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*Article*

# Psychological Evaluation of a Residential Children's Burns Camp Programme: A Ten-Year Evaluation

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**Abstract:** Residential burns camp programmes provide help and support to children with burn injuries by providing activities designed to build their confidence and self-esteem. Our regional burns service has been running camps for over 20 years and evaluation is an important part of assessing their effectiveness. In this study we report both qualitative and quantitative data from 10 consecutive years of burns camps. Qualitative feedback was gathered using Likert scales and free response questionnaires at the end of camp and six weeks post-camp. Three quantitative outcome measures, the Paediatric Quality of Life Inventory v4, the Children's Revised Impact of Event Scale (CRIES8) and the Satisfaction with Appearance Scale (SWAP) were completed before and six weeks after camp. Children and their parents/carers both reported attending burns camp was helpful for them/their child; the themes of meeting other children with burn injuries and developing confidence and self-esteem were cited as reasons. Parents/carers also reported significant improvements in their child's physical and psychological functioning post-camp in some years. These findings confirm the importance of providing burns camp programmes for children with burn injuries as part of their post burn rehabilitation.

**Keywords:** burns camp; evaluation; burn rehabilitation

## 1. Introduction

Experiencing a burn injury as a child can be a traumatic experience, the process of recovery is difficult with a vigorous aftercare routine including painful dressing changes, physiotherapy, and specialist pressure garments for scar management. Some patients may also need psychological support after their burn injury to help them cope with the emotional impact of the injury, the demands of their treatment regime and coming to terms with and adjusting to a changed appearance, including dealing with questions and curiosity from others.

Burns camp programmes provide support for children with fun and confidence-building activities that help them adjust to the changes they have experienced following their burn injury. The first burn camps were held in America in the early 1980s [1,2] and by 2010 burns camps were being held in over 60 countries worldwide [3]; that number continues to grow to this day [4,5]). The positive effects of attending a burns camp are well known and have been reported in the literature for over 20 years with most studies focusing on qualitative methods to assess the impact of attending a burns camp. Cox et al reported improved body image in teenagers [6] and several groups found campers reported increased self-confidence, increased acceptance of scars and altered body image following the camp; they also found developing social skills and sharing experiences of burn injury were important to camp participants [7–10]. More recently, a long-term retrospective follow-up study from Australia found that the benefits of the camp programme were long term, particularly for those who developed friendships that continue outside the camp experience [11].

Some studies have used quantitative methods to try to capture changes in teenagers' perception of self-esteem and body image. Biggs et al [12], Arnoldo et al [13] and Bakker et al [10] all found either no change or only small changes in self-esteem using the Rosenberg Self-Esteem tool [14]. Tropez-Arceneaux et al also found no significant changes using the Rosenberg self-esteem tool two months after camp but did report a significant improvement in self-esteem six months post camp [4] and Rimmer et al [15] found a statistically significant improvement in the first year of a two-year study. Bakker et al [10] and Armstrong-Jones et al [16] both found significant improvements in campers'

satisfaction with their appearance three months after camp using the Satisfaction with Appearance scale [17].

Burns rehabilitation camps have become an integral part of burns after care and in the UK the National Burn Care Standards [18] stipulate Burn Care Services should provide access to a Burns Camp/Club for children and young people up to the age of 25. Our regional paediatric burns service has been running children's burn camps since 1993. It was originally just a weekend break for a select number of children and staff but by 2000 this had expanded into two, age specific, week-long residential camps (along with additional activity days and family weekends) over the course of a calendar year. The camp programme focuses on fostering an affirming environment for children to explore social connections and build self-esteem through physical activity, mindfully informed routines, and reflective activities. Evaluation data has been collected at each camp. In 2007, Gaskell reported on the challenges of evaluating burns camps, especially with quantitative outcome measures [7]. In 2008, the Psychosocial Special Interest Group of the British Burn Association (BBA) reviewed the outcome measures available for assessing wellbeing after a burn injury and produced recommendations [19]. Whilst these measures are not burn specific, they were agreed as being the best tools available for assessing post burn well-being at the time. As a result, the quantitative measures included in the camp evaluation questionnaires were updated.

Here we report the evaluation findings from ten consecutive years' evaluation of our two, age specific, weeklong residential burns camps using both the recommended outcome measures and qualitative feedback questionnaires.

## 2. Materials and Methods

The BBA Psychosocial Special Interest Group recommended outcome measures were trialled at the older children's camp (10-16 years) in 2009 then used for both younger children's (5-10 years) and older children's camps between 2010 and 2019. Qualitative information was also collected for each camp.

*Identification and invitation process of campers:* Access to the camp was through professional referral by any member of the multidisciplinary burn care team. Places at both the younger and older children's camps were also offered to the paediatric burns service in an adjacent centre, typically 2 and 4 places respectively. The campers were placed in the two camps depending on their age: the younger children's camp for children aged between 5 and 10 years and the older camp for children between 10 and 16 years. In addition, in 2010, 2017 and 2019, two teenagers taking part in an exchange programme with an American burn camp programme joined the older children's camp. Children were invited to camp by telephone conversation with a parent/carer; verbal acceptance was followed up with an application form to be completed by children and their parents/carers.

*Burn camp leaders:* The campers were supported by a 2:1 ratio of camp leaders. The camp leaders were recruited from the multidisciplinary burn care teams at both burns services, including doctors, nurses, physiotherapists, occupational therapists, clinical psychologists and play specialists; fire fighters from the local Fire and Rescue Service and burns camp volunteers, including burns survivors who were now adults.

*Quantitative measures:* Three outcome measures were included. The Paediatric Quality of Life Inventory v4 (PedsQL) [20], measure consists of separate age specific parent and child reports along with a family impact module. The report includes assessments for both physical and psychosocial functioning which are completed by parents/carers and children aged 8 and above. There are also two parent/carer only assessments, the health-related quality of life measure and the family functioning measure. These cover domains of cognitive function, communication, worry, daily activities and family relationships. Lower scores are indicative of greater difficulties within each domain. The Children's Revised Impact of Event Scale (CRIES8) [21] is a child friendly self-reporting measure of anxiety/distress for children aged 8 and above. Scores of >17 indicate a child has risk factors for post-traumatic stress disorder. The Satisfaction with Appearance Scale (SWAP) [17] was used with the older children's camp for young people aged 13 and over, it is a measure of post burn body image. Higher scores indicate dissatisfaction with appearance and a poorer body image.

Children aged 8 and above and their parents/carers were asked to complete the same age-appropriate outcome measure questionnaire before and six weeks post-camp, the pre-camp questionnaires were sent out with the invitation letters to each parent/carer and child as appropriate. Paired pre- and post-camp data was analysed anonymously using the Wilcoxon signed rank test and Prism GraphPad software.

*Qualitative tools.* The simple, one page, questionnaires (developed and piloted at camps prior to 2010) were used to gather qualitative data from children, parents/carers, and camp leaders. The questionnaire included simple 7-point Likert scales and free response questions and covered topics such as what children gained from attending camp, how helpful had it been, how the camp programme could be improved. The children were also asked if they would recommend burns camp to other children with burn injuries. Campers were asked to complete the questionnaire at the end of the camp week and six weeks later children aged 8 and over, parents/carers and Camp Leaders were asked to complete a post-camp questionnaire. The responses to these qualitative tools were grouped into themes by the lead author.

Teenagers participating in the Colorado exchange programme were not asked to complete the post camp outcome measures.

### 3. Results

During the study period of 2010-2019, between 14 and 19 children attended the younger children's camp each year and between 21 and 28 attended the older children's camp. Each camp comprised of first time and returning campers. In total 400 places at camp were taken up over the ten-year period: 158 at the younger children's camp and 242 at the older children's camp. The mean age of participants at the younger children's camp was 8 years (range 7-10) and at the older children's camp, was 13 years (range 12-14), (Table 1).

**Table 1.** Number and ages of children attending a residential burn camp between 2010 -2019.

	Younger Children's Camp				Older Children's Camp			
Year	Total Number	Girls	Boys	Mean Age	Total Number	Girls	Boys	Mean Age
2010	17	9	8	7	23	11	12	13
2011	15	9	7	7	21	9	12	13
2012	15	9	6	7	21	12	9	13
2013	18	9	9	7	24	13	11	12
2014	14	7	7	8	22	12	10	12
2015	19	8	11	8	24	16	8	13
2016	16	8	8	8	25	18	7	13
2017	15	9	6	9	28	17	11	12
2018	15	8	7	9	27	14	13	13
2019	14	8	6	10	27	18	9	14

#### 3.1. Qualitative responses

The end of camp evaluation was completed by all the children attending camp; they were reassured handwriting and spelling did not matter and help with writing was provided by camp leaders, if needed. Over 70% of the children attending each camp reported enjoying it a lot (data not shown). For twelve of the camps the figure was over 90%. Table 2 shows the Likert scale responses to the questions "How much has camp helped you?" and "Would you recommend the camp to someone else who has been burned?". There is a broad spread of responses, particularly for the older

children, as to whether camp helped them; the vast majority of those who attended camp would recommend burns camp to someone else with burns.

**Table 2.** Likert scale responses provided by children on the last night of camp.

	Younger Children's Camp							Older Children's Camp											
How much has coming to camp helped you?																			
		1	2	3	4	5	6	7				1	2	3	4	5	6	7	
2010							2	7				1		1	1	5	3	8	
2011				1	2		1	10							2	4	2	11	
2012		1			1		2	11							1	1	5	13	
2013				1	2	1	2	12						1		3	2	18	
2014			1		1	1	2	9											
Would you recommend the Camp to someone else who has been burned?																			
		1	2	3	4	5	6	7				1	2	3	4	5	6	7	
2014															2	1		18	
2015					1	1		17							1			23	
2016					2	2	2	9							1		2	22	
2017						2		13							1	2	3	21	
2018							2	12									1	22	
2019							1	13									2	24	

The free responses to “How has being at camp helped you?” and “Explain why you would/would not recommend the camp” were grouped into themes. The themes that were repeated at every camp are given in Table 3 and illustrated with a selection of quotes. *Meeting other children with burn injuries* and *Developing confidence and self-esteem* are seen as very important by the children who attended burns camp. Other frequent themes, appearing in at least 8 of the 10 years included *learning to cope with a burn injury* and *developing friendships and social skills*.

**Table 3.** Repeated themed qualitative responses from children at the end of camp. Several response themes appeared every year following both older children’s (a) and younger children’s (b) camp between 2010 and 2019.

Question	Theme	Illustrative Quotes
<b>(a) Older Children’s Responses</b>		
How has being at camp helped you? (2010 – 2013)	Meeting children with similar experiences	<ul style="list-style-type: none"><li>– I have been able to meet people that suffer from burns and seen that you can still carry out ambitions and goals to whatever extent you want, having a burn doesn’t stop you (2010)</li><li>– You know you’re not alone and you’re not the only one that has scars (2012)</li><li>– That other people are burnt too, and you feel more safe (2013)</li></ul>
	Develop confidence and self-esteem	<ul style="list-style-type: none"><li>– Made me feel more confident about my scars and myself (2009)</li><li>– Got a lot more confidence (2011)</li></ul>

		<ul style="list-style-type: none"> <li>- I am more confident showing my burns (2012)</li> </ul>
Explain why you would / would not recommend the camp to someone with burn injuries (2014 – 2019)	Meeting children with burn injuries and scars	<ul style="list-style-type: none"> <li>- I think that lots of people that don't have burns instantly label you and at burns camp that doesn't happen, you bit by bit become more comfortable in your "burnt" skin and you get to the stage where you're so comfortable you can make jokes (2014)</li> <li>- It helps you meet other people with burns and also helps you understand and accept your own burns (2015)</li> <li>- It helps you talk to people who have been through the same thing as you (2019)</li> </ul>
	Develops confidence and coping strategies	<ul style="list-style-type: none"> <li>- It helps you be more confident with your burn (2014)</li> <li>- It's an opportunity for people with fears to support each other and gain confidence (2016)</li> <li>- It has boosted my confidence about my burn as sometimes I'm not confident about it (2019)</li> </ul>
	Camp is great fun	<ul style="list-style-type: none"> <li>- I would recommend the camp to someone else because it is really fun (2015)</li> <li>- Camp is a great and wonderful experience which every child who has been burned should try (2016)</li> <li>- I would recommend it to someone else who had been burned because camp is really fun, exciting (2018)</li> </ul>
<b>(b) Younger Children's Responses</b>		
How has being at camp helped you? (2010 – 2014)	Develop confidence and self-esteem	<ul style="list-style-type: none"> <li>- More confidence (2010)</li> <li>- Camp has helped me a lot, it gave me confidence (2012)</li> <li>- Helped me be independent (2014)</li> </ul>
Explain why you would / would not recommend the camp to someone with burn injuries (2015 – 2019)	Meeting other children with burn injuries	<ul style="list-style-type: none"> <li>- You get to meet other children with burns (2015)</li> <li>- They know they are not the only one with a burn (2016)</li> <li>- You can talk to other people about their burns (2019)</li> </ul>







	Develops confidence	<ul style="list-style-type: none"> <li>They will take lots and lots of care of you and it will build your confidence in different activities (2016)</li> <li>It builds your confidence (2017)</li> <li>Brings confidence (2018)</li> </ul>
	The activities	<ul style="list-style-type: none"> <li>It is fun and the activities are good (2015)</li> <li>You get to do really good activities (2017)</li> <li>Try new things (2019)</li> </ul>





The 6-week post camp qualitative questionnaires were completed by children aged 8 and over and parents/carers of all children. The return rate varied from camp to camp. The older children's camp had a range of 50% - 81% for children and 53% - 77% for parents/carers while the younger children's camp had a wider range with 46% - 100% of children (aged 8 and above) and 37% - 93% of parents returning their free response questionnaires. The Likert scales (Table 4) clearly show respondents thought attending burns camp is beneficial for a child with burn injuries. Most children thought "Coming to burns camp helps people who have been burned" while most parents/carers thought camp helped their child and they gained a lot by attending.





**Table 4.** Likert Scale responses provided by both (a) children and (b) their parents/carers six weeks post-camp.

(a)

	Younger Children								Older Children									
How much do you think coming to Burns Camp helps people who have been burned?																		
		1	2	3	4	5	6	7			1	2	3	4	5	6	7	
2010											1				1	3	11	
2011								3						3		2	6	
2012								4							1	1	10	
2013					1			5								2	10	
2014								7							2		10	
2015						1		7									18	
2016		1						5									18	
2017							1	7						1		2	16	
2018								8								3	15	
2019								6								1	18	

(b)

	Younger Children's Parent/Carer								Older Children's Parent/Carer										
How much do you think that coming to camp has helped your child?																			
		1	2	3	4	5	6	7				1	2	3	4	5	6	7	
2010												1			1		2	11	
2011						2	2	8								1	2	8	
2012							2	1									2	10	
2013					1		1	1						1		1	1	8	
2014							2	1								2		10	
2015					2	1	1	3								1	3	14	
2016						1		5										18	
2017					1		1	1									2	19	
2018								9							1	2	2	14	

2019							7										1	2	16	
How much do you think your child gained from coming to camp?																				
		1	2	3	4	5	6	7			1	2	3	4	5	6	7			
2010												1			1	1	2	10		
2011						2	2	8								1	1	8		
2012							1	1									3	9		
2013				1			1	1					1	1			1	8		
2014							2	1							1			11		
2015				1	1	2	3										2	15		
2016			1					6							1			17		
2017				1			1	9									2	19		
2018						1		8							1	2	16			
2019							1	7									4	15		

The free response answers were grouped into themes, with some themes present after every camp. Table 5 details these repeated themes: *Meeting children with similar experiences*, and *Developing confidence and self-esteem* are reported by both children and their parents/carers. Comments were also made about the camp programme and making camp longer by both children and their parents/carers. Parents/carers also felt camp helped their children develop friendships, social skills and peer support.

**Table 5.** Repeated themed qualitative responses post-camp. Several response themes appeared every year for (a) older children’s camp from 2010 – 2019 and (b) younger children’s camp from 2011-2019.

Question	Theme	Illustrative Quotes
<b>(a) Older Children’s Responses</b>		
In what ways do you think coming to Burns Camp helps people who have been burned?	Meeting children with similar experiences	<div>– Helps you realise you’re not alone and there are people out there who know how you feel and what you’re going through and they can give you advice (2012)</div> <div>– You meet people who have gone through what you went through and it helps by talking to them (2016)</div> <div>– Makes us feel that we are not on our own and there’s other people like us and we can still move on with our life no matter what (2018)</div>
	Develop confidence and self-esteem	<div>– Gives you more confidence (2010)</div> <div>– It gives you the confidence to show your scars without feeling intimidated or embarrassed (2011)</div> <div>– I’ve got a lot more confidence (2017)</div>
<b>Parent/Carer Responses – Older Children</b>		



How has being at camp helped your child?	Meeting children with similar experiences	<ul style="list-style-type: none"> <li>– [Name] has been able to meet other children with burns and it made him realise he is not alone (2012)</li> <li>– Meeting other children who had similar experiences and injuries was incredibly important in [Name]’s progress (2016)</li> <li>– Able to see how others deal with their injuries (2019)</li> </ul>
	Develop confidence and self-esteem	<ul style="list-style-type: none"> <li>– Confidence to not be embarrassed by her injuries in public (2010)</li> <li>– Helped with his confidence and how to cope with bullies at school (2013)</li> <li>– [Name] is a different child; she no longer thinks she is strange and different; she has confidence in herself (2015)</li> </ul>
What do you think your child gained from coming to camp?	Increased self-confidence, independence, and self-esteem	<ul style="list-style-type: none"> <li>– It has boosted her self-esteem and confidence levels (2012)</li> <li>– When he faces difficulties, he now always looks for a different way to solve the problem rather than give up (2015)</li> <li>– I noticed a difference in [Name]’s confidence immediately. The child we left to go to camp was anxious, the child we picked up a week later was confident and beaming from the experiences she had had (2018)</li> </ul>
What do you think are the good things about camp?	Meeting children with experience of burn injury	<ul style="list-style-type: none"> <li>– Meeting others who have experienced trauma and learning how others have dealt with their trauma and subsequent scarring (2011)</li> <li>– [Name] gets to meet people who have been through more or less the same thing as her which makes her feel that she isn’t on her own (2013)</li> <li>– [Name] loved being around other people who have similar issues as her. It’s helped her realise she is not alone. (2014)</li> </ul>
<b>(b) Younger Children’s Responses</b>		
In what ways do you think coming to Burns Camp	Meeting children with similar experiences	<ul style="list-style-type: none"> <li>– To just see other people burnt and not just feeling that only you have burns (2012)</li> </ul>

helps people who have been burned?		<ul style="list-style-type: none"> <li>– I think it helps because we can talk to people who have experienced the same things (2014)</li> <li>– It helps to have people around you who have scars like you, you can talk about it if you want to (2018)</li> </ul>
<b>Parent/Carer Responses – Younger Children</b>		
How has being at camp helped your child?	Meeting children with similar experiences	<ul style="list-style-type: none"> <li>– Meeting other children with burns has helped [Name] realise she's not the only one (2011)</li> <li>– Has helped [Name] talk with other children about his scar, whereas before he was a bit "sheepish" about it (2013)</li> <li>– Meeting other children who had experienced the same thing, showing him he was not alone has helped with anxiety and coming to terms with his accident (2017)</li> </ul>
What do you think your child gained from coming to camp?	Increased self-confidence, independence, and self-esteem	<ul style="list-style-type: none"> <li>– Confidence, showed [Name] her injury should not physically restrict her in life (2013)</li> <li>– [Name] gained confidence and seems to be mixing more with other kids rather than playing on her own (2016)</li> <li>– [Name] has become more independent (2019)</li> </ul>
What do you think are the good things about camp?	Meeting children with experience of burn injury	<ul style="list-style-type: none"> <li>– He learnt that others have injuries and is less embarrassed, he is less aggressive with family members (2012)</li> <li>– I am happy my child had a chance to meet other young people with similar injuries (2015)</li> <li>– All the kids can relate to each other with their burns and they can build each other's confidence (2017)</li> </ul>
	Increased self-confidence, independence, and self-esteem	<ul style="list-style-type: none"> <li>– Helped my son be more confident (2014)</li> <li>– Her improved self-esteem has made a big impact on her socially (2016)</li> <li>– It teaches a child to be confident and independent and gives them a feeling of belonging (2019)</li> </ul>
	Camp programme	<ul style="list-style-type: none"> <li>– There are loads of well organised activities (2011)</li> </ul>

		<ul style="list-style-type: none"> <li>– The activities are incredible (2014)</li> <li>– The activities and doing things in the camp (2018)</li> </ul>
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Camp leaders from both camps thought “children gained from attending burns camp” with the theme of *Developing confidence and self-esteem* featuring after every camp and *Developing friendships and social skills* after every older children’s camp and most younger children’s camps; a selection of quotes is illustrated in Table 6.

**Table 6.** Camp leaders repeated themed qualitative responses post-camp, responses from both younger children’s (YC) and older children’s (OC) camps are included.

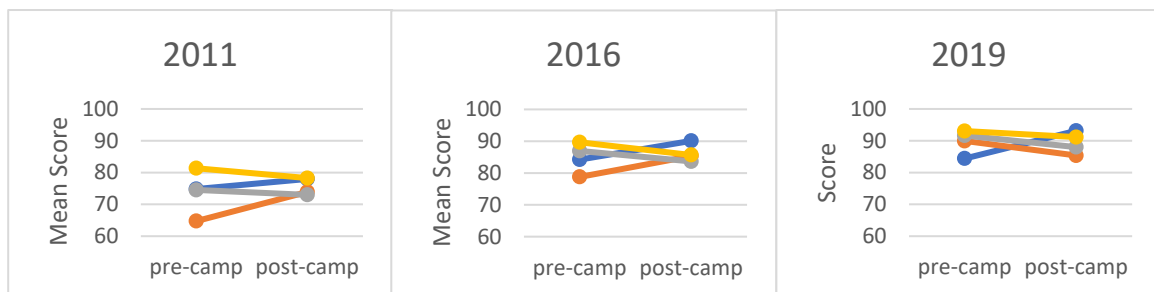
Question	Theme	Illustrative Quotes
Did you feel the children gained anything from Camp?	Develop confidence and self-esteem	<ul style="list-style-type: none"> <li>– All the children grew in confidence over the week and were able to try lots of activities they had never done before, or thought that they would be able to do but did (2013-YC)</li> <li>– Increased confidence, especially around body image (2011-OC)</li> <li>– You could see the confidence of a new camper in my group grow, he talked about his burn injury with the other children openly and joined in the public swimming session at the end of the week with no difficulties (2013-OC)</li> </ul>
What do you think worked well at Camp?	Camp leader team	<ul style="list-style-type: none"> <li>– We had an amazing group of leaders who worked really well together and provided a good skill mix to meet the needs of the group (2019-YC)</li> <li>– We had a really good staff team who worked well together and put a lot of effort into making the campers feel safe and supported (2017-OC)</li> <li>– Having previous campers now as adult leaders has an obvious positive message, I thought their contribution was invaluable this year (2019-OC)</li> </ul>

Other themes which appeared most years included *Learning to cope with a burn injury* (younger children) and *Developing peer support* (older children). Leaders were also asked about how the camps were run; in every year comments were made about the *Camp programme* and the importance of the *Teamwork between Camp Leaders* in delivering the range of camp activities and providing the rehabilitative support to the children.

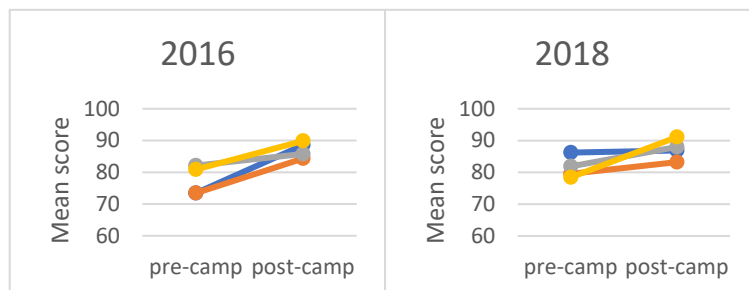
### 3.2. Quantitative responses

The return rate for the post-camp outcome measure questionnaire was the same or slightly higher than the free response questionnaire, occasionally families would skip the Likert scale and free response page. The outcome measures data is more variable than the qualitative responses; the paired pre- and post-camp data is often quite similar with only small differences between the mean scores for each of the individual measures. However, as can be seen in Figure 1, parents/carers of older children reported a statistically significant improvement in psychosocial functioning in 2011 ( $p=0.045$ ) and 2016 ( $p=0.022$ ) and in physical functioning in 2019 ( $p=0.031$ ). Parents/carers of younger children also reported a statistically significant improvement in both physical and psychosocial functioning in 2016 ( $p=0.031$  and  $p=0.039$  respectively) and family functioning in 2018 ( $p=0.016$ ). A statistically significant decrease in the health-related quality of life subscale was reported by parents/carers of older children in 2014 ( $p=0.031$ ) and 2018 ( $p=0.049$ ); this could be due, in part, to the increased confidence of the teenagers exhibiting as being less compliant with parental/carer wishes. Some of the parents/carers reported this as an issue.

#### (a) Older Children's Camp



#### (b) Younger Children's Camp



**Figure 1.** Statistically significant improvements were seen in the parent/carer outcome measures following three of the (a) older children's camps (2011,  $p=0.045$ ; 2016,  $p=0.022$ ; and 2019,  $p=0.031$ ) and two of the (b) younger children's camps (2016,  $p=0.031$  (physical subscale) and  $p=0.039$  (psychosocial subscale) and 2018,  $p=0.016$ ). All Peds QL subscales are shown: physical functioning (blue), psychosocial functioning (orange), health related quality of life (grey) and family functioning (gold).

Only one of the children's measures gave a statistically significant improvement; in 2017, older children reported an improvement in psychosocial functioning with a  $p$  value of 0.018. The older children also reported an improved mean score in the CRIES8 measure in all ten years (data not shown) but they were not significant changes. It is worth noting that for first time campers reporting a pre-camp score of  $>17$  (indicating higher risk of post-traumatic stress disorder), this dropped below 17 in the post camp measures. Any camper reporting a score of  $>17$  was referred to the burns clinical psychologist for follow up. The SWAP measure, for those aged 13 and over, showed a small improvement or no change post camp. The number of returned questionnaires from children aged 8 – 10 attending the younger children's camps was too small to run statistical analysis.

#### 4. Discussion

Experiencing a significant burn injury is a traumatic event with children often spending a prolonged period of time in hospital away from family and peers. Transition back into normal routines and social spaces involves adjusting to both temporary (dressings and pressure garments) and long lasting (e.g. scarring) changes to appearance. Burns camps aim to provide a safe space for children to face the challenges of recovery in a fun, supportive and affirming environment.

Our qualitative findings show children who attended a weeklong burns camp do indeed report positive benefits at the end of the camp programme that were maintained at the post camp follow up six weeks later. Whilst a spread of responses can be seen on the Likert scales, the majority are at the top two points of the scale, showing that both children and their parents/carers felt strongly that the burns camp programme helped them/their child in a number of ways.

Consistent themes were observed from the free response comments in all ten years of the evaluation covered by this report. Meeting other children with burn injuries shows children they are not the only one with burn scars and facilitates the development of peer support networks which are often maintained outside the camp environment. We have several cohorts of campers who are now in their 20s and 30s who still maintain these friendships and support each other on an ongoing basis (personal communication). Some have gone on to train as volunteer burns camp leaders and are now an invaluable part of the programme, providing unique support for children based on their lived experience. This highlights the value of creating a supportive environment for children to expand their support networks through validation and connection to a shared experience of a potentially isolating and life-altering injury [6]. In this context, children and their parents/carers reported that the camp experience restored confidence and facilitated adjustment to the life changes brought about by the injury experience with coping strategies learned from each other.

The responses received from parents/carers post camp echoed those of their children; with developing confidence, self-esteem and independence as well as being able to talk to other children with burn injuries cited as ways in which attending burns camp helped their child. This is consistent with other qualitative reports in the burn's literature [7–10].

This feedback also highlighted the importance of having a good burn camp leader team who work well together to support the range of activities provided at camp and any psychosocial support required.

In 1997, Marion Doctor commented, "While it is commonly observed that young people are positively affected by the camp experience, quantification of that differentiation has proven somewhat elusive" [22]. Gaskell in 2007 [7] and a recent review by Kornhaber et al [23] both highlighted the inconsistencies between positive qualitative data and non-significant changes seen with quantitative data. By changing the outcome measures used in our pre- and post-camp questionnaires, we hoped to improve our quantitative data set and demonstrate quantifiable benefits of attending a burns camp. Significant improvements were observed for both the physical and psychosocial subscales of the parent/carer PedsQL measure for both younger and older children on occasions, but not consistently over the period of study. However, unlike Rimmer [15] and Armstrong-Jones [16], we did not see any significant changes in participants' satisfaction with their appearance post camp. This could be due to a smaller sample size and/or to a higher satisfaction level to start with. The hypothesis that the significant decrease in health-related quality of life reported by parents/carers on two occasions maybe due to children's improved confidence post-camp is also suggested as a possible explanation for the lower Strengths and Difficulties Questionnaire score reported by parents in the Armstrong-Jones study [16]. As previously discussed, the three outcome measures chosen are not burns specific and so the measures may not be sensitive enough to pick up changes in small cohorts of burns patients. Amalgamating the data into a single data set to increase the sample size would not be a valid comparison because each camp is different with a slightly different programme, different cohort of children and in some year's very different external variables (e.g. weather) which all have an impact.

## 5. Conclusions

Over a period of ten consecutive years, children attending a regional residential burns camp consistently reported the benefits of the programme to include meeting other burn-injured children and developing confidence and self-esteem. This was echoed by both their parents/carers and camp leaders. As with many other studies, the quantitative measures did not reliably match the qualitative data throughout but did provide corroboration in some years.

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