verified (Cronbach's $\alpha = 0.56$).²⁹

Independent Variables

A question about the PFA training participation was originally developed through discussion among researchers and health care professionals (HA, YKo, YKa, MI, YM, and DN) who were engaged in mental health among health care professionals or PFA in Japan. The question was: "Have you ever taken psychological first aid (PFA) training?" and was answered by a binary (yes/no).³⁰

The demographic variables retrieved were sex, age, an affiliation of DMAT or DPAT, hospital affiliation, occupation, years of occupational experience, and years of DMAT or DPAT experience.

Statistical Analysis

We analyzed the data set of participants who completed all questions of the questionnaire. A univariate linear regression analysis was used to examine the association of ARTIC-10 with the PFA training participation and other independent variables (sex, age, occupation). A multiple linear regression analysis was used to examine the association of ARTIC-10 with the PFA training participation and other independent variables (sex, age, occupation). Occupation was classified into 4 categories: physicians, nurses and midwives, other health care professionals (pharmacists, psychologists, and so forth), and medical office workers. Physicians, nurses and midwives, and other health care professionals were analyzed with medical office workers as a dummy variable for reference in the univariate linear regression and the multiple regression analyses. Any association between the independent and dependent variables was shown as a regression coefficient (beta weight) and quantified by a 95% confidence interval (95% CI). All statistical analyses used 2-tailed tests. The statistical significance level was established at a *P* value of less than 0.05. All analyses were conducted using SPSS version 28.0 J for Windows (SPSS, Tokyo, Japan).

Results

Among 13 315 health care professionals, 777 (5.8%) agreed to participate in this study, and 484 (3.6%) completed all questions. The mean age was 44.0 (SD = 8.4), 340 participants (70.2%) were men, 123 participants (25.4%) were physicians, 191 participants (39.5%) were nurses, 91 participants (18.8%) were other health care

Table 1. Demographic characteristics of participants (N = 484)

	n	%	Mean	SD
Sex				
Men	340	70.2		
Women	144	29.8		
DMAT or DPAT				
DMAT	424	87.6		
DPAT	51	10.5		
DMAT & DPAT	9	1.9		
Age (years)			44.0	8.4
Occupation				
Physician	123	25.4		
Nurse or midwife	191	39.5		
Other health care professionals (pharmacists, psychologists, social workers, radiology technicians, physical therapists, etc)	91	18.8		
Medical office worker	79	16.3		
Occupational experience (years)			19.4	8.1
DMAT or DPAT experience (years)			6.2	4.0
Experience of PFA training participation (yes)	77	15.9		
ARTIC-10 (range: 1.0–7.0)			4.7	0.7

ARTIC-10, Attitudes Related to Trauma-Informed Care 10-item; PFA, psychological first aid; SD, standard deviation.

professionals (pharmacists, psychologists, social workers, radiology technicians, physical therapists, and so forth), and 79 participants (16.3%) were medical office workers (Table 1). Among them, 77 (15.9%) had experienced PFA training participation. The mean score of ARTIC was 4.7 (SD = 0.7).

The univariate linear regression analysis showed that PFA training participation ($B = 0.19$, 95% CI: 0.02–0.36; $P = 0.03$), age ($B = 0.01$, 95% CI: 0.01–0.02; $P = 0.01$), and physician (reference: medical office worker; $B = 0.19$, 95% CI: 0.05–0.33; $P < 0.01$) were factors associated with ARTIC-10 (Table 2). The multiple linear regression analysis showed that PFA training participation ($B = 0.17$, 95% CI: 0.01–0.34; $P = 0.04$), women (reference: men; $B = 0.24$, 95% CI: 0.08–0.40; $P < 0.01$), and physician (reference: medical office worker; $B = 0.21$, 95% CI: 0.02–0.41; $P = 0.03$) were significantly associated with ARTIC-10. R squared in the adjusted model was 0.05.

Discussion

This cross-sectional study aimed to investigate the association between PFA training participation and ARTIC-10 among health care professionals in Japan. The results of univariate linear regression analysis and multiple linear regression analysis showed that PFA training participation was significantly and positively associated with attitudes toward TIC measured by ARTIC-10.

PFA training participation was significantly and positively associated with ARTIC-10, as hypothesized. To the best of our knowledge, this study is the first to show an association between PFA training participation and attitudes toward TIC among health care professionals. Since PFA was originally developed to provide mental health care to disaster survivors and other traumatized individuals, it is understandable that health care professionals who

Table 2. Results of univariate and multiple linear regression analysis in participants (n = 484) for ARTIC-10

Variables	Univariate linear regression			Multiple linear regression ^a		
	B	95% CI	P	B	95% CI	P
Experience of PFA training participation (yes)	0.19	0.02, 0.36	0.03*	0.17	0.01, 0.34	0.04*
Age	0.01	0.02, 0.02	0.01*	0.01	-0.01, 0.01	0.12
Sex (reference: men)	0.13	-0.01, 0.26	0.06	0.24	0.08, 0.40	< 0.01**
Occupation: physician (reference: medical office worker)	0.19	0.05, 0.33	< 0.01**	0.21	0.02, 0.41	0.03*
Occupation: nurse or midwife (reference: medical office worker)	-0.01	-0.22, 0.04	0.16	-0.01	-0.26, 0.14	0.54
Occupation: other health care professionals (reference: medical office worker)	0.05	-0.11, 0.21	0.51	0.16	-0.05, 0.37	0.13

*P < 0.05; **P < 0.01; ^aR-squared value was 0.05; ARTIC-10, Attitudes Related to Trauma-Informed Care 10-item; CI, confidence interval; PFA, psychological first aid.

had experienced PFA training participation had improved their attitudes toward TIC. Health care professionals who attended 1-day, face-to-face PFA training demonstrated improved PFA skills and knowledge of trauma survivors at the post-PFA training assessment and 6 months follow-up.³¹ Similarly, the participants in this study may have improved their attitudes toward TIC after attending PFA training. Safety; trustworthiness and transparency; peer support; collaboration and mutuality; empowerment, voice, and choice; and cultural, historical, and gender issues were proposed as the 6 key principles fundamental to TIC.³ As an example of 1 of the 6 principles, safety is included throughout the organization, assuring that the staff and the people they serve, whether children or adults, feel physically and psychologically safe; the physical setting is safe and interpersonal interactions promote a sense of safety. PFA training models adhered to Hobfoll's 5 principles of an immediate trauma intervention: safety, calming, efficacy, connectedness, and hope.²¹ The PFA guide for field workers, developed by the World Health Organization (WHO), includes checking the safety of people, the listening and helping to calm, assessing needs and concerns for them, addressing basic needs, and protecting them from further harm.³² Many similarities can be found between the PFA principles and the 6 key principles of TIC, such as providing care that ensures the safety of the person experiencing trauma. The contents of the PFA training were considered to enhance the understanding of the 6 key principles of TIC. Thus, it was deemed that participants who had experienced PFA training participation had improved attitudes toward TIC and scored higher on the ARTIC-10 than participants who had not experienced PFA training participation in this study.

A scoping review showed that PFA training participation significantly improves knowledge of appropriate psychosocial response and PFA skills in supporting people in acute distress, thereby enhancing self-efficacy and promoting resilience.²⁰ This study showed that the experience of PFA training participation improved attitudes toward TIC. For health care professionals, improved TIC means providing trauma-sensitive care to people who have experienced trauma, which is vital for them to ensure better care for those who have experienced trauma. It was reported that TIC practice among health care professionals has improved communication with patients, improved patient satisfaction and compliance, and decreased health care costs.³³ In addition, implementing TIC has been reported to have resulted in reduced stress levels and burnout among health care professionals and support staff.^{7,8} The results of this study suggest that health care professionals can improve their own mental health by taking PFA training and enhancing their TIC. Therefore, from the perspective

of TIC, taking PFA training among health care professionals has various benefits for the health care professionals themselves and their patients.

Based on the characteristics of the participants in this study, the results may apply to medical rescue workers providing care to survivors of terrorism and disasters. Survivors of terrorism and disasters experience a variety of traumatic events, such as being injured themselves or witnessing scenes of accidents involving people close to them.³⁴ Medical rescue workers need to be able to apply TIC to survivors at the scene of terrorism or disaster in order to provide appropriate mental health care to the survivors. This study suggested that medical rescue workers may also benefit from PFA training participation to improve attitudes toward TIC and offer appropriate mental health care to survivors of terrorism and disasters.

Furthermore, the results of this study indicate that attitudes toward TIC were a vital outcome of taking PFA training. A scoping review highlights limited evaluation of PFA training and unclear training outcomes measurement after PFA training.²⁰ Using attitudes toward TIC as an outcome measure of taking PFA training may be helpful as an indicator of the effectiveness of practice psychological care for people who have experienced a traumatic event. This study found that attitude toward TIC was a useful outcome measure of the effect of taking PFA training, which is a significant result for future research on PFA training, TIC, and trauma care.

Limitations

This study has some limitations. First, we did not consider when participants received PFA training in our analysis, other than that they had taken PFA training by May 2021. Participants with PFA training participation gained different knowledge and skills depending on when they attended PFA training, which may have different effects on participants' attitudes toward TIC. Second, the response rate was low, which may limit the external validity of this study. Non-responders could be too stressed to respond or not at all stressed and, therefore, not interested in this survey. Almost all DMAT and DPAT members were asked to participate in this study on a voluntary basis without any honorarium, using the e-mail mailing list. It is possible that the recruitment method and the fact that participants did not see the e-mail could also be a reason for the low response rate. In the future, a survey with a larger sample and a higher response rate would be necessary. Third, motivated health care professionals in general tended to register as DMAT and DPAT members; thus, DMAT and DPAT members are not

representative of health care professionals in Japan. Fourth, R squared of the multiple linear regression analysis in the adjusted model was low in this study. Fifth, more men (70.2%) than women (29.8%) participated in this study. It may be useful in the future to conduct a study in which the same proportion of participants are men and women, though sex was included as an independent variable in the multiple regression analysis, and differences in sex were adjusted for in this study. Sixth, the participants in this study were health care professionals in Japan only. Future research is needed to determine whether similar results can be found among health care professionals in other countries and in other occupations. Finally, this study was cross-sectional, and the causality cannot be clarified. It is necessary to conduct a longitudinal survey with a larger sample and pre- and post-PFA training participation surveys in the future.

Conclusions

This cross-sectional study aimed to investigate the association between the PFA training participation and ARTIC-10 among health care professionals in Japan. The results of univariate linear regression analysis and multiple linear regression analysis showed that PFA training participation was significantly and positively associated with ARTIC-10. This study is the first to show an association between PFA training participation and attitudes toward TIC among health care professionals and found new benefits of taking PFA training. It is necessary to conduct a longitudinal survey with a larger sample and pre- and post-PFA training participation surveys in the future.

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Author contributions. DN was in charge of this study, supervising the process and providing his expert opinion. HA and DN conceived and designed the study. HA, YKo, YKa, MI, YM, and DN contributed to creating questionnaires. YKa and MI recruited the participants. HA and DN developed the analysis plan. YKo managed the enrollment procedure and overall control of the study. HA wrote the first draft of the manuscript, and all other authors revised the manuscript critically. All authors approved the final version of the manuscript.

Competing interests. All authors declare no relevant conflicts of interest in relation to the subject of the manuscript. DN reports personal fees from Startia, Inc., en-power, Inc., MD.net, AIG General Insurance Company, Ltd, outside the submitted work.

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