

# Sport for Development and Psychosocial Wellbeing in Displacement Settings: A Quasi-Experimental Study from the Kurdistan Region of Iraq

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## ORIGINAL ARTICLE

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## ABSTRACT

Over the last decade, the number of refugees and internally displaced persons (IDPs) has sharply increased across the globe, and sport has become one increasingly prominent tool used in displacement settings to support psychosocial well-being amongst these vulnerable populations. Despite the growing use of sport in displacement contexts, evidence concerning the outcomes of sport-based interventions remains limited, especially as it concerns intervention delivered directly within the camp context. To help address this gap, we present the results of a quasi-experimental study of a sport-based intervention taking place in three IDP camps in the Kurdistan Region of Iraq. This paper focuses on the outcomes of the intervention on the psychosocial well-being and socio-emotional competencies of participating children and youth. Results show that trial group participants had significantly higher levels of psychosocial wellbeing and socio-emotional competencies following the programs, though the latter with only a small effect size. Furthermore, the increase in psychosocial wellbeing is stronger for participants in mixed-gender teams and those who live within camp settings. Overall, though there are limitations to this intervention, these results likely highlight the importance of long-term interventions featuring well-trained coaches who are sensitive to local context and realities.

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## Keywords

sport for development; health; wellbeing; international development; refugees

## Introduction

Over the last decade, the number of refugees and internally displaced persons (IDPs) has sharply increased across the globe. Between armed conflict, political instability, and natural disasters, there are currently over 100 million forcibly displaced individuals across the globe (United Nations High Commission for Refugees; UNHRC, 2023b). People in situations of forced displacement face multifaceted challenges related to both their immediate safety and long-term wellbeing. Thus, given the multiple needs of these groups, special attention is required to preserve their mental health and overall psychosocial wellbeing (Inter-agency Standing Committee; IASC, 2007; Ventevogel et al., 2015). As the UNHCR notes, adequate levels of psychosocial wellbeing are essential for refugees or IDPs to cope with challenges, pursue economic opportunities, and care for their loved ones (UNHRC, 2023a; Ventevogel et al., 2015). And more broadly, this growing focus and recognition of psychosocial wellbeing is part of a long-standing shift towards a more holistic understanding of health. Thus, health has become understood as more than mere physical wellbeing but includes mental, spiritual, and emotional aspects while also recognising that social conditions and systems influence overall wellbeing (Eiroa-Orosa, 2020; Engel, 1977; Kumar, 2020).

Following this more holistic understanding of health, sport has become one increasingly prominent tool

used in displacement settings to support psychosocial well-being among these vulnerable populations (Ley & Barrio, 2019). Both scholars and development agencies recognise sport as a low-cost, accessible tool that can help promote mental health and support the development of many crucial life skills associated with psychosocial wellbeing (Deutsche Gesellschaft für Internationale Zusammenarbeit; GIZ, 2022; Ley & Barrio, 2019; UNHRC, 2022a; Wiedemann et al., 2014). In line with this recognition, numerous development agencies and non-governmental organisations (NGOs), especially within the burgeoning Sport for Development (S4D) movement, have worked to implement sport-based interventions focusing on refugee or IDP wellbeing (Gadai et al., 2022; Spaaij et al., 2019; UNHRC, 2022a). Broadly speaking, S4D is defined by the intentional use of sport and play to achieve broader social outcomes and, therefore, often relies on adapted sporting pedagogies that focus on positive social interactions and the development of personal skills as opposed to competition or the promotion of sporting abilities. For instance, S4D activities focusing on displaced persons have taken place in camp (Adamakis, 2022; Richards et al., 2014), arrival (Block & Gibbs, 2017), and educational settings (Papageorgiou et al., 2021).

Though there is some tentative evidence supporting the connections between sport or S4D activities and psychosocial wellbeing, scholars have identified several critical issues within the literature. From an implementation perspective, there are concerns that interventions are not sufficiently trauma-sensitive and do not consider the cultural context of the targeted population groups (Ley & Barrio, 2019; Spaaij et al., 2019).

In other words, there remains a need to offer locally relevant activities that ensure a sense of safety while being mindful of potential triggers within the physical activity context. From a research perspective, reviews have generally found evidence in the field to be mixed (e.g. Adamakis, 2022; Richards et al., 2014) and based on methodologically weak approaches (Hansell et al., 2021; Whitley et al., 2019). Furthermore, existing research connecting sport and forced displacement predominantly focuses on the social inclusion of refugees arriving in the Global North (Spaaij et al., 2019), and this despite the increasing number of sport-based initiatives taking place in camp settings both in the Global North and South (cf. Gadais et al., 2022; UNHRC, 2022a).

It is against this background that this paper situates itself. In the following, we present the evaluation of a collaboratively developed, trauma-sensitive S4D intervention taking place in three IDP camps in the Kurdistan Region of Iraq. To generate results, this study uses a quasi-experimental approach to assess the impact of the intervention on the psychosocial wellbeing and socio-emotional competencies of participating children and youth. As such, through the design, setting and location of the study, we seek to address concerns regarding the quality of evidence and Global North focus within this particular area of research. Moving forward, we will first present in more detail the context and nature of the intervention studied. Afterward, the methodology of the study will be outlined. Finally, results will be presented, and their implications discussed.

## Context and Intervention

Iraq faces some of the highest levels of internal displacement in the world. Due to instability caused by the continued threat of Islamic State in Iraq and the Levant (ISIL) and various natural disasters, 1.2 million people were still living in displacement across the country as of the end of 2022, most of whom reside in informal or camp settings (Internal Displacement Monitoring Center, 2023). Iraqi IDPs face high levels of unemployment and food insecurity, which in turn

threatens their overall wellbeing and pushes many into detrimental coping strategies such as “taking their children out of school, selling productive assets, becoming involved in crime, and early marriage” (Internal Displacement Monitoring Center, 2023). In response to the needs presented by this situation, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, in collaboration with NGOs and university partners, has worked to develop S4D activities promoting psychosocial wellbeing within IDP camps and host communities.

To implement the activities on the ground, GIZ partnered with the NGO Friends of Waldorf Education (FWE). Over a period of 5 years, local FWE staff were trained in international emergency and trauma pedagogy, thus giving this staff tools to aid local youth and help them process traumatic experiences (see Friends of Waldorf Education, 2024). In order to minimize the impacts of trauma and to stabilize children living in IDP and refugee camps, humanitarian organisations, including FWE, have been attempting to establish and run local “Child Friendly Spaces” since 2015.

These “Child Friendly Spaces” are safe areas dedicated to children and youth who have survived traumatic experiences and are living in hardship conditions. Here FWE Trauma Pedagogy Practitioners seek to create an environment characterized by structural and emotional safety and continuity. Starting in 2019, GIZ worked with FWE to implement S4D activities in Child Friendly Spaces within three IDP camps located in the Kurdistan Region of Iraq in Duhok Governorate (Bersive I, Bersive II and Chamishko). Further activities also took place in the host community of Zakho. Twelve Trauma Pedagogy Practitioners teamed up with seven sport graduates from the University of Zakho, forming coaching teams that allowed programming to combine trauma-sensitive approaches with local, culturally relevant knowledge and context. Overall, eight coaches came from IDP backgrounds, and 11 from the host community, 11 coaches were male, and eight coaches were female, with an age range of 25 to 35 years old.

Before implementing activities for youth, these 19 coaches took part in a multi-faceted training program

between 2019 and 2021. The first training consisted of a four-day workshop focusing on core S4D principles (see GIZ, 2022). Namely, this training focuses on intro-

ducing the basics of S4D and its pedagogical principles. These principles are outlined in Table 1.

**Table 1**

*Overview of GIZ S4D Pedagogical Principles (see GIZ, 2022; Raub & Broermann, 2023)*

Principle	Description
Multi-Dimensional Development of Participants	An S4D training session should always foster the multidimensional development of the participants, i.e. cognitive, social, physical and sport-related development.
Developing Life Skills/Competencies	The aim of S4D is to integrate life skills/competencies into training sessions in a way that allows youth participants to incorporate them into transfer them to their daily life contexts.
Roles and Responsibilities of a Coach	A S4D coach must always act as a role model on and off the pitch. The coach is the one who will be in direct contact with the youth participants and will not only have an impact on the individuals themselves but also on their communities. It is, therefore, essential that he/she is aware of his/her different roles and responsibilities.
Appropriate Educational Goals	Appropriate educational goals are essential when developing the sporting and life skills/competencies of youth participants. Put simply, the activities chosen by a coach as part of an S4D training session should neither be too easy nor too difficult for participants. They must always be adjusted to the personal and sociocultural context and background of youth participants to manage diversity.
Structure of a S4D Training	The transfer of life skills from the training field into daily life contexts is both the most important and the most difficult step. A clear training structure can help to facilitate this transfer and should always include sufficient time for discussion and reflection.

A follow-up workshop of two days in 2019 focused on trauma-informed football coaching to meet the needs of potentially traumatized children and youth. Along with receiving continuous individual support and supervision, all coaches participated in further education workshops during the pandemic, focusing on creating sportive online sessions during the lockdown as well as creating games following guidelines on social distancing. At the end of 2020, all coaches joined an additional one-and-a-half-day further education workshop on using sport to foster gender equality and prevent gender-based violence against women and girls, which was followed by further training in summer 2021 that aimed to prepare the coaches for delivering sessions with the children and youth that eventually joined the intervention this study is based on. In total, all coaches received a total of more than 110 hours of S4D training.

Afterwards, 20 football teams were formed (10 mixed teams, 10 male teams) that started regular training sessions twice a week in October 2021, either using the small-sided mini pitches at the Child-Friendly Spaces or bigger tented pitches near the respective camps as well as in the host community of Zakho city. In parallel, 10 of the 19 coaches were selected to receive additional weekly theoretical and practical training sessions on “Ultimate Flying Disc”, which was seen as an opportunity to deliver S4D sessions using a newer, more neutral, non-contact sport. Five Frisbee teams (one female team in the host community and four mixed teams in IDP camps) were eventually formed and started training in December 2021 following the same S4D coaching principles as the football teams. Complementing the regular trainings, participants took part in “Fair Play” leagues, open sporting evenings, and different thematic events. Overall, the choice to use football as well as Frisbee was taken

in order to reach children with both a popular, well-known sport as well as a newer, innovative sport that carries less sociocultural baggage with it.

Among the 25 teams, there were 20 teams with IDPs, 5 teams with members of the host community, 11 all-boys teams, one all-girls team and 13 mixed teams. Participants were divided into age-appropriate teams: 10-12, 13-15, 16-19 years old. Given the age differences and the fact that only about 27% of participants identified as female, it was decided to create fewer mixed teams that allowed for more girls to be together in one team, thus providing a more even mix of genders and ages and minimising the risk of exclusion by the majority gender within the activities. It proved to be challenging to increase the participant rate of girls, especially in the older age groups. This is due to prevailing societal traditions and culture.

All teams underwent one-hour sessions twice per week. Sessions were specifically designed to foster psychosocial wellbeing, to increase gender equality, and to contribute to preventing gender-based violence. Sessions were based on the manual “Sports Builds Gender Equality” (Sinjari & Barwari, 2022) specifically designed for that purpose and focused on contributing positively to identified challenges of children and youth through S4D’s social and life skill-based approach. The coaches followed a predetermined curriculum and were supervised by a S4D instructor who conducted multiple field visits.

All leagues followed the principles of “Fair-Play” which is based on an additional scoring system for fairness and team spirit. The “International Day of Sport for Development and Peace” was celebrated on the 6th of April with a tournament of all mixed football teams and the female team, while the ultimate frisbee teams joined a regional frisbee event in Dohuk in May 2022. The all-male football league celebrated the finals in June 2022 with a game festival.

## Methods

### *Design*

A quasi-experimental, longitudinal study design was used to examine possible impacts of Sport for Development (S4D) on children and adolescents’ psychosocial wellbeing, gender-related attitudes and behavioural changes towards gender norms and inclusive behaviour in the Kurdistan Region of Iraq. The present paper reports on the psychosocial wellbeing and socio-emotional competencies results, though preliminary results for all areas are available in a separate report (see Raub & Broermann, 2023). While the comparison group did not receive any type of treatment, the trial group participated in S4D activities twice per week for a duration of six to seven months. The standardized survey was digitized, and participants were interviewed by trained interviewers via tablets and an offline survey application. Before the endline was conducted, six focus group discussions were held with six participants each (36 in total).

The allocation ratio between the intervention and comparison group is 1:1. That means that 317 children and adolescents were assigned to the trial group, 319 to the comparison group. In total, 636 children and adolescents participated in the study. The gender ratio was 28% females in the trial group and 35% in the comparison group. The somewhat lower representation of female participants compared to males is due to difficulties in reaching girls for sport projects rooted in cultural and societal norms. The College of Physical Education and Sport Science at the University of Duhok has granted ethical approval for the study and the study was also approved by GIZ’s data protection unit. The anonymity of the participants is guaranteed by GIZ, and the General Data Protection Regulation by the European Union is applied. As the study’s target group is minors, approval for participation was obtained by parents or legal guardians beforehand.

For the study, a questionnaire was developed by the researchers and the GIZ team taking into consideration the specific project intervention and local context.



Items on psychosocial wellbeing were partially adapted from the KIDSCREEN surveys (see e.g. Ravens-Sieberer et al., 2005, 2007), while others were developed by the research and implementation teams. Items pertaining to socio-emotional competencies, perceived social cohesion, and attitudes related to gender equality as well as gender-based violence were developed wholly by the research and implementation teams in line with the goals of the intervention and previous experiences with similar research (see e.g. GIZ, 2022). After the first pilot, the questionnaire was readjusted to fit the age group and cultural context. A second pilot was conducted by the trained interviewers which resulted in further adjustments of the questionnaire. In particular, design, piloting and adjustments focused on ensuring that questions were clear, contextually appropriate and closely aligned to the goals of the intervention concerning improved psychosocial wellbeing, socio-emotional skills, and gender equality (Petry et al., 2020). Psychosocial wellbeing asks about the manifestation of feelings in the previous week (e.g., sad, lonely, safe, having fun). Socio-emotional skills measure communication (e.g., “it is hard for me to find the right words”), conflict resolution (e.g. “I know I am good at solving conflict”) and attitudes related emotional expression (e.g., “crying makes me look weak”). And gender equality asks various questions related to attitudes and behaviours concerning gender roles (e.g. in the household, in school). All items in the survey were mandatory, ensuring no missing values.

### **Participants**

To participate in the study the following criteria were applied for participants of the intervention and comparison group: Age 10 to 19, not having participated in any S4D activity before, being willing and available to participate in S4D activities twice per week (for trial group) and being from either an IDP camp (Bersive I, Bersive II and Chamishko) or the host community of Zakho in the Kurdistan Region of Iraq. The project location was predetermined by the GIZ project on-site and the local partner due to the possibility of access to

these camps. The ratio of IDPs and members of the host community is 4:1 as the focus of the S4D intervention was on IDPs. As mentioned, a balanced gender distribution of 50% male and female was aimed for but could not be attained due to cultural circumstances.

### **Selection, Randomisation, and Data Collection**

All children and adolescents participating in the evaluated S4D activities also participated in the study. The main selection criterion was not having participated in any S4D activity beforehand; the second criteria was the age group; the third the gender balance and the last one the school class. As the aim was to have children from the same school classes participating (due to logistics), school schedules were verified to see if they matched.

Selection of participants in the intervention was done using the non-probability sampling technique self-selection sampling along the above-mentioned criteria. Self-selection sampling was carried out through 19 S4D coaches who disseminated the information about the S4D intervention within the IDP camps. In the host community, the participants for the S4D intervention were selected from one school in Zakho, where GIZ had access. Thus, all children and youth in the three IDP camps and one school fitting the selection criteria and voluntarily agreeing to be part of the project were registered to participate. To achieve a 20% quota of host community participation in the intervention, self-selection sampling was paired with non-proportional quota sampling. One additional criterion for participation for the host community was school classes in the morning to ensure availability in the afternoon for S4D activities. Nonproportional quota sampling was also applied for the gender representation in both comparison and trial groups. Initially, the researchers aimed for a 50% gender quota but later had to reduce it to approximately 30% due to cultural circumstances. There were several dropouts in the first weeks which were replaced with mainly girls who had previously expressed interest in the intervention to elevate the female participation rate. Drop-outs happened for various reasons, including parents wishing that their chil-

dren focus more on school than sport or due to the start of the agricultural season. For the comparison group, children and adolescents fitting the defined criteria for the trial group were selected based on self-selection sampling and non-proportional quota sampling (for the host community quota).

While we acknowledge that especially self-selection sampling and using coaches to recruit participants contributes to some kind of selection bias, the coaches function as important gate keepers to the target group and without them, the target group would remain inaccessible. In addition, the coaches could directly answer any questions and allay concerns about the activities, conditions, and inclusiveness of the offers. Further, probability sampling would have provoked ethical concerns. Making an offer for participation in S4D activities and then randomly selecting participants would, at the same time, exclude others willing and hoping to participate. Especially in vulnerable

contexts such as IDP camps, such practices would create not only large disappointments but also possible conflict in already mentally strained children and adolescents. While randomization at the cluster level (camps) might be possible in theory, in practice, the number and access to such camps remain limited.

Ultimately, this process led to a sample of 310 participants in the trial group, and 319 in the comparison group. Data was collected from both groups as a baseline at the start of the S4D activities and endline data was collected at the conclusion of the programme. Local graduates from the University of Duhok were engaged to lead interviews and data collection within both groups to reduce risks of perceived social desirability that may have been present had coaches or GIZ staff done the interviews. Full demographic information, including age, gender, and context, is provided in Table 2.

**Table 2**

*Overview of participant demographic characteristics for trial and comparison groups.*

Demographic Characteristics	Trial Group (n=310)	Comparison Group (n=319)
<b>Age group*</b>		
10-12 years	89	101
13-15 years	162	152
15-19 years	56	48
<b>Gender n (%)</b>		
Male	225 (72.6%)	206 (64,6%)
Female	85 (27.4%)	113 (35.4%)
<b>Background n (%)**</b>		
IDP	246 (79.4%)	240 (80%)
Host	64 (20.6%)	60 (20%)
<b>Type of Sport</b>		
Football	246	
Ultimate Frisbee	64	
<b>Type of Team</b>		
Mixed Team	214	
Same Gender Team	96	

\*3 missing cases in intervention group \*\*19 missing cases in comparison group

## Data Analysis

Mixed-between within ANOVAs were conducted to assess the differences in psychosocial well-being as well as socio-economic competencies between the participants of the trial group and the comparison group. In addition, mixed-between within ANOVAs were used to identify which individual characteristics (age, gender, type of sport, sports group, or background) within the trial group influence the (development) of psychosocial wellbeing.

The assumptions for conducting a mixed between-within ANOVA were sufficiently met in all scenarios (Pallant, 2010). It was chosen not to conduct a MANOVA (Multivariate Analysis of Variance) as the six dependent variables (of which two are presented in this article) do not necessarily relate to each other: psychosocial wellbeing; social-emotional competencies; gender equality (misogynistic attitudes); gender-based violence; recognition of unpaid care and domestic work; social cohesion (inclusive behaviour).

To reduce the risk of a Type 1 error, a more stringent alpha value was set using the Bonferroni adjustment. With six dependent variables, the alpha value was set

to  $p = 0.008 (=0.05/6)$  to control for Type 1 error across multiple tests.

## Results

Overall, as outlined in Table 3, the trial group achieved higher average endline outcomes both in terms of psychosocial wellbeing and socio-emotional competencies. The two mixed between-within ANOVAs conducted to assess the impact of the intervention on psychosocial wellbeing and on socio-emotional competencies across two time periods (pre-intervention, post-intervention) further show a significant interaction between time and group affiliation of medium (psychosocial wellbeing: Greenhouse-Geisser  $F(1, 462) = 39.50$ ,  $p < .001$ , partial  $\eta^2 = .08$ ) and small effect (socio-emotional competencies: Greenhouse-Geisser  $F(1, 462) = 11.29$ ,  $p < .001$ , partial  $\eta^2 = 0.02$ ). Both the comparison and the trial group show an increase in the psychological wellbeing of the participants from baseline to endline. However, this increase was stronger in the trial group. The reported socio-emotional competencies of participants also increased for the trial group, but not in the comparison group, which shows a small decrease.

**Table 3**

*Descriptive results for trial and comparison group, both overall and divided according to demographic (age, gender, background) and intervention variables (type of team, type of sport).*

Psychological Wellbeing		n	Baseline M(SD)	Endline M(SD)
Between subject factors	Trial group	229	4.21 (.44)	4.54 (.35)
	Comparison group	235	4.28 (.41)	4.32 (.44)
	Total	464	4.25 (.43)	4.43 (.41)
Type of Team	Mixed Gender	164	4.15 (.44)	4.57 (.33)
	Single Gender	65	4.35 (.42)	4.46 (.40)
	Total	229	4.21 (.44)	4.54 (.35)
Background	Host community	35	4.56 (.33)	4.59 (.35)
	Camp	194	4.15 (.43)	4.53 (.35)
	Total	229	4.21 (.44)	4.54 (.35)
Gender	Male	167	4.18 (.42)	4.55 (.36)
	Female	62	4.28 (.49)	4.52 (.31)
	Total	229	4.21 (.44)	4.54 (.35)



Psychological Wellbeing		n	Baseline M(SD)	Endline M(SD)
Age	10-12	66	4.23 (.43)	4.64 (.29)
	13-15	122	4.19 (.46)	4.51 (.35)
	15-19	39	4.24 (.40)	4.45 (.41)
	Total	227	4.21 (.44)	4.54 (.35)
Type of Sport	Football	184	4.19 (.43)	4.56 (.35)
	Ultimate Frisbee	45	4.28 (.47)	4.46 (.34)
	Total	229	4.21 (.44)	4.54 (.35)
Socio-emotional Competences		n	Baseline M(SD)	Endline M(SD)
Between subject factors	Trial group	229	2.93 (.40)	3.07 (.31)
	Comparison group	235	2.95 (.41)	2.93 (.34)
	Total	464	2.94 (.40)	3.00 (.34)

**Table 4**

*Results of Mixed-between within ANOVAs, both overall and divided according to demographic (age, gender, background) and intervention variables (type of team, type of sport).*

Psychosocial Wellbeing						
Between Subjects Factor	Source	Df	Mean Square	F Statistic	p-value	Partial Eta squared
Trial/ Comparison group	Measuring Points	1	8.06	66.88	<.001	.13
	Measuring Points * Inter Comparison group	1	4.76	39.50	<.001	.08
	Error (Measuring Points)	462	0.12			
Type of Team	Measuring Points	1	6.47	53.41	<.001	.19
	Measuring Points * Inter Comparison group	1	2.16	17.84	<.001	.07
	Error (Measuring Points)	227	0.12			
Individual Background	Measuring Points	1	2.52	20.59	<.001	.08
	Measuring Points * Inter Comparison group	1	1.87	15.27	<.001	.06
	Error (Measuring Points)	227	0.12			
Gender	Measuring Points	1	8.28	64.00	<.001	.22
	Measuring Points * Inter Comparison group	1	0.31	2.43	.121	.01
	Error (Measuring Points)	227	0.13			
Age	Measuring Points	1	9.04	69.60	<.001	.24
	Measuring Points * Inter Comparison group	2	0.25	1.91	.151	.02
	Error (Measuring Points)	224	0.13			

<i>Psychosocial Wellbeing</i>						
Type of Sport	Measuring Points	1	5.32	41.62	<.001	.16
	Measuring Points * Inter Comparison group	1	0.67	5.23	.023	.02
	Error (Measuring Points)	227	0.13			
<i>Socio-emotional competences</i>						
<i>Between Subjects Factor</i>	<i>Source</i>	<i>Df</i>	<i>Mean Square</i>	<i>F Statistic</i>	<i>p-value</i>	<i>Partial Eta squared</i>
Trial/ Comparison group	Measuring Points	1	0.75	5.97	.015	.01
	Measuring Points * Inter Comparison group	1	1.41	11.29	<.001	.02
	Error (Measuring Points)	462	0.13			

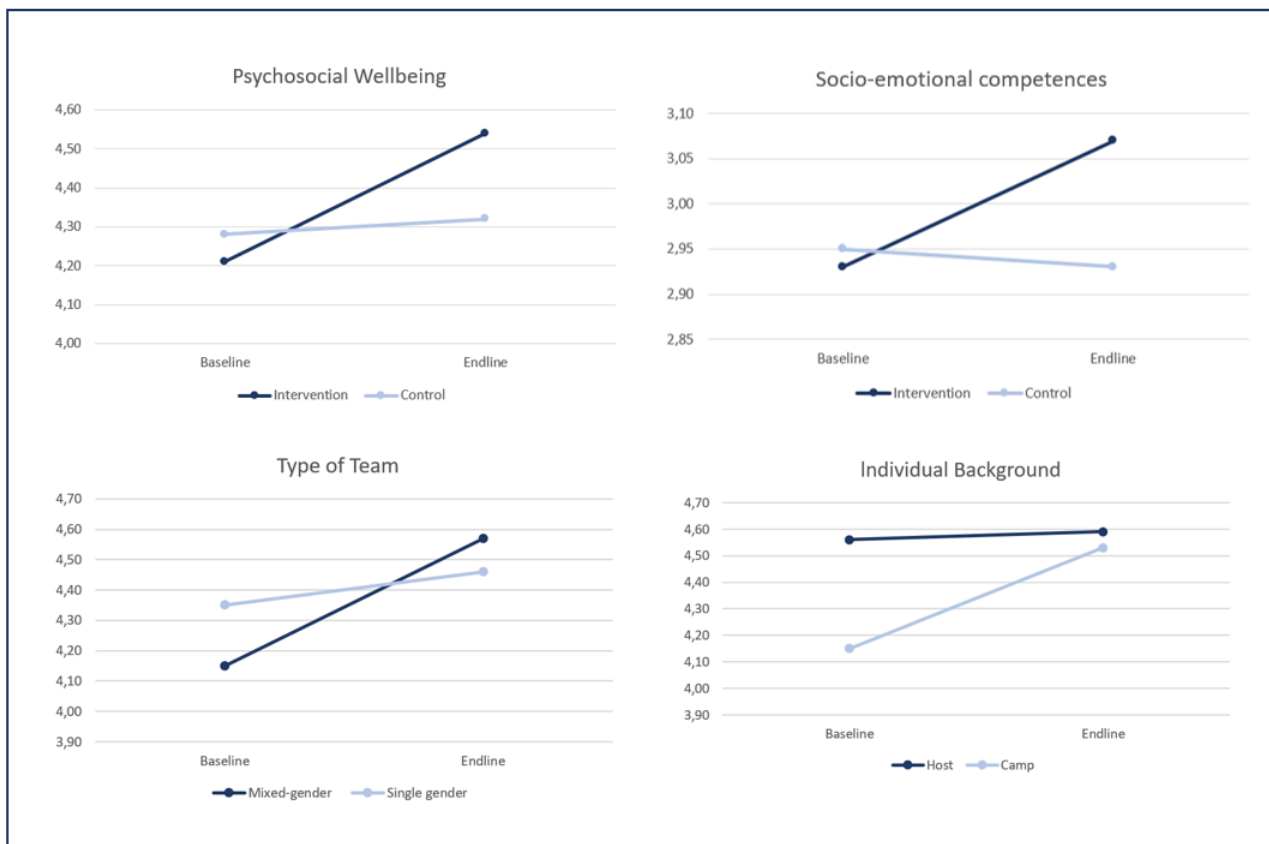
Additionally, the influence of gender, age, type of sport (football or ultimate frisbee), type of team (mixed or same sex team) or background (IDP or host community) on psychosocial wellbeing was analysed within the trial group. Neither gender ( $p=.121$ ), age ( $p=.151$ ) nor sport ( $p=.023$ ) had a significant impact on the change in psychological wellbeing. However, the interactions between time and type of teams (Greenhouse-Geisser  $F(1, 227)=17.84$ ,  $p<.001$ , partial  $\eta^2=.07$ ) or respectively individual background (Greenhouse-Geisser  $F(1, 227)=15.27$ ,  $p<.001$ , partial  $\eta^2=.06$ ) were found to be significant and of medium effect. The psychosocial wellbeing of participants playing in mixed gender teams increased to a larger extent than within same gender teams. While participants in mixed gender teams reported lower psychosocial wellbeing scores than those in same gender teams at baseline, they reported higher scores after the intervention.

A second analysis regarding differences in psychosocial wellbeing among girls in mixed or same gender teams showed no significant impact ( $p=0.562$ ). However, those who lived in IDP camps showed a larger increase in their reported psychosocial wellbeing reducing the difference between the participants from host communities from  $-0.41$  at baseline to  $-0.06$  at endline. The full results of the two mixed between-within

ANOVAs are presented in Table 3 and selected results are further depicted in Figure 1.

## Discussion

Overall, our results show that participants in the trial group obtain significantly higher scores for psychosocial wellbeing and socio-emotional competencies at endline. Through the S4D intervention, children and youth experience self-efficacy, which is specifically important in the context of forced migration and potential trauma where stability, belonging and a healthy environment are very often lacking. This makes S4D interventions potentially valuable not only for sport projects but also for development interventions working to provide psychosocial support in crisis or post-crisis settings. Though these results are highly promising, there are some limitations to keep in mind before progressing to a more comprehensive discussion. For one, the tendency towards higher values in the response behaviour of the children and youth is a well-known phenomenon in social sciences and psychology. On the one hand, this is due to social desirability whereby respondents select responses they believe are more socially desirable or may support the continuation of the intervention (Grimm, 2010). On the other hand, children and youth often reflect dif-



**Figure 1** Graphical depiction of significant results for psychosocial wellbeing and socio-emotional competences, as well as psychosocial wellbeing according to team composition and participant backgrounds.

ferently on their response behaviour after an intervention. Another limitation concerns the selection of participants made by the coaches. Literature suggests that self-selection can distort results and that positive outcomes may be because of the participants' inherent characteristics as opposed to the intervention in question. However, as we explained previously, given the sensitive socio-cultural context in which the intervention took place, we felt that having trusted, local figures lead the recruitment process was crucial. Despite these avowed limitations, there are a number of potential implications from a research and applied point of view.

The results show that participants in mixed-gender teams, as well as those living in IDP camps, obtain the highest increase in scores. In other words, male participants benefit from the presence of female partic-

ipants regarding atmosphere, social interactions, and group dynamics - all factors contributing to psychosocial wellbeing. In a context with strict gender segregation, this result shows the importance of questioning persistent gender norms in society and offering opportunities for different genders to interact. This is in line with previous research that shows that gender composition can influence outcomes (e.g., Babinski et al., 2013) and is likely a valuable avenue for future study in S4D. It should be noted that there was only one single gender team for girls, which makes further comparison here difficult. The reported psychosocial wellbeing of participants from the host communities was higher at baseline and endline.

Another important element of the study was that the comparison group, beyond possibly having access to other offers in the camp or host communities, did not

receive any structured form of standardised program. Though we acknowledge the difficulties behind this, we would encourage future work to compare various forms of interventions. For example, interventions using conventional sporting methodologies could be effectively contrasted with S4D, and S4D could be further compared with other leisure or arts-based interventions. This would allow us not only to expand the evidence base for S4D but gain a more fine-grained understanding of where S4D approaches might provide a unique added value.

From a more applied perspective, these results also can help us identify several potentially crucial elements for such interventions. In particular, we highlight three of them here. First, an intervention period of at least six months with, ideally, bi-weekly interventions is promising to foster positive outcomes. Up to now, many S4D health interventions have lasted under 12 weeks (Hansell et al., 2021), and there are questions about the ability of shorter interventions to build the relationships and engagement needed to foster longer-term outcomes (Hansell, 2022). Either way, there is a need for ex-post studies to help determine the sustainability of outcomes generated (Hansell et al., 2021). Second, there is a need for intensive training and ongoing support of coaches. For this intervention, the coaches were accompanied during the whole implementation by a designated S4D instructor who monitored the training and schedules, provided feedback and psychological support to coaches when needed, and served as a liaison between coaches, the implementing partner NGO, and the GIZ project. The integration of emergency and trauma pedagogy was likely also crucial in ensuring the relevance and sensitivity of the S4D offers. Third and finally, the pairing of coaches from different backgrounds in trauma pedagogy and physical education was a potentially important facilitator. Coaches came from both IDP and host community backgrounds, thus giving them the ability to relate to the different participant groups while also providing opportunities for contact across those communities. Indeed, regarding the latter two points, there has been growing recognition within the S4D field of

the need to adequately train coaches and professionals in the field (McSweeney et al., 2022; Strachan et al., 2016).

A final reflection comes from the fact that the study demonstrates that the psychosocial wellbeing of children and youth in IDP camps is lower than that of children and youth from host communities. However, the S4D intervention increases the wellbeing of the former more than the latter. This result may not be surprising at first, as children and youth from IDP camps (have) likely experience(d) greater hardships such as poverty, uncertain future, traumatic events, poor living conditions, economic hardship, loss of related parties, and torn families. Thus, there is a stronger lifting effect in children and youth from IDP camps to increase psychosocial wellbeing. As many international and local NGOs in the Kurdistan Region of Iraq refrain from working in IDP camps, and humanitarian funding for refugee camps facing significant gaps (UNHRC, 2022b), this result is an argument for continued intervention, support and research in these settings.

## Conclusion

In conclusion, our paper underscores the importance of well-trained, trauma-informed coaches and sufficiently lengthy interventions in achieving the benefits of S4D programs. Despite some methodological limitations, the positive outcomes highlight the need for comprehensive coach training and sustained intervention periods. Future work should focus on optimizing these elements to enhance the effectiveness and sustainability of S4D interventions in crisis settings.

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The authors have declared that no competing interests exist.

### Data availability statement

All relevant data are within the paper.