

Effectiveness of child-friendly spaces on the personal well-being of school children: a double-blind, non-randomised control trial

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Summary Background. During humanitarian crises, women and children are particularly vulnerable to morbidity and mortality.

Objectives. In response to the level of personal well-being of internally displaced children living outside the IDP camps of Zakho District, we applied a Child-Friendly Space (CFS) programme in the community centre of a non-governmental organisation for two months.

Material and methods. In this non-randomised parallel controlled trial, internally displaced children living in the Zakho district in Iraqi Kurdistan were assigned to an experimental ($n = 36$) or control group ($n = 36$). The children in the experimental group were entered into a two-month CFS programme, including music, painting, dancing, critical thinking games and recreational activities. The CFS programme was designed based on the UNICEF guidelines of CFS establishment.

Results. The children were similar in age (9.86 vs 9.58 years; $p = 0.428$), sleeping hrs. (8.78 vs 9.28 hours; $p = 0.294$) and gender (male: 58.3% vs 50.0%; $p = 0.478$) in the control and experimental groups, respectively. The study showed that following the study period, the children in the experimental group were significantly happier about what they have (mean: 9.2 vs 7.0; $p < 0.001$) and were happier about how safe they feel (8.3 vs 7.00; $p = 0.0085$) compared to the children in the control group. In addition, the children of the experimental group had significantly higher mean scores of personal well-being compared to the children in the control group (8.4 vs 7.7; $p = 0.0074$).

Conclusions. This study showed that the CFS programme is an effective technique to improve the level of personal well-being and sense of security and safety of children.

Key words: child-friendly spaces, personal well-being, psychosocial well-being.

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Background

Humanitarian crises put children at a wide range of risks. Conflict and natural disasters expose children to fatal and adverse events, as well as considerable risks related to family separation and displacement. These events could be neglect, sexual exploitation or abduction [1]. Exposure to disasters and traumatic events result in further challenges to psychosocial well-being [2].

The Islamic State in Iraq and Syria (ISIS) attacked the Yazidi community of Sinjar, in Iraqi Kurdistan, on 3 August 2014. Several men and women were executed within a few days. The women and girls who were executed were as young as nine, along with some being kidnapped, sold, sexually enslaved, beaten or forced to work. The boys were ripped from their families and forced into ISIS military training camps [3]. Based on a retrospective household survey conducted, close to 10,000 Yazidis were either killed or kidnapped during the ISIS assault [4].

The ISIS fighters converged on the Sinjar (a majority Kurdish populated area) in Iraqi Kurdistan after they left their bases in Iraq and Syria in the early hours of 3 August 2014. The Sinjar town and 81 villages are spread around the base of Mount Sinjar, an arid 100-kilometre-long mountain range. The ethnic groups of the Sinjar, including Sunni and Shia Arabs, Kurds, Turkmen and Christians, suffered in different ways in the ISIS attack

[5]. The majority of these people reached the Kurdistan region by mid-August 2014. The Kurdistan Regional Government (KRG) provided temporary shelters in hundreds of informal settlements, including schools, mosques, community spaces and unfinished buildings. Later, the internally displaced people (IDP) were settled in some newly built camps. More than 300,000 Yazidis were settled in different areas of the Kurdistan region. Some of these IDPs are still scattered in construction sites and unofficial tented settlements. Close to 10,000 individuals remained in tents on the north side of the Sinjar Mountain under Kurdish supervision and control. Roughly 15,000 were reportedly settled temporarily in refugee camps in Syria, and at least 30,000 crossed the border and were settled in Turkey [6, 7]. Previous studies have reported that the internally displaced children of the Sinjar district were severely traumatised (DSM-5 PTSD – post-traumatic stress disorder) after the ISIS attack in 2014 [8–10].

Child-Friendly Spaces (CFSs) are considered to be a standard approach to meet the protection and psychological needs of children during natural and manmade emergencies [11, 12]. CFSs are considered to be a means of providing a temporary and safe environment for children to establish a sufficient level of normalcy to support their personal well-being during extreme conditions [11]. CFSs are attractive to facilitators and are flexible in adapting diverse activities in challenging contexts, as well as being potentially cost-effective [13, 14].



Child-friendly spaces are initially established as a strategy in response to the required action for integrated support for children in emergencies, especially in societies with a weak or no environment for children. These spaces provide convenient and community-based mechanisms for a broad range of ages. CFSs are considered to be the most appropriate operational strategy to provide core commitments for children in emergencies and during their aftermath [11]. At present, there is no evidence on the effectiveness of CFS programmes on the personal well-being of children in IDPs integrated with host communities, especially in Iraqi Kurdistan after the ISIS attack.

CFSs have been used as part of a humanitarian response in the Middle East region (including Lebanon, Jordan, Turkey and Iraq), sub-Saharan Africa, south-east and south Asia and Latin America [15]. CFSs have been established to operate for the first six months of a crisis. However, traumatic events have long-term effects on children, resulting in continuous exposure of children to CFS activities. There is an evident gap in the effectiveness of CFS activities on the psychological impacts on IDPs who were integrated with host communities in literature.

In this study, a CFS is defined as a programme that ‘supports the resilience and well-being of children and young people who have experienced disasters through community organised, structured activities conducted in a safe, child-friendly and stimulating environment’ [16].

Objectives

This study aimed to evaluate the effectiveness of a child-friendly space programme on the personal well-being of school children after humanitarian emergencies. We hypothesised that the personal well-being of the children who participated in the CFS programme would be improved compared to children who did not participate in the programme.

Material and methods

Study design, target population and sampling

In this quasi-experimental study, we asked the parents of IDP children who visited a non-governmental organisation to involve their children in a two-month child-friendly programme. The parents visited the “Women Rehabilitation Organization” (WRO) for the activities of self-resilience and empowerment. In this regard, the parents who agreed to involve their children in a child-friendly programme were included in the experimental group. We considered the age and gender of the children and the educational levels of the parents when including some other children in the control group. The children in the experimental group received a two-month child-friendly spaces programme in the determined space of the NGO.

The target population of this study was school children aged 6–12 years of both genders with different socio-demographic aspects who lived in the Zakho district outside the IDP camps. The parents of these children had different socio-demographic characteristics. They were Yazidi populations internally displaced by the Islamic State in Iraq and Syria (ISIS) and originated from Sinjar district and its suburbs.

The mothers of the children participated in sewing training held by the WRO. This training programme gave us the opportunity to ask them to include their children in a child-friendly programme. Children of both genders, aged 6–12 years and who lived in the Zakho district outside an IDP camp, regardless of other socio-demographic aspects, were eligible for inclusion in this programme. In this experimental study, of the total 38 parents who were invited to take part in the programme, only two parents did not accept to include their children in this programme due to social and familial problems. The children in the control group did not receive any intervention. As a criterion,

children who participated in less than two sessions per week were not included in the analysis. We did not exclude any children from the study due to this condition.

The second author of this study checked the general and socio-demographic aspects of the mothers and children for the eligibility criteria. The children who met the eligibility criteria were invited by their mothers to participate in this study. Children who had diseases that did not allow them to participate in the programme were not eligible to take part in this study. The children had to follow the instructions of the facilitator in terms of physical activity and some other entertainment activities; therefore, children with diseases were unable to involve themselves with other children in the programme.

Blinding and allocation concealment

To establishment the blind groups in this study, the children and mothers were masked for the purposes of the study. The second author, as an employee of the WRO, asked the mothers to include their children in a child-friendly space programme for two months. The required coordination was made with the NGO before the application of the programme. The child-friendly space programme was funded by the WRO NGO as part of their routine rehabilitation programmes. The mothers of the children in the control group were also not included in the sewing training course. This allowed us to conceal the allocation in this study. In other words, the children and their parents in both the experimental and control groups were not aware of this intervention and comparison. The mothers and children in the control group did not know that we were holding a CFS programme in an NGO environment. The mothers and children who were included in this study lived in the Zakho district outside an IDP camp; therefore, it provided us another good chance to carry out the concealment between the two groups.

Intervention

Two interventions were applied to the children and mothers in the experimental group in this study. The mothers were entered into a sewing training programme for two months. Meanwhile, the children were entered in a CFS programme for the same period as their mothers. The sewing training course was outside the scope of this study, and we only took advantage of this training to include their children in a CFS programme. In addition, the children were the target population of the study. The outcomes of interest of the study were measured before implementation of the programme and after two months in both the experimental and control groups by the second author. The assessor of the study outcomes was the second author, who is different from the facilitator.

The intervention was performed by four facilitators from the WRO NGO, as the programme was performed by the same NGO. However, the required information to apply the CFS programme was given to the facilitator by the second author (programme supervisor). The CFS programme was applied for three days per week for two months. Each session lasted for two hours, parallel to the time of the sewing training course. The facilitators were trained by the supervisor concerning the detailed steps of the programme. In addition, the process of implementation of the programme was monitored by the supervisor for ongoing support and possible technical issues. The supervisor (second author) included two males and two females to consider the cultural aspects of the IDP communities. The children were divided into four equal groups ($n = 9$). One male and one female facilitator worked together and were responsible for two groups of children. These four facilitators carried out the required coordination for the time of the activities. The sessions were implemented in the morning and evening, according to a previously determined plan.



Figure 1. Views of the CFS

The project was sponsored by the US government and implemented by the WRO. The CFS programme was arranged and implemented based on the “Save the children guidelines”. The activities of this programme included dancing, recreational activities, painting and critical thinking games.

The following five principles were determined by the guidelines developed by UNICEF called “A Practical Guide for Developing Child-Friendly Spaces” [11]. The main principles of child-friendly spaces recommended by UNICEF are:

- Principle 1: CFSs are secure and “safe” environments for children;
- Principle 2: CFSs provide a stimulating and supportive environment for children;
- Principle 3: CFSs are built on existing structures and capacities within a community;
- Principle 4: CFSs use a fully participatory approach for the design and implementation;
- Principle 5: CFSs provide or support integrated services and programmes;
- Principle 6: CFSs are inclusive and non-discriminatory.

The current programme was established by the WRO NGO based on the initial assessment of the needs of the children who live in the Zakho district outside the IDP camps. The NGO attempted to establish a safe and contextually suitable programme. This programme was determined by the NGO to enhance the psychological well-being of the children as part of psychosocial support. The programme was implemented in the summer between 15/5/2019 and 20/7/2019 in the Women Center in Zakho. The Center belongs to the WRO NGO.

The types of activities were changed every week to avoid a repetitive environment for the children. In addition, the facilitators performed different activities during each session of the week. The same plan was applied by two different groups of facilitators to the children in four groups.

The activities of the programme were planned as follows for each session per week: Firstly, the children were asked to listen to 15-minutes of music in the community centre. The pieces of music were joyful and were changed weekly and daily

to avoid boring the children. After listening to the music, the children were asked to dance for 20 to 30 minutes. Afterwards, A4 papers were given to the children to make their favourite paintings. The children were given examples of desirable paintings, such as flowers, birds, nature, houses and trees, to use as a guide for their paintings. The painting sub-session lasted for 20 to 30 minutes. The children were then given some critical thinking games to perform for 15 minutes. Lastly, the children were asked to perform recreation activities around the building for 30 minutes. The recreation activities were safe in terms of physical and psychological environments (Figure 1).

The facilitators guided the children for all types of activities that were performed in the community centre. They guided to children to work together safely and to help each other in painting and gaming activities. They were also asked to sit together and help each other when painting. The supervisor guided the facilitators to help the children to communicate with each other within the activities. In addition, they were monitored during recreational activities so as not to harm each other during these activities.

Measurement criteria

The Personal Well-being Index – School Children (PWI-SC) was translated into Kurdish language, and accordingly into English. The PWI-SC is designed for use with school-age children and adolescents and uses a 0–10 Likert Response Scale to rate the question items. The scale has 7 question items to measure the personal well-being of school children. The domains measured by this scale were standard of living, personal health, achievement in life, personal relationships, personal safety, feeling part of the community and future security. The assessor receive the responses of the children based on the 11-point happiness scale, which indicates the two response anchors of ‘very sad/very happy’ and the neutral mid-position of ‘neither happy nor sad’. On this scale, zero means one feels very sad, and 10 means one feels very happy. The middle of the scale is 5, which means one feels ‘neither happy nor sad’. The test asses-

sor holds the questionnaire for the children to select the level of happiness [17]. The outcomes were measured by a separate trained facilitator (other than the four facilitators (interventionists)) to avoid measurement bias.

Statistical methods

General information concerning the children was presented as mean and standard deviation or number and percentage. The homogeneity of general information between the control and experimental group was examined using the independent *t*-Test and Pearson Chi-squared test. The comparison of personal well-being between the two study groups was examined using an independent *t*-Test. The significant level of difference was determined as a *p*-value of less than 0.05. The statistical calculations were performed using Statistical Package for Social Sciences version 25 (SPSS 25; IBM Corp; USA). The effect size was determined using G*Power 3.2.9 statistical software. Cohen's *d* effect size was determined as 0.2 (small effect size), 0.5 (medium effect size) and 0.8 (large effect size).

Sample size determination

The sample size was calculated using G*Power 3.2.9 statistical software. The authors measured the personal well-being of five children randomly by PWI-SC. The mean score of the five measured children was 6.50 (SD: 1.25). The authors expected that the mean score would reach 7.50 (SD: 0.95) using a two-sided effect size of 0.90 (large effect size), α error prob (0.05) and power 0.95. The total sample size required for the project was 68, which included 34 in each group. 72 children were registered in the NGO; therefore, the children were divided randomly into two groups. The project was applied as an initial evaluation of the designed intervention by the NGO. The children in the control group were included in the same activities when project assessment was accomplished.

Ethical approval

Permission to implement this CFS programme was obtained by the WRO from the Duhok Governorate in 2019. In addition, we obtained permission to implement this study from the Board of Rehabilitation and Humanitarian Affairs (BRHA) and the WRO NGO. Written consent to include the children was obtained from all parents. In addition, we obtained written consent from the parents to include the photos of their children during the activities in catalogues, on website or in other publications.

Results

The children were similar in age (9.86 vs 9.58 years; $p = 0.428$), sleeping hrs. (8.78 vs 9.28 hours; $p = 0.294$) and gender (male: 58.3% vs 50.0%; $p = 0.478$) in the control and experimental groups, respectively (Table 1). The study did not find a significant difference in personal well-being before and after the CFS programme in the control group, though personal well-being was significantly improved after completion of the CFS programme in the experimental group after two months. There was no significant difference in the mean score of personal well-being between male and female children in the control and experimental groups after two months (data not shown).

The study showed that following the entertainment period, the children in the experimental group were significantly happier about what they have (9.2 vs 7.0; $p < 0.001$) and were happier about how safe they felt (8.3 vs 7.00; $p = 0.0085$) compared to the children in the control group. In addition, the children in the experimental group had significantly higher mean scores of personal well-being compared to the children in the control group (8.4 vs 7.7; $p = 0.0074$). However, the children in both the experimental and control groups were similar in other items of personal well-being (Table 2). The study showed that the personal well-being of the children significantly decreased with increasing age (*r*-value: -0.356; *p*-value: 0.0329) (Table 3).

Table 1. Comparison of general information between the control and experimental groups

Children's characteristics	Control (n = 36)	Experimental (n = 36)	<i>p</i> two-sided
Age (year) mean (SD)	9.86 (1.53)	9.58 (1.42)	0.428*
Sleeping hrs. mean (SD)	8.78 (2.18)	9.28 (1.81)	0.294*
Gender (%)			0.478**
male	21 (58.3)	18 (50.0)	
female	15 (41.7)	18 (50.0)	

* Independent *t*-Test, ** Pearson Chi-squared tests were performed for statistical analyses.

Table 2. Differences of personal well-being between the control and experimental groups

Personal well-being items	Study groups mean (SD)		Effect size (Cohens' <i>d</i>)	<i>p</i>
	Control (n = 36)	Experimental (n = 36)		
How happy are you... about the things you have?	7.0 (2.0)	9.2 (1.3)	1.30	< 0.001
How happy are you... with your health?	8.3 (1.4)	8.7 (1.6)	0.27	0.3528
How happy are you... with the things you want to be good at?	7.9 (1.7)	8.3 (1.5)	0.25	0.3161
How happy are you... about getting on with the people you know?	7.8 (2.1)	8.2 (1.6)	0.21	0.3448
How happy are you... about how safe you feel?	7.0 (2.2)	8.3 (1.7)	0.66	0.0085
How happy are you... about doing things away from your home?	8.2 (1.7)	8.4 (1.8)	0.11	0.5962
How happy are you... about what may happen to you later on in your life?	7.5 (1.7)	8.1 (1.8)	0.34	0.1698
Mean personal score	7.7 (1.2)	8.4 (1.1)	0.61	0.0074

* Independent *t*-Test was performed for statistical analyses. The bold numbers show the affected categories of personal well-being.

Table 3. Correlation of age with the mean score of personal well-being of children in the experimental group

	Value	95% Confidence Interval		<i>p</i>
		Lower 95%	Upper 95%	
Correlation	-0.356	-0.613	-0.031	0.0329*

Bivariate correlation was performed for statistical analysis.

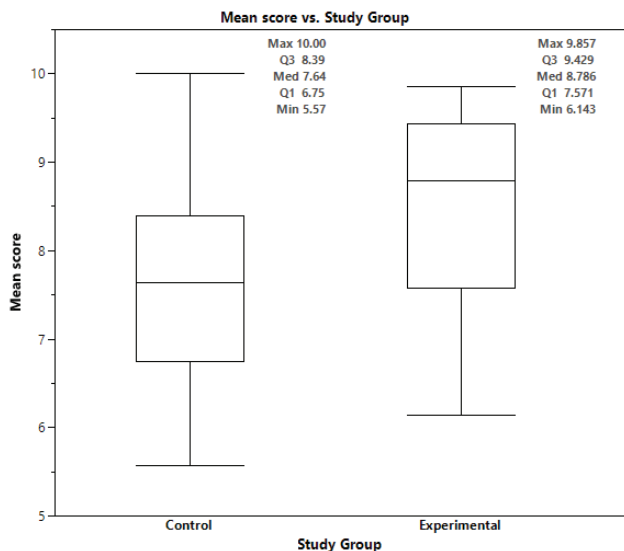


Figure 2. Comparison of mean personal well-being score between the control and experimental groups

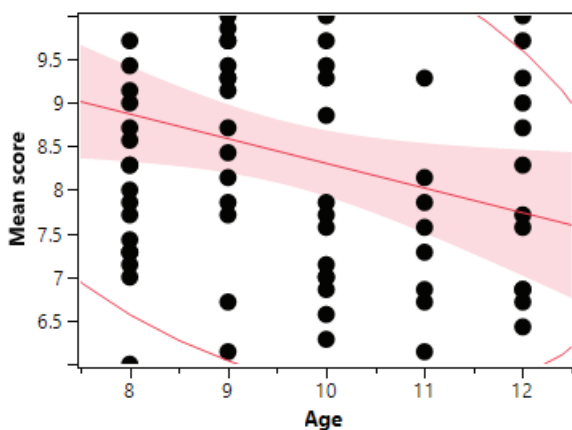


Figure 3. Correlation of age with a mean score of personal well-being in the experimental group

Discussion

This study showed the CFS programme is an effective technique to improve the level of personal well-being and sense of security and safety of children. The effectiveness of CFSs on children's well-being has been examined in other regions as well. For example, a multi-setting study examined the effects of a CFS programme on protection concerns, psychosocial well-being, developmental assets and community resources among 1,010 children and 1,312 carers in catchment areas in Ethiopia, Uganda, Iraq, Jordan and Nepal. They reported a substantial improvement in protection concerns, psychosocial well-being and developmental assets in children aged 6–11 years. The pooled analyses showed a significant improvement only for psychosocial well-being [18].

The main point of this study is that the children who were included in the CFS programme felt that they are safer compared to those children who did not participate in CFS activities. CFSs play the role of a mechanism for protecting children

from abuse, exploitation and violence, as they establish a safe environment for children. The children feel safe when they play in a secure physical space under the supervision of local facilitators. In addition, CFSs aim to improve the psychosocial well-being of children and available resources through structured activities organised by local facilitators [18]. The mean levels of feeling safe in the control and experimental groups were 7.0 and 8.3 (effect size: 0.66), respectively. The high score of feeling safety among control group (score = 7.0) could be related to their integration in the host community (the sample included in this study live in the Zakho district not in the IDP camps). We believe that the participation of the children in group activities (including music, songs, games, recreational and educational activities) has been substantial in assisting them in building self-esteem and emotional self-regulation, as well as coping strategies. In this study we created the small groups of children and we asked them to communicate and discuss the assignments to each other. This is why we believe that the children felt safer and happier for the things they have. A systematic review of 10 reports of outcomes of CFSs showed positive outcomes concerning psychosocial well-being [13], and similar positive effects were reported elsewhere [19–21].

The difference in the outcomes of this study compared to other reports may back to the strength of the CFS used in this study. Because we included the children in different entertainment activities. In addition, the CFS may have a different effect between geographic areas. This study showed that CFSs are significantly more effective concerning the happiness of children, followed by a feeling of safety. Large (effect size: 1.30) and moderate (effect size: 0.66) effect sizes were found for happiness and a feeling of safety, respectively. Literature has reported different effect sizes for the CFS programme. For example, Panter reported a more modest effect (0.13) of the CFS on safety for younger children. However, they reported moderate impacts of CFS on insecurity (effect size: 0.30), as well as distress and well-being (effect size: 0.40) in an eight-week stress management programme [21]. The difference in the outcomes may back to the quality and activities of the CFS and the step of a crisis across various geographic areas, or the interventions must be established based on the interests and circumstances of children in humanitarian settings.

The good score of personal well-being of the children in the control group may back to their integration in the hospital community. Integration of the children into the host communities provides opportunities for families to exchange cultural and behavioural aspects between each other. A study conducted in this region claimed that the Yazidi population feels safer when they see that Muslims are surrounding them and welcome them into their homes. The Muslims in the Duhok governorate welcomed the Yazidi IDP and assisted them on the day of the ISIS attack [10]. When individuals feel psychologically safe, they can engage in experiences and interactions throughout life. Therefore, we believe that the current level of psychological safety in children will establish an opportunity for IDPs to overcome the stress of traumatic events. In addition, psychological safety enables IDP children to up-regulate, or actively engage, because they feel that they are in the right direction of development [22], as this decreases barriers to engagement. It also allows individuals to freely practice communication, integration and interaction with the external world.

Limitations of the study

The first weak point of this study is that the technical aspects did not allow us to randomly allocate the children into the

experimental and control group. In addition, we did not compare the outcomes of the study with a group from the host community. However, we tried to adhere to the principles of UNICEF in establishing a CFS in this study.

Conclusions

This study showed that participation in the CFS programme is an effective technique to help children feel safer and happier.

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Conflicts of interest: The authors declare no conflicts of interest.

In addition, it is an effective technique to improve the overall personal well-being of children.

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