Preventing violent extremism in youth through sports: An intervention from the 3N model

Abstract

Preventive approaches have gained weight with regard to violent extremism. However, although the number of interventions aimed at prevention has increased, many of them do not have a solid theoretical basis and very few have been evaluated, so we do not know the real impact of these interventions. Based on these limitations, a sport-based intervention program was designed to prevent violent extremism. Using the 3N model of radicalization as a theoretical reference, the program was designed and implemented trying to influence the needs, narratives, and social networks of the participants. Thus, the objective of the present research was to evaluate the impact of the program, for which two studies were designed. The first study used a quantitative approach using questionnaires that were answered by the participants and by a control group. The second study used a qualitative approach that included open-ended questionnaires that were completed by the participants' referents. Both studies assessed the needs, narratives, and social networks of the participants. Overall, the results showed an improvement in social networks and differences in the effects on needs and narratives depending on the study. We conclude by highlighting the role of sports-based interventions in generating a sense of belonging and improving social support as preventive factors.

Keywords: violent extremism; 3N model; sport-based intervention; PVE

Violent extremism is now recognized as a complex problem that needs to be addressed comprehensively. Reactive and exclusively policy-focused approaches have been found to be limited, especially when addressing a medium- and long-term strategy, and when aiming to preserve social cohesion and inclusion (Trujillo & Moyano, 2019a; Stephens et al., 2021). Based on this premise, many countries and institutions consider preventive work with youth at risk as a priority action in preventing violent extremism and the processes of radicalization before they emerge (Hassan et al., 2021; Siegel et al., 2019).

In the last decade, social scientists have sought to understand the risk factors and mechanisms involved in the radicalization process (Gøtzsche-Astrup, 2018). From an applied point of view, it is necessary to provide evidence-based clues to develop effective preventive actions. However, the knowledge developed during this time is not always implemented in the applied field (Koehler & Fiebig, 2019). Even fewer studies have systematically evaluated interventions aimed at preventing violent extremism with a scientific methodology (Gielen, 2019; Lewis et al., 2020).

In this research, we present the results of an intervention program using sport to prevent violent extremism in youth. The underlying perspective is that young people are proactive actors of community resilience and sport is a useful means to contribute in a protective direction. However, in order to implement effective interventions, we must first understand what we are dealing with. Or in other words, how the process of radicalization leads a person into violent extremism.

The process of radicalization

Radicalization is a contested phenomenon that has given rise to a multitude of definitions and theories without consensus (Neumann, 2013). However, there seems to be some agreement on some aspects such as the fact that it is a process (Horgan, 2008),

so there may be different degrees, and that it does not always lead to acts of violence, generating a distinction between radicalization of ideologies and radicalization of actions (Khalil et al., 2022). Based on these aspects, a variety of theories have emerged that attempt to explain how individuals become radicalized by attributing greater or lesser weight to certain factors (for a review see King & Taylor, 2011; Lobato, 2019; Schmid, 2013). However, given the complexity and diversity of the phenomenon, it is necessary to take a theory as a starting point, especially when the objective is to design and evaluate a PVE program (Williams, 2020). In this respect, it has been recommended to opt for theories that have empirical evidence (Moyano, 2019). Consequently, in this research we have adopted the 3N model of radicalization.

Trying to answer the question of what motivates normal individuals to become radicals, Kruglanski and colleagues (Kruglanski et al., 2019; Weber & Kruglanski, 2017) have proposed that the answer lies at the intersection of three psychological forces referred the 3Ns: 1) the individual's needs or motivations, 2) the ideological narratives of the individual's culture, and 3) the interplay between peer pressure and social influence occurring within the individual's social network.

According to this model, the path to radicalization begins with the activation of the significance quest, which directs attention to the means of achieving significance—a passionate need to count, to be someone, to be recognized, to matter. These means are found in the collective narrative (ideology) of the ingroup as it is the beliefs of a group that inform what is meaningful or important in the eyes of others. If such an ideology identifies violence and terrorism as the only means to achieve significance, people may support and engage in violence and terrorism. Group processes, on the other hand, would be those that link the two previous processes. In this sense, group engagement

can restore significance to individuals by rewarding them in various ways (e.g., prestige, resources, sense of belonging).

In this way, radicalization reflects a high-level commitment to the ideological goal and violence as a means to achieve it, along with a reduced commitment to alternative goals and values (Schumpe et al., 2018). Based on this conceptualization, the reduction of radicalization would consist of a reduced commitment to the core ideological goal or to the means of achieving it (violence and terrorism) (Dugas & Kruglanski, 2014; Webber et al., 2018). Therefore, reducing radicalization should focus on intervening in these three forces (Bélanger et al., 2015). Taking tertiary prevention or deradicalization as an example, two paths have been proposed through which radicalization can be reduced (Bélanger, 2018, Webber et al., 2020). First, there is an explicit or direct path that consists of delegitimizing the use of violence or, using the model's concepts, changing the narrative. Second, there are two implicit or indirect paths. One consists of offering other alternatives to achieve personal significance in order to move individuals away from radicalized pathways and environments, while the other takes the form of weakening networks that support the use of violence and facilitating new social networks not associated with extremism. Although these pathways have been theorized for deradicalization, we firmly believe that an adaptation can also be theorized for primary and secondary prevention as detailed below.

The importance of prevention

Preventing violent extremism (PVE) encompasses all initiatives before a person radicalizes to the point of using violence (Koehler & Fiebig, 2019). Looking at the public health model (Caplan, 1964), PVE is located in the primary and secondary prevention, which aims at averting the consolidation of risk factors. Primary prevention targets all individuals while secondary prevention specifically targets at-risk groups.

Interventions within these frameworks usually include activities aimed at raising awareness, resilience, or community coherence, among others (Koehler & Fiebig, 2019).

Activities aimed to increase resilience seem to be one of the main strategies when trying to prevent radicalization (Koehler & Fiebig, 2019; Trujillo & Moyano, 2019b). Resilience refers to multisystemic adaptive capacities leading to improved outcomes after a disturbance (Norris et al., 2008). It is often associated with the notion of 'bouncing-back:' returning to a state of equilibrium following some form of stress or adversity (Bonnell et al., 2011; Masten & Reed, 2005; Rutter, 2012). Additionally, this concept has been expanded and, rather than necessarily returning to its previous state, some authors discuss that a system may adapt or transform in the face of stress or adversity (Davidson et al., 2016; Davoudi, 2012). From the point of view of PVE, the creation or strengthening of resilience would influence the prevention of radicalization processes (Stephens & Sieckelinck, 2020). However, it should be acknowledged that there is still debate as to whether resilience is a trait that individuals possess or is a response mediated by the environment. Along the same lines, resilience can also be directed at maintaining the status-quo or at social change and transformation (Stephens & Sieckelinck, 2021). Following this proposal, we do place ourselves in a perspective that positions resilience in flexibility and the ability to adapt to social norms in order to mitigate risk factors to prevent radicalization. Nonetheless, with this position we abandon the understanding of resilience as a generator of social change, which should be understood as a possible limitation.

Using the 3N model to foster PVE, we find that the ultimate goal, given that there would not have been a prior radicalization process, is to create resilient individuals, groups, and communities. That is, people who have significance and a

support network within the community. This being the ultimate goal, and according to the 3N model, there would be three pathways to achieve it (Bélanger, 2018, Webber et al., 2020). First, a direct route consisting of delegitimizing violent narratives or narratives that present some components such as grievances, culprits, or violent means. Second, there would be an indirect pathway based on providing other sources of significance in order to move individuals toward more favorable contexts. Third, another indirect pathway related to reducing relationships with deviant peers who may exert a negative influence.

Sports and PVE

Sports have historically played a notable role in the promotion of peace and bring different groups together on a framework of positive values such as partnership, respect, and tolerance (Gerstein et al., 2021). Research supports that sports programs—especially when integrating an educational point of view—have the capability to improve social skills and relationships, provide a sense of belonging and purpose, and create opportunities amongst participants and communities (Lenos & Jansen, 2019; Richardson et al., 2017). The use of sports to reduce crime and other disruptive behaviors has become more common in recent years (Khoury-Kassabri & Schneider 2018; Spruit, Hoffenaar, et al., 2018; Spruit, van der Put, et al., 2018). However, the link between PVE and sports has only a short run for the moment.

Although sports are generally part of several prevention programs (Broeders et al., 2021; Koehler & Fiebig; Lenos & Jansen, 2019), they usually target the less relevant factors of integration and identity (Wolfowicz et al., 2021), and most have not been evaluated to assess their impact (Hassan et al., 2021). As far as we know, the only evaluation of a program of this type was conducted by Johns and colleagues (2014), who assessed the impact of the sport-focused youth mentoring program "More than a

Game." Through qualitative data analysis, the authors found that the program improved participants' social networks while increasing their confidence, self-esteem, sense of belonging, and self-control. However, among the limitations of the study is the lack of a pre- and post-evaluation. Therefore, in our understanding, the effect of sport on the prevention of violent extremism does not yet have sufficient evidence to go beyond speculation.

Sports program to prevent violent extremism

This intervention is part of the Anonymized project,[1] the objective of which is to create a sports program that provides young people at risk of exclusion with tools that help them integrate into society to prevent processes of radicalization toward violent extremism. The sports program combines sports practice with the learning of transversal skills capable of enhancing protective factors and minimizing risk factors that can contribute to the process of youth radicalization.

The sports program consisted of 18 sessions, with a total duration of approximately 50 hours, which were implemented over a period of two months. The work team was composed of social educators, psychologists, and sports coaches. The intervention was adjusted to the 3N model by combining the practice of sports with dynamics designed to improve the needs, narratives, and networks of the participants.

The contents of the intervention were grouped according to the three factors proposed by the 3N model as follows. The first sessions addressed the needs. Participants were taught how to present themselves in society, a code of coexistence was developed, and emotional expression and respect for others were discussed in depth. Various games were also played to break the ice and build trust among the participants and with the professionals. The following sessions included self-awareness

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[1] Anonymized project name for peer review.

activities where participants reflected on their characteristics and skills, and discussed their life aspirations and values. Finally, games were played to work on interpersonal skills, improve confidence, and train empathy.

The following sessions focused on the narratives factor. To do so, they began by looking at examples of overcoming obstacles and inspiring life trajectories. Later, some sports were included to work on frustration and improve cooperation; among them, basketball, volleyball, and table tennis. Outdoor activities (e.g., hiking) were also carried out in order to improve well-being within the project and promote sports in nature. This was followed by training in personal skills such as empathy, active listening, and the ability to express their unmet needs and demands. Last, dynamics were used to design a course of action focused on achieving their objectives.

Finally, the last sessions dealt with social networks. In these sessions, participants were involved in different social activities, worked on self-criticism and practiced different sports to improve frustration tolerance, such as soccer, basketball, and table tennis. In the last session, an outdoor excursion was conducted in which participants expressed their opinions about the programs. A more detailed version of the activities carried out and the specific objectives of each can be found in the project trainer's manual.[2]

The present research

The general objective of this research was to evaluate the impact of the implementation of the Anonymized project[3] program. To achieve this, an evaluation program was designed to assess impact prior to the implementation of the Anonymized program. The evaluation design was based on the theorization of the 3N model in relation to Anonymized program and included both quantitative and qualitative

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[2] The project trainer's manual can be found at the following link: link will be included after peer review
[3] Anonymized project name for peer review.

methods. The design, implementation, and results of the use of quantitative methods are described in Study 1, while those of qualitative methods are described in Study 2. The studies received ethical approval from the Ethics Committee of a University of Spain.[4] Before their participation, all participants provided written informed consent to participate.

Study 1: Quantitative approach

In order to elucidate the impact of the intervention and the psychosocial mechanisms through which these effects appeared, a quantitative approach using statistical analyses was used.

Method

Participants and procedure

A total of 120 participants were recruited incidentally through the associations of which they were part of. They were from associations working with young people in vulnerable situations (e.g., NGOs and foundations). A member of the team spoke with the youth's educators and/or caregivers to inform them of the possibility of participating in the Anonymized program. Once they were informed, the youth decided if they wanted to participate on a voluntary basis. In order to compare the effects of the intervention program, a control group of secondary school students ($N = 104$) from a high school located in the same geographical area was recruited. All participants were asked to complete a questionnaire before the start of the program and again after the program was completed, with a three-month interval between the two. For this second collection of data, however, the sampling was smaller; especially for the intervention group due to different reasons such as voluntary drop off, change of program, expulsion from the center, or change of residence.

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[4] Anonymized university name for peer review.

Pre-test sample. The initial total sample consisted of 213 participants. Of these, 109 received the intervention (105 males, three females, and one missing; $M_{age} = 20.64$, $SD_{age} = 3.30$).[5] Regarding education, 34 were not enrolled in any course, nine were in compulsory secondary education, two were in high school, 28 were in vocational training, 19 were studying Spanish, one was studying at university, and four were working. Furthermore, 74.3% were in a foster care program. On the other hand, the control group consisted of 104 participants (45 males, 52 females, four reporting other, and three missing; $M_{age} = 16.50$, $SD_{age} = 0.54$). All participants in the control group were in high school.

Post-test sample. When the questionnaire was administered a second time, three months after the first one, some of the participants had dropped out of the program and others were uncooperative in completing the questionnaire. Thus, the final intervention group consisted of 82 participants (78 males, three females, and one missing; $M_{age} = 20.96$, $SD_{age} = 3.34$) reflecting a 24.77% dropout rate; while the control group consisted of 97 participants (38 males, 52 females, four other and three missing; $M_{age} = 16.46$, $SD_{age} = 0.50$) reflecting a 6.73% dropout rate. Regarding those who dropped out, some properly dropped out of the intervention and others participated but did not complete the post-test. A total of 27 participants, all males, did not take the post-test ($M_{age} = 19.12$, $SD_{age} = 2.93$).

A post-hoc sensitivity analysis was computed using the G*Power function for repeated measures, within-between interactions, ANOVA-approach (Faul et al., 2009). Considering the sample size ($N = 179$), $\alpha = .05$, two groups, two measurements, correlation among repeated measures ($r = .41$), nonsphericity correction 1, and effect

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[5] Note that eleven participants did not cooperate to take part in the evaluation.

size ($\eta^2_p = .20$), the power reached was .99. This implies that our sample was large enough to detect small effect sizes.

Variables and instruments

Participants completed a questionnaire that was administered before the intervention and at the end of the intervention. To reduce language bias and facilitate understanding, the questionnaires were originally written in Spanish and subsequently translated into French and Arab by an external team of professional translators following a back-translation design (Hambleton, 2005). The only differences between the two questionnaires were that the pre-test included socio-demographic data not included in the post-test, and that the post-test included a series of indicators in order to evaluate the satisfaction with the program implementation process. All variables were evaluated on a Likert-type scale from 0 (*strongly disagree*) to 4 (*strongly agree*). The different measures used are presented below grouped according to the three factors of the 3N model.

Needs. We selected two variables to assess the needs. First, we conceptualized needs as *sports motivation*; four items adapted from the harmonious passion scale in the sport context (Pedrosa et al., 2017) were included to assess it (e.g., "When I have free time I try to play sports"). Higher scores reflected higher motivation for sports. Internal consistency was adequate for the pre-test ($\alpha = .92$) and the post-test ($\alpha = .94$), as well as for the test-retest reliability ($r = .90$, $p < .001$). Second, the *search for meaning* was measured with two items from Steger et al.'s (2006) meaning in life questionnaire (i.e., "I am seeking a purpose or mission for my life" and "I am looking for something that makes my life feel meaningful"). Higher scores reflected a higher search for meaning. Internal consistency, calculated by the Spearman-Brown approach, was adequate for the

pre-test (r_{S-B} = .55, p < .001) and the post-test (r_{S-B} = .66, p < .001), as well as for the test-retest reliability (r = .57, p < .001).

Violent narratives. We also included two constructs to assess the violent narratives. We measured *moral disengagement* with three items from Bandura et al.'s (1996) scale (e.g., "Some people deserve to be treated like animals"). Higher scores reflected higher moral disengagement. Internal consistency was adequate for the pre-test (α = .52) and the post-test (α = .67), as well as for the test-retest reliability (r = .41, p < .001). Furthermore, we measured *support for political violence* with two items from Bélanger et al.'s (2019) scale (i.e., "Violence is necessary for social change" and "It is acceptable to retaliate against someone who insults my values and beliefs"). Higher scores reflected higher support for political violence. Internal consistency, calculated by the Spearman-Brown approach, was adequate for the pre-test (r_{S-B} = .37, p < .001) and the post-test (r_{S-B} = .32, p < .001), as well as for the test-retest reliability (r = .51, p < .001).

Social network. Two scales were included to assess the social network. On the one hand, the social risk network was measured with three items from Moyano's (2011) scale that reflected the level of *deviant peers* (e.g., "My friends talk about fights and violence all the time"). Higher scores reflected the presence of more deviant peers. Internal consistency was adequate for the pre-test (α = .79) and the post-test (α = .76), as well as for the test-retest reliability (r = .63, p < .001). On the other hand, *social support* was measured with three items from Moyano et al.'s (2020) scale (e.g., "When I feel lonely, there are several individuals I can talk to"). Higher scores reflected higher inclusion within the society. Internal consistency was adequate for the pre-test (α = .84) and the post-test (α = .82), as well as for the test-retest reliability (r = .65, p < .001).

Satisfaction with the implementation process. The post-test included seven indicators to assess participants' impressions of the program: fun, interest, usefulness, attitudes toward activities and educators, understanding of content, and appropriate number of sessions.

Sociodemographic data. We asked participants about their age, gender, occupation, and whether they were in a foster care program during the pre-test.

Data analysis

When analyzing the data, descriptive statistics and bivariate correlations were calculated for all variables for both the intervention and control groups. Subsequently, mixed-model analyses of variance were performed to test for differences between pre- and post-test scores in each of the groups. Finally, Student's t-tests were calculated to evaluate the satisfaction with the program implementation process.

Results

Table 1 presents means, standard deviations, and Pearson's bivariate correlations for all variables in each of the groups.

[Insert Table 1]

In order to test the effects of the intervention in contrast to the control group, we performed mixed-model analyses of variance (ANOVA) with the time of administration (pre-test vs. post-test) as a within-subject factor and group as a between-subject factor (0 = control group, 1 = intervention group) for each of the variables.

For sports motivation, we observed no main effect of time ($F(1,174) = 0.39$, $p = .531$, $\eta^2{}_p = .002$) and a significant main effect of group ($F(1,174) = 72.37$, $p < .001$, $\eta^2{}_p = .29$); the intervention group ($M = 3.67$, $SD = 0.09$) had a higher motivation for sport than the control group ($M = 2.59$, $SD = 0.09$). We neither observed an interaction

between time and being in intervention versus control group ($F(1,174) = 0.005$, $p = .994$, $\eta^2_p < .001$).

For search for meaning, we did not observe a main effect of time ($F(1,174) = 2.50$, $p = .116$, $\eta^2_p = .01$) but we observed a significant main effect of group ($F(1,174) = 52.20$, $p < .001$, $\eta^2_p = .23$); the intervention group presented more search for meaning ($M = 3.36$, $SD = 0.09$) than the control group ($M = 2.51$, $SD = 0.08$). We did not observe an interaction between time and being in treatment versus control group ($F(1,174) = 0.69$, $p = .408$, $\eta^2_p = .004$).

For moral disengagement, we observed a significant main effect of time ($F(1,173) = 5.95$, $p = .016$, $\eta^2_p = .03$), moral disengagement was higher during the pre-test ($M = 2.03$, $SD = 0.07$) than during the post-test ($M = 1.84$, $SD = 0.07$), and no main effect of group ($F(1,173) = 0.33$, $p = .567$, $\eta^2_p = .002$). We also observed an interaction between time and being in treatment versus control group ($F(1,173) = 6.74$, $p = .010$, $\eta^2_p = .04$). Follow-up simple effects analyses verified that levels of moral disengagement were higher during the pre-test ($M = 2.09$, $SD = 0.11$) than during the post-test ($M = 1.70$, $SD = 0.11$) in the intervention group (see Figure 1).
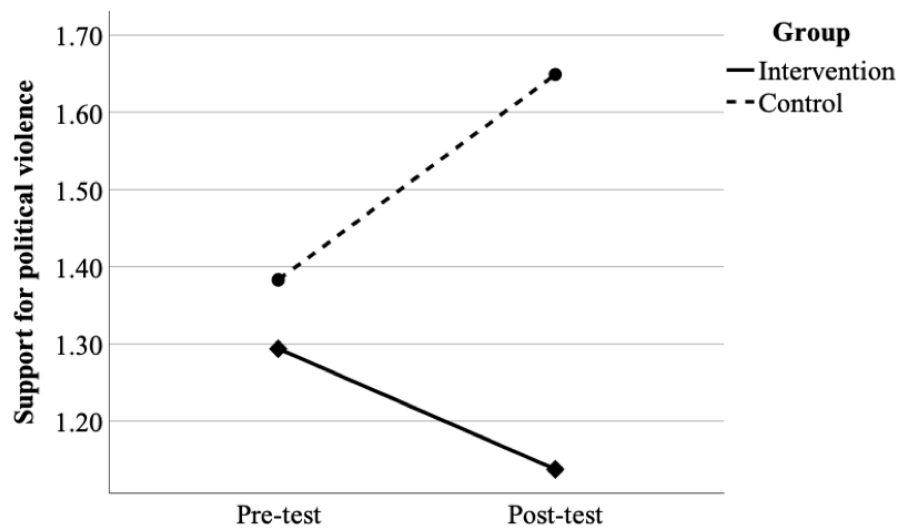
Figure 1

Moral disengagement during pre- and post-test for intervention and control groups
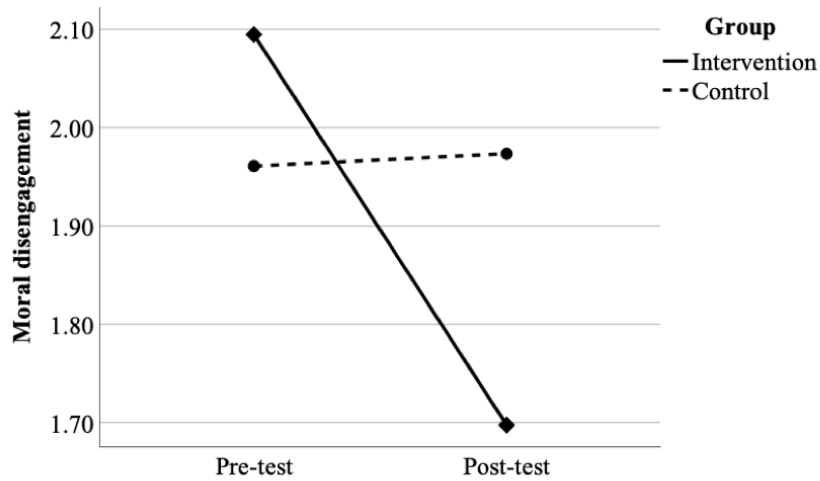
For support for political violence, we did not observe any significant main effect of time ($F(1,172) = 0. 49$, $p = .484$, $\eta^2_p = .003$), but we observed a significant main effect of group ($F(1,172) = 4.73$, $p = .031$, $\eta^2_p = .03$), the control group presented more support for political violence ($M = 1.52$, $SD = 0.09$) than the intervention group ($M = 1.22$, $SD = 0.10$). We also observed an interaction between time and being in treatment versus control group ($F(1,172) = 7.30$, $p = .008$, $\eta^2_p = .04$). Follow-up simple effects analyses verified that levels of support for political violence were higher during the post-test ($M = 1.65$, $SD = 0.10$) than during the pre-test ($M = 1.38$, $SD = 0.11$) in the control group (see Figure 2).

Figure 2

Support for political violence during pre- and post-test for intervention and control groups

For deviant peers, we did not observe a significant main effect of time ($F(1,174)$ = 2.02, $p = .157$, $\eta^2_p = .01$) or group ($F(1,174) = 0.23$, $p = .632$, $\eta^2_p = .001$). However, we observed a significant interaction between time and being in treatment versus control group ($F(1,174) = 15.38$, $p < .001$, $\eta^2_p = .08$). Follow-up simple effects analyses verified that levels of deviant peers were higher during the post-test ($M = 0.78$, $SD = 0.08$) than during the pretest ($M = 0.51$, $SD = 0.08$) in the control group (see Figure 3).

Figure 3

Deviant peers during pre- and post-test for intervention and control groups
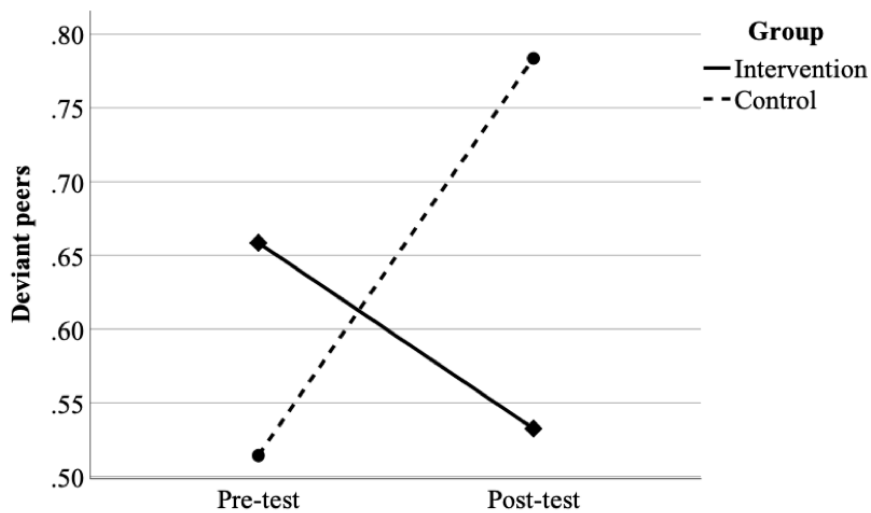
For social support, we observed a significant main effect of time ($F(1,174) =$ 6.40, $p = .012$, $\eta^2_p = .04$), the social support was higher during the post-test ($M = 3.01$, $SD = 0.07$) than during the pre-test ($M = 2.86$, $SD = 0.07$), and a significant main effect of group ($F(1,174) = 26.17$, $p < .001$, $\eta^2_p = .13$), the control group presented more social support ($M = 3.26$, $SD = 0.09$) than the intervention group ($M = 2.61$, $SD = 0.09$). We also observed an interaction between time and being in treatment versus control group ($F(1,174) = 13.88$, $p < .001$, $\eta^2_p = 0.07$). Follow-up simple effects analyses verified that levels of social support were higher during the post-test ($M = 2.80$, $SD = 0.10$) than during the pretest ($M = 2.42$, $SD = 0.11$) in the intervention group (see Figure 4).

Figure 4

Social support during pre- and post-test for intervention and control groups
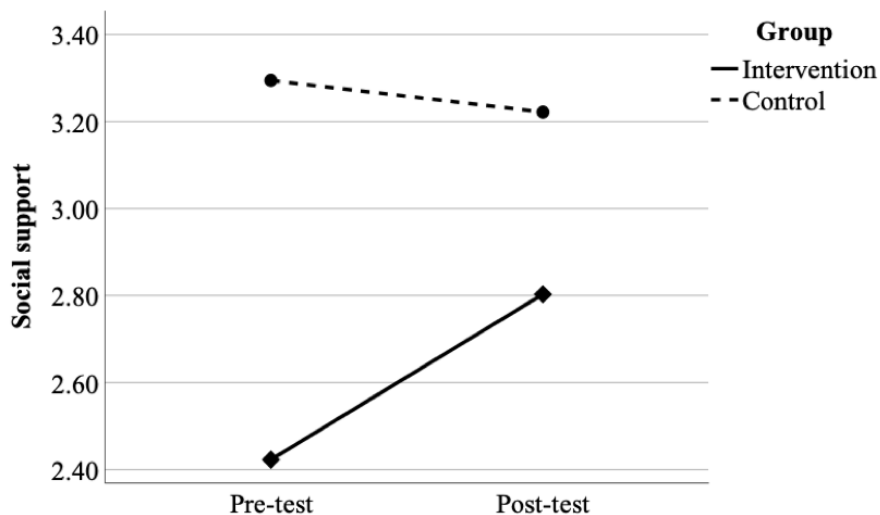
Last, regarding satisfaction with the implementation process, participants (the intervention group) highlighted that the program was fun ($M = 3.64$, $SD = 0.60$), interesting ($M = 3.70$, $SD = 0.59$) and useful for their lives ($M = 3.38$, $SD = 0.91$). They also stated that they liked the activities ($M = 3.84$, $SD = 0.37$), the educators ($M = 3.87$, $SD = 0.41$), that they understood the contents ($M = 3.66$, $SD = 0.60$), and that the number of sessions was appropriate ($M = 2.97$, $SD = 1.31$). In all these indicators, the mean score of the responses was above the mean of the scale ($p < .001$) showing how well the program had been received by the participants.

As a last step, in order to test whether those participants who did not complete the post-test started from a similar situation to those who completed it, Student's t-tests for independent samples were performed only with the intervention group. The independent variable was the completion (vs. non-completion) of the post-test and the dependent variables were the six variables previously analyzed. As can be seen in Table 2, the results did not show significant differences for sports motivation, search for meaning, moral disengagement, support for political violence, and social support. However, they show that those who did not complete the post-test had more deviant peers.

Table 2

Student t-test differences in means between those who did and did not complete the post-test in the intervention group

	Post-test completion	Post-test non- completion			
	M (*SD*)	*M* (*SD*)	*t*	*p*	*d*
Sports motivation	3.66 (0.51)	3.43 (0.71)	1.88	.063	0.42
Search for meaning	3.45 (0.74)	3.63 (0.58)	1.18	.239	0.26
Moral disengagement	2.11 (1.08)	2.09 (0.97)	0.09	0.928	0.02
Political violence	1.29 (1.17)	1.52 (1.21)	0.89	.377	0.20
Deviant peers	0.66 (0.96)	1.32 (1.04)	3.07	.003	0.68
Social support	2.42 (1.13)	2.80 (1.12)	1.52	.131	0.34

Discussion

Overall, the results showed a positive impact of the intervention. On the one hand, moral disengagement decreased, and social support increased in the intervention group compared to the control group. On the other hand, support for political violence and deviant peers worsened in the control group but remained unchanged in the intervention group. From the 3N model, the intervention had an impact through the direct pathway of the narrative and through the indirect pathway of the social network, although it did not affect the indirect pathway of needs.

Study 2: Qualitative approach

In order to complete the impact assessment with qualitative data and being aware of the problems of social desirability associated with self-administered questionnaires, a second study was designed to obtain information from the practitioners who spent the most time with the youth. We will refer to them as the referents to distinguish them from the program participants.

Method

Participants and procedure

A total of 76 referents were recruited based on convenience sampling and based on the following criteria: (1) being a professional working in one of the participating associations and (2) being the main person in charge for at least one of the young participants. Referents were social educators, social workers, psychologists, lawyers, trainers, or members of host families. An informed consent form was signed by the referents prior to participation.

Instruments

Two online questionnaires based of open-ended questions were developed. The first questionnaire was administered at the beginning of the program and consisted of several questions about the participants' weaknesses, strengths, and opportunities, their needs, and some psychological constructs assessed in the quantitative study: attitudes toward sport, social inclusion, meaning in life, moral disengagement, negative and positive social models, and violent extremism. The second questionnaire included two open-ended questions aimed to retrieve information related to changes in the participants, the role of the program in those changes, and participants' perspectives on the program. Overall, 91 referents answered at least one of the questionnaires. Specifically, 19 completed both the pre- and post-intervention questionnaire, 57 only completed the pre-intervention questionnaire, and 15 only completed the post-intervention questionnaires. This was partly due to the drop-out rate of the participants, and partly due to the difficulties on reaching out to the referents for a follow up. Moreover, some referents answered the questionnaire referring to more than one participant.

Data analysis

Starting from a realist perspective, in which language is interpreted as a construction of the social reality (Potter & Wetherell, 1987), the method chosen to analyze the data was thematic analysis (Braun & Clarke, 2006). Particularly, codebook thematic analysis from an inductive perspective (Braun & Clarke, 2020). The analysis process began with several readings to familiarize oneself with the material. Using a deductive approach, the most relevant excerpts were identified and coded within the 3N framework. Subsequently, the different codes within this framework were used to inductively identify the different themes inside the three factors of the 3N model.

Results

Thematic analysis revealed different themes in relation to the three model factors that indicated large interpersonal differences in these factors prior to the start of the program in the participants. However, participation in the program, according to the referents, resulted in themes related to positive change in most factors (see Figure 5).

[Insert Figure 5]

Needs

The first theme within the needs was *polarized interest in sports*. According to the referents, most of the program's participants were motivated toward playing sports and participating in leisure activities. Many participants were described as being especially interested in football, which seems to be one of the reasons why they wanted to participate in the program. However, it was also mentioned that some of the participants had no interest in sports revealing the opposite theme. Considering the course of the program, some participants developed an *increase interest in sports*: "He was a young man who did not do anything related to sports nor liked any sport. Currently he is motivated to continue practicing sports" (R14post).

Another theme found in the needs were *lack of life objectives*. The referents mentioned that the participants did not have clear goals in life, sometimes explained by their irregular situation and the struggles that the participants were going through as reflected in the following quote:

> He has no support outside the center; neither social nor family. He's a young man with many abilities, well integrated. His difficulties are in terms of documents, since he does not have an ID or passport and this closes many doors in his life, which makes him feel worried. (R48pre)

By the end of the program the theme was more positive showing *specific life objectives* even related with sports. This theme would also maintain a relationship with *increase interest in* sports, as reflected in the following quote:

> She seems a little more extroverted and confident. She made new friends in the program, has improved her Spanish and started to practice sport after many years. She also experienced the role of educator and collaborated in the management of the second part of the program with the educators. (R24post)

Nevertheless, the referents also mention that, still, some of the participant's goals and dreams may be compromised by their irregular situation and socioeconomic insecurity. This theme, denominated *socioeconomic insecurity*, was transversal to the other themes and, according to the referents, many of the proposed objectives were not in line with reality due to this situation.

Narratives

In the case of the narratives, the first theme identified was *polarized empathy*. While most referents referred to the youth they worked with as very empathic and respectful, some others refer a lack of this qualities, whether as a copying mechanism— "Sometimes he can be perceived as not empathic and superficial, and he has expressed that this is an emotional shield" (R66pre)—or as a general lack of respect and understanding for the others' ideas and emotions—"He's very hermetic and does not accept that others can interpret things differently" (R4pre). In this regard, in the second

questionnaire, the referents provided responses reflecting *improved social skills* in the participant's overall social skills and maturity when maintaining relationships with their peers: "It has given the young people tools to work on their social, linguistic, and emotional competencies and thus be able to know themselves better and strengthen their skills and knowledge for a good social integration" (R17post).

Another theme identified was *justification of violence*. When violence was mentioned, it mostly followed the ideas portrayed by this quote: "He is not a violent boy but he doesn't accept refusal too much. He gets quite angry if things don't go the way he wants" (R73pre). The referents also declared that some participants justified the violence in some situations, especially in response to frustration and anger. In this vein, one of the referents mentioned that a participant seemed more empathetic after his participation on the program, but also that "he still refers to situations in which violence is one of the few possible solutions" (R69pre).

A final emerging theme was *negative attitudes*. It was mentioned that some of the youth showed prejudices toward specific groups: "We have found some difficulty or less affection in relationships with roommates of different origin than yours (even if not explicitly" (R14pre). This topic, however, was not mentioned in the second survey by any referent.

Networks

The first theme identified in the networks was *reduced support network*. Most of the referents indicated that the participants did not have much support. Support was limited to a few friends since many had no family and many of their relationships were negative. Some familiar contexts did not facilitate the youths' integration. This reduced social support, in some cases, was also experienced within the group of participants as indicated by a referent:

He explains that he has not felt integrated into the group and that he didn't want to finish the program. It is a shame that he had a bad time. […] He asked me to come with him the first day and I did, but I couldn't come to the rest. (R10)

In the same way, another theme encountered was the *restricted positive social role models*. While some referents commented that participants did not have negative social models, they also pointed out that they did have a lack of positive role models. Some relevant answers for this were: "He is not surrounded by bad references, as far as we know, but neither by positive ones" (R15); "He has a good social circle, but sometimes necessity can lead him to not-so-safe environments" (R16); and "He lives with other young people in circuits of marginality and sometimes shows attitudes that show he can be easily influenced" (R17). The few social models they had seemed to be found among friends, family members, and workers from the associations.

After the program, the comments of the referents changed, with the main theme being the opposite, i.e., *sense of belonging*. Social support increased within the group of participants, as reflected by these responses: "He says he felt uncomfortable with the group. At first, he had shown some impediment in meeting with strangers" (R12) and "He made new friends and participated in activities he didn't know before" (R13). Participation in the program served to strength their sense of belonging: "Beyond a change, the program has been a comfort zone for him during a life stage change process. He has had a point of reference and has felt part of a peer group where he knows he is expected" (R18). Moreover, this was also extensible to the world of sports and seemed to be associated with the development of other positive skills. According to the referents, belonging to a group and the improvement of transferable skills helped increase participants' social networks and overall integration, as mentioned by this referent:

The program has helped him to integrate much more into the world of sports and to have more social skills for his social integration, more autonomy to move around the city, interact with other young people he did not know, and learn to work in a group and in a team. (R14)

Data triangulation

Finally, given that the quantitative and qualitative data came from different sources, a triangulation was performed to further deepen the similarities and differences in perception by youth and referents. This was done by contrasting the significant changes in the statistical analyses with the themes found in the thematic analysis.

In terms of needs, on the one hand, statistical analyses indicated that there was no change in either motivation for sport or the search for meaning in life. On the other hand, qualitative analyses showed the opposite, an increased motivation by some participants and the establishment of goals and life plans. In the case of the narratives, moral disengagement was reduced while support for political violence was maintained, according to statistical analyses. The referents mentioned a similar situation. Although they recognized an improvement in some related skills, there were no indicators of improvement or deterioration in support for violence. Finally, regarding the network, statistical analyses showed an improvement in perceived social support despite no change in terms of deviant peers. These results were also found by the referents, who said they perceived a greater sense of belonging even though there was no real change in the positive social models.

Discussion

The analysis of the qualitative data revealed the perception of indicators about positive changes in terms of an increase in interest in sports in those participants who did not have it, the establishment of future goals, the improvement of some skills and the development of a sense of belonging. However, some barriers were also identified, such as socioeconomic insecurity that limited the positive effects, and factors that did

not change, such as support for violence in certain situations. Contrasting these results with those of Study 1, the formation of a new group that provided a sense of belonging and social support, and the lack of an impact on violence-related narratives are the main findings supported by both studies.

General discussion

The prevention of violent extremism is one of the priority challenges for security and social cohesion in the countries around us. In recent years, comprehensive approaches to this phenomenon have been developed in an attempt to focus on young people as a fundamental target group, both because of their potential vulnerability and because they are possible positive agents for generating social resilience (Zimmerman et al., 2013). However, the scientific evaluation of this type of actions has not been common (Hassan et al., 2021). In this research we have presented the results of a preventive program to prevent extremism in young people through sports. To do so, we have used the 3N model (Kruglanski et al., 2019), assuming that by influencing needs, narratives, and social network, using sport as a medium, we will be favoring protective factors and thus minimizing the risk of radicalization.

The results obtained through a mixed quantitative and qualitative approach are promising. Through the quantitative approach we have found interesting effects of the program on narratives (decrease in moral disengagement) and network (increase in perceived social support). However, it is noteworthy that most of the constructs assessed did not change and in the case of those who remained stable while they worsened for the control group we can find the cause in the specific context of the control group. While this indicates that the intervention did not work as expected, it also means that the situation did not get worse, which can also be interpreted as positive.

Through the qualitative information provided by the referents, we have found some indicators of convergence with the quantitative results. Mainly the usefulness of this type of interventions to generate a sense of belonging and social support among participants and, on the negative side, the inefficiency to change violent narratives. In addition to the above, it is worth noting the overall positive satisfaction with the implementation process of the participants. These results are in line with those found by Johns and colleagues (2014), who also found an increased sense of belonging and the improvement of other skills, and extend them with the inclusion of a control group and a pre- and post-evaluation. At the same time, the results are consistent with other sport-focused prevention programs aimed at reducing the risk of juvenile delinquency where it has been found that this type of intervention has a positive impact on the network by promoting resistance to peer pressure and fostering prosocial behaviors (Spruit, Hoffenaar, et al., 2018; Spruit, van der Put, et al., 2018).

In addition, it is important to highlight those results that are null or negative. First, the impact on needs was not as expected. This may be due to several factors, such as voluntary participation, which may have led to a ceiling effect preventing us from seeing changes as suggested by the quantitative results. Future programs should test the effects of mandatory sport-based programs to clarify this point. Second, the impact on the narratives was also not as expected. This point is relevant given that changing violent narratives is the direct way to prevent violent extremism, according to the theoretical model followed, and the program has shown not to have the necessary capacity to influence this factor. The results suggest that future programs should focus more on violent narratives and use sport as an additional network influencer. Third, the qualitative study revealed the presence of structural constraints such as socioeconomic insecurity. This highlights the limitations of this type of resilience-focused programs

that neglects the social environment. Research has shown the influence of context on the acceptance of extremist narratives (Lobato et al., 2021), which suggests that efforts to generate more resilient youth may be disrupted, or even ineffective, if we do not address the elements of the social structure that may facilitate the acceptance of such narratives. Future programs should adopt a more ecological perspective by integrating resilience with structural elements of risk and determine the impact of the interaction of the two elements (Bouhana, 2019).

To the best of our knowledge, this has been the first application of this theoretical model to the field of prevention, excluding more theoretical proposals and applications focused on tertiary prevention (Bélanger et al., 2015; Weber et al., 2018). Although the results do not allow us to affirm that a change in the three factors proposed by this model has been achieved, the use of this model has allowed us to understand that the use of sport-based interventions seems to be more connected to the network. That is, this type of intervention appears to be an indirect pathway to minimize the risk of radicalization. Future studies should determine whether intervention in only one of the factors is sufficient or whether it would be necessary to intervene in the other two and complement this type of intervention with others that place special emphasis on changing narratives.

It is also necessary to mention some limitations that could affect the interpretation of the results. First, the sample was limited. Recruiting participants was not easy and there was a high drop-out rate while the control group was far from being similar to the intervention group in some key aspects. Although the data indicated that among those who dropped out only the deviant peers were different, this raises some questions as to what the efficacy of the intervention would have been if these participants had taken the post-test or whether these participants were the ones most in

need of the intervention. Second, short, but less reliable instruments were chosen for use due to the characteristics of the participants, who in many cases had a low level of literacy or did not know the native language of the implementation context. This also forced us to have adaptations of the instrument in French and Arabic, in addition to Spanish. Third, the context of the COVID-19 pandemic affected the implementation of the program, which sometimes had to be adapted to the health measures adopted by the competent authorities. Beyond these limitations, we consider that this research provides relevant data on the dynamism of the three psychosocial factors contemplated in the 3N model and the possibility of influencing them through applied interventions. Future research should continue this line of work by trying to maximize experimental control in primary prevention contexts. Moreover, this applied perspective could be potentially interesting not only in the prevention of political violence, but also in other areas such as the prevention of delinquency or organized crime.

In conclusion, sports can be a fundamental tool for the prevention of violent extremism. In particular, sports have a positive impact on the participants' network, giving them a greater sense of belonging and increasing their perceived social support. Consequently, the combination of sports with other types of interventions focused on needs and violent narratives stands as the best option for future prevention programs.

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Table 1

Descriptive statistics and Pearson's bivariate correlations

	1	2	3	4	5	6	7	8	9	10	11	12	Intervention group	Control group
													M (SD)	M (SD)
1. Sports motivation (pre-test)	-	.93***	.15	.19	.11	-.02	.23*	.19	-.12	.11	.04	.06	3.60 (0.57)	2.59 (1.09)
2. Sports motivation (post-test)	.38***	-	.12	.24*	.06	-.04	.19	.20	-.23*	.06	.02	.15	3.69 (0.39)	2.62 (1.14)
3. Moral disengagement (pre-test)	.03	.05	-	.74***	.52***	.46***	.51***	.51***	.04	.01	.16	.07	2.11 (1.05)	1.98 (0.86)
4. Moral disengagement (post-test)	-.04	.01	.18	-	.48***	.51***	.52***	.54***	-.05	.09	.12	.19	1.70 (1.07)	2.00 (0.90)
5. Political violence (pre-test)	.02	.16	.42***	.08	-	.72***	.40***	.40***	.01	-.01	.22*	.19	1.34 (1.18)	1.42 (1.03)
6. Political violence (post-test)	-.06	.04	.06	.53***	.29**	-	.41***	.44***	-.06	-.03	.09	.06	1.14 (0.92)	1.65 (1.03)
7. Deviant peers (pre-test)	-.22**	.07	.09	.23*	.23*	.25*	-	.81***	-.04	-.02	-.01	.01	0.82 (1.01)	0.50 (0.65)
8. Deviant peers (post-test)	-.29**	-.01	.20	.32**	-.01	.30**	.56***	-	-.04	.08	-.07	-.08	0.53 (0.79)	0.78 (0.82)
9. Search for meaning (pre-test)	.21*	-.01	.21*	-.05	.04	-.20	.01	-.19	-	.58***	-.10	-.13	3.49 (0.70)	2.55 (0.90)
10. Search for meaning (post-test)	-.01	-.09	.37	.23*	-.07	.22	-.07	.03	.31*	-	.01	.10	3.27 (0.91)	2.52 (1.04)
11. Social support (pre-test)	.10	.01	-.09	-.10	-.08	.01	.07	.03	.02	.08	-	.75***	2.52 (1.13)	3.26 (0.88)
12. Social support (post-test)	.06	.22*	-.03	-.09	.13	.06	.05	-.08	-.08	.21	.55***	-	2.80 (0.95)	3.23 (0.79)

Note: *$p < .05$, **$p < .01$, ***$p < .001$; data for the intervention group below the diagonal and for the control group above the diagonal.

Figure 5

Relationships between the themes identified in the thematic analysis