



OPEN ACCESS

EDITED BY

Serena Tagliacozzo,
National Research Council (CNR), Italy

REVIEWED BY

Kenneth Mølbjerg Jørgensen,
Malmö University, Sweden
Rima Devi,
Andalas University, Indonesia

*CORRESPONDENCE

Hitomi Matsunaga
✉ hmatsu@nagasaki-u.ac.jp

RECEIVED 12 May 2025

ACCEPTED 29 September 2025

PUBLISHED 22 October 2025

CITATION

Matsunaga H, Yamada S, Kashiwazaki Y,
Orita M and Takamura N (2025) What
characteristics define individuals who serve as
kataribe (storytellers) in conveying lessons
derived from the unprecedented disaster,
including the Fukushima Daiichi Nuclear
Power Plant accident?
Front. Commun. 10:1627318.
doi: 10.3389/fcomm.2025.1627318

COPYRIGHT

© 2025 Matsunaga, Yamada, Kashiwazaki,
Orita and Takamura. This is an open-access
article distributed under the terms of the
[Creative Commons Attribution License](#)
(CC BY). The use, distribution or reproduction
in other forums is permitted, provided the
original author(s) and the copyright owner(s)
are credited and that the original publication
in this journal is cited, in accordance with
accepted academic practice. No use,
distribution or reproduction is permitted
which does not comply with these terms.

What characteristics define individuals who serve as kataribe (storytellers) in conveying lessons derived from the unprecedented disaster, including the Fukushima Daiichi Nuclear Power Plant accident?

Hitomi Matsunaga^{1,2*}, Shuji Yamada², Yuya Kashiwazaki¹,
Makiko Orita¹ and Noboru Takamura^{1,2}

¹Department of Disaster Resilience and Science, Atomic Bomb Disease Institute, Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan, ²The Great East Japan Earthquake and Nuclear Disaster Memorial Museum, Futaba, Japan

On March 11, 2011, the triple tragedy of an earthquake, tsunami, and nuclear disaster struck Fukushima Prefecture. This study aimed to clarify the characteristics of *kataribe* ("storytellers") who experienced the tragedy and conveyed their experiences in Fukushima, especially the struggle to continue as *kataribe*. A questionnaire survey was conducted from January 15 to July 30, 2024. The quantitative data were analyzed using chi-square tests and logistic regression analysis. The results indicated that most *kataribe* were satisfied with their current activities, expressed a strong desire to continue, and were highly motivated to improve their skills. However, approximately half of the respondents experienced difficulties in continuing as a *kataribe*. Moreover, they expressed a lack of confidence in themselves, social understanding, and economic support. The findings of this study highlight the importance of preserving diverse traditional resources, such as *kataribe*, who promote disaster prevention measures based on their experiences, not as experts but as peer supporters.

KEYWORDS

Fukushima Daiichi Nuclear Power Plant accident, storyteller, archive, lessons from a disaster, peer education

1 Introduction

In the early afternoon (14:46:23 local time) of March 11, 2011, a 9.0-magnitude earthquake, the Great East Japan Earthquake (GEJE), struck Japan, causing widespread damage to the eastern coastal region. The GEJE, which lasted approximately 6 min, occurred at a relatively shallow depth (15.2 miles) and ended up shifting the Earth on its axis by an estimated 10–25 cm. The GEJE caused a tsunami that proceeded to devastate the coastal areas of Tohoku and southern Hokkaido, claiming the majority of the 19,729 total lives lost. The first tsunami wave reached the coast only 15 min after the GEJE, with reports measuring the maximum height of the wave at approximately 38 m, the height of a 12-story building, directly impacting a continuous stretch of land more than 500 km in length along the coastal areas of Honshu, from the Tohoku to Kanto region, and caused a nuclear accident at the Fukushima Daiichi

Nuclear Power Plant (FDNPP), triggering a potential public health emergency of international concern. As a result, the International Nuclear Event Scale was raised to Level 7, the highest level, similar to the Chernobyl nuclear accident in 1986 (Reconstruction Agency, 2025; World Health Organization, 2013). As of 2025, this triple disaster had led to 4,179 deaths, including 2,348 indirect deaths and missing persons, in Fukushima Prefecture alone. The residents of Fukushima Prefecture have had complicated experiences, including not only anxiety about the health effects of radiation exposure, but also the resultant discrimination and stigmas. Furthermore, many residents were separated from their family members by forced evacuation, experienced major changes in lifestyle habits, and developed worsening chronic illnesses (Takebayashi et al., 2017). The devastation inflicted by this triple tragedy was beyond human imagination and far worse than what was captured in media reports and photographs (Reconstruction Agency, 2025).

Kataribe, which means “storytellers” in Japanese, pass down various historical stories from generation to generation. The history of *kataribe* can be traced to prehistoric times, when writing had not yet been invented. It began as a way to connect, educate, and entertain within communities (The Stories World, 2024). *Kataribe* perform storytelling as a natural phenomenon, share cultural beliefs, teach moral lessons, and preserve historical events (Prawoto and Octavia, 2021). The methods used by *kataribe* include oral narratives, folklore, ballads, mythological epics, and visual storytelling through art and symbols. Furthermore, they use music, dance, and dramatic expressions to engage with their tales (Fakhruddin and Elmada, 2022). In recent years, *kataribe* have taken on different roles from those in prehistoric times. This study focused on those who have new roles as *kataribe*. After disasters, narratives naturally emerge among people seeking to understand and memorize what happened (Jerolleman, 2021). In Japan, *kataribe* share their experiences of tragic events and convey the lessons learned as narratives. *Kataribe* are active all over Japan. In Hiroshima and Nagasaki, survivors talk about the horrors of the atomic bombings in 1945; in Minamata, Kumamoto prefecture they reflect on struggles and stigmatization linked to the severe mercury poisoning-induced neurological disease of the same name; in Kobe, eyewitnesses guide interested visitors through the city to share their experiences with the devastating 1995 Hanshin-Awaji Earthquake and show how the city has recovered (Nagata et al., 2022; Tanaka et al., 2019). *Kataribe* use storytelling techniques that directly combine the disaster experience with emotions or feelings (Gerster et al., 2020). In this way, they transmit lessons, shared emotions, and developed empathy to listeners. No qualifications are needed to become a *kataribe*; hence, their activity can be conceived as spontaneous behavior (Nagamatsu et al., 2021). Anyone who has registered with an associated foundation can share their stories as *kataribe*. However, there have only been about 150 *kataribe* in the time since the FDNPP accident. Furthermore, neither the kinds of people that comprise *kataribe* in Fukushima nor their characteristics have been clarified. The present paper focuses on people who have experienced a disaster directly, as opposed to successors in myths, as well as hidden knowledge in regard to disaster prevention methods.

Previous studies have documented the history (The Stories World, 2024) and background of storytelling (Prawoto and Octavia, 2021), as well as the details of its activities (Fakhruddin and Elmada, 2022). However, few studies have investigated what kinds of people are storytellers, or what passion they have, especially in relation to

research on the FDNPP accident. Recent studies have focused on the benefits of storytelling, while previous studies have concluded that *kataribe* are beneficial and effective in conveying the lessons of unexpected future disasters and preparedness. Audiences can recognize that disasters may occur by hearing the experiences of *kataribe*, which increases interest in not only disasters, but also disaster mitigation and prevention measures, as well as motivation (Watanabe et al., 2024; Sato, 2020). It has also been confirmed that people who listen to *kataribe* feel more motivated to share stories with their friends and family and that the motivation to implement disaster prevention measures spreads through listeners (Sato et al., 2023). Recently, the style of *kataribe* has evolved. Combining *kataribe* and worksheets that include impressions, comments, opinions, and experiential learning case study games has increased the understanding of and deepened preparation for man-made disasters or those triggered by natural hazards (Kimura and Hayashi, 2009).

Given this background, the present study aimed to clarify the characteristics of *kataribe* in Fukushima Prefecture, including the struggle to continue as *kataribe*, and to evaluate social resources from their perspectives. There is clear evidence that hearing disaster experiences directly from victims increases awareness of disaster preparedness. However, even in disaster-prone countries such as Japan, the *kataribe* system has not been fully established. Clarifying what kind of individuals comprise *kataribe* and the difficulties they face could lead to more effective support and contribute to mitigating the damage caused by unexpected disasters.

2 Materials and methods

2.1 Participants

This study was conducted in Fukushima Prefecture, which is the location of the FDNPP. A questionnaire was distributed to 21 groups, comprising 115 *kataribe* who were registered in Fukushima Prefecture at an office for united *kataribe* groups. Among the 115 questionnaires distributed to each *kataribe* group leader, 72 responses were received and included in the analysis (response rate: 62.6%). Among the respondents, 43 (59.7%) were female, 13 (18.1%) were in their teens, eight (11.1%) in their 20s, one (1.4%) in their 30s, two (2.8%) in their 40s, 11 (15.3%) in their 50s, 13 (18.1%) in their 60s, 20 (27.8%) in their 70s, and four (5.6%) in their 80s and over. The purpose of the study and ethical considerations were described in the questionnaire, and returning a completed survey was considered to indicate informed consent. The study protocol was approved by the Ethics Committee of Nagasaki University Graduate School of Biomedical Sciences (No. 23102701), and authorization for the study was obtained at the registration office in Fukushima Prefecture.

2.2 Questionnaire

The questionnaire was developed based on previous studies conducted in Fukushima (Yasumura and Abe, 2017; Takamura et al., 2023) and other information obtained through private interviews with *kataribe* and their supporters. The questionnaire was designed to be completed in both paper and electronic format, according to the preference of the respondent. Data were collected on demographic

characteristics, including sex, age, place of residence at the time of the disaster, and whether there were changes in living areas and occupations due to the GEJE and FDNPP accident. Furthermore, the participants were asked whether their current primary source of income included the activity of *kataribe*. The participants were also asked to select the most appropriate response from the options provided regarding the following type of disaster told: how they joined the *kataribe* (self-initiated or recommended), position as a *kataribe* (group, private, or both), duration of their activity (1–4 years, 5–9 years, and ≥ 10 years), frequency of their activity (once per month, once every 2 weeks, or more than once per week), and whether they conducted storytelling at a regular place (yes or no).

We also asked about the difficulty of continuing as a *kataribe* using the following question: “Have you ever experienced difficulties continuing *kataribe* activities?” We then asked those who responded yes to select multiple reasons (e.g., being busy with a primary job, health issues, others). For those who chose “others,” we asked them to describe in free writing why it was difficult to continue the activity.

Because one of the purposes of the survey was to evaluate activities from the perspective of *kataribe* themselves, we asked whether they had assessed well-developed places of storytelling, training systems, and meeting for changing activity information. Further, we asked whether they felt that comprehensive social support was sufficient (yes or no). The participants were also asked about the motivation and experience needed to improve their skill as a *kataribe*, whether they wanted to improve their *kataribe* skills, whether they wanted to be more active, whether they wanted to learn about radiation, and whether they had participated in a skill-up seminar on *kataribe* (yes or no). Furthermore, we asked the participants to select multiple items from 11 options that they considered necessary to continue as a *kataribe*.

To assess their mental health, we included questions about life satisfaction and included the Post-Traumatic Stress Disorder (PTSD) checklist (PCL-S) and the 3-item version of the University of Tokyo Health Sociology Sense of Coherence Scale (SOC-3-UTHS). Satisfaction was evaluated by asking the following questions: “Are you satisfied with the activity of *kataribe*?,” “Did your life satisfaction change as a result of becoming a *kataribe*?,” and “Do you feel happy with your current life?”

The PCL-S is widely used to assess the severity of traumatic reactions and screen for PTSD. The PCL-S is psychometric, and its screening properties have been reported (Shiga et al., 2021; Wilkins et al., 2011). We used the standard cutoff of ≥ 12 as an indicator of mood/anxiety disorders, as defined in previous Japanese studies. The SOC-3-UTHS, which assesses the capacity to cope with stress, has been widely used in epidemiological and psychological investigations (Lundberg and Nyström, 1995; Togari et al., 2007). The SOC-3-UTHS is composed of three items rated on a seven-point Likert-type scale (possible score ranges from 3 to 21), with higher scores indicating a stronger sense of coherence and ability to cope with stress.

2.3 Statistical analysis

The chi-square test was used to assess differences between the difficulty of continuing *kataribe* activities and each question item. Logistic analysis was used to evaluate each *kataribe* system's independent association with the difficulty of continuing the

storytelling activity. Age and sex were included as adjustment factors in each model. All data were statistically analyzed using SPSS Statistics 29.0 (IBM Armonk, New York, NY, United States), with the level of statistical significance set at $p < 0.05$.

3 Results

3.1 Basic attributes

Of the 72 participants, 47 (65.3%) experienced the GEJE in Hamadori, 18 (25.0%) in Nakadori, two (2.8%) in Aizu, and five (6.9%) outside of Fukushima. In addition, 25 (34.7%) of the respondents had changed their residence and moved to a different district from where they had been during the disaster. Further, 29 (40.3%) had changed occupations because of the disaster, and only seven (9.7%) earned their primary income from *kataribe* activities. The results of a chi-square test indicated that only the occupation had changed because the disaster influenced the difficulties experienced in continuing *kataribe* activities (Table 1).

3.2 Characteristics of the *kataribe*

In total, 35 (48.6%) participants had joined the *kataribe* via self-initiation. Regarding position, 39 (54.2%) belonged to a group, 12 (16.7%) were privately active, and 21 (29.1%) were active both in a group and privately. The duration of *kataribe* activity was as follows: 38 (53.5%) had been active for 1–4 years, 15 (21.1%) for 5–9 years, and 18 (25.4%) for ≥ 10 years. Regarding the frequency of storytelling, 36 (52.2%) responded once per month, 19 (27.5%) once every 2 weeks, and 14 (20.3%) more than once per week. Moreover, 60 (83.3%) had a place where they regularly told a story (Table 1). Regarding topics, 62 (86.1%) participants talked about the GEJE, 56 (77.8%) about the tsunami, and 54 (75.0%) about the FDNPP accident. Table 2 shows the details regarding the combinations of stories about disasters. The most common patterns included three disasters, such as the GEJE, tsunami, and FDNPP disaster in one story (58.3%, $n = 42$), followed by the tsunami and GEJE (16.7%, $n = 12$), the GEJE and FDNPP disaster (8.3%, $n = 6$), only the FDNPP disaster (6.9%, $n = 5$), and various disaster patterns.

3.3 Difficulties experienced when continuing as a *kataribe*

Among the 72 participants, about half ($n = 32$; 44.4%) reported experiencing difficulties continuing as a *kataribe*. The most common reason given was feeling unsuitable as a *kataribe* ($n = 9$; 29.0%), followed by health issues ($n = 7$; 22.6%), financial problems ($n = 6$; 19.4%), restrictions from the COVID-19 pandemic ($n = 5$; 16.1%), and busy with a primary job ($n = 4$; 12.9%) (Figure 1).

Seventeen respondents selected “other” and provided free-writing responses, which were analyzed using content analysis and divided into the following five categories (Table 3): “Lack of disaster experience,” “Lack of understanding,” “Lack of transportation,” “Lack of salary,” and “Others.”

TABLE 1 Characteristics of *kataribe* in Fukushima related to the difficulty of continuing storytelling activities.

Item (data for each item)		Overall <i>n</i> (%) 72 (100)	Yes <i>n</i> (%) 32 (44.4)	No <i>n</i> (%) 40 (55.6)	<i>p</i> -value
Sex (<i>n</i> = 72)	Female	43 (59.7)	21 (65.6)	22 (55.0)	0.361
	Male	29 (40.3)	11 (34.4)	18 (45.0)	
Age (<i>n</i> = 72)	10–20s	21 (29.2)	7 (21.8)	14 (35.0)	0.434
	30–60s	27 (37.5)	14 (43.8)	13 (32.5)	
	≥70s	24 (33.3)	11 (34.4)	13 (32.5)	
Place of residence at the time of the disasters (<i>n</i> = 72)	Hamadori	47 (65.3)	22 (68.8)	25 (62.5)	0.257
	Nakadori	18 (25.0)	7 (21.9)	11 (27.5)	
	Aizu	2 (2.8)	2 (6.2)	0 (0)	
	Outside Fukushima	5 (6.9)	1 (3.1)	4 (10.0)	
Change in living area due to the disasters (<i>n</i> = 72)	Yes	25 (34.7)	12 (37.5)	13 (32.5)	0.658
	No	47 (65.3)	20 (62.5)	27 (67.5)	
Change in occupation due to the disasters (<i>n</i> = 72)	Yes	29 (40.3)	18 (56.2)	11 (27.5)	0.013
	No	43 (59.7)	14 (43.8)	29 (72.5)	
Current primary source of income (<i>n</i> = 72)	Related to storytelling	7 (9.7)	3 (9.4)	4 (10.0)	0.181
	Not related to storytelling	65 (90.3)	29 (90.6)	36 (90.0)	
How the respondent joined the <i>kataribe</i> (<i>n</i> = 72)	Self-initiated	35 (48.6)	15 (46.9)	20 (50.0)	0.792
	Recommended	37 (51.4)	17 (53.1)	20 (50.0)	
Position as a <i>Kataribe</i> (<i>n</i> = 72)	Group	39 (54.2)	18 (56.3)	21 (52.5)	0.430
	Private	12 (16.7)	4 (12.5)	8 (20.0)	
	Both	21 (29.1)	10 (31.2)	11 (27.5)	
Duration of <i>Kataribe</i> activity, years (<i>n</i> = 71)	1–4	38 (53.5)	14 (43.8)	24 (61.5)	0.232
	5–9	15 (21.1)	7 (21.9)	8 (20.5)	
	≥10	18 (25.4)	11 (34.3)	7 (18.0)	
Frequency of <i>Kataribe</i> activity (<i>n</i> = 69)	Once per month	36 (52.2)	14 (45.2)	22 (57.9)	0.568
	Once every 2 weeks	19 (27.5)	10 (32.2)	9 (23.7)	
	More than once per week	14 (20.3)	7 (22.6)	7 (18.4)	
Regular place for <i>Kataribe</i> activity (<i>n</i> = 72)	Yes	60 (83.3)	26 (81.2)	34 (85.0)	0.671
	No	12 (16.7)	6 (18.8)	6 (15.0)	

The chi-square test was used for comparisons.

TABLE 2 Details of the combination patterns of stories about disasters.

Combination patterns	Number	%
Earthquake + tsunami + nuclear power plant accident	42	58.3%
Earthquake + tsunami	12	16.7%
Earthquake + nuclear power plant accident	6	8.3%
Nuclear power plant accident	5	6.9%
Earthquake	2	2.8%
Tsunami + nuclear power plant accident	1	1.4%
Tsunami	1	1.4%
Others	3	4.2%

“Lack of disaster experience” included five descriptions and indicated the inability to continue as a *kataribe* because they had experienced less severe disaster damage than others.

I did not experience the tsunami casually. Further, I did not experience the death of my family after the GEJE. So I cannot tell a more touching story than other victims. I do not have confidence in my story.

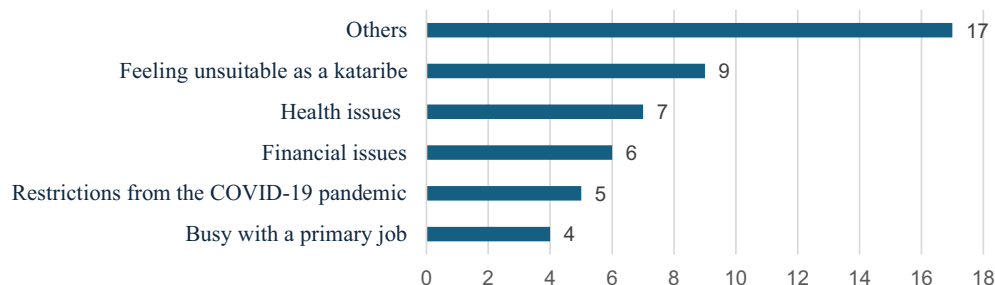


FIGURE 1
Reasons for experiencing difficulties in continuing as a *kataribe* (multiple responses).

TABLE 3 Content analysis of the difficulties experienced by continuing as a *kataribe* (free writing; others).

Category	Code	Number
Lack of disaster experience	I was not affected by the tsunami.	1
	The situation in the coastal areas was only hearsay.	1
	I felt anxious when I did not answer about the inexperience of the disaster.	1
	It wasn't easy to talk about hearing from other survivors.	1
	Lack of damage such as a destroyed home or dead family member	1
Lack of understanding	Less of a supporter of storytelling	1
	The same group members have different storytelling activities.	1
	Some responded that my story was difficult to understand.	2
Lack of transportation	I do not have a driving license or own a car.	2
	Public transportation was not sufficient to take me to the venue.	1
Lack of salary	I cannot afford to volunteer as a storyteller.	1
	I did not have enough time because my primary job was too tight.	1
Others	Family health issue	1
	Old age	1
	No activity information was available.	1

“Lack of understanding” included four data descriptions and indicated being unable to obtain the understanding as a *kataribe* from the audience.

I tried to make an understandable and touching story, but it was difficult based on my disaster experience and skills. I was very shocked when someone said to me after my storytelling, “Your talk was difficult to understand. What did you want to convey to us about the disaster experience?”

“Lack of transportation” included three data descriptions and indicated those who did not have sufficient transportation to go to the venue of the *kataribe* activity.

The venue for delivering the storytelling was not always a well-transported area. I do not have a driving license. So, I could not get there on time without not only public transportation, but also special support.

“Lack of salary” included two data descriptions and indicated those who could not obtain enough of a reward as a *kataribe*.

The kataribe activity does not provide enough of a reward. Generally, as volunteers, clients in Japanese society tend to ask us for no fee. It was a tough situation. I want more people to listen to my story and have knowledge about the disaster. But if I energetically perform a storytelling activity, it interferes with my main job, and I cannot make a living.

“Others” was categorized according to three different meanings and descriptions.

“Due to a health issue in my family, I could not continue the activity,” “I was beginning to feel unwell because of aging, so I refrained from the activity,” and “I could not gather enough information on where and who needed kataribe”.

3.4 Evaluating the social system of *kataribe*

In total, 90.0% of the respondents evaluated the places for storytelling as well prepared [yes: $n = 41$ (58.6%); probably yes: $n = 22$ (31.4%)], and 72.8% responded that the storytelling training system was also good [yes: $n = 29$ (41.4%), probably yes: $n = 22$ (31.4%)]. In addition, 81.4%

TABLE 4 Evaluating the social system of the *kataribe* in relation to the difficulty of continuing activities.

Item (data for each item)		Overall <i>n</i> (%) 72 (100)	Yes <i>n</i> (%) 32 (44.4)	No <i>n</i> (%) 40 (55.6)	<i>p</i> -value
Well-developed place of storytelling (<i>n</i> = 70)	Yes	41 (58.6)	13 (41.9)	28 (71.8)	0.055
	Probably yes	22 (31.4)	13 (41.9)	9 (23.1)	
	Probably no	5 (7.1)	3 (9.7)	2 (5.1)	
	No	2 (2.9)	2 (6.5)	0	
Well-developed training system (<i>n</i> = 70)	Yes	29 (41.4)	8 (25.8)	21 (53.8)	0.097
	Probably yes	22 (31.4)	11 (35.5)	11 (28.2)	
	Probably no	16 (22.9)	10 (32.2)	6 (15.4)	
	No	3 (4.3)	2 (6.5)	1 (2.6)	
Well-developed meetings for changing activity information (<i>n</i> = 70)	Yes	26 (37.1)	6 (19.4)	20 (51.2)	0.032
	Probably yes	31 (44.3)	16 (51.5)	15 (38.5)	
	Probably no	9 (12.9)	6 (19.4)	3 (7.7)	
	No	4 (5.7)	3 (9.7)	1 (2.6)	
Well-developed comprehensive social support (<i>n</i> = 68)	Yes	43 (63.2)	12 (41.4)	31 (79.5)	0.001
	No	25 (36.8)	17 (58.6)	8 (20.5)	

The chi-square test was used for comparisons.

TABLE 5 Independent associations with the difficulty of continuing *kataribe* activities.

		Place of activities OR (95% CI)	Training system OR (95% CI)	Interaction place OR (95% CI)	Social support OR (95% CI)
Sex	Female/male	1.70 (0.59–4.86)	2.03 (0.71–5.85)	2.67 (0.85–8.33)	1.61 (0.53–4.83)
Age (years)	10s ~ 80s	0.90 (0.72–1.12)	0.91 (0.73–1.14)	0.91 (0.73–1.15)	0.97 (0.77–1.23)
Place of activities	No~Yes	2.39* (1.11–5.15)	–	–	–
Training system	No~Yes	–	1.97* (1.10–3.60)	–	–
Interaction place	No~Yes	–	–	2.70** (1.31–5.56)	–
Social support	No~Yes	–	–	–	5.42** (1.75–16.8)

Logistic regression analysis was conducted. OR; odds ratio, CI; confidence interval, * $p < 0.05$; ** $p < 0.01$.

evaluated the meeting place for exchanging information about their latest activity as well organized [yes: $n = 26$ (37.1%), probably yes: $n = 31$ (44.3%)], and 63.2% ($n = 43$) responded that social support for their storytelling activity was well prepared (Table 4).

Logistic regression analysis revealed that each social system evaluation was independently associated with the difficulty of continuing a storytelling activity. The variance inflation factor (VIF) of all selected variances was < 10 (all VIF values were between 1 and 2), and no serious multicollinearity was observed. A major finding of this study was the low evaluation of comprehensive social support for storytelling and how it independently influenced the difficulty of continuing the storytelling activity [odds ratio (OR) = 5.42, 95% confidence interval (CI): 1.75–16.8, $p < 0.01$]. Furthermore, the lack of a meeting place for exchanging information about their latest activity (OR = 2.70, 95% CI: 1.31–5.56, $p < 0.01$), the lack of a place for a *kataribe* activity (OR = 2.39, 95% CI: 1.11–5.15, $p < 0.05$), and the lack of a training system (OR = 1.97, 95% CI: 1.10–3.60, $p < 0.05$)

were all independently associated with the difficulty of continuing a storytelling activity (Table 5).

3.5 Motivation to continue as a *kataribe*

Regarding the motivation to improve storytelling skills, 58 (89.2%) of the respondents indicated that they wanted to improve their storytelling skills, while 56 (78.9%) wanted to be more proactive in their activity. Furthermore, 64 (90.1%) of the respondents wanted to acquire more knowledge about radiation regardless of whether they were talking about the FDNPP accident. In total, 45 (62.5%) respondents had participated in a skill-up seminar for *kataribe*. Regarding ambition as a *kataribe*, the only significant difference observed was between the group that had experienced difficulties in continuing as a *kataribe* and the group that wanted to be more proactive in their activity ($p = 0.02$) (Table 6).

TABLE 6 Ambition and mental health as a *kataribe* in relation to the difficulty of continuing activities.

Item (data for each item)		Overall <i>n</i> (%) 72 (100)	Yes <i>n</i> (%) 32 (44.4)	No <i>n</i> (%) 40 (55.6)	<i>p</i> -value
Want to improve Kataribe skills (<i>n</i> = 65)	Yes	58 (89.2)	23 (82.1)	35 (94.6)	0.109
	No	7 (10.8)	5 (17.9)	2 (5.4)	
Want to be more active as a Kataribe (<i>n</i> = 71)	Yes	56 (78.9)	20 (62.5)	36 (92.3)	0.002
	No	15 (21.1)	12 (37.5)	3 (7.7)	
Want to learn more about radiation (<i>n</i> = 71)	Yes	64 (90.1)	27 (84.4)	37 (94.9)	0.140
	No	7 (9.9)	5 (15.6)	2 (5.1)	
Participated in a skill-up seminar for Kataribe (<i>n</i> = 72)	Yes	45 (62.5)	20 (62.5)	25 (62.5)	1.00
	No	27 (37.5)	12 (37.5)	15 (37.5)	
Satisfied with the Kataribe activity (<i>n</i> = 70)	Yes	28 (40.0)	9 (29.0)	19 (48.7)	0.220
	Probably yes	30 (42.9)	15 (48.4)	15 (38.5)	
	Probably no	12 (17.1)	7 (22.6)	5 (12.8)	
	No	0	0	0	
Change in life satisfaction after starting Kataribe activities (<i>n</i> = 69)	Yes	24 (34.8)	9 (28.1)	15 (40.5)	0.341
	Probably yes	44 (63.8)	22 (68.8)	22 (59.5)	
	Probably no	1 (1.4)	1 (3.1)	0	
	No	0	0	0	
Feel happy with my current life (<i>n</i> = 70)	Yes	31 (44.3)	12 (38.7)	19 (48.7)	0.632
	Probably yes	31 (44.3)	16 (51.6)	15 (38.5)	
	Probably no	4 (5.7)	2 (6.5)	2 (5.1)	
	No	4 (5.7)	1 (3.2)	3 (7.7)	
PCL-S (<i>n</i> = 72)	Low (<13)	69 (95.8)	31 (96.9)	38 (95.0)	0.692
	High (>12)	3 (4.2)	1 (3.1)	2 (5.0)	
SOC-3-UTHS (<i>n</i> = 72)	Mean±SD	15.5 ± 3.9	15.2 ± 4.2	15.8 ± 3.6	0.767*

Fisher's exact test was used for comparisons. *Mann-Whitney U test. PCL-S; Post-Traumatic Stress Disorder checklist-Specific version, SOC-3-UTHS; the 3-item version of the University of Tokyo Health Sociology Sense of Coherence Scale.

Table 7 shows the reasons considered necessary to continue storytelling activities. The most highly necessary thing was someone to listen to their story [*n* = 51 (70.8%)], followed by a place where they could tell their story [*n* = 42 (58.3%)], people or organizations for coordinating their storytelling [*n* = 36 (50.0%)], physical strength [*n* = 34 (47.2%)], financial support [*n* = 28 (38.9%)], someone to accept the contents of the story [*n* = 26 (36.1%)], and spreading information about the *kataribe* [*n* = 25 (34.7%)]. By contrast, evaluations [*n* = 17 (23.6%)], comments [*n* = 16 (22.2%)], and professional advice [*n* = 12 (16.7%)] were needed less than the other things related to storytelling.

3.6 Satisfaction and mental health

Approximately 80% of the *kataribe* in Fukushima were satisfied with their storytelling activity [yes: *n* = 28 (40.0%); probably yes: *n* = 30 (42.9%)]. Almost all of the participants [*n* = 68 (98.6%)] felt that their life satisfaction had improved as a result of beginning storytelling. Furthermore, 62 (88.6%) of the participants felt happy with their lives at the time of the survey. On the other hand, three respondents (4.2%) reported having a traumatic response. The SOC-3-UTHS score (mean ± standard deviation) of the *kataribe* was 15.5 ± 3.9. No differences in SOC-3-UTHS scores were found between those who had and those who

had not experienced difficulties continuing as a *kataribe* (*p* = 0.767) (Table 6).

4 Discussion

This study aimed to clarify the characteristics of *kataribe* in Fukushima after a triple disaster that included the Earthquake, Tsunami and FDNPP accident. There are many *kataribe* in Japan (Nagata et al., 2022; Tanaka et al., 2019). However, Fukushima is the only area that was directly affected by the FDNPP accident. The present findings highlight the importance of protecting opportunities to convey valuable lessons directly from the perspective of victims as *kataribe*.

4.1 Difficulties experienced as a *kataribe*

Approximately 40% of the study participants had experienced difficulties in continuing as a *kataribe*. One of the most useful findings of the study was that the most common reason for experiencing difficulties in continuing as a *kataribe* was a loss of self-confidence due to self-evaluation as opposed to financial reasons or health problems. The findings also revealed that the *kataribe* were sensitive to evaluations from audiences, and that a

TABLE 7 Things necessary to continue storytelling activities.

Item (data for each item)	Overall <i>n</i> (%) 72 (100)	Yes <i>n</i> (%) 32 (44.4)	No <i>n</i> (%) 40 (55.6)	<i>p</i> -value
Someone to listen	51 (70.8)	23 (71.9)	28 (70.0)	0.862
A place to tell a story	42 (58.3)	17 (53.1)	25 (62.5)	0.423
Coordination of storytelling	36 (50.0)	15 (46.9)	21 (52.5)	0.635
Physical strength	34 (47.2)	17 (53.1)	17 (42.5)	0.370
Financial support	28 (38.9)	15 (46.9)	13 (32.5)	0.214
Someone who accepts the contents of the story	26 (36.1)	13 (40.6)	13 (32.5)	0.476
Spreading information about a storyteller	25 (34.7)	13 (40.6)	12 (30.0)	0.347
Evaluation of the storytelling	17 (23.6)	10 (31.3)	7 (17.5)	0.172
Comments on the storytelling	16 (22.2)	7 (21.9)	9 (22.5)	0.949
Professional advice	12 (16.7)	9 (28.1)	3 (7.5)	0.020
Other	6 (8.3)	4 (12.5)	2 (5.0)	0.253

lack of understanding or a negative evaluation inhibited them from continuing as a *kataribe*. It has been shown that *kataribe* who explain disasters and their experiences tend to have three types of difficulties: technical, psychological, and social (Nishisaka and Furuya, 2018).

On the other hand, the findings indicated that *kataribe* need support to continue their activities, such as someone to listen, a place to tell their stories, and coordination for storytelling. Interestingly, few *kataribe* indicated a need for evaluations, commentary, or professional advice about their stories. On the other hand, although the number of participants was small, we found that those who had experienced difficulties continuing their work were statistically more likely to seek advice from a professional compared with those who had not. It is necessary to prepare a consultation system for *kataribe* who want to seek advice. It is also important to understand that some *kataribe* feel inferior because of a lack of miserable disaster experience. Allowing them to share their stories by coordinating places and people who can listen to them could provide useful support.

4.2 High motivation and support for *kataribe*

While the present study revealed that *kataribe* did not need advice to continue their storytelling activities, they were highly motivated to improve their skills and learn more about radiation. Most of the participants wanted to “improve their storytelling skills” and “acquire scientific knowledge about radiation.” However, only about 60% of the participants had experience attending skill-up seminars. A previous study also revealed that despite a strong desire to gain scientific knowledge, they had fewer opportunities to learn about scientific evidence regarding how these disasters were triggered by natural hazards (Matsuki, 2024).

In particular, this study targeted Fukushima, which was the only area directly affected by the FDNPP accident. In Fukushima Prefecture, there are still areas designated as “difficult to return zones,” where access is restricted because of radioactive materials (Fukushima Prefectural Government, 2025). In addition, there is still deep-rooted anxiety about the health effects of radiation

exposure among not only residents of Fukushima, but also the general population (Nakayama et al., 2019), even though international organizations have clearly stated that no adverse health effects have been observed in Fukushima (UN Scientific Committee on the Effects of Atomic Radiation, 2022). Among the participants, 75.0% talked about the FDNPP accident in their stories. For *kataribe* to convey accurate knowledge about radiation and its health effects and help prevent the spread of unnecessary reputational damage, education on radiation and other scientific evidence are needed.

4.3 Mental health of the *kataribe*

Kataribe are both information providers and victims of a tragic accident. It has been reported that immediately after a disaster (within 1 month), victims tend to experience a state of negative emotions, such as awareness of death, various negative reactions such as anger and depression, and survivor's guilt (Longmuir and Vincent, 2021). Furthermore, evacuees from areas affected by a nuclear accident have been shown to have prolonged mental health problems. In particular, it has been reported that people who have experienced a nuclear disaster tend to experience a prolonged deterioration of mental health and high levels of psychological distress because of a fear of the health effects of radiation (Murakami et al., 2019).

On the other hand, the participants in the present study were better than average in terms of improved mental health after the disaster. Emotional support, changes in the environment, work, religion, hobbies, time, and past adversity were related to other types of psychological recovery (Tanaka et al., 2019). Furthermore, sharing one's own experiences has been reported to improve mental health (Tanaka et al., 2020). This is referred to as “narrative therapy,” which can help survivors overcome difficult experiences by allowing them to talk about and interpret such experiences (Nagamatsu et al., 2021). In the present study, 98.6% of the participants reported that their life satisfaction was improved after starting *kataribe* activities. These results suggest that discussing their experiences may help prevent the worsening of mental health among survivors.

4.4 Characteristics of the *kataribe*

Kataribe in Fukushima Prefecture have been sharing their experiences and lessons learned from disasters for not only tourism, but also education as increasing motivation for disaster prevention among all generations and various backgrounds (Fukushima Prefecture, Lifelong Learning Division, Culture and Sports Bureau, 2023). Storytelling about the disaster revealed that it has two major functions: public disaster education and promoting recovery to enhance the resilience of the community (Kargillis et al., 2014). In this study, 83.0% of the participants had a place where they could regularly tell their stories; however, the frequency of such activities varied. In addition, only 25.4% of the *kataribe* had been continuing their activities for ≥ 10 years, suggesting the difficulty of continuing storytelling. On the other hand, *kataribe* positively evaluated the surrounding social resources. While it is necessary to establish social resources, it is also necessary to develop projects and support to help them maintain their motivation.

4.5 Limitations

This study has several limitations. First, we could not follow up with individuals who did not continue *kataribe* activities for several reasons after the FDNPP accident. Second, these studies carefully investigated the situation of *kataribe* in Fukushima Prefecture after the GEJE; however, the GEJE caused damage in not only Fukushima, but also Miyagi and Iwate Prefectures. Therefore, the findings of this study may differ from those of other regions that have not been affected by a nuclear accident. Although Miyagi and Iwate Prefectures are adjacent to Fukushima and face the Pacific Ocean, they were not directly affected by the FDNPP accident. Finally, this study focused on *kataribe* who learned lessons from a nuclear accident in Japan. Storytellers exist all over the world, and they each have a historical background that likely influences their motivations and responsibilities. However, these data are limited, so we could not conduct a detailed analysis. It would be meaningful to study the roles and potential of storytellers in the modern era, which is characterized by the evolution of the Internet and artificial intelligence.

5 Conclusion

In this study, we investigated the characteristics and difficulties of continuing as a *kataribe* in Fukushima Prefecture. The results revealed that most *kataribe* were satisfied with their current activities, expressed a strong desire to continue, and were highly motivated to improve their skills. On the other hand, about half of the participants experienced difficulties in continuing as a *kataribe*, and it was found that there was a lack of confidence in themselves, social understanding, and economic support. In summary, the findings of this study indicate that *kataribe*, who promote disaster prevention measures based on their experiences and lessons learned from tragic disasters, not as experts but as peer supporters, are diverse traditional resources that need to be preserved.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

Ethics statement

Written informed consent was obtained from the individual(s), and minor(s)' legal guardian/next of kin, for the publication of any potentially identifiable images or data included in this article.

Author contributions

HM: Conceptualization, Formal analysis, Investigation, Writing – original draft. SY: Conceptualization, Data curation, Writing – review & editing. YK: Methodology, Writing – review & editing. MO: Validation, Writing – review & editing. NT: Supervision, Validation, Writing – review & editing.

Funding

The author(s) declare that financial support was received for the research and/or publication of this article. This work was supported by the Great East Japan Earthquake and Nuclear Disaster Memorial Museum mission research fund.

Acknowledgments

We would like to express our deepest gratitude to the *kataribe* of Fukushima Prefecture who participated in this study, and to Koichi Moriai, Director of Social Education, Lifelong Learning Division, Fukushima Prefectural Culture and Sports Bureau (at the time of the study), who coordinated the research.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The authors declare that no Gen AI was used in the creation of this manuscript.

Any alternative text (alt text) provided alongside figures in this article has been generated by Frontiers with the support of artificial intelligence and reasonable efforts have been made to ensure accuracy, including review by the authors wherever possible. If you identify any issues, please contact us.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations,

or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

References

- Fakhruddin, I., and Elmada, M. A. G. (2022). Local wisdom as a part of disaster communication: a study on the local storytelling in disaster mitigation. *ETNOSIA* 7, 154–166. doi: 10.31947/etnosia.v7i2.22145
- Fukushima Prefectural Government. (2025). *Transition of the evacuation zones -explanation*. Available online at: <https://www.pref.fukushima.lg.jp/site/portal-english/en/1-3-1.html> (Last accessed April 17, 2025).
- Fukushima Prefecture, Lifelong Learning Division, Culture and Sports Bureau. (2023). *Fukushima Tsutaebito*. Available online at: <https://www.densho-road-fukushima.com/en/tsutaebito-list-en/> (Last accessed April 17, 2025).
- Gerster, J., Shibayama, A., and Ono, M. (2020). 'KATARITSUGI: storytelling as a method in disaster risk education' the 17th world conference on earthquake engineering. 10c-0006.
- Jerolleman, A. (2021). Storytelling and narrative research in crisis and disaster studies. Oxford, England: Oxford Research Encyclopedia of Politics.
- Kargillis, C., Kako, M., and Gillham, D. (2014). Disaster survivors: a narrative approach towards emotional recovery. *Aust. J. Emerg. Manag.* 29, 25–30. doi: 10.3316/informit.656225798377153
- Kimura, R., and Hayashi, H. (2009). Development of education programs and materials for disaster mitigation and preparedness using victims' experiences of local historical disaster. *J. Soc. Saf. Sci.* 11, 215–224. (in Japanese). doi: 10.11314/jiss.11.215
- Longmuir, C., and Vincent, I. O. A. (2021). Social and mental health impact of nuclear disaster in survivors: a narrative review. *Behav. Sci. (Basel, Switzerland)*. 11:113. doi: 10.3390/bs11080113
- Lundberg, M., and Nyström, P. (1995). A simplified way of measuring sense of coherence: experiences from a population survey in Sweden. *Eur. J. Pub. Health* 5, 56–59. doi: 10.1093/eurpub/5.1.56
- Matsuki, S. (2024). The narratives and scientific knowledge in disaster-affected area: trends of guides in the Unzen volcanic area UNESCO global Geopark. *Bull. Grad. Sch. Lit. Hum. Sci.* 75, 156–178. (in Japanese). doi: 10.24729/0002001002
- Murakami, M., Takebayashi, Y., and Tsubokura, M. (2019). Lower psychological distress levels among returnees compared with evacuees after the Fukushima nuclear accident. *Tohoku J. Exp. Med.* 247, 13–17. doi: 10.1620/tjem.247.13
- Nagamatsu, S., Fukasawa, Y., and Kobayashi, I. (2021). Why does disaster storytelling matter for a resilient society? *J. Disaster Res.* 16, 127–134. doi: 10.20965/jdr.2021.p0127
- Nagata, T., Ikeda, M., Kimura, K., and Oda, T. (2022). Development of tsunami disaster risk reduction education program for children with no experience of earthquake disaster – practice and verification at Shichigahama town, Miyagi prefecture. *J. Disaster Res.* 17, 1000–1014. doi: 10.20965/jdr.2022.p1000
- Nakayama, C., Iwasa, H., Kuroda, Y., Yasumura, S., Orui, M., Sato, O., et al. (2019). Lingering health-related anxiety about radiation among Fukushima residents as correlated with media information following the accident at Fukushima Daiichi nuclear power plant. *PLoS One* 14:e0217285. doi: 10.1371/journal.pone.0217285
- Nishisaka, R., and Furuya, K. (2018). 'Establishment of Kataribe-guides and their activities at remnants of the great East Japan earthquake'. *Journal of Japan Institute of Tourism. Research* 29, 17–28. (in Japanese). doi: 10.18979/jitr.29.2_17
- Prawoto, E., and Octavia, L. (2021). Disaster storytelling: extending the memory of the community toward disaster preparedness from myth, scientific explanation, and popular culture. *J. Disaster Res.* 16, 228–233. doi: 10.20965/jdr.2021.p0228
- Reconstruction Agency. *Great East Japan earthquake*. (2025). Available online at: <https://www.reconstruction.go.jp/english/topics/GEJE/index.html> (Last accessed April 17, 2025).
- Sato, S. (2020). Analysis of listening and study on narratives of survivor's disaster experience as inquiry based learning by middle school students: case of disaster tradition activity of the 2011 great East Japan earthquake disaster in Hashikami junior high school. *J. Soc. Saf. Sci.* 37, 79–87. (in Japanese). doi: 10.11314/jiss.37.79
- Sato, S., Watanabe, Y., Sato, W., Hoshi, K., Watanabe, T., Nakagawa, M., et al. (2023). An analysis of the lasting effects of disaster storytelling learning on listeners: a case study on online program for elementary, junior high, and high school students. *J. Jpn. Soc. Nat. Dis.* 42, 35–48. (in Japanese). https://jsnds.org/ssk/ssk_42_s_035.pdf
- Shiga, T., Zhang, W., Ohira, T., Suzuki, Y., Maeda, M., Mashiko, H., et al. (2021). Socioeconomic status, damage-related conditions, and PTSD following the Fukushima Daiichi nuclear power plant accident: the Fukushima health management survey Fukushima. *J. Med. Sci.* 67, 71–82. doi: 10.5387/fms.2020-24
- Takamura, N., Orita, M., Matsunaga, H., and Taira, Y. (2023). Eleven years of community efforts for the recovery from the nuclear disaster. *Environ. Adv.* 11:100330. doi: 10.1016/j.envadv.2022.100330
- Takebayashi, Y., Lyamzina, Y., Suzuki, Y., and Murakami, M. (2017). Risk perception and anxiety regarding radiation after the 2011 Fukushima nuclear power plant accident: a systematic qualitative review. *Int. J. Environ. Res. Public Health* 14:1306. doi: 10.3390/ijerph14111306
- Tanaka, E., Iso, H., Tsutsumi, A., Kameoka, S., You, Y., and Kato, H. (2020). School based psychoeducation and storytelling: associations with long-term mental health in adolescent survivors of the Wenchuan earthquake. *Epidemiol. Psychiatr. Sci.* 29:e65. doi: 10.1017/S2045796019000611
- Tanaka, E., Tennichi, H., Kameoka, S., and Kato, H. (2019). Long-term psychological recovery process and its associated factors among survivors of the great Hanshin-Awaji earthquake in Japan: a qualitative study. *BMJ Open* 9:e030250. doi: 10.1136/bmjopen-2019-030250
- The Stories World. (2024). *The history of storytelling – from ancient fires to modern screens*. Available online at: <https://thestoriesworld.com/the-history-of-storytelling/> (Last accessed April 17, 2025).
- Togari, T., Yamazaki, Y., Nakayama, K., and Shimizu, J. (2007). Development of a short version of the sense of coherence scale for population survey. *J. Epidemiol. Community Health* 6, 921–922. doi: 10.1136/jech.2006.056697
- UN Scientific Committee on the Effects of Atomic Radiation. (2022). *Levels and effects of radiation exposure due to the nuclear accident at the Fukushima Daiichi nuclear Power Station (FDNPS): implications of information published since the UNSCEAR 2013 report*. Available online at: https://www.unscear.org/unscear/uploads/documents/unscear-reports/UNSCEAR_2020_21_Report_Vol.II-CORR.pdf (Last accessed April 17, 2025).
- Watanabe, Y., Sato, S., and Imamura, F. (2024). Effective visitor learning and experience for changing disaster preparedness behavior based on visitors' characteristics: from an internet survey on the case of the 2011 great East Japan earthquake. *Nat. Dis.* 43, 101–112. (in Japanese).
- Wilkins, K. C., Lang, A. J., and Norman, S. B. (2011). Synthesis of the psychometric properties of the PTSD checklist (PCL) military, civilian, and specific versions. *Depress. Anxiety* 28, 596–606. doi: 10.1002/da.20837
- World Health Organization. (2013). *Great East Japan earthquake: a story of a devastating natural disaster, a tale of human compassion 11 march 2011*. Available online at: https://iris.who.int/bitstream/handle/10665/207516/9789290615682_eng.pdf?sequence=1 (Last accessed April 17, 2025).
- Yasumura, S., and Abe, M. (2017). Fukushima health management survey and related issues. *Asia Pac. J. Public Health* 29, 29S–35S. doi: 10.1177/1010539516687022