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Evaluating the effectiveness of a psychological and adventure multicomponent program for victims of intimate partner violence: A pilot mixed-method study

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Abstract

Intimate partner violence (IPV) is a global health problem with different negative consequences for women's mental health. This pilot study aims to evaluate the efficacy of a multicomponent intervention for battered women using a comparison group design to analyze improvement in self-esteem, self-concept, self-efficacy, body dissatisfaction, and depression. The intervention consisted of an eight-session multicomponent intervention program based on the combination of group psychological therapy and adventure activities. The study sample originally consisted of 34 women IPV victims. Self-report psychological assessment was conducted during the pre-test and post-test while interviews were conducted during the post-test among the experimental group. The results of this pilot study suggest the efficacy of the cognitive-behavioural multicomponent intervention on self-esteem, self-efficacy and depression in the IPV victims from the experimental group. We conclude that these findings support the efficacy of this psychological intervention program. Practical implications and suggestions are also discussed.

Keywords: Adventure Therapy, Intimate Partner Violence; Group therapy; Mixed Method Research; Multicomponent Program; Wilderness therapy.

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3 **Evaluating the effectiveness of a psychological and adventure multicomponent program**
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5 **for victims of intimate partner violence: A pilot mixed-method study**
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12 **Introduction**
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15 Violence against women (VAW) is defined as "*any act of gender-based violence that*
16 *results in, or is likely to result in, physical, sexual, or mental harm or suffering to women*"
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18 (United Nations, 1993) and includes different forms of violence such as intimate partner
19 violence (IPV), sexual violence and harassment, human trafficking, female genital mutilation
20 or child marriage, and others (World Health Organization [WHO], 2002), being intimate
21 partner violence (IPV) the most common form of violence against women (WHO, 2021) with
22 the additional aggravating factor of being committed by a spouse, ex-spouse, or current or
23 former partner, and disproportionately affecting women (Centre for Disease Control and
24 Prevention [CDC], 2003).
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36 The high IPV prevalence is shown by the latest WHO's global and national estimates
37 (2021), concluding that 27% of women have experienced IPV during their lifetime, while
38 around 13% have experienced IPV in the past 12 months. At the local level, in Spain, a cross-
39 sectional survey in primary care found that 24.8% of women had experienced IPV during
40 their lifetime, most of them including physical and psychological violence (Ruiz-Peréz et al.,
41 2017). Later, the 2019 VAW Macro-survey (Ministerio de Igualdad [*Ministry of Equality*],
42 2020) showed that 32.4% of Spanish women had experienced violence in their lifetime
43 (14.2% physical or sexual, and 31.9% psychological), and 10.8% during the previous 12
44 months (1.8% physical and sexual, and 10.6% psychological violence).
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56 A substantial body of research has focused on IPV's negative consequences on
57 women's health (for a review see Campbell, 2000), including self-report poorer health (Coker
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3 et al., 2000) and lower female psychological well-being (Matheson et al., 2015; Vilariño et
4 al., 2018). Indeed, psychological violence predicts mental health problems (posttraumatic
5 stress disorder and depression) after controlling for physical and sexual violence (Mechanic
6 et al., 2008). As a consequence of partners' emotional abuse, women experience emotional
7 loneliness, lower self-esteem and diminished identity among others, showing that partner
8 abuse or being with a partner who constantly changes his behaviour for no reason, damages
9 one's sense of self (Lammers et al., 2005). In this regard, erosion of the self is defined as a
10 loss of self-esteem and self-efficacy (Matheson et al., 2015) and Childress (2013) concluded
11 that "*The majority of study participants noted the devastating effects of abuse on their self-*
12 *esteem, self-identity and self-confidence*" (p. 698), which might explain why the self-esteem
13 of psychologically and physically abused women is more damaged (Tariq, 2013) and their
14 emotional and physical self-concept is lower (Penado-Abilleira & Rodicio-García, 2017) than
15 women who have not been abused. Furthermore, victims of IPV have lower body image
16 satisfaction (FitzPatrick et al., 2022), are more ashamed of their bodies (Gervais & Davidson,
17 2013), and have a damaged body image (Weaver et al., 2007).

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The study of the affective and cognitive dimensions of self-concept is crucial for understanding the mental issues of IPV victims. Overall, violence by intimate partners erodes the self of women and affects their general mental health. Specifically, intimate partner victimization leads to lower levels of self-efficacy (Matheson et al., 2015) and, ultimately, to more severe symptoms of depression (Cascardi & O'Leary, 1992; Chen et al., 2022; Cort et al., 2014; Garcia et al., 2021; Lambert et al., 2013; Mugoya et al., 2020; Yuan & Hesketh, 2021).

Group therapy with IPV victims

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3 Given the adverse psychological outcomes described above, intervention for IPV
4 victims is essential to overcome its psychological cost. Group therapy, the most common type
5 of intervention for IPV victims, is of proven efficacy (Clark et al., 2018; Crespo & Arinero,
6 2010; Cort et al., 2014; Daneshvar et al., 2020; Kaslow et al., 2010; Kelly & Pich, 2014;
7 Tutty et al., 2016; McWhirter, 2011). However, group therapy programs for self-esteem and
8 self-concept have had mixed effectiveness. Santos et al. (2017) reported enhanced self-
9 esteem in an eight-week group intervention program, concluding that social support
10 intervention is important for improving the self-esteem of IPV victims (Constantino et al.,
11 2005). In the Spanish context, Santandreu-Oliver et al. (2014) showed the effectiveness of
12 group intervention focused on enhancing self-concept and self-esteem. On the contrary,
13 Crespo & Arinero (2010) failed to improve women's self-esteem significantly. Indeed,
14 Santandreu-Oliver et al. (2014) developed an intervention specifically designed to improve
15 self-esteem and self-concept, however, self-esteem improved only minimally (p. 62), and the
16 study did not have a control group. Based on the above literature, it is expected that group
17 process variables (e.g., connectedness, attachment) might boost intervention effectiveness
18 with IPV victims (Lothstein, 2013). and, therefore, this study aimed to analyze the effects of
19 a group intervention program on the well-being of victims of interpersonal violence.
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43 **Adventure and wilderness therapy with IPV victims**

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46 The connection with nature may be an alternative and complementary approach for
47 people with a variety of psychological problems (Chaudhury & Banerjee, 2020). Adventure
48 Therapy (AT), makes experiential activities its central feature (Gass et al., 2012). It involves
49 the use of adventure as a tool to achieve the established therapeutic goals (Alvarez & Stauffer
50 2001), combining the benefits of adventure with those of the traditional therapy (Newes &
51 Bandoroff, 2004). Some of the key elements that characterize AT definition include: 1) it is
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3 intentional; 2) facilitates the use of adventure tools and techniques; 3) guides personal
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5 change, 4) aims at achieving desired therapeutic goals (Alvarez & Stauffer, 2001; News &
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7 Bandoroff, 2004).
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11 Various studies have shown the many beneficial features of AT. For instance, the
12
13 meta-analysis conducted by Bowen & Neill (2013) concluded that these programs were
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15 effective in behavioural, emotional, and interpersonal outcomes in both the short and long
16
17 term. Adventure activities are particularly helpful to strengthen the sense of self (Gass et al.,
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19 2012), which might be especially important for IPV victims (Lammers et al., 2005). Indeed,
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21 adventure base therapy might be highly indicated for women who have experienced IPV and
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23 feel a loss of internal control (Clements & Sawhney 2000). This is of great importance since
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25 AT allows to regulate one's behavior, facilitating self-awareness, which will turn into an
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27 increase in women's internal sense of control in their daily lives (Newes & Bandoroff, 2004).
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35 A specific format of AT is Wilderness Therapy (WT). WT distinguishes itself from
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37 AT in terms of context, conducting in distant wild settings, where outdoor life and the
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39 immersion in nature are essential to the treatment (Fernee, et al., 2015, 2016). This type of
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41 intervention has been developed with domestic violence survivors (McBride & Korell, 2005),
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43 leading the American Psychological Association (APA, 2018) to recommend using WT for
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45 women victims of IPV. McBride & Korell (2005) explained how WT could promote their
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47 personal empowerment, and Levine (1994) addressed body image concerns and self-imposed
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49 limitations effectively by using WT in a group of female victims of sexual abuse. Based on
50
51 these previous studies, adventure and wilderness therapy are helpful for IPV women due to
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53 the three basic psychological needs that are met through these adventure activities: autonomy,
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55 competence, and relatedness (Gass et al., 2012). Therefore, this study aimed to analyze the
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3 effects of an intervention program based on adventure therapy for the well-being of victims
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5 of interpersonal violence.
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8 9 **Multicomponent programs with IPV victims**

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12 Solid empirical support has previously shown cognitive-behavioural psychological
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14 multicomponent programs for IPV victims to be more effective than treatment of individual
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16 components (Crespo & Arinero, 2010; Crespo et al., 2021; Johnson et al., 2011; Kaslow et
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18 al., 2010; Kiely et al., 2010; Pigeon et al., 2022; Tirado-Muñoz et al., 2014). They are
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20 characterized by the combination of several techniques (components) addressing multiple
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22 factors involved in a psychosocial problem. Indeed, Fulu et al. (2014) asserted that
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24 multicomponent interventions are more effective in preventing violence against women than
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26 single-component therapies. Along the same line, Sabri & Gielen (2019) claimed that
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28 multicomponent interventions might be promising for working with women survivors of
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30 violence, due to the many ways that violence impacts women's health. Nonetheless, to our
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32 knowledge, no published research has explored a multicomponent intervention program for
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34 treating the different dimensions of self-esteem in victims of interpersonal violence.
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36 Intending to overcome this gap in the literature, this study aimed to analyze the effects of a
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38 multicomponent intervention program on the well-being of victims of interpersonal violence.
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45 **The Present Study**

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48 Based on the literature outlined above, we aimed to test if the intervention that
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50 involves the three core attributes previously mentioned (adventure and group-based, and
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52 multicomponent treatment) improves IPV victims' well-being. Indeed, this pilot study
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54 examined the efficacy of a multicomponent program using a comparison group design to
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56 analyze improvement in self-esteem, self-concept, self-efficacy, body dissatisfaction, and
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58 depression. We hypothesized that participants in the treatment group would show statistically
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3 significant differences from the control group in self-esteem (Hypothesis 1), self-concept
4 (Hypothesis 2), self-efficacy (Hypothesis 3), body dissatisfaction (Hypothesis 4) and
5 depression (Hypothesis 5). Moreover, participants would also show post-intervention
6 improvement in self-esteem, self-concept, self-efficacy, body dissatisfaction and depression
7 from their preintervention scores. Therefore, this study contributes to the IPV literature by
8 evaluating a multicomponent program on the psychological recovery of IPV victims.
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20 **Method**

21 **Trial design**

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25 This was a two-arm randomized controlled pilot trial with an intervention and a
26 control group. Randomization and blinding procedures were conducted after the inclusion
27 and exclusion criteria had been verified. This study was approved by the University of
28 (blinded for peer-review) Bioethics and Biosafety Committee and registered with the
29 ISRCTN Clinical Trials Registry (blinded for peer-review). The detailed protocol has been
30 previously published elsewhere (blinded for peer-review).
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40 **Participants and Procedure**

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43 The study sample originally consisted of 34 women IPV victims. Participants were
44 recruited based on the following inclusion criteria: victim of IPV, over 18 years of age and
45 residence in the Region of Extremadura (Spain). Women who reported a severe
46 psychological or psychiatric disorder were excluded due to ethical reasons, including those
47 participants meeting criteria for depressive disorders, bipolar and related disorders, eating
48 disorders, personality disorders, as well as any problem included in the schizophrenia
49 spectrum. Such ethical criteria were based on the fact that our multicomponent intervention
50 was not designed to be an intensive treatment that fits the specific needs of those IPV women
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3 who, in addition, meet the criteria for a psychopathological disorder. In particular, the
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5 intrinsic characteristics of both psychological sessions and adventure activities might have a
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7 negative impact on their symptomatology and the development of their individual therapies.
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10 Additional exclusion criteria included reporting physical problems incompatible with
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12 adventure activities and not having enough proficiency in the Spanish language to
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14 communicate with the research team. The study information was distributed through
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16 Women's Institutes and Associations in contact with IPV victims and by word of mouth.
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18 After inviting them to participate, the institutions sent an informative flyer directly to IPV
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20 victims; women who voluntarily decided to participate in the study contacted the researcher
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22 directly. Before forming the intervention and control groups, the women were screened to
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24 check for their compliance with the inclusion and exclusion criteria. Of the 45 female victims
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26 originally evaluated, 11 were excluded because they met some of the exclusion criteria (e.g.,
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28 physical problems or diagnosed with a severe mental health disorder). The 34 women who
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30 were finally included in the sample were randomly assigned to the experimental or the
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32 control groups (control group, $n = 17$; experimental group, $n = 17$). There were three
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34 dropouts, one from the experimental group and two from the control group (one before the
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36 preintervention assessment and the other two before the postintervention assessment).
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43 The women's ages ranged from 23 to 56 ($M = 40.75$, $SD = 8.56$). Every woman was
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45 legally divorced (45.5%) or separated (54.5%) from their abuser and had from zero to six
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47 children ($M = 1.90$, $SD = 1.31$). Regarding their education, most participants had completed
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49 upper secondary education and vocational education (36.4%), followed by lower secondary
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51 education (30.3%), graduate or postgraduate university (24.2%), and only 9.1% did not finish
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53 lower secondary education. Most of the women reported the violence they experienced to the
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55 police (90.9%), and 75.8% of women reported having or had had a restraining order against
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57 their abuser. Women on average reported that the last violent event took place more than two
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3 years and a half before the beginning of this study ($M = 32.29$ months; $SD = 28.33$).
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5 Moreover, most of the female participants declared to have experienced physical violence
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7 (66.7%) and psychological violence (78.8%). Furthermore, 54.5% of the women reported had
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9 been victims of both physical and psychological violence by their former partner. The
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11 primary outcomes were focused on assessing mental health variables at pre-treatment, post-
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13 treatment, and both short and medium follow-up (one and three months after treatment
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15 completion). It should be noted that this report only describes the main results of the program
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17 regarding pre- and post-treatment efficacy assessments.
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22 **Program description**

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26 Participants in both groups were encouraged to continue their usual treatments, and all
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28 of them received a referral card listing IPV community resources, including local and
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30 national IPV service telephone numbers. Women in the experimental group were assigned to
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32 a multicomponent program consisting of eight group-therapy sessions distributed over
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34 consecutive weekends. This cognitive-behavioural multicomponent intervention, which
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36 included psychological and adventure components, took place in a natural, outdoor setting.
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38 Each session was structured as follows: the first part was a group-based therapy (one hour)
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40 describing the program's psychological components, and the second part (three to five hours)
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42 included the component of the adventure activities. This integrative approach was designed to
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44 work on the psychological component during the first part of the session, preparing the
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46 women for the adventure activity in the second part. Each session of the program was
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48 composed of a combination of physical and psychological components. Table 1 presents the
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50 treatment intervention contents in each session. All the sessions were conducted and
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52 supervised by professionals in the field.
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3 The psychological components were implemented by professionals, all therapists had
4 PhDs and intensive training in general clinical psychology and intervention for IPV victims.
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6 Experts in sports sciences were responsible for developing the adventure component (with
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8 additional psychological support from the specialized therapists during the adventure
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10 activities). The women assigned to the control group participated in the scheduled evaluations
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12 but did not participate in the multicomponent program.
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18 **Measures**

21 *Sociodemographic measures* included age, education, number of children, marital
22 status, IPV history and socioeconomic status. The participants self-reported information on
23 their medical histories and their physical and mental health problems. A checklist analyzing
24 IPV victimization was used to determine compliance with the inclusion criteria, including
25 whether they had ever 1) experienced any psychological or physical violence by an intimate
26 partner; 2) had a protective order because of violence; 3) reported violence against them to
27 the police; or 4) made use of specialized psychological or social resources for IPV victims.
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38 *Self-esteem.* Participant self-esteem was measured using the well-known Rosenberg
39 Self-Esteem Scale (RSE; Rosenberg, 1965) (Spanish adaptation by Vázquez Morejón et al.,
40 2004), which comprises 10-items answered on a four-point Likert scale (1 = strongly agree, 2
41 = agree, 3 = disagree, 4 = strongly disagree) with scores ranging from 10 to 40. The RSE is a
42 reliable and valid instrument with high internal consistency ($\alpha = 0.72$ to 0.88 ; e.g., Gray-
43 Little et al., 1997). In this study, the measure had adequate reliability ($\alpha = 0.82$).
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53 *Self-concept.* The Self-Concept Form-5 (AF-5; García & Musitu, 1999) has 30 items
54 on five self-concept dimensions (academic/professional, social, emotional, family, and
55 physical), in six statements rated on a continuous response scale (1 = complete disagreement
56 to 99 = complete agreement). Higher scores mean better self-concept, except for the
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3 emotional self-concept dimension, in which higher scores mean lower emotional self-concept
4 since all items are worded negatively. This reliable and valid instrument has high internal
5 consistency ($\alpha = 0.71$ to 0.88 ; e.g., García & Musitu, 1999). In this study, the measure had
6 adequate reliability (academic/professional: $\alpha = 0.77$, social: $\alpha = 0.77$, emotional: $\alpha = 0.75$,
7 family $\alpha = 0.68$, and physical: $\alpha = 0.77$).

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16 *Self-efficacy.* This variable was measured using the General Self-Efficacy Scale
17 (Baessler & Schwarzer, 1996; Sanjuán-Suárez et al., 2000). Its 10 items, rated on a 10-point
18 Likert-type scale, analyze feelings of personal competence in handling stressful situations.
19 Previous research has already highlighted its high internal consistency in different countries
20 ($\alpha = 0.79$ to 0.93) (e.g., Sanjuán-Suárez et al., 2000). In this study, the measure had adequate
21 reliability ($\alpha = 0.95$).

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31 *Body dissatisfaction.* The Body Shape Questionnaire (BSQ) (Cooper et al., 1987;
32 Spanish adaptation developed by Raich et al., 1996) was used to measure participant body
33 dissatisfaction. This 34-item questionnaire assesses concerns about female body image in
34 four subscales (body dissatisfaction, fear of gaining weight, appearance-related low esteem,
35 and desire to lose weight) rated on a six-point scale (1 = never to 6 = always). The total score
36 ranges from 34 to 204, and higher scores show more body dissatisfaction. Previous
37 psychometric studies have demonstrated high internal consistency ($\alpha = 0.95$ to 0.97) (e.g.,
38 Raich et al., 1996). In this study, the measure had adequate reliability ($\alpha = 0.98$).

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50 *Depression symptomatology.* Depressive symptoms were measured using the Beck's
51 Depression Inventory-Second Edition (BDI-II) (Beck et al., 1996; Spanish adaptation
52 developed by Sanz et al., 2003). This widely-used scale is a 21-item questionnaire that
53 assesses the severity of depressive symptomatology in different areas, such as sadness, loss of
54 pleasure, or suicidal ideation, among others. The questionnaire has shown high internal
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3 consistency in a multitude of studies and subsamples ($\alpha = 0.73$ to 0.95 ; e.g., Sanz et al.,
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6 2003). In this study, the measure shows adequate reliability ($\alpha = 0.91$).
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9 *Qualitative assessment.* Participants in the experimental group were asked their
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11 opinions of the program in individual semi-structured interviews about its positive and
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13 negative aspects one week after the program ended. A researcher expert on qualitative
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15 methodology asked two questions about the internal qualities of the program, "What did you
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17 like best about the program?" and "What aspects of the program could be improved?". The
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19 interviews were organized using the SWOT technique, one of the most common qualitative
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21 strategies for organizational management, which analyzes internal concerns, and plans
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23 conditions for improvement and problem-solving (Helms & Nixon, 2010). Working from this
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25 perspective, questions were directed at identifying the program's strengths, weaknesses,
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27 opportunities, and threats (SWOT) according to the participants' experiences, but mainly the
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29 strengths and weaknesses. The responses grouped in the four SWOT areas of interest were
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31 later analyzed thematically to enhance data richness.
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37 **Data Analysis**

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40 First, the normality of the quantitative variables was checked using the Shapiro-Wilks test.
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42 Changes in *quantitative data* resulting from the intervention were analyzed by repeated-
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44 measures ANOVA over time, and with age and baseline level as covariates. Statistical
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46 analyses were performed by intention-to-treat (ITT) analysis and by per-protocol analysis for
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48 comparison. Between-group differences at baseline were analyzed using independent samples
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50 tests. Finally, within-group differences were analyzed using paired sample t-test or the
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52 Wilcoxon signed-rank test according to the normality of the variable. All analyses were
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54 conducted with the SPSS statistical package (version 26.0; SPSS, Inc., Chicago, IL, USA),
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56 with the significance level set at 0.05. Second, *qualitative data* were analyzed thematically to
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3 deepen participants' insights, find patterns, make connections (Braun & Clarke, 2006), and
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5 generate a well-organized and methodical report (King, 2004).
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9 **Quantitative Results**

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12 Preliminary analysis showed no differences in variables between the intervention and
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14 control groups at baseline. *Hypothesis 1* on self-esteem was fully supported, as the results
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16 from the ANOVA showed that participants in the intervention group had significantly higher
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18 mean scores than control group participants on self-esteem ($F(1, 31) = 6.16, p = .019$). The
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20 estimated between-group effect size in the intention-to-treat analysis was small ($\eta^2 = .17$;
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22 Table 2). Covariates (age and baseline levels) did not significantly affect the participant's
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24 improvement in self-esteem. Moreover, participants in the experimental group had a greater
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26 post-intervention increase in self-esteem (T1) compared to baseline (T0) ($t(16) = -3.21, p =$
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28 $.006$).
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34 *Hypothesis 2* on self-concept was partially supported. The ANOVA showed that the
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36 experimental group had a larger increase in physical self-concept than the control group (F
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38 $(1, 31) = 5.32, p = .028$) but estimated between-group effect size in the intention-to-treat
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40 analysis was small ($\eta^2 = .15$; Table 2). Furthermore, the experimental group's post-
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42 intervention scores on physical self-concept improved when compared with baseline in the
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44 efficacy analysis ($Z(16) = -2.17, p = .030$) while the p -value was $.055$ in the intention-to-treat
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46 analysis. There were no between-group or within-group differences in professional, social,
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48 familiar and emotional self-concept (see Table 2). Inclusion of the baseline level significantly
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50 affected improvement in social self-concept but did not affect its significance, whereas age
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52 did not significantly affect any dimension of self-concept.
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58 *Hypothesis 3* on improvement in self-efficacy was fully supported. Participants in the
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60 intervention group had a larger increase in self-efficacy than the control group ($F(1, 31)$

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3 =7.45, $p = .010$), and the estimated between-group effect size was small ($\eta^2 = .19$). The
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=7.45, $p = .010$), and the estimated between-group effect size was small ($\eta^2 = .19$). The covariates (age and baseline level) did not significantly affect improvement in participant self-efficacy. Furthermore, there were significant differences between the experimental group post-intervention and baseline scores ($Z(16) = -2.30, p = .021$).

Hypothesis 4 on decrease in body dissatisfaction as a consequence of the intervention was not supported, since results failed to show between-group differences or within-group differences on the body dissatisfaction scale. Neither did the inclusion of covariates (age and baseline levels) show any significant effect on participant body dissatisfaction.

Finally, *Hypothesis 5* was fully supported, as the intervention group participants had lower depression scores than the control group at post-intervention assessment ($F(1, 31) = 16.43, p < .001$), and the estimated between-group effect size in the intention-to-treat analysis was medium ($\eta^2 = .35$). The inclusion of baseline level as a covariate significantly affected improvement in depression ($F(1, 30) = 20.97, p < .001; \eta^2 = .41$), whereas age did not significantly affect the covariate. Moreover, there were within-group differences in the experimental group ($Z(16) = -3.16, p = .002$). Baseline means in the experimental group correspond to mild depression ($M = 17.69, SD = 10.81$), whereas post-intervention scores were within the limits of normal/minimal depression ($M = 7.25, SD = 7.97$).

Qualitative results

In general, participants were very enthusiastic about the experience: 100% of the women agreed that the three most recurrent themes (group support, activities, and staff support) were instrumental to the program's success.

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3 **Group support.** Out of the 16 women, 11 emphasized that knowing other women who
4 had experienced similar situations was the main accomplishment of the program. The
5 commonality of experiences shared during group therapy made them feel increasingly
6 comfortable at each session. It facilitated their sense of belonging to the group and their
7 solidarity with the other women. Participants talked about the group therapy sessions as
8 intimate "opportunities for breaking down boundaries". Those meetings propitiated an
9 environment in which participants felt understood and were able to offer their advice and
10 comfort to other women. Seven women specifically referred to this process of supporting
11 others as crucial because it enabled them to position themselves in a more active rather than
12 passive role. In their views, they progressed from victims to allies, a feature that helped boost
13 their confidence and sense of self-value.
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17 The second feature that the participants most liked was the **adventure activities**. For
18 three women out of the 16, adventure outdoor sports were the highlight of the whole
19 experience, while for two of them, it was as important as the group therapy and peer
20 networking. The remaining 11 participants also stated that they enjoyed the adventure
21 activities despite their fear of some of them. Although the reasons for their satisfaction
22 varied, the three most recurrent themes were learning to trust other people again, overcoming
23 personal fears, and pushing physical limits. The overcoming of personal fears combined with
24 physical achievement also implied a whole new level of confidence in themselves and their
25 own abilities. In this respect, the adventure activities represented an opportunity to prove
26 themselves capable of facing adversity and not think in terms of limits but possibilities. The
27 motto "I can" became a joint statement among these women's narratives, even when they
28 could not finish an activity.
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32 In addition, an unexpected positive influence was related to the trust in the **staff** that
33 they were able to build up. This was the third most recurrent theme in the interviews. All of
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3 the women mentioned how well treated and cared for by the activity staff they felt. The
4 physical and technical challenges required them to rely on the staff's expertise and carefully
5 follow their instructions. Far from being a deterrent, the presence of men on the staff
6 unexpectedly emerged as a therapeutic element. One participant affirmed, "*They helped me*
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think that there are also good men out there, who are different".

Participants were also asked to identify project weaknesses. In answer to the question, "What would you change about this project?" seven participants indicated that, in some cases, the distance they had to travel to get to the location was too long. Although three of these seven women finished their comments regarding length with a positive remark, such as "but it was worth it" or "it was long, but I would do it again", two of them were concerned that the distance would limit their future interaction with the rest of the group. Also, the experience was too short for six women who would have liked more sessions. Five of them would have extended the group therapies, and three recommended a gradual de-escalation of the weekly encounters to finish the project less abruptly.

Discussion

This pilot study aimed to assess a multicomponent intervention program's effectiveness on self-esteem, self-efficacy, self-concept, body dissatisfaction, and depression in female IPV victims. The multicomponent program was based on the combination of adventure and group therapy. First, the eight-session group therapy with a cognitive-behavioural orientation effectively increased IPV victims' self-esteem (Santos et al., 2017). Second, adventure therapy, understood as the prescriptive use of adventure experiences provided by mental health professionals, was conducted in natural settings that involve

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3 women in cognitive, affective, and behavioural activities (Gass et al., 2012) already
4 performed by IPV survivors (Schwarz, 2021).
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8 The combination of both quantitative data from the intervention and control group
9 responses, along with the qualitative data from the individual interviews with the
10 experimental groups showed the effectiveness of the multicomponent intervention program.
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12 The intervention included participants with different education levels and ages,
13 demonstrating its efficacy despite this diversity. This is critical to IPV intervention because
14 the women who are victims are from all socioeconomic backgrounds.
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21 The quantitative results of the study enabled us to confirm Hypotheses 1, 3 and 5 and
22 partially accept Hypothesis 2, but not Hypothesis 4. Indeed, results showed an improvement
23 in self-esteem (Hypothesis 1) and self-efficacy (Hypothesis 3) scores when compared with
24 their preintervention scores and control group scores, as in previous group intervention
25 programs that have also shown improvements in self-esteem (Santos et al., 2017). Self-
26 esteem is usually assessed in group intervention effectiveness studies (Santos et al., 2017),
27 and its improvement is mainly due to the social support provided by group therapy (Tutty et
28 al., 2016). Damage to self-esteem is caused by psychological and physical violence
29 (Childress, 2013), and its recovery requires specific intervention. The effect size of our study
30 was larger than that of Tutty et al. (2016; effect size = 0.15), and its improvement might be
31 due to the multicomponent nature of our program. As stated in previous studies (Crespo &
32 Arinero, 2010; Crespo et al., 2021; Johnson et al., 2011; Kaslow et al., 2010; Kiely et al.,
33 2010; Pigeon et al., 2022; Tirado-Muñoz et al., 2014), multicomponent intervention groups
34 allow women to strengthen some protective factors during the therapy that, in turn, could be
35 transferred to their daily lives, therefore increasing the self-perception of their abilities to
36 overcome demanding everyday situations.
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3 Kokka et al. (2019) found that a program focused on stress management and lifestyle
4 increased self-efficacy of IPV victims. As in the Kokka et al. (2019) intervention, the focus
5 on physical activities and contact with nature might have caused an improvement in self-
6 efficacy. Our results partially support Hypothesis 2 by showing that only one dimension of
7 self-concept, physical self-concept, improved from participation in the intervention group.
8 This improvement is interesting since a damaged physical self-concept is a consequence of
9 sexual, physical and psychological violence (Penado-Abilleira & Rodicio-García, 2017). The
10 positive effect of the multicomponent program on victims' physical self-concept is, according
11 to the study by Dale et al. (2011), that exercise (e.g., yoga) buffers the negative impact on
12 self-concept consequence of IPV. However, results did not show statistically significant
13 improvement in the other areas of the self-concept. A possible explanation might be that the
14 intervention group was composed of women who reported differences in frequency of the
15 violence suffered. In this regard, previous studies have shown that women who frequently
16 experienced IPV reported a more negative self-concept than women who had occasionally
17 experienced such violence (Carrascosa et al., 2016; Weaver et al., 2014).

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38 Our results confirmed that the multicomponent program effectively decreased the
39 levels of depressive symptomatology of women who had experienced IPV. This result is
40 noteworthy, as "*depression is one of the most common comorbid conditions associated with*
41 *posttraumatic stress disorder (PTSD)*" (Nixon et al., 2004, p. 315). Depression has been
42 targeted by psychological intervention in cognitive processing therapy (Resick et al., 2008)
43 and cognitive behavioural therapy (Echeburúa et al., 2013). In conjunction with cognitive
44 behavioural therapy, group therapy increases female functioning in everyday life (Echeburúa
45 et al., 2013).

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56 Moreover, previous studies have shown the efficacy of wilderness adventure therapy
57 in reducing depressive symptoms (Bowen et al., 2016), but we found no significant effect of
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3 the intervention on body image. This might be because the intervention group was composed
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5 of women who reported differences in the severity of the violence experienced. Previous
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7 studies have shown that women who experienced more extreme IPV reported a more
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9 negative body image than women who had experienced less severe IPV (Campbel, 1989;
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11 Weaver et al., 2014). Changes in body image might be more pronounced and significant in
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13 those women who have suffered higher levels of IPV severity. For future studies, the severity
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15 of violence that women have experienced should be controlled for and body satisfaction
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17 improvement analyzed in those who have experienced more severe and extreme IPV.
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23 The qualitative results of the study identified the program's strengths and weaknesses,
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25 combining the flexible approach of the thematic analysis with its multifaceted analysis of
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27 data (Braun & Clarke, 2006; Nowell et al. 2017) in the areas of inquiry we had with the
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29 SWOT technique. Among the strengths, most of the women agreed that group support,
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31 adventure activities, and the staff's involvement were crucial to the program's success. The
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33 participants underscored the importance of peer support and networking, which was built up
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35 throughout the whole program, even though they primarily attributed this to the group
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37 therapy. This is according with a recent meta-analysis that suggests that group peer support
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39 interventions are effective for people experiencing mental health problems (Lyon et al.,
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41 2021). The second and third most influential features were the outdoor activities which
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43 further strengthened the ties created during group therapy. At the same time, the staff's
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45 support was considered fundamental for its success, which is, according to the importance
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47 given to the therapeutic relationship described in adventure therapy (Newes & Bandoroff,
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49 2004). We should also mention some specific weaknesses of the project, such as the distance
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51 to be travelled and the length of the intervention, which we consider possible improvements
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53 for further projects.
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Limitations and future studies

Despite the success of this pilot intervention, some limitations must be acknowledged. The first limitation was the small sample size ($n = 34$), limiting the generalizability of the results, so future studies should replicate this intervention with women from different regions and cultures. In addition, our intervention excluded, due to ethical reasons, those participants meeting the criteria for a severe psychological or psychiatric disorder. Future studies should adapt this psycho-adventure multicomponent program to the real needs of those women presenting a psychopathological disorder. This is especially important for those participants who have a depressive disorder (e.g., Major Depressive Disorder) because, as mentioned above, this mental health problem represents a common comorbid condition in women victims of gender violence (Chen et al., 2022; Garcia et al., 2021; Machorrinho et al., 2022; Mugoya et al., 2020; Stylianou, 2018; Yuan & Hesketh, 2021) becoming a key target for both IPV women's (Echeburúa et al., 2013; Resick et al., 2008) and wilderness adventure (Bowen & Neill, 2013; Bowen et al., 2016) interventions. Moreover, because the effect sizes were small to medium, it is needed to reproduce these results in large samples for replicability reasons and to examine the maintenance of the initial changes with long-term follow-ups. The participants commented that the intervention was too short and that it ended too suddenly, so future interventions could be longer and the program could end more gradually. However, considering how much effort the participants made to organize their schedules to be able to attend the sessions, a longer program might hinder participant commitment to the intervention. Thus, following Santos et al. (2017), "*Future research should evaluate shorter versus longer programs to define the optimal length of the intervention*" (p. 56). We relied on self-report measures, and future studies should use other behavioural correlates of psychological improvement. Importantly, some relevant information about female participants was missing like their income level, their nationality, the severity of the violence

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3 they were exposed to, or external psychological interventions they were receiving during the
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5 intervention which should be considered as potential covariates in future studies.
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8 Physiological variables were not assessed, and they should be evaluated to understand the
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10 biological mechanisms leading to improvements in some of the variables that were included.
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12 Indeed, cortisol level is higher among IPV victims (Pico-Alfonso et al., 2004). This is a
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14 biological marker associated with severe psychological problems in women exposed to IPV
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16 (Cerdeña-Molina et al., 2022) that can improve their connection to nature (Wu & Jones, 2022).
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18 Regarding the procedure, there was not a process evaluation, which hinder us to know what
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20 components of the intervention most contributed to the success of the program or how the
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22 contextual factors affect the intervention (Linnan et al., 2002). The qualitative analysis was
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24 realized by a single expert and future studies would benefit from a more integrative
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26 qualitative team conducting interviews with open questions and working towards a deeper
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28 level of response analysis. Although the results of this pilot study are promising in terms of
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30 the efficacy of the multicomponent intervention in improving self-esteem, self-concept, self-
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32 efficacy and depressive symptomatology in women victims of gender violence, its cost-
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34 effectiveness must also be studied.
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41 **Conclusions**

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44 The combination of both quantitative and qualitative data enables us to confirm the
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46 efficacy of the cognitive-behavioural multicomponent intervention on the self-esteem, self-
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48 efficacy and depressive symptomatology of IPV victims in a group adventure therapy. This is
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50 especially important since 50% of IPV victims have depression and self-esteem problems
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52 (Echeburúa et al., 2013; p. 1785). The group therapy and adventure activities in this study
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54 were complementary components enabling women to overcome personal fears, which
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56 combined with physical achievements, reached a whole new level of confidence in
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3 themselves and their capacities. Despite the existence of effective therapy groups (e.g. Santos
4 et al., 2017) and effective nature-based programs (Silva et al., 2018) for the psychological
5 adjustment of IPV victims, this unique program is the first to combine psychological and
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10 physical components for improving their well-being.
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For Peer Review

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For Peer Review

Table 1. Multicomponent program intervention by session

Session	Psychological Components		Adventure Components	
	<i>Goals</i>		<i>Goals</i>	
1	Group cohesion and behavioral contract	Explanation of the aims of the intervention program. Introducing ourselves, group cohesion and norms setting.	Experiential pedagogy	Outdoor adventure pedagogy <i>Rationale of the election of the adventure activity:</i> The adventure activity chosen enhances group cohesion and sense of group belonging
2	Body image acceptance and one's exposure own body	Understanding how certain social norms lead to a poor acceptance of our bodies. Knowing current strict and traditional beauty canons.	Calm waters crossing and paddle surf	To foment teamwork; Become familiar with water sports and safety standards <i>Rationale of the election of the adventure activity:</i> The adventure activity chosen enhances body exposure by wearing a neoprene suit
3	Identifying our body limits and capacities I ¹	Knowing in depth the thought-feeling causal chain related to our body. Analyzing the pathological criticism of our body and capabilities and accepting compliments from others	Floating	Expose to participants to a new and challenging situation, even it is a totally risk controlled situation <i>Rationale of the election of the adventure activity:</i> The adventure activity chosen exposes to participants to a challenging situation showing their corporal capacities
4	Identifying our body limits and capacities II ¹	Identifying our physical skills, capabilities and competences, as well as body limits. Changing the feelings raised by negative perceptions and distorted thoughts about our body.	4 × 4 trail and caving	Expose to participants to a new and challenging situation, even it is a totally risk controlled situation. <i>Rationale of the election of the adventure activity:</i> The adventure activity chosen enhances participants' realistic evaluations of their body limits for crossing the cave
5	Self-efficacy improvement	Promoting Psychoeducation ³ self-efficacy expectations and promoting self-knowledge, self-esteem, and self-efficacy to recognize one's own positive qualities. Analyzing the performance achievements already used to successfully modify beliefs about personal capabilities.	Rough waters kayaking	To Promote decision making in a new and unknown scenario <i>Rationale of the election of the adventure activity:</i> The adventure activity chosen enhances problem solving skills, ensuring the success in the activity to be considered as a new achievement in their lives
6	Behavioral activation strategies ²	Knowing behavioral activation and the importance of identifying pleasant activities. Identifying negative and distorted thoughts that prevent us from developing pleasant activities.	Canyoning	To enhance problem solving skills and confront to challenging situations <i>Rationale of the election of the adventure activity:</i> The adventure activity chosen enhances identification of the activities as a pleasant activity that make them feeling good
7	Activation control techniques	Validating, recognizing and valuing those relaxation strategies that are already working for them. Discovering easy-to-implement relaxation techniques in everyday life.	Rafting	To promote teamwork with different roles in the same group <i>Rationale of the election of the adventure activity:</i> The adventure activity chosen allows to practice relaxation strategies when the activity was calm
8	Knowing how to distinguish between objective and subjective risk	Analyzing achievements and learnings obtained due to the intervention and generalization of results to their lives Final session	Half-mountain crossing. Forest bathing	To practice relaxation strategies and connection with nature <i>Rationale of the election of the adventure activity:</i> The adventure activity chosen summarizes all the acquired knowledge in the previous sessions.

¹Based on Santandreu-Oliver et al. (2014) guidelines and adapted for the purpose of this intervention ²Based on Barraca Mairal (2019) guidelines and adapted for the purpose of this intervention; ³Based on Bandura (1995, 1997) and adapted for the purposed of this intervention.

Table 2. Means, Standard Deviations, independent samples tests and ANOVA Repeated Measures for each outcome

	Per Protocol Analysis											Intention to treat Analysis										
	Intervention Group				Control Group							Intervention Group				Control Group						
	N	M(SD) Pre	M(SD) post	p intra	N	M(SD) Pre	M(SD) post	P- value intra	F- value	p inter	Effect size	N	M(SD) Pre	M(SD) post	P- value intra	N	M(SD) Pre	M(SD) post	p intra	F-value	p inter	Effect size
RSE	16	28.69 (4.38)	32.00 (4.13)	.006	15	28.47 (4.34)	28.93 (3.57)	.438	5.49	.026	.16	17	28.24 (4.63)	31.40 (4.70)	.006	16	29.00 (4.70)	29.28 (5.38)	.680	6.16	.019	.17
AF-5 Profess.	16	8.42 (1.25)	8.22 (2.27)	.514	15	7.71 (1.69)	7.69 (1.55)	.940	0.1	.758	.003	17	8.43 (1.21)	8.17 (2.21)	.776	16	7.72 (1.63)	7.73 (1.50)	.972	0.23	.633	.01
AF-5 Social	16	7.21 (2.19)	7.54 (1.79)	.519	14	6.51 (2.16)	6.33 (1.91)	.411	2.57*	.120*	.09*	17	7.08 (2.19)	7.26 (2.08)	.712	16	6.40 (2.07)	6.29 (1.90)	.591	1.07*	.310*	.03*
AF-5 Emotion.	16	4.81 (2.37)	4.31 (2.21)	.286	15	5.04 (2.07)	5.11 (2.39)	.865	0.86	.362	.03	17	4.97 (2.39)	4.42 (2.18)	.210	16	5.11 (2.02)	5.14 (2.32)	.955	0.99	.327	.03
AF-5 family,	16	6.06 (1.77)	5.73 (2.12)	.327	15	6.42 (1.61)	6.34 (1.56)	.382	0.48	.492	.02	17	5.86 (1.90)	5.64 (2.08)	.512	16	6.43 (1.56)	6.36 (1.51)	.603	0.17	.686	.01
AF-5 Physical	16	5.55 (2.51)	6.70 (2.86)	.030	15	5.45 (1.97)	5.43 (1.88)	.912	5.84	.022	.17	17	5.50 (2.44)	6.49 (2.90)	.055	16	5.54 (1.94)	5.35 (1.84)	.477	5.32	.028	.15
Self- Efficacy	14	63.86 (23.95)	84.86 (11.20)	.010	14	63.64 (17.84)	60.64 (22.02)	.436	9.17	.006	.26	17	61.33 (22.33)	80.00 (20.79)	.021	16	65.00 (18.30)	61.82 (20.77)	.411	7.45	.010	.19
BSQ	14	81.21 (31.60)	76.79 (35.05)	.220	14	82.00 (42.83)	87.78 (49.73)	.109	1.66	.210	.06	17	80.82 (36.85)	76.53 (39.30)	.484	16	80.13 (41.48)	86.01 (51.85)	.162	1.88	.180	.06
BDI-II	15	16.80 (11.11)	5.67 (6.16)	.002	14	16.92 (10.72)	18.93 (11.16)	.183	23.67*	<.001*	.48*	17	17.69 (10.81)	7.25 (7.97)	.002	16	17.06 (10.04)	19.04 (10.88)	.162	20.97*	<.001*	.41*

*Adjusted by baseline. Covariables did not affect the significance (<.05 or >.05) in any variable. RSE: *Self-esteem*; AF-5: *Self-concept*; BSQ: *Body dissatisfaction*; BDI-II: *Beck's Depression Inventory-Second Edition*.

*Note: Differences in N-values in the Per-protocol analysis account for participants who did not complete all the measures.