

Self-Disclosure by Childhood Cancer Survivors and Its Psychological Effects

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Abstract

The long-term survival rates for childhood cancers have continued to rise, making it critical to understand the long-term outcomes and the follow-up needs of those diagnosed with childhood cancer. Long-term survival is associated with both secondary illnesses and psychological distress; however, the self-disclosure of one's history of childhood cancer could promote self-care and social support among childhood cancer survivors. Nevertheless, many childhood cancer survivors are reluctant to self-disclosure, particularly in Japan, as its cultural context emphasizes collective homogeneity rather than individualism. This qualitative, descriptive study aimed to understand the experiences of adult childhood cancer survivors regarding their self-disclosure of their disease history to their lovers, friends, and community. Between October 2017 and November 2018, 13 adults (9 men, 4 women; age range: 20–39 years) who had been diagnosed with childhood cancer and were five years or more past their last treatment participated in semi-structured interviews. A thematic analysis was conducted using the Steps for Coding and Theorization (SCAT). From the interview data, three concepts (i.e., Increased Desire for Self-Disclosure, Joy at Having Enriched the Lives of Themselves and Others, and Increased Expectations for Relationship Change and Disappointment), along with eight themes, were extracted. Self-disclosure was found to have both positive and negative effects, but the willingness to risk self-disclosure promotes the development of social and intimate relationships among childhood cancer survivors. Negative experiences or frustration from poor responses to self-disclosure can interfere with future self-disclosure attempts. Thus, self-disclosure could serve as a means of overcoming one's disease. Healthcare providers involved in long-term follow-up should promote the benefits of self-disclosure in overcoming a childhood cancer diagnosis.

Keywords: childhood cancer, self-disclosure, Japan, cancer survivors, long-term care, Adolescent and Young Adult

1. Introduction

Childhood cancer is a term used collectively to refer to cancer diagnoses that affect children aged 14 and under. Treatment advancements have improved survival rates for childhood cancer patients in recent years. For example, the 5-year survival rate of pediatric acute lymphocytic leukemia exceeds 90% in several high-income nations and was 87.6% in Japan. Further, the 5-year survival rate of pediatric lymphoma exceeds 90% in 29 countries, being 89.6% in Japan (Allemani et al., 2018).

As survival rates increase, long-term follow-up has been recommended for childhood cancer survivors (CCSs) who survived cancer for a long period (Hudson, Casillas, Bhatia, & Landier, 2021; Maeda, 2013). Among CCSs who receive long-term follow-up, chronic diseases, which represent secondary disorders of childhood cancer treatment, have been found to occur in approximately three-quarters of patients (Armstrong et al., 2014; Oeffinger et al., 2006). Common secondary disorders that develop following cancer treatment include cardiovascular disorders, pulmonary functional disorders, severe musculoskeletal problems, endocrine abnormalities, and secondary cancers (Suh et al., 2020). They have also been reported to rise with the elapse of time (Oeffinger et al., 2006; Mulrooney et al., 2019). As the period of survival following the completion of cancer treatment lengthens, patients experience an increased risk of secondary disorders caused by treatment, resulting in long-term anxiety about the future (Brinkman, Recklitis, Michel, Grootenhuis, & Klosky, 2018; Zeltzer et al., 2009). These challenges can result in ongoing apprehension and fear among CCSs regarding their future, contributing to chronic anxiety and psychological distress (Lee, Gau, Hsu, & Chang, 2009; Merle, 1990). Researchers have also reported

that CCSs who frequently experience post-traumatic stress syndrome have subsequent social and neurocognitive effects. CCSs of pediatric brain tumors have shown a high incidence of depression and anxiety, with those having ten or more years since their diagnosis having a 1.5-fold increased risk of developing anxiety (Crochet et al., 2019; Mitchell, Ferguson, Gill, & Symonds, 2013; Zebrack, Gurney, & Oeffinger, 2004). Vulnerability to stress due to the history of childhood cancer that triggered depression and anxiety could cause various problems, including a reduced involvement with one's community and peers, poor health-related QOL, and emotional distress (Huang et al., 2017).

Self-care is a strategy for improving the health outcomes of CCSs. Previous research on establishing self-care among CCSs have shown the effectiveness of having the skills necessary for managing risks associated with cancer and its treatments, seeking effective social support, and obtaining support and assistance from those around them (Reed-Knight, Blount, & Gilleland, 2014 Jackson, Tucker, & Herman, 2007; Schwarzer, Luszczynska, Ziegelmann, & Lippke, 2008). Effective social support and assistance from others can be achieved through self-disclosure (Tsuchiya, Horn, & Ingham, 2014). Self-disclosure regarding the history of childhood cancer has been viewed as necessary in some contexts, such as advancing to higher grade levels in school, enrolling in higher-level education, engaging in romantic relationships, and finding employment. CCSs are reportedly cautious with self-disclosure because of their reduced self-esteem and their abilities being underestimated by the people around them (Rabin, 2020). CCSs have reported being unable to utilize opportunities to discuss their illnesses, a reluctance to talk about their illnesses with other people, anxiety about their lack of friends when returning to school, and apprehension about rebuilding their friendships (Choquette, Rennick, & Virginia, 2016). Moreover, when intensive treatments and academic interruptions interfere with their social skills, problems can arise, such as an inability to take appropriate actions and behaviors in their social relationships, which leads to social exclusion, social withdrawal, and being bullied (de Ruiter et al., 2016).

In Japan, a country with a culture deeply rooted in homogeneity, people are taught starting in childhood to be cooperative rather than autonomous or independent (Doi, 2007). Thus, attempts by Japanese individuals to disclose their true self are accompanied by psychological distress, including worry, anxiety, tension, and guilt, which require considerable effort to overcome. This cultural context suggests that CCSs in Japan may have culturally unique self-disclosure methods; however, few studies have examined the experiences for self-disclosure among CCSs in Japan or the outcomes they achieved.

Numerous recent studies on stress have examined post-traumatic growth among CCSs and have reported positive psychological changes related to social relationships (Gianinazzi et al., 2016; Taku et al., 2007). One post-traumatic growth study reported that the negative influences of trauma could be alleviated through self-disclosure, highlighting the need to study self-disclosure further (Taku, 2010).

Understanding the experiences of self-disclosure from the perspective of CCSs and considering both the negative and positive aspects of self-disclosure could contribute to establishing strategies that support and build self-care during long-term follow-up. Therefore, this study aimed to identify the experiences in which CCSs in Japan could self-disclose about their illness to the people around them.

2. Method

2.1 Study Design

This study used a qualitative, descriptive design, following the Standards for Reporting Qualitative Research (SRQR; O'Brien, Harris, Beckman, & Cook, 2014). Thematic analysis was performed following the approach of Braun and Clarke (2006). Coding was performing using the Steps for Coding and Theorization (SCAT; Otani, 2007). SCAT is an explicit and step-by-step analysis procedure, is applicable to relatively small-scale data, and is easy for use by beginners. The four-step analysis process—from coding to generation of themes and concepts to theorization—is visualized on a worksheet and thus remained explicit. It is therefore possible to have an analyst check the validity of the analysis, thereby making the method suitable for collaborative analyses as well (Otani, 2019).

2.2 Study Population

The study participants were CCSs in the Adolescent and Young Adult (AYA) generation who had developed a childhood between birth and age 15 and for whom at least five years had elapsed since their final cancer treatment. Participants understood the purpose of the study and provided informed consent.

2.2.1 Inclusion and Exclusion Criteria

Individuals who met the inclusion criteria were eligible to participate: (1) being between 20 and 40 years of age and able to understand the study objectives and provide informed consent; (2) having received a diagnosis of

childhood cancer in the past; (3) being informed of their illnesses; (4) having a cancer diagnosis that was either cured or in remission and not having received treatment for relapse; (5) lacking an illness that impaired normal conversations. These inclusion criteria were designed to ensure that participation did not adversely affect the CCSs' mental health.

Those who had declined to participate mid-way were excluded as participants. Participants were excluded from the study if participation was judged to result in excessive anxiety or psychological distress.

2.2.2 Sampling and Sample Size

We began the recruitment process to broadly solicit participants from all over Japan.

First, we contacted a CCS self-help group that included approximately 20 members from all over Japan regardless of the institution that provided cancer treatment and requested their assistance with the study. A representative from the self-help group agreed to assist with identifying participants, resulting in three CCSs agreeing to participate in our study. We obtained consent from all individuals involved in consultation and recruitment.

Next, we sent emails and letters asking for cooperation from physicians and nurses who had experience with childhood cancer treatment, childhood cancer nursing, or nursing AYA-generation cancer patients in Japan's major cities of Tokyo, Nagoya, and Osaka or regional cities. One physician and eight nurses agreed to be recruited as study participants. Through this recruitment process, 13 CCSs agreed to participate in our study, and ten gave their consent to participate. Using the recruitment methods described above, 13 individuals ultimately participated in our study (Figure 1).

Data were collected from October 2017 to November 2018.

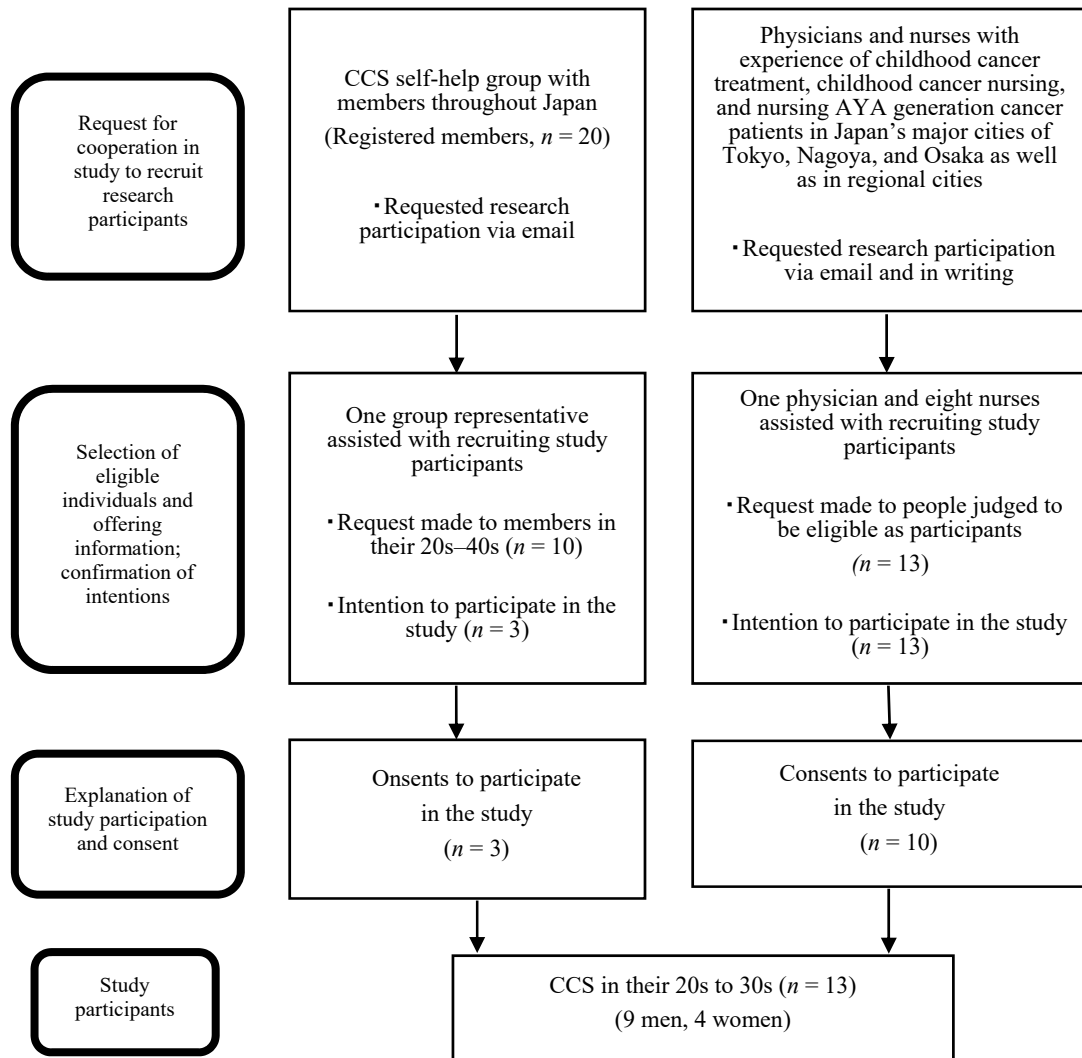


Figure 1. Process of recruiting research participants

2.3 Data Collection Procedures

The qualitative data for our study were collected in Japanese, following an interview guide (Appendix). Detailed and in-depth interviews were conducted with the 13 participants. The interview began with an informal conversation designed to build a relationship of trust. We asked the interviewees about their experiences of their battle with cancer during childhood and up to the present. We gathered information focusing on their life events, their relationships with other people at school and in society, their experiences concerning self-disclosure, and changes in their thoughts and feelings about childhood cancer. The interviews were conducted by the first author, who was formerly a pediatric nurse and had received formal doctoral training for conducting interviews as a qualitative research method. Data were collected via semi-structured interviews that included open-ended questions and lasted between 60 and 90 minutes following the interview guide. If needed, a follow-up interview was conducted to gain a more detailed understanding of the participants' experiences that lasted approximately 30 minutes. The interviews were conducted face-to-face, typically in a small and undisturbed conference room, an environment in which the interviewees could relax and feel comfortable talking in depth. Participants consented to their interviews being recorded with a voice recorder.

2.4 Data Analysis

Data were analyzed based on SCAT, a series of generative coding and theorization steps in which appropriate and creative codes are devised while reading the text (Otani, 2007). A divided list of the data was created from the text, matrix-style. In the first step, we identified the words included in the data that must be noted. The second step involved identifying words outside the extracted text that could be used to re-create the words of interest. In the third step, the concepts outside the text that explained the words of interest were identified. Further, in the fourth step, the themes and structured ideas from the text were coded. Our ultimate aim was to use the emerging themes that clarified the experiences of CCSs living in Japan regarding the self-disclosure initiated by the CCS regarding their illness to the people around them. We anonymized the participants with participant numbers to maintain confidentiality. During the survey period, the research team collaboratively verified the analytic process used by the main analyst. If problems arose, the team discussed them and made revisions to guarantee the data's reliability. University faculty members with experience conducting qualitative research were asked to supervise the study. Open discussions were conducted during study group meetings hosted by the main analyst to help ensure the robustness of the results.

2.5 Ethical Considerations

This study received permission from the Ethical Committee of Gunma Prefectural College of Health Sciences (approval no. 2017-19). The study participants received both oral and written explanations of the purpose and methods of the study prior to their interviews, including the following: voluntary nature of their participation in the study, protection of their anonymity; confidentiality of their personal information, and the ability to withdraw from the study at any time. We conducted the interviews after obtaining participants' informed consent.

3. Results

3.1 Participants

All 13 participants took part in the interviews (Table 1). The sample comprised nine men and four women who were between 20 and 39 years in age. Six had been diagnosed with hematologic tumors and seven with solid tumors. Their age of cancer onset ranged from 1 to 14 years, and four participants had their childhood cancer explained to them at the time of onset that included a clear statement of the disease name.

Table 1. Participants' Characteristics

| Participant | Gender | Age | Age of onset (years) | Type of cancer | Announcement at onset | Experience of recurrence and/or secondary cancer |
|-------------|--------|-----|----------------------|------------------------------|-----------------------|--|
| 1 | M | 20s | 1 | Rhabdomyosarcoma | No | No |
| 2 | M | 20s | 2 | Nephroblastoma | No | No |
| 3 | M | 20s | 2 | Neuroblastoma | No | No |
| 4 | M | 20s | 2 | Nephroblastoma | No | No |
| 5 | F | 20s | 7 | Acute lymphocytic leukemia | No | No |
| 6 | M | 30s | 10 | Chronic myelogenous leukemia | No | Yes |
| 7 | M | 30s | 12 | Acute myelogenous leukemia | No | No |
| 8 | M | 30s | 13 | Rhabdomyosarcoma | Yes | No |
| 9 | F | 30s | 13 | Rhabdomyosarcoma | Yes | Yes |
| 10 | F | 20s | 13 | Osteosarcoma | Yes | No |
| 11 | M | 30s | 13 | Acute myelogenous leukemia | No | Yes |
| 12 | F | 30s | 13 | Acute myelogenous leukemia | No | Yes |
| 13 | M | 30s | 14 | Acute lymphocytic leukemia | Yes | Yes |

Prior to their self-disclosure, the CCSs spent time in the hospital and, after discharge, hiding that they had childhood cancer due to fears of being seen as “different.” The 13 participants stated that they made their first full disclosures to other people about their illness between adolescence and early adulthood.

3.2 Survey Results

Coding using the SCAT method uncovered eight themes: 1) Desire to Have Intimate Relationships with Peers, 2) Desire to Help Psychologically Distressed People, 3) Preparing for the Worst, 4) Gaining Confidence in Relationships with Others, 5) Increased Self-Perceived Usefulness, 6) Reaffirmation of the Value of Their Experiences, 7) Increased Expectations for Relationship Change, and 8) Disappointment and Cautiousness. The concepts were *Increased Desire for Self-Disclosure*, *Joy at Having Enriched the Lives of Themselves and Others*, and *Increased Expectations for Relationship Change and Disappointment* (Table 2).

These themes and concepts are introduced below with reference to participants' narratives. The narratives quoted in the text are identified by the participant numbers shown in Table 2.

Table 2. Themes and Concepts

| Concept | Theme |
|---|--|
| Increased Desire for Self-Disclosure | Desire to Have Intimate Relationships with Peers |
| | Desire to Help Psychologically Distressed People |
| | Preparing for the Worst |
| Joy at Having Enriched the Lives of Themselves and Others | Gaining Confidence in Relationships with Others |
| | Increased Self-Perceived Usefulness |
| | Reaffirmation of the Value of Their Experiences |
| Increased Expectations for Relationship Change and Disappointment | Increased Expectations for Relationship Change |
| | Disappointment and Cautiousness |

3.3 *Increased Desire for Self-Disclosure*

3.3.1. Theme 1: Desire to Have Intimate Relationships with Peers

This theme involved experiences of self-disclosure in search of intimate interpersonal relationships that participants had thus far been unable to foster. Changes in the environment, such as embarking on a higher educational experience, triggered their self-disclosure. The strong bond and deep interpersonal relationships that participants sought were closely linked to their knowledge of being accepted, including the fact that they had experienced and survived cancer. Thus, they overcame their feelings of wanting to keep their history of cancer a secret and decided to fully disclose their history and feelings toward cancer.

When I was in high school, I didn't tell anybody about my illness as I didn't want to be seen as different from other people. It was tough not having true friends because of keeping something a secret. So, when I made friends after starting college, I decided to tell them from the beginning about my illness and the number of years I'm expected to live. (Participant 2)

3.3.2 Theme 2: Desire to Help Psychologically Distressed People

This theme included experiences of participants disclosing their deeper self to help other people they met who were psychologically distressed, such as due to illness or bullying. Along with a strong sense of empathy, the participants experienced a growing desire to help others based on their own experience of contracting cancer and were motivated both consciously and subconsciously to disclose themselves. As they were aware that others did not understand their painful experiences, they shared their experience-based knowledge that was discovered after they had struggled with their illness to help and rescue people who had been psychologically hurt.

I met a classmate who had been bullied and could not attend school. This was a moment where I felt that there was no need to hide. So, I confessed for the first time to her about my illness and treatment. This was as if to tell her, let's go through this together. (Participant 9)

As a nurse, I encountered a child patient with self-induced hypoglycemia. Why did he feel like wanting to hurt himself? A body that never returns to what it was previously is the personification of despair. It was frustrating to see that healthy people could not understand this. As I wanted to encourage that child, I told him about my own experience as a childhood cancer survivor. (Participant 1)

3.3.3 Theme 3: Preparing for the Worst

This theme included experiences related to self-disclosure as a way of coping with the inevitable related to their cancer diagnosis. This resulted in participants being placed in circumstances where they could not hide their cancer, and they determined that it was better to convey accurate information than to be misunderstood. As one participant had lost all her hair and could not hide it, she self-disclosed her illness to gain others' understanding and continue her relationships with friends and at work.

If I had tried to hide my loss of hair, I bet people would ask me why I was wearing a hat. My mother encouraged me "You can do it because you've overcome that painful treatment." Instead of hiding it, I chose friendships that would make me feel easy and comfortable. I then stood in front of everybody, with my skinny body and hairless head in full view and explained myself. (Participant 6)

I suffer an aftereffect in my legs that, if it was not known about, might not allow me to ask for the sick leave necessary for long-term follow-up and would interfere with my job providing nursing care. Self-disclosure was necessary for me to continue working by obtaining my coworkers' cooperation. (Participant 10)

I suffer epileptic seizures, which is a sequela of my cancer. But there is no need for excessive worries or emergency countermeasures. To maintain good relationships with my friends, it is important not to make them worry too much, so I explained my illness and its sequela to them. (Participant 12)

3.4 *Joy at Having Enriched the Lives of Themselves and Others*

3.4.1 Theme 4: Gaining Confidence in Relationships with Others

This theme was a self-disclosure experience in which a trusting relationship had been built with others by talking with them. Some participants had been psychologically hurt by late complications and changes in their outward appearance. They sought connections with people from the same generation, overcame their loneliness and their feelings of wanting to hide, and chose to disclose themselves to their friends and romantic partners. As a result of their full self-disclosure, including their feelings about having had cancer, they had fostered deep ties with their friends and romantic partners. They gained confidence in relationships with others, and self-disclosure has been a turning point in enriching their lives.

I confessed to my friend that if I developed secondary cancer, I might die immediately. My friend listened carefully to my anxiety and fear and rebutted, “You are healthy now; there is no need to think about things that are far ahead like that.” I was surprised to hear such totally unexpected words from him. I came to realize that that’s how people who have not experienced illness think. I came to believe that all I have to do is to have my cancer detected early. (Participant 1)

With my friends’ encouragement, I could explain my situation plainly and honestly to my lover. By doing this, my friends and lover gradually shared the mental burden that I had shouldered alone until then. I had been convinced that I would die and that I was bearing a terrible burden. I could rely, from the heart, on my healthy friends and my lover. I think that this episode was an important turning point in my life. (Participant 1)

I talked in depth about the fact that I had been hospitalized for childhood cancer. I now felt that I had gotten over it; it was like I had gained psychological strength. My friends accepted me, and I became their equal. This was a turning point that made me grow tremendously, mentally. (Participant 6)

3.4.2 Theme 5: Increased Self-Perceived Usefulness

This theme was related to the self-disclosure experiences in which participants encouraged people and children who were psychologically hurt by sharing their own experiences, thereby perceiving a feeling of being useful and a sense of satisfaction. The participants included those who had become employed as care providers, such as nurses. Their personal experiences allowed them to empathize with the pain experienced by adolescent patients, and they chose to disclose their experiences. They gained self-approval by learning that their self-disclosure was useful for others and hearing words of appreciation from those who had heard their self-disclosure.

I told the patient, “Nothing changes if you regard your life pessimistically. Only you can make it change.” The child said that he felt saved by my words. I suffered from childhood cancer, but I’m glad it became useful to other people. It was also me who was saved. (Participant 1)

I told my friend who cannot attend school, “I’m undergoing painful treatment for childhood cancer. I absolutely want to go to school but cannot. You may be suffering too. But if you try a little harder, something will certainly trigger a change. Let’s both work on this!” She told me, “I’m glad I could talk with you.” I could utilize things I felt were negative, which turned out to be positive for others. This was a joyful experience. It was me who was saved. (Participant 9)

3.4.3 Theme 6: Reaffirmation of the Value of Their Experiences

This theme included experiences the participants who had previously regarded childhood cancer as a painful and horrible experience but ultimately developed a different outlook, such as the experience of overcoming treatment being extremely valuable and heroic to others, leading to them being able to reacknowledge its value. For example, some participants had thoroughly hidden that they were CCSs. By being praised unexpectedly by others, they became aware that their childhood cancer experience enriched their life and positively influenced their inner self.

My self-disclosure moved others; they recognized my efforts, which eased my mind and made me feel better. Nobody can blame me for getting sick; it is not a negative thing. My awareness of illness changed inside me. I thought that my illness was a defect in me, but actually, it was not. (Participant 9)

I hid the fact that I was sick because I did not want to be considered different from other people at school. But when I participated in a group interview as part of the entrance exam to a high school, I was asked why I was the only one who had been absent from school for so many days. I explained on the spot that I had had childhood cancer but that I was there because I’d overcome an illness! I have a mind that is stronger than anybody else’s! My friends praised me enthusiastically for this big speech, and I passed the exam. My childhood cancer was tough and painful, but I felt that it became food for me. (Participant 11)

3.5 Increased Expectations for Relationship Change and Disappointment

3.5.1 Theme 7: Increased Expectations for Relationship Change

This theme captured the experiences of participants who have continued to self-disclose because their self-disclosure was successful, leading to forming better relationships with others and proving to them how wonderful self-disclosure is. They felt that self-disclosure was beneficial not only to themselves but also to others, and therefore, took positive steps toward it.

I disclose my own experiences with cancer to people who have come to me for advice or consultation, my children, children undergoing treatment, and their family members. I went to a hospital where children were undergoing treatment and showed them and their families how healthy I’ve become. When I did this, I felt that relating my

experience helped other people, that I could make use of something like my *raison d'être*, and that I was also psychologically saved. This was why I told them about my experiences. (Participant 9)

3.5.2 Theme 8: Disappointment and Cautiousness

This theme was related to self-disclosure experiences in which the participants acted to utilize their experiences and improve their relationships with others but had not achieved the desired results. The participants chose to disclose themselves to encourage the families of sick children and understand its complications. However, the results of their self-disclosure were not exactly as expected. The reasons for these complications were not within their power to resolve. Therefore, the self-disclosure ultimately increased their frustration. They were disappointed and cautious about any subsequent self-disclosure; some even gave up.

As a nurse, I wanted to care for the mothers of sick children, so I revealed to them that I was a childhood cancer survivor who had overcome it. I had wanted the mothers to hold hopes for their children's future, but their reactions were not good. I figured that from now on, they would tell me, "My child is different from you: you were cured of cancer!" Considering the psychological damage factor, I felt that I could not disclose myself too casually. (Participant 10)

I told my friend, whom I wanted to become my best friend, that I suffer epileptic seizures as a complication of childhood cancer. I told her that, even if I collapsed, I would simply recover after 5 minutes, so there's no need to worry. But my friend became so worried that she began restricting my hobbies and leisure activities. I could not enjoy life anymore. So, I broke off contact with this friend. It was very regrettable and sad. (Participant 12)

I have complications, and I may not be able to go to work. So, I told people at the workplace honestly about this. My coworkers did not react in a supportive way. As I don't want them to misunderstand me in a strange way, I may have to convey this gradually by checking how the other person reacts. But I was terribly hurt mentally, and now I'm anxious about it. (Participant 10)

4. Discussion

This study investigated the experiences of CCSs living in Japan with self-disclosing their history with cancer to the people around them. This study identified three novel findings. First, the experiences of self-disclosure by the CCS who were adolescents and young adults was found to be associated with a developmental shift in the individual to seek change in their interpersonal relationships. Second, self-disclosure is a deliberate and challenging action conducted to increase the intimacy in their relationship with other healthy individuals, representing an experience of overcoming an illness. Third, five outcomes related to self-disclosure experiences were identified. Of these, the following four were associated with positive self-esteem: Gaining Confidence in Relationships with Others, Increased Self-Perceived Usefulness, Reaffirmation of the Value of Their Experiences, and Increased Expectations for Relationship Change. However, the remaining outcome, Disappointment and Cautiousness, was associated with negative self-perception.

Although the participants could live without disclosing themselves as before, they overcame difficulties and made their "self-disclosure" a personal challenge. Specific examples of this behavior included the following: (1) attempting to self-disclose while sensing and predicting the risks to their self-esteem; (2) attempting further self-disclosure by changing their strategy while being aware that self-disclosure is a scary thing based on their past experiences; (3) attempting self-disclosure while accepting the risks of encountering setbacks and failures if their cancer history is perceived negatively. These indicated that the act of attempting self-disclosure after fearing prejudice, confronting difficulties, and going beyond their psychological comfort zones could be seen as representing a true, deliberate challenge. The challenges that participants deliberately faced during their self-disclosure were also about conquering and overcoming, using their own strengths, and the psychosocial difficulties experienced due to their cancer. Therefore, self-disclosures by CCSs can be considered an experience of overcoming a disease.

AYAs have been found to self-disclose by limiting the content to information sought in the workplace and school, as well as factual information (Gray, Fitch, Phillips, & Fergus, 2000; Rabin, 2020; Stergiou-Kita, Pritlove, & Kirsh, 2016). Contrary to these findings, the participants in this study disclosed their difficult experiences with cancer and their painful feelings about having had cancer. Why did these individuals choose to make such deep self-disclosures? Adult survivors of childhood cancer might choose to self-disclose because they wish to be understood by others and communicate the feelings they have experienced. This theory is supported by an existing study (Rabin, 2019). Their psychological growth and development could also trigger their decision regarding self-disclosure. The growth and development of their interpersonal relationships, together with a growing awareness of their increasing maturity, can lead to a strong desire to be understood by others and the existence of

clear, expected outcomes, which can promote their deep self-disclosures (Vijayakumar, Op de Macks, Shirtcliff, & Pfeifer, 2019).

What factors enable Japanese CCSs to confront their challenges with self-disclosure? Participants received their friends' approval and encouragement that increased their confidence about interpersonal relationships and ended up disclosing information about themselves. Given the strong cooperative traits observed within the Japanese cultural context, one promoting factor might be having an environment that prevents fears of becoming isolated (Evans, Mallet, Bazillier, & Amiel, 2015).

This study identified five themes as self-disclosure outcomes. Four were related to positive interpersonal relationships stemming from self-disclosure and outcomes leading to changes in self-esteem. Another key point of this study was that there were also negative outcomes related to self-disclosure.

The experience of increased disappointment related to self-disclosure led to negative self-perceptions among CCSs. We found three effects. First, some recipients misunderstood or did not respond to the self-disclosure, which increased the risk for declining self-esteem for CCSs, leading to growing anxiety, the destruction of friendships, and making self-disclosure a trigger for new psychosocial problems related to their cancer history (Yamaji et al., 2020). Second, CCSs could become psychologically hurt following their self-disclosure as they perceived it as a traumatic experience and refused further attempts to increase their intimacy with others. This could serve as an emotional pain that does emerge among CCSs who were adolescents and young adults, as they seek ties and connections with their friends. Third, resignation, cautiousness, and hesitance toward subsequent self-disclosure can occur, which hampers self-disclosure and interfere with overcoming their illnesses. These three effects could negatively impact the quality of life of those who have experienced cancer. However, none of the study participants saw reporting having a dramatic decline in their self-esteem or experienced confusion. CCSs who attempt self-disclosure as a challenge can be seen as building a foundation for mental resilience (Seiler & Jenewein, 2019).

These findings have applications for real-world practices. Care providers should support patients' continuation in school by utilizing Information and communication technology and other tools to promote their social and psychological growth and development, which serves as a foundation for self-disclosure. Cancer education programs should be developed and provided to healthy children to help them accept friends whose outward appearances and physical strengths have changed. For families, we recommend providing advice on parent-child relationships that enhance children's sense of self-esteem through speaking to them and encouraging them, which can help CCSs positively evaluate their experiences with overcoming treatment. Care providers should clearly and repeatedly convey to patients that self-disclosure is itself an aspect of overcoming illness, and even if unsuccessful, the heroism of disclosing information should be emphasized. Healthcare professionals involved with long-term follow-up should cooperate with the activities of peer support groups and share and promote the value of CCSs' self-disclosure experiences. Consulting with CCSs about self-disclosure and encouraging social skills training for accepting one's emotions could also be beneficial (Mendoza et al., 2019).

4.1 Study Limitations

This study has several limitations. First, the study had a small sample size that included only 13 participants. Given the variety of diagnosed childhood cancers and the diversity of CCSs, the study's results must be interpreted with caution when generalizing them. Second, none of the participants were undergoing treatment at the time of the interviews, and the self-disclosure of people with severe late complications could differ. Further research that extends the scope of the current findings is necessary to develop care programs that support the CCSs' efforts to overcome their challenges with self-disclosure.

4.2 Conclusions

The experience of self-disclosing one's cancer—which had previously been kept secret—among CCSs is in itself an experience of overcoming one's illness and is thus beneficial. The failure of self-disclosure is a risk that CCSs must take to build relationships. Survivors can be encouraged to attempt self-disclosure through support that fosters psychological and social growth, provides validation, and helps them recover when they are unsuccessful.

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Competing Interests Statement

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Appendix: Interview Guide

- Begin with a conversation designed to build a relationship of trust, for example, with a self-introduction by the interviewer and an explanation of their role in the interview.

Prompt 1. Please tell me about yourself.

Age, occupation, family makeup, name of cancer, age at disease onset, treatments received, presence or absence of complications, age when participant learned about the disease, who received the cancer diagnosis, and how the diagnosis was made.

Prompt 2. Please look back at the time between the diagnosis of your childhood cancer to the present, and tell me about the things you've experienced due to having childhood cancer, along with any changes that occurred in your thoughts and feelings (e.g., your relationships with others at school and in society; your circumstances and experiences related to the explanations about the illness that you provided to others, as well as self-disclosure; life events you've experienced; changes in your thoughts and feelings about having had childhood cancer).

- Have the participants talk, using the recollection method, about their long-term experiences since being diagnosed with cancer in childhood
- During the interviews, questions may be added whenever the interviewers felt they did not understand the participant, the narrative was unclear, or if they wanted more data in cases where the experiences and thoughts had not been fully described. For example, they could also ask:
 - “What type of experience was it for you?”
 - “What meaning did that experience have for you?”
 - “Approximately when did you see changes in your thoughts and feelings as well as in the meaning for you regarding your cancer experience?”
 - “How did you feel about it before you came to feel that way?”
 - “What types of changes do you think it made to your life?”
 - “What do you think was the cause or trigger for changing your feelings in that way?”

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