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The Healing through Arts (HeARTS) program for children bereaved by cancer: Pilot study findings from Singapore

Saryna Ong, M.S.[1], Travis Loh, B.A.[1], Phyllis Wong, M.S.[1] and Irene Teo, PH.D.[1,2]

[1]Department of Psychosocial Oncology, National Cancer Centre Singapore, Singapore, Singapore and [2]Lien Centre for Palliative Care, Duke-NUS Medical School Singapore, Singapore, Singapore

Original Article

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Author for correspondence: Irene Teo;
Email: irene.teo.e.a@nccs.com.sg

Abstract

Objectives. The article aims to investigate the feasibility, acceptability, and initial efficacy of a short-term 3-day art therapy group for children who have experienced parental death to cancer.
Methods. The study utilized a pretest–posttest design and included children ($n = 20$) aged 7–12 years. The feasibility of the intervention was measured by recruitment ability, study compliance, and intervention adherence, while acceptability was assessed using a child-reported satisfaction survey. Efficacy was examined using the child-reported Pediatric Quality of Life Inventory (PedsQL), while the emotional, social, and behavioral functioning of children was measured using the parent-reported Strengths and Difficulties Questionnaire. Paired sample *t*-tests were used for analyses.
Results. The intervention was found to be feasible (80% recruitment rate and 100% session adherence). Acceptability was high, and all participants were satisfied and found the intervention to be helpful. While results did not reach statistical significance, improvements in psychosocial and physical quality of life were reported by all the children post-intervention and at the 3-month follow-up. Parent-reported a decrease in behavioral difficulties scores and an increase in prosocial behavior scores at post-intervention and at the 3-month follow-up.
Significance of results. The 3-day art therapy group intervention was shown to be feasible to conduct and acceptable to the recipients. The intervention shows promise in improving post-death adjustment and quality of life outcomes of children bereaved by parental death due to cancer that were maintained after 3 months. The use of art therapy groups to ameliorate difficulties associated with parental loss and to assist children in coping day-to-day difficulties should be further investigated.

Introduction

Living through the death of a parent due to cancer can be a traumatic experience that impacts the emotional, social, and psychological well-being and development of a child (Worden 1996). This may be especially true for children who have difficulty making meaning of their parents' illness and death and expressing their emotions (Neimeyer 2001; Wijayanti and Suatin 2020). Research suggests that children (typically up to 16 years of age), when left unsupported, may be at high risk for complicated grief and psychiatric morbidity in the short and long term (Brown and Goodman 2005; Gray et al. 2011; Kagan 2014; Kirwin and Hamrin 2005).

Despite these consequences, there remains a paucity of research examining the feasibility and effectiveness of interventions for children bereaved by parental death due to cancer. In the wider literature, however, a meta-analysis comparing results across controlled and uncontrolled studies of bereavement interventions for children indicated a small to moderate treatment effect in favor of treatment for bereaved children (Rosner et al. 2010). Other reviews support this, demonstrating that even relatively brief interventions can prevent children from developing more severe problems, such as mental health problems and traumatic grief, after the loss of a parent (Bergman et al. 2017). Interventions to support bereaved children are largely provided in the form of individual counseling, family counseling, and groups such as grief camps (Balk 2010; Bergman et al. 2017). Compared to individual or family counseling, group intervention has the added advantage of helping children reduce their sense of isolation and loneliness and normalize their feelings of grief (Abuhegazy and Elkeshishi 2017; McClatchey and Wimmer 2012). There is also an opportunity for group members to connect and build meaningful friendships and support systems.

Research indicates that immersive, time-limited interventions (e.g., weekend camps) can help children cope with the impact of loss (Clute and Kobayashi 2013). These interventions involve elements of group therapy, psychoeducation, expressive techniques, and recreational aspects of the outdoors. The activities and curriculum are designed to

help children learn, practice, and reinforce adaptive coping strategies over 2–3 days (Griffiths et al. 2019; McClatchey 2020).

Several intervention studies have incorporated expressive arts into their intervention (Bachman 2013; McClatchey et al. 2009; Mitchell et al. 2007; Nabors et al. 2004; Schachter 2007). These therapies have been found to be helpful treatment modalities for bereaved children and youth (Loumeau-May 2020; Mcintyre 1990; Thompson and Neimeyer 2014). Art expression is natural for most children (Malchiodi 2011). It offers them the ability to express their emotions and experiences as an alternative means of communication (Malchiodi 2007). It helps a child get in touch with feelings that cannot be easily expressed in words. The art can serve as a "container" for powerful feelings (Bosgraaf et al. 2020), and this can be especially beneficial for bereaved children as the experience of losing a parent can be overwhelming.

However, the use of the art therapy group with bereaved children is less studied. Raymer and McIntyre (1987) examined group art and music therapy with a ratio of 1 facilitator: 4–6 bereaved children that met weekly; they reported that the goals of the art therapy group include catharsis in art process and product, constructive expression of feelings, and development of flexible but firm inner control and individual growth. Hence, this study hopes to further investigate and support the use of the art therapy group with children bereaved by cancer.

The primary aims of the study were to investigate the feasibility and acceptability of a brief 3-day art therapy group for children who lost a parent due to cancer. As a secondary aim, we examined the initial efficacy of the intervention in improving bereaved children outcomes. This art therapy group had been offered by our service for approximately 4 years to support the needs of children bereaved by parental death due to cancer. The findings from this brief group intervention may inform service providers offering to support bereaved children while working with limited resources.

Materials and methods

Study design

This was a non-randomized, pretest–posttest pilot study examining an art therapy group intervention for bereaved children. The survey data were pooled across 3 runs of the art therapy groups between June 2017 and June 2018. Assessments were administered to both the child and parent/guardian at 3 different time periods: pre-intervention, post-intervention 1 (after the group sessions ended), and post-intervention 2 (3 months later).

Participants and procedures

Potential participants consisting of children bereaved by parental death due to cancer were recruited via their parent/guardian through (i) referrals by medical social workers, (ii) fliers and posters placed throughout the institution, and (iii) the institution's website. Participants were included if they (i) lost a parent through cancer within the last 2 years, (ii) were 7–12 years of age at the time of program participation, and (iii) were willing to participate in the art therapy group.

The loss of a parent within the last 2 years was set as a criterion as an estimate of 20% of bereaved children exhibit a wide range of emotional and behavioral symptoms after their parent's death (Dowdney 2000) and these symptoms sometimes persist for 2 years (Dowdney 2000; Worden 1996). We selected an age criterion of 7–12 years old as this range represents the ages of primary school–aged children. Children in this age range may be at increased risk for adjustment difficulties after the loss of a family member (Worden 1996). Several prior studies have targeted primary school–aged children (Nabors et al. 2004; Tonkins and Lambert 1996), and for studies that include children from aged 6 to 18 years, the children are usually divided into age-appropriate groups for activities (Creed et al. 2001; McClatchey and Wimmer 2012).

We allowed siblings to participate in the same intervention run. Children whose parent/guardian did not consent to their participation were excluded. Consent from the children was obtained and they signed the child assent forms which were written using simple words for 7–12-year-old children to understand. Parent/guardian written consent was also obtained prior to the intervention. Baseline study assessment surveys (both by child participant and parent/guardian) were also completed.

Measures

We collected intervention data (e.g., recruitment and program attendance numbers) and self-reported information from both the children participants and their parent/guardian. The children were administered a survey comprising instruments developed for use in children that took approximately 15 min to complete. The group facilitators were on standby to assist with completion of the survey forms, especially for the younger children. The children had the option of opting out of completing the surveys, and this was conveyed to both the children participants and their parents/guardians.

Feasibility

Feasibility was assessed by ability to recruit, study compliance (i.e., completion of study assessments) and intervention adherence (i.e., number of participants who attended all 3 days of the art therapy group). For the intervention to be considered feasible, we expected a recruitment rate of more than 50% (i.e. majority) and study compliance/intervention adherence rate to be at least 80% based on prior studies in our cultural and treatment setting (Teo et al. 2020a, 2020b).

Acceptability

Acceptability was assessed using a child-reported satisfaction survey our team had developed that consisted of 5 visual analog scales (ranging from 1 to 5) and 2 short questions (see Supplementary Figure). The items inquired about the children's agreement to statements regarding perceived usefulness of the program (e.g., "This group is helpful to me") and their enjoyment of the program (e.g., "I enjoyed being in this group"). The 2 short questions asked what they liked best and least about the art therapy group. This survey was administered immediately post-intervention. For the study to be considered acceptable, we expected that the majority of participants would score above the middle-point of the scale assessing usefulness of and satisfaction with the intervention.

Efficacy

As there was no standardized measurement of grief in children (Currier et al. 2007), we utilized 2 widely used assessment instruments for parents and children to measure emotional, social, and behavioral functioning of children through the constructs of quality of life (child-reported) and strengths and difficulties (parent-reported). Although the parent/guardian did not receive

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the intervention, it is assumed that they are able to provide valuable, observed behavior and coping of the children.

Quality of life (child-reported)

The Pediatric Quality of Life Inventory (PedsQL) Self Report consists of 23 items measuring physical, emotional, social, and school functioning (Varni et al. 1999). There are 2 subscales: physical health functioning and psychosocial health functioning. The latter subscale is a sum of the emotional, social, and school functioning scales. Participants rate how much of a problem each life domain has been for him/her based on 5-point scale (0 = never, 4 = almost always). The scales are transformed to a score from 0 to 100 where higher scores indicate better health-related quality of life. The standard error of the mean score is widely used as the indicator of minimally clinically important difference (MCID) for this instrument. In our study, internal consistency of the physical health functioning ($\alpha = 0.51$) and psychosocial health functioning ($\alpha = 0.76$) subscales were found to be acceptable.

Strengths and difficulties (parent-reported)

The Strengths and Difficulties Questionnaire (SDQ) consists of 25 items assessing a child's emotional symptoms, conduct problems, hyperactivity/ inattention, peer relation problems, and prosocial behavior (Goodman 2001). Respondents rate each item based on "Not True," "Somewhat True," and "Certainly True." The items are converted into a 0–2 scoring system, and the subscale scores are derived (ranging from 0 to 10). A Total Difficulties score (ranging from 0 to 40) is generated by summing all the scales except the prosocial behavior scale. Scores of 13 and below reflect unlikely clinical significant problems, 14–17 as borderline problems, and 18 and above as clinically relevant (Goodman and Goodman 2009). Our study showed internal consistency similar to that of Goodman, with mean Cronbach's $\alpha = 0.071$.

Intervention

The guiding theoretical framework of the art therapy group was based on the "Tasks of Mourning" (Worden 1996), "The Dual Process Model of Coping with Bereavement" (Stroebe and Schut 1999), and concept of "Continuing Bonds" (Klass et al. 1996). The goals of the art therapy group were to (i) provide a safe and supportive space, (ii) facilitate expression and release of feelings associated with grief, and (iii) memorialize the deceased parents. The concepts of art therapy were woven into expressive art activities. See Table 1.

Day 1 activities included setting of therapy group ground rules, warm-up games, creation of self-collage, decoration of a gingerbread man, and the creation of a memory box. The warm-up games and creation of a self-collage were included to allow the children to get to know each other and feel safe in the group. The decoration of a gingerbread was for children to place their gingerbread man (representing themselves) on the feelings chart placed on a wall. The feelings chart consisted of a painted rainbow with a sad-faced cloud and a happy-faced sun at both ends. The children were encouraged to check in on their feelings by placing their gingerbread man on the chart at the start and end of each day. This activity served to encourage the children to be in touch with their feelings. It also gave the facilitator a sense of the children's mood. The creation of the memory box helped the children to memorialize their deceased loved ones and served as a reminder that their loved ones lived in their memory.

Table 1. Goals, theoretical framework, and activities included in the art therapy group intervention

Goals	Theoretical framework	Activities
Provide a safe and supportive space	People connect on the basis of being similar and grow on the basis of being different (Satir et al. 1991)	Setting ground rules
		Self-collage to get to know each other's commonalities and differences
		Draw strengths and support network ecosystem
Facilitate expression and release of feelings	Worden's task 2 of mourning: to process the pain of grief (Worden 2009)	Gingerbread man feelings chart
		Free and continuous painting of feelings
		Letter writing and balloon release ritual
Memorialize the deceased parent	Continuing bonds (Klass et al. 1996)	Memory box creation
		Make-a-bear activity

Day 2 activities included painting their feelings to express their emotions. They were encouraged to use as much paint and paper as they wished to express themselves as a means of catharsis. They then wrote a letter to their deceased parent and released helium balloons that contained the letter. This activity served to allow the children to express any thoughts and words that they wanted to convey to their loved ones.

On day 3, the children drew their strengths and support network ecosystem. The task was intended to help children be aware of their inner strengths and the support circle that they could access and lean on. The children also participated in a build-a-bear activity where they painted the t-shirt of the bear in any design and thought of the characteristics and strengths they wished that the bear would have. The purpose of the make-a-bear was to provide the children with a "transitional object" for psychological comfort.

After each art activity, the group had some sharing time. The sharing entailed their experience in the art-making process and anything they wanted to share about their artwork. Some games were also incorporated in between art activities and sharing time as we strived for a balance between activities that were loss-oriented and restoration-oriented, consistent with Strobe's dual process model of coping with bereavement.

Art therapy group timing

The art therapy group occurred during school holidays, and groups were formed with a minimum number of 3 sign-ups. Three runs were conducted between June 2017 and June 2018 (approximately once every 6 months). The art therapy group was conducted over 3 consecutive days from 9 am to 3 pm; the children attended the groups without their parent/guardian receiving any intervention. Research has indicated that even relatively brief interventions can prevent children from developing mental health problems and traumatic grief after the loss of a parent (Bergman et al. 2017). As such, we adopted a 3-day time-limited art therapy group. Each group was facilitated by a Masters-level art therapist and co-facilitated by a medical social worker. Both the art therapist and medical social worker have, respectively, 10 years or more of experience in working in an oncology setting. An associate medical social worker provided additional assistance. We had a protocol

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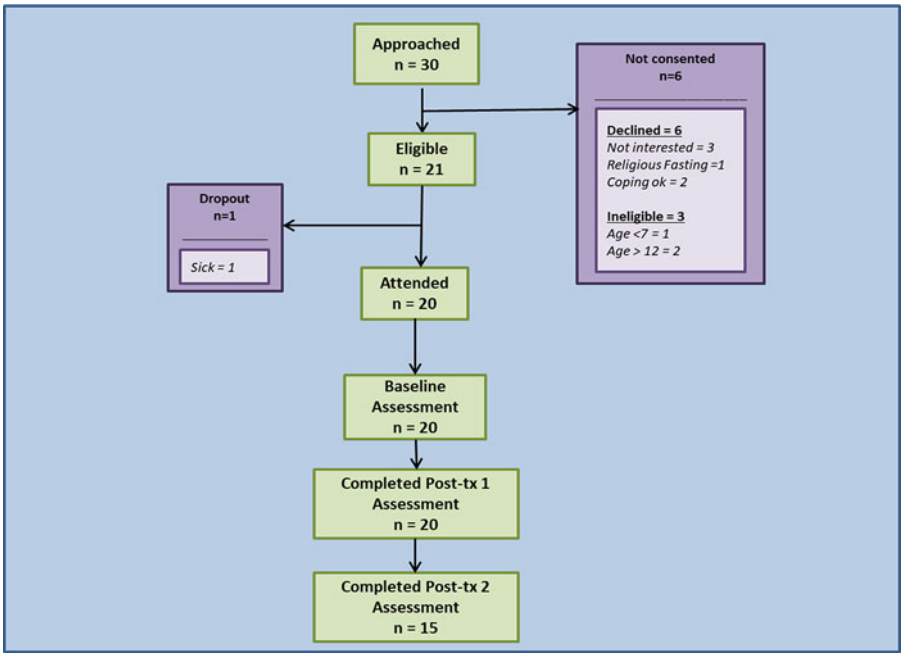

Fig. 1. Study flow diagram.

where a child participant would be provided one-on-one support in a private room if they showed significant distress or were disruptive to the group as long as necessary.

Data analysis

Descriptive statistics were used to present the study participant characteristics, feasibility data (recruitment, study compliance, and intervention adherence), and intervention satisfaction scores. Themes from the responses to the open-ended question were extracted using thematic analyses. Graphical representations were used to present the study outcomes. Paired sample *t*-tests were conducted to assess changes in the outcomes of interest across the 3 assessment points. Outcome changes were also examined in terms of MCIDs for the PedsQL (standard error of the mean score) and clinically relevant thresholds for the SDQ (score of 13). A sample size of 16 was required to provide a study power of 80% and a level of significance of 5% (two-sided) for detecting a large effect size (ES) (0.8). We rounded the sample size to 20 to account for study attrition.

Results

Sample characteristics

The study participants ($n = 20$) came from 3 consecutive runs of the art therapy groups where 7, 5, and 8 children participated in the respective rounds. The percentage of Chinese ($n = 14$, 70%), Malay ($n = 4$, 20%), and others ($n = 2$, 10%) were generally reflective of the local population. There were almost an equal proportion of male ($n = 11$, 55%) and female ($n = 9$, 45%) participants. There were an equal number of children aged 7–9 years (lower primary school) and aged 10–12 years (upper primary school). Almost half of the children lost their mother ($n = 9$, 45%), and the others lost their father ($n = 11$, 55%). Most children ($n = 19$, 95%) had lost their parent $\leq$12 months prior to participating in the art therapy group.

Feasibility

The parents/guardians of 24 out of 30 children who were referred by medical social workers agreed to participate, yielding a recruitment rate of 80%. Figure 1 presents the study flow diagram. Of those who declined, 3 of the parents reported they were not keen for their child to attend, while 2 others reported coping adaptively. One parent was worried about participating during the religious fasting month. Of the 24 parents who expressed interest in sending their children for the program, 21 were eligible for the study (3 children were not within the age inclusion criteria). A total of 20 participants commenced the intervention as 1 was not able to make it due to illness. All 20 children who started the group therapy attended all 3 days yielding 100% intervention adherence. The study assessment compliance rate was 100% at post-intervention and 75% at the 3-month follow-up.

Acceptability

All the participants reported finding the group helpful to them (Table 2). In particular, they reported that the art activities helped them express their feelings of loss. They also felt that they were

Table 2. Means and standard deviations on participant satisfaction ($n = 20$)

Satisfaction items[a]	Mean	SD
I feel that I am not alone in coping with the loss of my father/mother.	4.4	1.0
The art activities helped me express my feelings about losing my father/mother.	4.2	1.1
This group is helpful to me.	4.6	0.9
I enjoyed the activities done in the group.	4.7	0.7
I enjoyed being in the group.	4.7	0.6

[a]Maximum score = 5.

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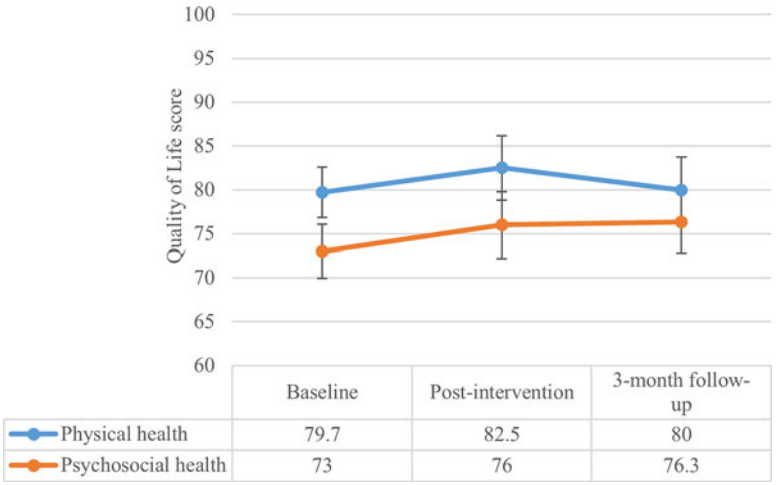

Fig. 2. Child-reported Quality of Life Across Time.

not alone in coping with the loss of their parent. They enjoyed the activities as well as participating in the group. In the open-ended feedback, 7 participants indicated that there was nothing that they disliked about the art therapy group. Two participants wrote that they disliked sharing their emotions.

Quality of life (child-reported)

Graphical mean data indicated that, on average, children reported increases in both psychosocial scores (ES = 0.20) and physical health functioning scores (ES = 0.19) immediately after the group intervention (Figure 2). The psychosocial health functioning scores were maintained at the 3-month follow-up (ES = 0.25). Physical health functioning returned to baseline levels at the 3-month follow-up. Paired sample *t*-tests did not show a statistically significant change over time. Eleven out of 20 participants (55%) post-intervention and 7 out of 15 participants (47%) at the 3-month follow-up reported minimally clinically important improvements in their physical health functioning. Eight out of 20 participants (40%) post-intervention and 6 out of 15 participants (40%) at the 3-month follow-up reported a minimally clinically important improvement in their psychosocial health functioning.

Strengths and difficulties (parent reported)

Graphical data further showed that, on average, the mean Total Difficulties score decreased from baseline to post-intervention (ES = 0.22) and further declined slightly at the 3-month follow-up (ES = 0.31) (Figure 3a) (Goodman and Goodman 2009). Prosocial behavior scores increased post-intervention (ES = 0.12), and there was a slight increase at the 3-month follow-up (ES = 0.19) (Figure 3b). Paired sample *t*-tests did not show a statistically significant change over time. However, 3 of the 5 children who entered the intervention with clinically relevant scores (60%) crossed the threshold to the nonclinical range at post-intervention. At the 3-month follow-up, 2 out of 4 with clinically relevant scores at baseline (data were missing for 1 participant at this time point) were in the nonclinical range.

Discussion

The 3-day Healing through Arts (HeARTS) therapy group targeting children bereaved by parental death due to cancer was feasible to run, was acceptable to participants, and showed promise in improving children/parent-reported outcomes. Feasibility-wise, a majority (80%) of those referred had signed their children up for the intervention. Anecdotally, there was little difficulty in recruiting participants across diverse criteria/settings, and our study sample was reflective of Singapore's multiracial and multicultural population. We note that all the participants were recruited through referral even though fliers and posters were made available in the institution or its website. One possible explanation was that the bereaved parent/guardian may be also trying to cope and face challenges seeking support. However, when approached about the support we provide for bereaved children, they were willing to accept help. Furthermore, our intervention adherence rate was 100%. This indicated that those who signed up were committed to and participated in the entire intervention. We observed that almost all the children (95%) who signed up had lost their parent $\leq$12 months prior to participating in the art therapy group. Practically, this is generally the time period bereaved families are followed for bereavement care if needed and may naturally be a good window to offer such an intervention to bereaved children.

The program was found to be highly acceptable. On average, the statement "I enjoyed the activities done in the group" was rated the highest with a mean score of 4.7 out of 5. This is despite the fact that the art activities required them to confront potentially complex feelings from parental death as they learned to express and release feelings associated with grief and memorialize their deceased parent. This indicates that art is a nonthreatening way for children to process and express difficult emotions. The participants rated the sessions highly in helping them express their feelings of loss and not feeling alone in their coping.

Through open-ended feedback, we found that the make-a-bear activity was mentioned the most (i.e., by 5 children). The facilitators noticed that some children named their bear after their deceased parent and gave the bear the same strengths and values as their deceased parent in the bear's birth certificate. Some parents/guardians had provided the feedback that the children subsequently hugged the bear to sleep every night. The bear can be seen as serving as a transitional object for these children.

Results also indicated that a minority (2 participants) wrote that they disliked the sharing of their emotions. This is not unexpected as grief is a difficult emotion to talk about. Although sharing was voluntary, the feedback we got serves as a reminder that

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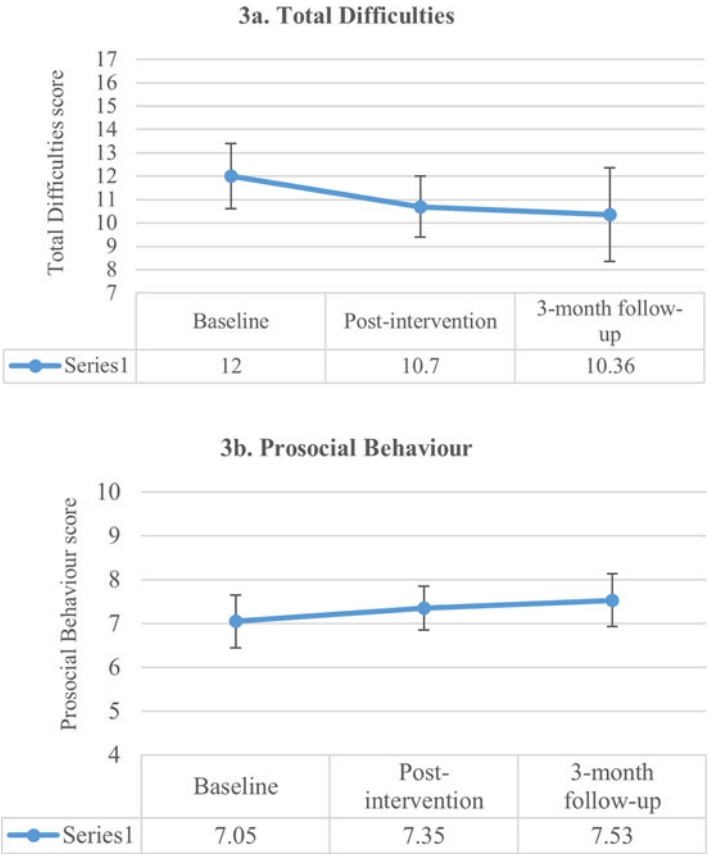

Fig. 3. Strengths and Difficulties (Parent-reported) Across Time.

some children may not feel comfortable expressing themselves, especially in a group setting, and that we need to be respectful of that. Nevertheless, they can still benefit from listening to the sharing of others, as it can facilitate the normalization of their grief and helps them not feel alone.

The pre–post intervention and follow-up outcome data from this pilot study was modest, but promising. The effect sizes on our outcomes of interest were small (ranging from 0.12 to 031). We did not observe statistically significant changes, which may be due to insufficient power to detect a large intervention effect size. Our findings of nonsignificant decreases in the SDQ (measuring emotional, conduct, and peer problems) were largely consistent with that of Griffiths et al. (2019) who had run the Lionheart Camp for bereaved children. We hope that this pilot work and initial reports of intervention effect size will inform future studies to be appropriately powered.

The average child-reported psychosocial quality of life showed improvement immediately after the intervention that was maintained at the 3-month follow-up. Furthermore, 40–55% reported meaningful clinical improvement in their scores at post-intervention and at follow-up. This corresponded with parent report of decline in emotional/behavioral difficulties and improvement in prosocial behavior immediately post-intervention and at the 3-month follow-up. Interestingly, a proportion of children who entered the program with clinically relevant scores on emotional/behavioral difficulties had scores that decreased to nonclinical ranges after the intervention. The improvement may be attributed to the therapeutic factor of participating in a therapy group where the child participant learns coping and socializing techniques (Yalom 1995). Our findings were consistent with previous studies that had examined time-limited interventions (e.g. weekend camps) as a promising intervention for helping children cope with bereavement (Clute and Kobayashi 2013). Overall, our study showed an improvement in psychosocial quality of life, a decline in emotional/behavioral difficulties, and an improvement in prosocial behavior.

The child-reported physical quality of life showed improvement immediately post-intervention but returned almost to baseline levels at the 3-month follow-up. Our findings may be reflective of the children's physical state (i.e., strength and energy levels), which were during the school break (when the intervention was conducted) and the school term (when the 3-month follow-up was conducted). The findings were unsurprising as the activities of the group did not specifically target physical/functional well-being and our interest in this outcome was exploratory.

We have been running the 3-day HeARTS art therapy group targeting children bereaved by parental death due to cancer for several years, and anecdotally, have received good feedback from parents/guardians of children participants. Although health-care providers try to identify young children of terminal patients and refer them to supportive services, there remain relatively few formal avenues for children to process the health decline and death of their parent. The time-limited structure of the HeARTS program makes it relatively easy to reach out to children who can benefit from bereavement support.

With respect to the group intervention, we are aware of the benefits of nondirective expression, especially when it comes to the expression of grief through art. However, in a group setting, we felt

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it important to provide a general structure and direction, especially for children. We allowed room for child autonomy and flexibility as much as we could within the theme used. For instance, when a child participant verbalized their preference to write instead of the planned painting activity, we facilitated that so that the children could express their feelings in words using a paintbrush rather than a painted image.

There are several clinical implications to our findings. First, the 3-day structure of the program showed promise in improving adjustment and outcomes of children bereaved by parental death due to cancer, which are maintained for 3 months. Centers and teams who have limited resources but would like to support children this way can consider running the programs intermittently like we did during the school holidays. Second, the literature comparing the responses of children to parent and sibling death showed that they were similarly impacted by both types of losses and that there was no significant difference in the total number of problems and syndrome scales (Worden et al. 1999). Hence, the potential for this program to extend to children who have lost a sibling or loved one may be explored and further researched.

Study limitations

There are several limitations to the study worth noting. While the small sample size and non-randomized study design were intended to gather data on initial efficacy, future studies should consider testing the effectiveness of the art therapy group using a larger sample size that will allow the detection of smaller intervention effect sizes. More rigorous methods (e.g., including a waitlist- or attention-comparison group) should also be used to mitigate the possibility of improvement as a result of time or the influence of other factors. The lack of a standardized measurement of grief in children also meant that we had to use widely used instruments assessing emotional, social, and behavioral functioning in children as substitutes. The outcome measures were also self-reported, and in some instances, children required assistance with them, which may have led to bias. The findings were also from a single center and may not be generalized to all children bereaved by parental death due to cancer. The addition of qualitative components in future research (particularly from the surviving parent and child's point of view) will likely provide a deeper understanding of their engagement in the program.

Conclusion

This study found that the 3-day HeARTS art therapy group was feasible and acceptable to participants. Initial outcome data indicated improvement in child-reported psychosocial quality of life scores and improvement in parent-reported child emotion/behavior scores that was maintained even 3 months after the intervention. In all, our studies underline the potential of art therapy groups in ameliorating the difficulties associated with parental death due to cancer and assisting children in coping with day-to-day difficulties and believe it merits further future investigation.

Supplementary material. The supplementary material for this article can be found at https://doi.org/10.1017/S1478951523000299.

Data availability statement. The data that support the findings of this study are available on request from the corresponding author.

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Conflicts of interest. There are no relevant financial or nonfinancial competing interests to report.

Ethical approval. The study received ethical approval from the Centralised Institutional Review Board (No. 2016/2898) in Singapore.

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