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Elementary school teachers' support for children with a parent who has cancer in Akita City, Japan

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ABSTRACT

Introduction: When a parent is diagnosed with cancer, the psychological and social impact on their children can be profound. Teachers play a key role in supporting these children, yet limited research has examined school-based support in Japan: This study aimed to examine the awareness, perceptions, and support practices of elementary school teachers toward children with a parent who has cancer.

Methods: A cross-sectional survey was conducted in Akita City. Demographic data included sex, age, parenting status, teaching years, and cancer/bereavement experiences. Teachers reported support experience and completed items on perception, knowledge, and anxiety. Teachers with support experience provided details about their most memorable case.

Results: Among 500 questionnaires collected, 459 were analyzed. Of these, 270 teachers (54.0%) reported support experience. Support experience was significantly associated with being female, having children, and personal or familial cancer experience.Teachers with support experience showed higher perception, knowledge, and anxiety. Memorable cases involved initial contact with children of newly diagnosed parents. Support included observing behavior, promoting emotional expression.

Conclusion: While teachers actively support affected children, personal factors and greater awareness were linked to increased anxiety. Enhancing teacher training and school–medical collaboration may improve support for children facing parental cancer.

Keywords: Parental cancer; elementary school; perceptions of support; knowledge of support; anxiety about support; children with a parent with cancer

INTRODUCTION

In Japan, the number of children living with a parent who has cancer is increasing. In 2019, the cancer incidence rate per 100,000 people was 922.4 for men and 668.1 for women (1). Each year, approximately 56,000 cancer patients have children under the age of 18, affecting about 87,000 children-around 4.3% of the total population under 18 (2). The average age of these children is 11.2 years (standard deviation = 5.2), with elementary school-aged children accounting for more than half (2).

Children of parents with cancer can develop psychosocial problems (3). These include being sensitive to changes in their parents at home, feeling guilty that their parent's cancer is their fault, and worrying about the future (3). Moreover, children whose parents have cancer tend to experience more physical complaints (4,5) greater emotional issues, higher stress-related symptoms (6,7) and a lower quality of life than those whose parents do not have cancer (8). In terms of school life, decreased motivation and lower grades have also been reported (3,9) and children whose parents have cancer may be more isolated compared to other age groups (10). To support the school life of these children has become necessary. Thus, although there is an urgent need to consider support for children, there is little research on support in school (11).

In Japan, in 2010, it was revealed what kind of support elementary school nurses and teachers provide to children (12,13). Notably, 16.4% of 152 school nurses and 10.1% of 385 teachers had experience supporting children. Although school nurses and teachers have communicated with children and their parents, the specific circumstances surrounding such interactions remain unclear. Moreover, more than 90% of teachers are aware that there is insufficient support for children whose parents have cancer, as well as inadequate information about cancer, and more than 65% have felt that it is difficult to deal with children whose parents have cancer. Nevertheless, these surveys were

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conducted over 10 years ago. The current support situation may have changed due to the younger age at which cancer is diagnosed and the improvement of the medical care environment due to medical advances.

This study aims to determine the factors related to the actual situation of elementary school teachers' support for children whose parents have cancer, as well as their perceptions of the 'children's emotional and academic needs, knowledge about cancer and its psychosocial impact on families, and anxiety related to providing appropriate support in the school setting. The research questions are as follows: (1) What are the teachers' demographic data, their levels of perception regarding the children's needs, knowledge about cancer and its effects, and anxiety about providing support, as well as the challenges experienced in offering such support? (2) Are demographic data and these perceptions, knowledge, and anxiety levels related to actual support experience? (3)What types of support are currently provided?

METHODS

This study employed a cross-sectional questionnaire survey, which is widely used to describe and analyse relationships among variables at a single point in time. Cross-sectional designs are particularly useful in identifying patterns and associations in educational and public health settings without requiring long-term follow-up (14,15). This design was appropriate for capturing the current perceptions, knowledge, anxiety, and support practices of elementary school teachers in response to a public health issue.

The participants were elementary school teachers who were recruited in Akita City from August to October 2022. Akita Prefecture was selected as it had one of the highest cancer incidence rates in Japan and the prefectural average for the number of cancer cases among Japanese parents in their 30-50s was higher than the national average (1).

Prior to initiating the survey, the research protocol was presented to the Akita City Board of Education, from whom authorization was obtained. All public elementary schools in Akita City were then approached, and principals were asked to participate in the study. Questionnaires were distributed to all full-time teachers in the schools that agreed to cooperate. A written explanation of the study's purpose, procedures, voluntary nature, and confidentiality was provided along with the questionnaire. Participation was entirely voluntary, and teachers were informed that they could choose not to respond without any consequences. Returning the completed questionnaire was regarded as providing informed consent. The required sample size was calculated using G × Power 3.1.9.2, based on a two-tailed Mann-Whitney U test with an effect size of 0.5, $\alpha = 0.05$, and power = 0.80. The minimum sample size required under these parameters was 134 participants. Assuming a response rate of 50%, the target sample size was adjusted to 268. Further considering that approximately 20% of responses may be incomplete or ineligible for analysis, the final required sample size was set at 322 participants or more.

Demographic data included sex, age, whether they had children, years of teaching experience, experience of learning about cancer, and whether they had a family member (e.g., parent, sibling, spouse, or child) who had been diagnosed with cancer (family experience of cancer). The items of perceptions, knowledge, and anxiety about support were created based on previous studies (12,13,16). Our research team, which includes experts in nursing, medicine, psychology, social support, and education, developed the items collaboratively to ensure content validity. A pilot test was conducted with several teachers to confirm the clarity and relevance of the items. Perception comprises five items, including the need for support and support for collaboration between teachers and medical staff. The responses were set on a 10-point scale, with 10 points for '"I think it is very 'necessary" to 1 point for '"Not at all 'necessary", and the total score ranged from 5 to 50 points; a higher score indicated a greater perceived importance of supporting children whose parents have cancer, and of promoting collaboration between schools and medical professionals. Knowledge comprises nine items and includes information about cancer knowledge and information resources for support. The responses were set to a 10-point scale, with 10 points for '"I understand 'completely" to 1 point for '"I don't understand at 'all", and the total score ranged from 9 to 90 points; the higher the score, the higher the knowledge. Anxiety comprises three items, including anxiety about supporting children, parents with cancer, and other family members. The responses were set on a 10-point scale, with 10 points for '"I feel very 'anxious" to 1 point for '"I am not anxious at 'all", and the total score ranged from 3 to 30 points; the higher the score, the greater the anxiety.

To assess the reliability of the questionnaire, Cronbach's alpha coefficients were calculated for each scale: perception ($\alpha = 0.85$), knowledge ($\alpha = 0.84$), and anxiety ($\alpha = 0.96$), indicating good internal consistency.

To divide participants into two groups (i.e., support experienced and inexperienced groups), participants were asked about their experience with the following ten types of support related to children whose parents have cancer:

1. Receiving consultations from a child about physical effects related to the parent"s cancer
2. Receiving consultations from a child about psychological effect
3. Receiving consultations from a child about social effect
4. Observing the child whose parent has cancer
5. Providing support to help the child feel secure
6. Receiving consultations from a parent with cancer regarding the child
7. Receiving consultations from a family member of the parent with cancer regarding the child
8. Providing social resources to the child
9. Providing social resources to the parent with cancer; and
10. Providing social resources to the family of the parent with cancer.

Support was operationally defined as either direct involvement (e.g., observing children, providing emotional care, or offering advice on the physical, psychological, and social impact of cancer on the child and family) or indirect involvement (e.g., advising parents or family members and connecting families to relevant social resources).

To identify details of the actual support provided, participants in the support experienced group were asked about their most memorable support experience in the last 10 years. Questions included the person who they first consulted, the situation of the parents, details of the consultation, and details of the support provided. Further, responses regarding whether there was any collaboration were given in a multiple-choice format.

The questionnaire was included in the analysis if approximately 80% or more of the questions were answered. Descriptive statistical analyses were conducted within two groups (i.e., support experienced and inexperienced groups), participants were asked about their experience with the following ten types of support related to children whose parents have cancer. Those who answered ‘“’yes” to at least one of the ten types of support were classified into the support experienced group.

To analyse the relationship between demographic data and support experience, t-tests, chi-squared tests were performed. To analyse the relationship between perceptions/knowledge/anxiety and support experience, a t-test was performed. The statistical software used was JMP 13.0 (SAS Institute). This study established an alpha level of 0.05 for statistical significance.

Open-ended responses regarding challenges were summarized qualitatively. Two researchers independently read and coded the responses using a thematic analysis approach. They identified recurring patterns and categorized the responses into themes through an inductive process. Disagreements in coding were discussed and resolved through consensus.

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amends or comparable ethical standards. The study received approval from the Ethics Committee of Akita University on May 31, 2022 (Approval number 2838).

RESULTS

The cooperation of 21 out of 40 elementary schools in Akita City was obtained. Of the 546 questionnaires distributed, 500 were collected, all of which were valid (valid response recovery rate: 91.6%). Although the questionnaire was distributed to all full-time faculty members, including administrators and school nurses, this study focused specifically on homeroom and subject teachers, who are most directly involved in daily interactions with students. Therefore, data from 41 individuals in administrative roles and school nurses were excluded from the analysis. A total of 459 teachers' responses were analysed. The valid response rate for the analysed dataset was 100%.

A total of 459 teachers were analysed after excluding administrators and school nurses. 264 participants (57.6%) had experience supporting children whose parents have cancer. Table 1 illustrates that support experience was significantly associated with being female, having children, personal or familial experiences with cancer, and not having experienced non-cancer-related bereavement.

499 participants (98.0%) had faced challenges in providing support. The reasons given for this were ‘“Worry about how much the school should ’intervene”, ‘“There are many things we ’don't know about cancer that prevent us from providing appropriate ’support”, ‘“The teachers feel ’insecure,” ‘“I cannot make time to provide support due to my busy ’schedule.”

TABLE 1. Demographic data and relationship with support experience (n=459; missing value exist in some data)

Items	Total	Support experience; n=264	Support inexperience; n=195	*p*-value
Sex (n=458)				
Female	318 (69.4)	195 (73.9)	123 (3.4)	0.02*
Male	140 (30.6)	69 (26.1)	71 (36.6)	
Age (years) (n=459)	48.3±9.7	49.3±8.4	47.1±11.2	0.23
Having children (n=453)				
Yes	284 (62.7)	155 (58.9)	129 (67.9)	0.03*
No	169 (37.3)	108 (41.1)	61 (32.1)	
Years of teaching experience (n=458)	23.1±9.9	24.2±8.7	21.7±11.2	0.06
Own cancer experience (n=457)				
Yes			5 (2.6)	<0.001**
No			189 (97.4)	
Experience of family with cancer (n=457)				
Yes	326 (71.3)	229 (87.1)	50 (5.9)	<0.001**
No	131 (28.7)	34 (12.9)	143 (74.1)	
Experience of colleague with cancer (n=455)				
Yes	86 (18.9)	36 (13.7)	64 (25.9)	<0.001**
No	369 (81.1)	226 (86.3)	165 (74.1)	
Experience of death due to cancer (n=456)				
Yes	257 (56.4)	189 (71.9)	68 (35.2)	<0.001**
No	199 (43.6)	74 (28.1)	125 (64.8)	
Experience of death due to reasons other than cancer (n=457)				
Yes	142 (31.0)	60 (22.8)	82 (42.3)	<0.001**
No	315 (69.0)	203 (77.2)	112 (57.7)	

t-test, Chi-square test, *p<0.05 **p<0.01. There were 459 (100%) responses regarding age and teaching experience. Responses of "I don't want to say" were excluded for sex, having children, experience of cancer and bereavement experience

As shown in Table 2, teachers with support experience had significantly higher levels of perception and knowledge and reported greater anxiety about providing support compared to those without experience. Among perception items, support for children received the highest score, whereas support involving collaboration with parents or medical staff was lower. Regarding knowledge, teachers had better understanding of family-related impacts but limited awareness of medical aspects and available resources. Notably, the knowledge item "information resources such as support and counselling organizations" had the lowest score overall.

Table 3 shows that most teachers recalled the most memorable support situations as initial contact with children or with children whose parent had just been diagnosed. Teachers most often supported students by observing their behavior, encouraging emotional expression, and involving them in family-oriented thinking. However, formal collaboration with specialists remained limited.

DISCUSSION

This study revealed that more than half of the teachers had experience supporting children whose parents have cancer, and that such experience was associated with higher levels of perception, knowledge, and anxiety.

The demographic characteristics of the participants closely resembled those of the general teaching population in Akita City (17). The proportion of teachers with support experience (54%) was higher than in previous studies (12,13), which may be attributed to advances in cancer diagnosis

TABLE 2. Perception/knowledge/anxiety and their relationship with support experience (n=459)

Items	Total mean±SD median (interquartile range)	Support experience n=264 mean±SD median (interquartile range)	Support inexperience n=195 mean±SD median (interquartile range)	*p*-value
Perception (5 items) score	31.0±7.6 32.0 (25.0, 35.0)	33.1±4.4 33.0 (32.0, 35.0)	28.1±9.8 25.0 (21.0, 37.0)	<0.001**
1. Support for children whose parents have cancer	8.8±1.5 9.0 (8.0, 10.0)	9.5±1.0 10.0 (9.0, 10.0)	7.8±1.6 8.0 (7.0, 9.0)	<0.001**
2. Support for the parent with cancer (patient)	6.9±1.8 8.0 (5.0, 8.0)	7.5±1.4 8.0 (7.0, 8.0)	6.0±1.9 5.0 (5.0, 8.0)	<0.001**
3. Support for the children's family (other than the patient)	4.7±2.1 4.0 (4.0, 5.0)	4.7±1.5 4.0 (4.0, 5.0)	4.6±2.7 5.0 (2.0, 7.0)	0.270
4. Support for the children in collaboration with medical staff	6.2±2.3 7.0 (4.0, 8.0)	7.0±1.5 7.0 (7.0, 8.0)	5.1±2.6 5.0 (4.0, 8.0)	<0.001**
5. Support for the parents in collaboration with medical staff	4.5±2.0 4.0 (3.0, 5.0)	4.4±1.6 4.0 (4.0, 5.0)	4.6±2.5 7.0 (4.0, 8.0)	0.009*
Knowledge (9 items) score	40.1±12.3 42.0 (33.0, 48.0)	45.4±8.4 46.0 (41.0, 49.0)	33.0±13.2 32.0 (24.0, 42.5)	<0.001**
1. Children's understanding of their parent's cancer	6.5±2.0 7.0 (5.0, 8.0)	7.4±1.6 8.0 (7.0, 8.0)	5.0±1.7 5.0 (4.0, 6.0)	<0.001**
2. Physical effects of parent's cancer on the child	3.9±1.9 4.0 (2.0, 5.0)	4.4±1.5 5.0 (4.0, 5.0)	3.2±2.1 3.0 (1.0, 5.0)	<0.001**
3. Psychological effects of parent's cancer on the child	4.5±1.7 4.0 (4.0, 5.0)	4.7±1.4 4.0 (4.0, 5.0)	4.1±1.9 4.0 (3.0, 5.0)	0.014*
4. Medical knowledge of cancer (the disease itself, treatments, etc.)	3.6±2.3 3.0 (2.0, 5.0)	3.7±2.4 3.0 (2.0, 5.0)	3.4±2.0 3.0 (1.0, 5.0)	0.67
5. Effect on family life when a parent acquires cancer while raising a child	5.5±2.7 5.0 (3.0, 9.0)	6.5±2.8 8.0 (4.0, 9.0)	4.3±2.1 5.0 (3.0, 6.0)	<0.001**
6. Effects of parental cancer on family relationships	6.4±2.8 8.0 (4.0, 9.0)	8.2±1.8 9.0 (8.0, 9.0)	4.4±2.3 4.0 (2.0, 6.0)	<0.001**
7. Methods of supporting parental cancer	3.1±1.5 3.0 (2.0, 4.0)	3.2±1.5 3.0 (2.0, 4.0)	3.0±1.6 2.5 (2.0, 4.0)	0.740
8. Considerations in communicating with the child	4.7±2.0 5.0 (3.0, 6.0)	5.5±1.5 6.0 (5.0, 6.0)	3.5±2.0 4.0 (2.0, 5.0)	<0.001**
9. Information resources such as support and counselling organizations	1.9±1.6 1.0 (1.0, 2.0)	1.8±1.6 1.0 (1.0, 2.0)	2.2±1.8 1.0 (1.0, 3.0)	0.001**
Anxiety (3 items) score	25.4±5.3 27.0 (23.0, 30.0)	26.1±4.7 27.0 (23.0, 30.0)	24.4±5.9 26.5 (21.0, 30.0)	<0.001**
1. Support for children whose parents have cancer	8.6±1.7 9.0 (8.0, 10.0)	8.9±1.4 9.0 (8.0, 10.0)	8.2±2.0 9.0 (7.0, 10.0)	<0.001**
2. Support for the parent with cancer (patient)	8.5±1.7 9.0 (8.0, 10.0)	8.8±1.5 9.0 (8.0, 10.0)	8.2±2.0 9.0 (7.0, 10.0)	<0.001**
3. Support for the children's family (other than the patient)	8.3±1.9 9.0 (7.0, 10.0)	8.5±1.7 9.0 (7.0, 10.0)	8.0±2.1 9.0 (7.0, 10.0)	0.031*

t-test, *$p<0.05$, **$p<0.01$. SD: Standard deviation

TABLE 3. Most memorable support detail (n=264; missing value exist in some data)

Support	n (%)
1st-time contact (n=253)	
• Children	173 (65.5)
• Mothers diagnosed with cancer	50 (18.9)
• Spouse (no cancer)	15 (5.7)
• Grandparents	10 (3.8)
• Fathers diagnosed with cancer	5 (1.9)
Parent’s situation (n=261)	
• Just diagnosed with cancer	176 (66.7)
• Undergoing cancer treatment	66 (25.0)
• In critical condition	15 (5.7)
• Others (Heard about it after death)	4 (1.5)
Type of consultation from the children (n=260) (Multiple answers)	
• Worries about life with parents	255 (96.6)
• Worries about the parent’s illness	159 (60.2)
• Others (physical symptoms, school absenteeism)	44 (16.6)
From the parent/family (n=60) (Multiple answers)	
• Information provided related to the parent’s cancer	55 (20.8)
• When parents are not feeling well	39 (14.8)
• Information provided about how the children are doing at home	33 (16.7)
• Request to look into how the children are doing	29 (11.0)
• Request to inform them if there is any change in the children	20 (7.6)
Type of support (n=264) (Multiple answers)	
• Observed the behaviour and changes in the children	263 (99.6)
• Together with the children, thought about what they can do as members of the family	224 (84.8)
• Created an atmosphere where the children can express their feelings	210 (79.5)
• Gave consideration so that the children would not have to deal with it alone	201 (76.1)
• Gave consideration toward privacy within the school	45 (17.0)
• Provided an opportunity to share the children’s state of mind	11 (4.1)
• Informed the parents about how the children is doing	5 (1.9)
Collaboration (n=264)	
• Yes	244 (92.4)
• No	20 (7.6)
Collaborated persons (n=264) (Multiple answers)	
• Grade chief	235 (89.0)
• Grade teacher	94 (35.6)
• Principal or Vice-principal	79 (29.9)
• School nurse	51 (19.3)
• Mentor	6 (2.3)
• Specialist (counsellor or psychologist)	3 (1.1)

and treatment, leading to a higher cancer incidence and improved survival rates. Consequently, the number of children with parents who have cancer has increased, along with the opportunities for teachers to provide support. ’Akita’s high cancer incidence rate (1) likely contributes to heightened cancer awareness among its citizens.

Regarding perception, the score toward children was high, while it was low for collaboration with parents and medical staff. This is a natural consequence of the fact that children are the primary focus of ’teachers’ daily interactions. Children are members of the family, and support for children is expected to lead to support for parents and their families in the future.

In terms of knowledge, teachers scored lower than previous studies (16). This discrepancy can be attributed to the inclusion of nurses and social workers in previous research, who had greater medical and nursing knowledge. Teachers with a family history of cancer scored higher on understanding the effects of parental cancer on family relationships, but their knowledge on specialized cancer-related topics, such as physical effects on children, methods of supporting parents, and resources for support, remained limited (18).

The finding that teachers had limited knowledge about medical aspects of cancer is consistent with a study by Sakie et al., (19) which showed that non-medical school personnel tend to have less accurate understanding of cancer-related care. Previous research on teachers” attitudes toward cancer suggests that both teachers and the general public tend to have negative perceptions of cancer, rooted in misunderstandings and fears (20,21).

Anxiety levels among teachers were notably high, with an average score exceeding eight points, increase compared to previous research (16). Many teachers reported facing challenges in providing support, especially due to their limited knowledge of cancer. Previous studies similarly found that most teachers had little to no cancer-related knowledge (21).

As there was no significant difference in methods of supporting parental cancer regardless of having support experience, and “worry about how much the school should intervene” was reported as a challenge in providing support, it can be inferred that teachers recognize certain limitations regarding school involvement in family health matters. However, children whose parents have cancer perceive friends and their school as social support providers (19). Therefore, there may be a difference in perception between the teachers who provide support and the children and families who receive support.

Although there was no significant difference in the type of support provided, teachers commonly supported children by observing behavioral changes and providing emotionally safe classroom environments. These practices are vital for children’s well-being and represent a core aspect of school-based psychosocial care. However, few teachers reported introducing external support resources, possibly due to limited awareness or a belief that such actions exceed school responsibilities. This highlights the need for clearer guidance and collaboration with medical and nursing professionals, which could alleviate teachers’ mental burden and enhance their capacity to respond effectively.

To enhance the support provided, teachers must acquire accurate knowledge about cancer, but current learning is largely self-directed. There is a need for more structured educational opportunities, particularly ones that match teachers’ work routines and motivation levels. E-learning, which has been shown to be effective in healthcare-related fields (22), could be a promising method for disseminating cancer-related knowledge to teachers.

Consultation cases involving children accounted for 65% of the total, a significant increase compared to previous studies (13). Most consultations occurred shortly after a parent’s cancer diagnosis, when both parents and children are often uncertain and anxious (23,24). It is crucial to provide continuous support during this period. Studies on children undergoing cancer treatment have highlighted the importance of ongoing support from teachers (25), and children who have lost a parent have reported that schools often forget about their emotional needs over time (26).

Limitation of the study

As the participants of this study were elementary school teachers in a city with a high incidence of cancer, it is conceivable that the current situation in other regions in Japan and overseas may be different. However, this study is a cornerstone to understand parental cancer support at elementary schools. While this study provided insights into the types of support teachers offered following initial consultations, the cross-sectional design limited our ability to determine the sequence of events or how support strategies evolved over time. Knowing when and how teachers interact with children and their parents, whether they think about how to respond, and what kind of conflicts teachers face when providing support can help understand the situation. Therefore, it will be necessary in the future to conduct an interview survey with teachers who have experience providing support to clarify the suitability and feasibility of intervention for teachers.

CONCLUSION

This study found that 57.6% of participating teachers in Akita City had experience supporting children affected by parental cancer. Their experience was significantly related to demographics and levels of perception, knowledge, and anxiety. Although teachers were aware of the importance of providing support, their limited knowledge of medical information and resources highlights the need for systematic education.

Future efforts should focus on improving teachers' ability to recognize and respond to children's emotional needs and fostering collaboration with medical professionals.

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DECLARATION OF INTEREST

Authors declare no conflicts of interest.

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