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Effectiveness of the Motivational Interviewing Techniques with Perpetrators of Intimate Partner Violence: A Non-Randomized Clinical Trial

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ABSTRACT

The effectiveness of perpetrators' intervention programs (PIPs) remains controversial. Readiness and motivation for change are associated with treatment success among intimate partner violence (IPV) perpetrators. In this study, we aimed to verify whether adding Motivational Interviewing Techniques (MIT) during the intake phase of a standard PIP (SPIP) increases treatment adherence. We also sought to evaluate the effectiveness of the MIT plus SPIP concerning an SPIP alone. In this non-randomized clinical trial, 50 participants were assigned to one of the two conditions SPIP alone or MIT plus SPIP. Data were collected at baseline and the end of the intervention. Proximal outcomes (dropout, intervention dose, motivation, attitudes toward IPV, problem-solving skills) and final outcomes (IPV perpetration, risk of IPV) were assessed. The Reliable Change Index (RCI) was also computed. Results indicated that SPIP plus MIT participants concluded the curriculum in a more advanced stage of change, revealed more readiness to change, evidenced greater clinical improvements, and displayed higher reductions in attitudes toward IPV, IPV perpetration, and recidivism risk than SPIP participants. These findings point to MIT's ability to promote readiness to change and progression into the stages of change, enhancing intervention efficacy with IPV perpetrators. (NCT05484440)

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Introduction

Intimate partner violence (IPV) is a persistent problem that continues to show high prevalence rates in several European countries (European Union Agency for Fundamental Rights, 2014), including Portugal. The long-term impact on victims' physical and mental health and the socioeconomic costs of IPV have also been documented, illuminating a serious human rights and public health problem (Bacchus et al., 2018).

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The emergence of perpetrator intervention programs (PIPs) marked an important shift in response to IPV, previously targeted at victims. Since then, we have witnessed a proliferation of PIPs, often constituting an alternative measure to imprisonment (Boots et al., 2016). Despite the growing number of studies (e.g., Cunha et al., 2022; Ferrer-Perez & Bosch-Fiol, 2018; Morrison et al., 2018Cunha & Gonçalves, 2015) and meta-analyses (e.g., Arce et al., 2020; Karakurt et al., 2019; Stephens Lewis et al., 2021) assessing the effectiveness of PIPs, results remain uncertain. In addition, literature has highlighted some of the main problems related to PIPs, such as the high attrition and dropout rates or the low motivation and readiness for change (e.g., Aaron & Beaulaurier, 2017; Butters et al., 2021). Thus, many men who attend intervention programs continue to show high levels of resistance to change (Carbajosa et al., 2017); a considerable percentage of perpetrators start treatment in the early motivational stages (Musser & Murphy, 2009) and perpetrators in these initial stages are more prone to abandon the intervention (Scott et al., 2011). High dropout rates among PIPs have been consistently associated with a lack of consideration for the perpetrators' motivation for change (Lila et al., 2018).

Since readiness and motivation for change are consistent indicators of overall treatment success among IPV perpetrators (e.g., Santirso, Gilchrist, et al., 2020) it is crucial to include Motivational Interviewing Techniques (MIT) in PIPs, considering that they are a promising method to improve the effectiveness of PIPs and reduce the dropout rates (Santirso, Gilchrist, et al., 2020; Silva et al., 2022). The present study sought to analyze whether adding MIT to a standard PIP (SPIP) increased the efficacy of the intervention compared to SPIP alone.

Effectiveness of Motivational Interviewing Techniques (MIT) with IPV Perpetrators

Motivational Interviewing (MI) aims to enhance the motivation to change, provoke a behavior change, reduce dropout rates, and improve problem-solving strategies (Miller & Rollnick, 2013). MI is often associated with the transtheoretical model (TMT) of change of Prochaska and DiClement (Miller & Rollnick, 2013). TTM assumes that individuals are expected to move through five stages of change (i.e., pre-contemplation, contemplation, preparation, action, and maintenance) as they move to problem resolution and nonviolent behavior (Prochaska et al., 1992). Although this model emerged to treat addictive behaviors, it is widely used with offenders in general (Stinson & Clark, 2017) and, more specifically, with IPV perpetrators (e.g., Santirso, Gilchrist, et al., 2020; Silva et al., 2022).

Several studies have sought to analyze the effectiveness of MI (e.g., Lila et al., 2018, 2020; Murphy et al., 2012, 2020; Romero-Martínez et al., 2019; Santirso,

Lila, et al., 2020; Scott et al., 2011). A review developed by Soleymani et al. (2018) concluded that MI could have positive effects on the commitment to interventions for perpetrators of IPV. Santirso, Gilchrist, et al. (2020) conducted a meta-analysis of only randomized controlled trials (RCTs) that evaluated interventions' effectiveness for IPV offenders, some including MIT. Results indicated that IPV interventions incorporating MIT significantly increased the intervention dose and reduced dropouts than interventions without MI. More recently, a systematic review conducted by Silva et al. (2022) including RCTs, non-randomized control trials (nRCTs), and quasi-experimental studies concluded that MIT increases attendance rate, treatment adherence, motivation to change, and behavioral and attitudinal outcomes. MIT seems to show greater effectiveness among individuals with low readiness to change and in the early stages of change.

Empirical evidence shows several benefits of MI implementation, namely, greater recognition of violence and responsibility for its behavior (e.g., Santirso, Lila, et al., 2020); greater commitment and lower dropout rates (e.g., Lila et al., 2018, 2020; Murphy et al., 2020; Scott et al., 2011); reduced risk of recidivism (e.g., Lila et al., 2018; Romero-Martínez et al., 2019); reduced physical aggression perpetration (e.g., Lila et al., 2020; Romero-Martínez et al., 2019); the promotion of motivation for change, levels of empathy, and the therapeutic alliance (e.g., Lila et al., 2020; Santirso, Lila, et al., 2020); and improvements in the perpetrators' stage of change (e.g., Lila et al., 2020). Studies also found that MI reveals greater effectiveness with participants who are more ambivalent and resistant to change – that is, with individuals in the early stages of change (e.g., Murphy et al., 2012).

Present Study

The current study assessed the importance of incorporating MIT in PIPs through a nRCT. This study is of relevance for different reasons. First, PIPs effectiveness results remain controversial (e.g., Arce et al., 2020; Karakurt et al., 2019; Stephens Lewis et al., 2021), and the inclusion of techniques to improve its efficacy has been crucial (e.g., Aaron & Beaulaurier, 2017). Second, results on the effectiveness of PIPs suggested better treatment outcomes followed integrating MIT into existing IPV interventions (Santirso, Gilchrist, et al., 2020; Silva et al., 2022). Third, control trials assessing MIT efficacy as a complement to standard PIPs are still scarce (e.g., Lila et al., 2018). Fourth, while most studies on the efficacy of PIPs focus on recidivism and/or reassault reduction as the major outcome, a more recent trend emphasizes the need also to consider more immediate changes in attitudes, motivation, and skills as they might impact recidivism/reoffense (e.g., Velonis et al., 2016).

Furthermore, as far as we know, there are no studies in Portugal assessing the efficacy of PIPs incorporating MIT.

Thus, the present study aims to verify whether the addition of MIT during the intake phase of a standard perpetration intervention program (SPIP) increases the treatment adherence and effectiveness of the intervention relative to a SPIP alone. Velonis et al. (2016) suggest that proximal and final outcomes were included. Therefore, we included motivation to change, attitudes toward IPV, and problem-solving skills as proximal outcomes. Intervention dose and dropout rate (i.e., treatment adherence) were also used as indicators of success, as previous studies revealed that perpetrators who participate in more sessions present lower recidivism rates and are less likely to be rearrested (Lila et al., 2018). As final outcomes, we considered IPV perpetration and IPV recidivism risk.

Method

Participants

The sample comprises 50 male perpetrators of IPV, both court- and self-referred to a community-based PIP implemented in two sites (Cunha et al., 2022; Cunha & Gonçalves, 2015). Inclusion criteria were: (a) being an adult male; (b) having perpetrated physical, psychological, and/or sexual violence against a female intimate partner or ex-partner; and (c) being able to read and write. Exclusion criteria were (a) psychotic disorders, (b) cognitive impairment, (c) psychological and/or personality disorders, and (d) substance abuse. Exclusion criteria were assessed through a screening interview with a psychologist and review of court-referred participants' file information.

Twenty-three (46%) participants were court-referred to the intervention and most had no previous criminal record ($n = 44$, 88%). All the participants were Caucasians and averaged 45.28 years old ($SD = 11.32$), ranging from 20 to 70. Half of the participants were married or cohabitated with the victim at the time of the intervention ($n = 25$, 50%), and the length of the relationship ranged from 1 to 43 years ($M = 17.14$, SD=12.02). Most participants completed the 4th grade ($n = 17$, 34%) or the 6th grade ($n = 14$, 28%) of education, belonged to a low socioeconomic status (SES; $n = 33$, 66%), and more than half were employed ($n = 26$, 52%). The groups were similar in all the sociodemographic and juridical variables. Court- and self-referred participants only differ in motivation to change, with self-referred reporting the highest scores. Table 1 summarizes the main sociodemographic and juridical variables.

Table 1. Sociodemographic and juridical characteristics.

	Total sample		SPIP plus MIT group ($n = 25$)		SPIP alone group ($n = 25$)				
	M	*SD*	*M*	*SD*	*M*	*SD*	*U*	*p*	η^2
Age	45.28	11.32	42.84	9.26	47.72	12.79	245.500	.193	.427
Relationship length	17.14	12.02	17.00	10.80	17.29	13.40	291.500	.865	.720
	n	%	*n*	%	*n*	%	χ^2	*p*	Cramer's V
Marital status									
Married/cohabitation	25	50.0	14	56.0	9	36.0	2.013	.128	.201
Divorced/separated	25	50.0	11	44.0	16	64.0			
Education									
4th grade	17	34.0	6	24.0	11	44.0	6.090	.084	.349
6th grade	14	28.0	8	32.0	6	24.0			
9th grade	12	24.0	5	20.0	7	28.0			
12th grade	3	6.0	3	12.0	0	0.0			
Graduation	4	6.0	4	12.0	1	4.0			
SES									
Low	33	66.0	15	60.0	18	75.0	1.853	.203	.194
Medium	15	30.0	9	36.0	6	25.0			
High	1	2.0	1	4.0	0	0.0			
Professional status									
Employed	26	52.0	13	52	13	52	1.600	.449	.179
Unemployed	15	30.0	9	36	6	24			
Retired	9	18.0	6	12	6	24			
Referral source									
Court-referred	23	46.0	9	36.0	14	56.0	2.013	.128	.201
Self-referred	27	54.0	16	64.0	11	44.0			
Prior convictions									
Yes	6	12.0	1	4.0	20	80.0	3.030	.095	.246
No	44	88.0	24	96.0	5	20.0			

Procedures

The program was delivered at two sites: the Psychology Service of University of Minho and a family-support institution in the North of Portugal. Participants were referred to the intervention by the court, child protection services, victim support, and family support institutions, probation services or were self-referred. Participants were assigned to each site according to their area of residence.

The potential participants were subjected to a screening interview (see Figure 1). All the procedures and their voluntary nature were explained to the participants. Those who met the inclusion criteria were invited to participate. Eight individuals declined to participate in the study. Three did not meet the inclusion criteria: two could not read and write, and one had active alcohol abuse. Those who agreed to participate signed the informed consent and completed a set of psychological measures. No incentives were offered to the participants. A total of 50 participants were then nonrandomly assigned to one of the two conditions, i.e., SPIP alone or MIT plus SPIP, according to the treatment site. SPIP alone was delivered at the family-support institution, and SPIP plus MIT was delivered at the Psychology Service of University of Minho. Ten participants dropped out from the SPIP

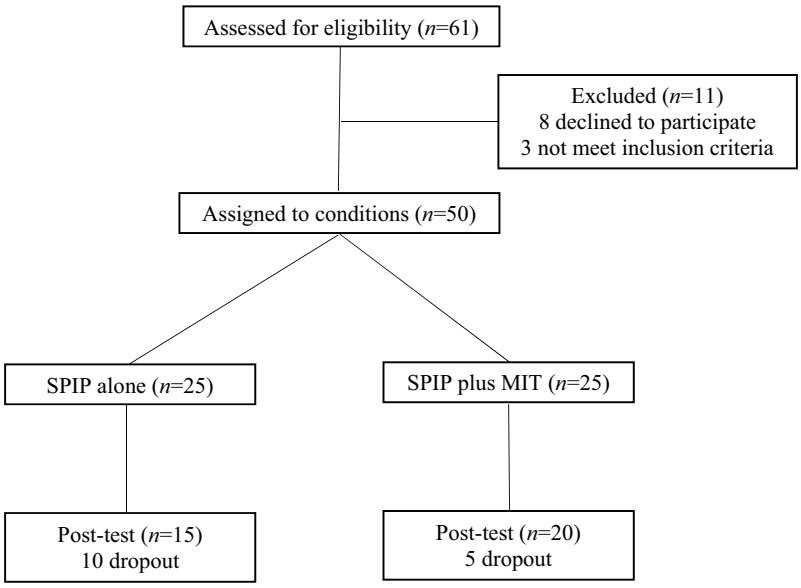

Figure 1. Flowchart of subjects' participation.

alone condition and five participants dropped out from the SPIP plus MIT condition.

Ethics procedures concerning privacy and data protection established by the Portuguese legislation and Helsinki Declaration were followed. The study was approved by the Subcommittee on Ethics of Social and Human Sciences of the University of Minho.

Measures

Proximal outcomes

Dropout. Dropout was assessed as a categorical variable (i.e., completers vs. dropouts). Dropouts included individuals who failed to attend more than 25% of the sessions. Treatment completers included participants who completed at least 75% of the sessions.

Intervention dose. The intervention dose was obtained by summing the total of sessions attended by the participant, ranging from 0 to 18.

Motivation. The University of Rhode Island Change Assessment Scale-Domestic Violence – Revised (URICA-DV-R; Levesque et al., 2000; Portuguese version Cunha, 2013) was used to assess men's readiness to change violent behavior toward their partners and their stage of change according to the TMT. URICA-DV-R is a 20-item self-report scale, answered on a 5-point Likert-type scale (1 = strongly disagree until 5 = strongly agree), assessing four

stages of change (Precontemplation, Contemplation, Action, and Maintenance) and a global Readiness of Change Index. The internal consistency ranges from .68 (Maintenance) to .81 (Action; Levesque et al., 2000). In this sample, the internal consistency at pretest ranged from .49 (Precontemplation) to .89 (Action) and from .40 (Precontemplation) to .86 (Action) at posttest.

Attitudes toward intimate partner violence. The Attitudes Toward Marital Violence Scale (ECVC; Machado et al., 2007) was used to assess attitudes toward IPV. ECVC is a 25-item scale, scored on a 5-point scale, ranging from 1 (completely disagree) to 5 (completely agree), composed of four factors: Legitimation and Minimization of Minor Violence, Legitimation of Violence due to Women's Behavior, Legitimation of Violence due to External Causes, and Legitimation of Violence due to Family Privacy. A higher score means attitudes supporting IPV. The instrument revealed good psychometric properties with an internal consistency for the total score of .93 (Machado et al., 2007). In this study, the internal consistency for the total scale was .91 at the pretest and .91 at the posttest.

Problem-solving skills. The Problem-Solving Inventory (IRP; Serra, Serra, 1988) was used to assess problem-solving skills. IRP is a 40-item self-report measure, coded on a 5-point scale, ranging from 1 (not agree) to 5 (agree very much). Three situations are presented: threat, damage, and challenge. The instrument is organized into nine factors: Request for Help, Confrontation and Active Problem Solving, Passive Abandonment at the Situation, Internal/External Control of the Problems, Strategies of Emotions' Control, Active Attitude of Noninterference in the Everyday Life by Occurrences, Internalized/Externalized Aggression, Self-Accountability and Fear of Consequences, and Confronting the Problems and Planning Strategies (Serra, 1987). IRP revealed temporal stability and good internal consistency. In this sample, the internal consistency for the total scale was .67 at the pretest and .62 at the posttest.

Final outcomes

Intimate partner violence perpetration. The Marital Violence Inventory (IVC; Machado et al., 2007) was used to assess IPV perpetration. IVC is a self-report measure of 21 items, considering physically abusive behavior, emotionally abusive behavior, and coercion/intimidation behavior, scored on a 3-point scale (0 = never, 1 = once, 2 = more than once). Items are grouped along with two scales: Physical Violence and Psychological Violence. In the present sample, the internal consistency for the total scale was .82 at the pretest and .77 at the posttest.

Risk of intimate partner violence. Spousal Assault Risk Assessment (SARA; Kropp et al., 1998; Portuguese version Almeida & Soeiro, 2005) assesses IPV risk. SARA comprises 20 risk factors organized into two parts: Part 1 is related to violence risk in general; and Part 2 is related to the risk of spousal violence. The presence of individual risk factors is coded on a 3-point scale (0 = absent, 1 = possibly or partially present, 2 = present). Statistical analyses indicated moderate levels of internal consistency (Kropp & Hart, 2000). In the present sample, internal consistency for the total scale was .81 on the pretest and .82 on the posttest.

The intervention program

The Promotion and Intervention Program with Batterers (PPRIAC) was developed in 2010 for self- or court-referred adult heterosexual male perpetrators of IPV (Cunha et al., 2022; Cunha & Gonçalves, 2015) (NCT05484440).

The SPIP alone consists of 18 group sessions (each lasting between 90 and 120 minutes) based on cognitive-behavioral and psychoeducational techniques. The main goals were (a) to stop the abusive behavior against women, (b) to accept responsibility for abusive behavior, (c) to change irrational beliefs and attitudes toward IPV, (d) to promote respect for women and healthy relationships, (e) to acquire personal and social skills, and (f) to promote a violence-free approach in problem-solving. To accomplish these goals, a set of therapeutic techniques (e.g., cognitive restructuring, ABC model, self-instructions, assertiveness and communication skills training, problem-solving training) and methods (e.g., role-play, homework, videos, power and control wheel, equality wheel, brainstorming) were used. The sessions occurred on a weekly basis and were facilitated by two therapists trained in intervention with IPV perpetrators. Six different therapists implemented the group sessions.

The MIT module consists of four to six individual sessions of 60 min each, using MI techniques. The MIT is based on MI (Miller & Rollnick, 2013), stages of change approach (Prochaska et al., 1992). MI techniques included those to promote behavioral change and to help clients work through their ambivalence such as asking permission, eliciting/evoking talk about change, using open-ended questions, reflective listening, normalizing, decisional balancing, statements supporting self-efficacy, and summarizing. The sessions occurred on a weekly basis before the integration on SPIP and were facilitated by one therapist. The number of MI sessions depended on the individual's motivation at the pretest (i.e., the stage of change), their involvement in the sessions, and the completion of a change plan ($M = 5.65$, $SD = .69$).

SPIP alone was delivered at the family-support institution and SPIP plus MIT was delivered at the Service of Psychology at the University of Minho.

Data analysis

Statistical analysis was performed using the IBM SPSS version 27. The outcomes for perpetrators who attended SPIP alone and MIT plus SPIP were compared at baseline using Mann–Whitney tests. Within-group differences in outcome measures at post-treatment were tested with Wilcoxon tests, and Mann–Whitney tests were performed to compare the two conditions at posttest. Non-parametric tests were used due to the sample size and the violation of the normal data distribution. Effect sizes were calculated using Eta Squared (η^2).

The intra-subject clinical change was assessed using the Reliable Change Index (RCI; Jacobson & Truax, 1991). Individuals with scores greater than .84 were placed into the "global improvement" (GI) category, those with scores below −.84 were placed into the "global deterioration" (GD) group, and those with scores between these values were placed in the "no change" (NC) category (Brazão et al., 2015). To compare the groups in clinical change categories, Chi-square tests were performed. Effect sizes were calculated with Cramer's V.

Results

Baseline assessment

At baseline, the groups only differed in pre-treatment stages of change and the Readiness to Change Index (RCI), with SPIP plus MIT individuals showing higher scores (see Table 2). Self- and court-referred participants only differed in stages of change, relapse, and RCI, with self-referred participants showing higher motivation to change. Self-referred individuals also reported more psychological violence perpetration (Supplementary files).

Posttest assessment

Results concerning posttest analysis for SPIP plus MIT group and SPIP alone group are presented in Table 3.

Proximal outcomes

At posttest, five (20%) individuals dropped out from the SPIP plus MIT group, and 10 (40%) individuals dropped out from the SPIP alone group. There are no differences between the groups, $\chi^2(1) = 2.381$, $p = .108$. The dropout in the SPIP plus MI group occurred in the first two sessions while the dropout in the SPIP alone group occurred gradually over the first ten sessions. There are, however, significant differences between individuals from the SPIP plus MIT group ($M = 16.20$; $SD = 1.49$) and individuals from the SPIP alone group ($M = 3.93$; $SD = 3.63$) on the number of group sessions attended, $U = .000$, $p < .001$.

Table 2. Baseline differences on the proximal and final outcomes.

	SPIP plus MIT group ($n = 25$)		SPIP group ($n = 25$)				
	M	*SD*	*M*	*SD*	*U*	*p*	η^2
Proximal outcomes							
RCI	43.72	12.67	31.44	14.83	161.500	.003	.172
Precontemplation	11.36	3.91	12.88	3.42	228.500	.101	.053
Contemplation	20.64	4.82	16.20	5.85	163.500	.004	.167
Action	21.88	2.92	16.80	6.03	148.000	.001	.204
Relapse	12.56	5.77	11.32	4.85	278.000	.502	.009
Violence attitudes	86.72	25.73	85.32	27.86	311.500	.985	.005
Minor violence	25.00	8.68	23.12	8.88	284.000	.580	.006
Women behavior	27.56	8.89	26.28	9.32	293.000	.705	.003
External causes	26.52	7.73	27.72	8.70	280.500	.534	.008
Family privacy	7.64	3.15	8.20	3.72	283.500	.569	.006
Problem-solving	143.20	15.53	143.20	10.77	288.500	.641	.004
Request for help	15.64	4.12	15.08	4.59	285.000	.592	.006
Act Problem solving	24.44	4.05	23.60	3.28	268.500	.390	.015
Passive abandon	12.12	3.49	11.44	2.50	246.500	.193	.033
Int/ext control	27.92	6.18	30.00	4.48	263.500	.341	.018
Emotions' control	15.16	3.97	16.44	2.77	260.500	.309	.020
Noninterference	11.32	1.25	11.44	2.04	300.500	.809	.001
Int/ext aggression	9.40	1.26	9.80	.50	290.500	.524	.004
Self-accountability	15.24	2.88	14.52	3.32	280.000	.525	.008
Confronting problem	11.96	2.17	10.88	1.88	217.000	.060	.069
Final outcomes							
Total violence	12.96	8.25	11.88	6.22	292.000	.690	.003
Physical violence	6.40	6.14	5.48	5.33	286.000	.605	.005
Psychol. violence	6.92	3.24	6.72	2.97	308.000	.930	.025
Risk of IPV	17.08	5.47	17.88	6.71	306.000	.899	.000
Part 1	7.60	3.18	8.08	4.10	309.500	.953	.000
Part 2	9.48	3.02	9.80	3.16	310.000	.961	.000

Note: RCI = Readiness to Change Index.

No differences were found between self- and court-mandated perpetrators, χ^2 (1)=.311, $p = .404$.

Results regarding proximal outcomes at post-treatment are displayed in Table 3. Participants in SPIP plus MIT showed a significant decrease in total attitudes toward IPV, and the different factors, with large effect sizes. No differences were found in the SPIP alone group. Regarding problem-solving strategies, SPIP plus MIT participants showed significant improvements in total problem-solving strategies and in internal/external control of the problems and strategies of emotions' control with large effect sizes. Participants in the SPIP alone group only revealed a significant improvement in the internal/external control of the problems with a large effect size. No differences were found between the SPIP alone group and SPIP plus MIT group between pre- and posttest in motivation to change.

Comparing the two groups at the post-treatment (cf. Table 3), significant differences were found in SPIP plus MIT and SPIP alone groups in the Readiness of Change Index and contemplation and action stages, with moderate to large effect sizes. Participants in the SPIP plus MIT group showed the highest scores. Also, there were differences between the groups in attitudes toward IPV with large effect sizes. SPIP plus MIT subjects presented the lowest

Table 3. Within-group and between-group analyses of change in SPIP plus MIT group and in SPIP group.

	SPIP plus MIT group					SPIP group					SPIP vs. SPIP + MIT		
	Pre-test (*n*=25)	Post-test (*n*=20)				Pre-test (*n*=25)	Post-test (*n*=15)						
	M(SD)	*M(SD)*	*z*	*p*	η^2	*M(SD)*	*M(SD)*	*z*	*p*	η^2	*U*	*p*	η^2
Proximal outcomes													
RCI	42.45 (13.41)	39.25 (9.93)	-1.189	.235	.071	26.29 (14.53)	28.76 (11.69)	-.855	.393	.043	75.500	.003	.224
Precontemplation	12.15 (3.91)	12.70 (3.18)	-.412	.680	.008	13.41 (3.45)	13.88 (3.99)	-.428	.668	.011	131.500	.244	.037
Contemplation	20.05 (5.23)	18.65 (4.59)	-1.458	.145	.106	13.88 (5.30)	14.35 (5.12)	-.311	.756	.006	88.500	.012	.167
Action	21.95 (2.98)	20.75 (4.34)	-1.285	.199	.083	14.76 (6.04)	17.18 (5.26)	-1.210	.226	.086	98.000	.028	.013
Relapse	12.60 (6.01)	12.55 (3.80)	-.026	.979	.000	11.06 (4.55)	11.12 (4.66)	-.190	.849	.002	142.000	.407	.020
Attitudes IPV	90.35 (22.48)	61.50 (14.69)	-3.827	.000	.732	83.41 (23.83)	81.12 (26.13)	-.414	.679	.010	89.500	.013	.163
Minor violence	26.20 (7.59)	17.20 (4.66)	-3.767	.000	.710	22.53 (7.98)	20.76 (6.88)	-1.540	.123	.140	113.500	.085	.080
Women behavior	28.70 (8.29)	18.65 (5.83)	-3.827	.000	.732	25.35 (7.64)	24.65 (9.06)	-.485	.628	.014	103.500	.042	.111
External causes	27.70 (7.25)	20.15 (4.48)	-3.423	.001	.586	27.65 (8.62)	28.00 (9.16)	-.628	.530	.023	83.000	.007	.190
Family privacy	7.75 (2.65)	5.50 (1.28)	-2.781	.005	.387	7.88 (3.37)	7.71 (2.95)	-.493	.622	.014	87.500	.011	.171
Problem-solving	143.70(14.31)	150.70 (14.31)	-2.429	.015	.295	142.94 (8.85)	146.06 (11.05)	-1.100	.271	.071	127.000	.198	.046
Request for help	15.60 (4.28)	14.70 (4.13)	-1.765	.077	.156	14.82 (4.25)	15.65 (3.06)	-.806	.420	.038	136.000	.311	.029
Problem solving	24.90 (3.91)	25.45 (2.82)	-.476	.634	.011	23.12 (3.48)	23.06 (3.75)	-.142	.887	.001	101.000*	.036	.120
Passive abandon	11.95 (3.71)	11.85 (2.80)	-.258	.796	.003	11.24 (2.19)	10.47 (3.14)	-.714	.475	.030	125.500	.177	.005
Int/ext control	28.05 (6.07)	31.85 (5.06)	-2.094	.036	.219	30.06 (4.75)	32.82 (5.89)	-2.080	.038	.254	146.000	.478	.014
Emotions' control	15.40 (5.06)	16.90 (2.73)	-2.172	.030	.236	16.35 (2.99)	17.76 (2.09)	-.916	.360	.049	161.000	.798	.002
Non-interference	11.45 (1.32)	11.35 (1.87)	-.533	.594	.014	11.76 (2.28)	11.18 (2.24)	-.626	.531	.023	145.000	.460	.016
Int/ext aggression	9.40 (1.27)	9.80 (.62)	-1.355	.176	.092	9.82 (.39)	9.82 (.53)	.000	1.00	.000	168.000	.964	.000
Selfaccountability	15.10 (2.73)	16.55 (2.31)	-1.844	.065	.170	15.12 (3.04)	15.94 (3.27)	-1.257	.209	.093	160.500	.775	.002
Confront problem	11.85 (2.25)	12.25 (1.59)	-.765	.444	.029	10.65 (1.84)	9.94 (1.95)	-1.404	.160	.116	61.000**	.001	.298
Final outcomes													
Total violence	12.85 (7.85)	.00 (.00)	-3.923	.000	.769	12.18 (6.01)	2.35 (2.96)	-3.626	.000	.773	80.000	.005	.203
Physical violence	6.45 (5.52)	.00 (.00)	-3.626	.000	.657	5.47 (5.54)	.82 (1.81)	-3.186	.001	.597	120.000	.133	.063
Psychol. violence	6.70 (3.40)	.00 (.00)	-3.925	.000	.770	6.94 (2.77)	1.53 (1.62)	-3.532	.000	.734	80.000	.005	.203
Risk of IPV	17.80 (5.65)	7.20 (4.38)	-3.928	.000	.771	16.00 (5.52)	11.53 (5.52)	-2.371	.018	.331	89.500	.013	.163
Part 1	8.00 (3.32)	7.20 (4.38)	-3.943	.000	.777	6.82 (3.17)	4.29 (2.91)	-3.367	.001	.667	138.000	.341	.026
Part 2	9.80 (3.09)	3.60 (2.14)	-3.931	.000	.773	9.18 (3.17)	7.24 (3.40)	-2.527	.012	.376	57.000	.000	.321

Note: RCI = Readiness to Change Index.

scores, meaning a reduction in accepting attitudes toward IPV. Results also revealed differences between the groups in confrontation and active problem-solving strategies and confronting the problems and planning strategies, with large effect sizes. Again, SPIP plus MIT participants showed the highest scores.

Self- and court-referred participants did not differ in proximal outcomes at posttest assessment (see Supplementary files).

Final outcomes

Findings concerning final outcomes at post-treatment are presented in Table 3. Results revealed that none of the individuals from the SPIP plus MIT group perpetrated violence against the partner or ex-partner during treatment while nine individuals did in the SPIP alone group. Participants from SPIP plus MIT reported a significant reduction in the perpetration of global violence as well as physical and psychological violence, with large effect sizes. In the SPIP alone group, a significant decrease in the perpetration of global violence and physical and psychological violence was also observed. Despite both groups showing significant reductions, there were differences between them in the perpetration of psychological violence and total violence. SPIP plus MIT participants presented the lowest scores.

In IPV risk at post-treatment, both groups showed significant reductions, with larger effect sizes for SPIP plus MIT group. Compared the groups, significant differences between them were found in the total score and part 2 score, with participants from SPIP alone group showing higher scores on risk than participants from SPIP plus MIT (cf. Table 3).

Self- and court-referred participants only differ in part 1 IPV risk at posttest assessment (see Supplementary files).

Clinical change in proximal outcomes after intervention completion

Data relating to clinical change at post-treatment are displayed in Table 4. Results revealed significant differences between groups in the distribution by clinical change categories for contemplation and action stages of change. The number of individuals falling into the global improvement category was higher for the SPIP plus MIT group. In contrast, the number of subjects in the global deterioration category was higher for the SPIP alone group. Differences in the distributions between the groups had a strong effect. Similar results were found for attitudes toward violence and three of its subscales. Thus, there was a significantly higher number of subjects from SPIP plus MIT in the global improvement category and a higher number of individuals from SPIP alone in the global deterioration category. No differences between the groups were found for problem-solving and its subscales, for the readiness of change index, precontemplation and relapse stages of action.

Table 4. Reliable Change Index (RCI) for proximal outcomes.

		SPIP plus MIT group		SPIP alone group				
		n	%	n	%	χ^2	*p*	Cramer's V
RCI	GI	11	55.0	5	35.7	1.515	.469	.211
	NC	3	15.0	2	14.3			
	GD	6	30.0	7	50.0			
Precontemplation	GI	6	30.0	3	21.4	.421	.810	.111
	NC	8	40.0	7	50.0			
	GD	6	30.0	4	28.6			
Contemplation	GI	13	65.0	3	21.4	6.779	.034	.447
	NC	2	10.0	5	35.7			
	GD	5	25.0	6	42.9			
Action	GI	10	50.0	6	42.9	7.508	.023	.470
	NC	6	30.0	0	0.0			
	GD	4	20.0	8	57.1			
Relapse	GI	7	35.0	8	57.1	2.443	2.95	.268
	NC	5	25.0	1	7.1			
	GD	8	40.0	5	35.7			
Violence attitudes	GI	17	85.0	5	35.7	10.308	.006	.551
	NC	3	15.0	5	35.7			
	GD	0	0.0	4	28.6			
Minor violence	GI	16	80.0	4	28.6	9.779	.008	.536
	NC	4	20.0	8	57.1			
	GD	0	0.0	2	14.3			
Women behavior	GI	18	90.0	3	21.4	16.961	.000	.706
	NC	2	10.0	7	50.0			
	GD	0	0.0	4	28.6			
External causes	GI	14	70.0	2	14.3	13.931	.001	.640
	NC	5	25.9	4	28.6			
	GD	1	5.0	8	57.1			
Family privacy	GI	11	55.0	5	35.7	1.642	.440	.220
	NC	8	40.0	7	50.0			
	GD	1	5.0	2	14.3			
Problem-solving	GI	8	40.0	4	28.6	.490	.783	.120
	NC	11	55.0	9	64.3			
	GD	1	5.0	1	7.1			
Request for help	GI	1	5.0	1	7.1	.087	.958	.051
	NC	15	75.0	10	71.4			
	GD	4	20.0	3	21.4			
Active problem solving	GI	3	15.0	4	28.6	.971	.615	.169
	NC	13	65.0	8	57.1			
	GD	4	20.0	2	14.3			
Passive abandonment	GI	7	35.0	3	21.4	.732	.694	.147
	NC	7	35.0	6	42.9			
	GD	6	30.0	5	35.7			
Internal/external control	GI	9	45.0	6	42.9	.294	.863	.093
	NC	7	35.0	6	42.9			
	GD	4	20.0	2	14.3			
Emotions' control	GI	8	40.0	3	21.4	1.302	.522	.196
	NC	11	55.0	10	71.4			
	GD	1	5.0	1	7.1			
Non-interference	GI	2	10.0	0	0.0	3.331	.189	.313
	NC	17	85.0	11	78.6			
	GD	1	5.0	3	21.4			
Internal/external aggression	GI	3	15.0	0	0.0	2.324	.313	.261
	NC	16	80.0	13	92.9			
	GD	1	5.0	1	7.1			
Self-accountability	GI	8	40.0	4	28.6	3.294	.193	.311
	NC	7	35.0	9	64.3			
	GD	5	25.0	1	7.1			
Confronting problem	GI	3	15.0	1	7.1	1.239	.538	.191
	NC	16	80.0	11	78.6			
	GD	1	5.0	2	14.3			

Note: RCI = Readiness to Change Index. GI = Global Improvement; NC = No Change.

Discussion

The present study was designed to analyze whether the addition of MIT during the intake phase of a SPIP produces effects on treatment adherence, as well as to assess the effectiveness of the intervention concerning a SPIP alone. It sought to fill a gap in the perpetrators' intervention research and practices as literature shows inconsistent results regarding effectiveness of PIPs. IPV perpetrators' resistance to traditional intervention programs has been well documented (Levesque et al., 2008), and motivation to change and readiness for change are critical elements for PIPs' completion and effectiveness (e.g., Santirso, Gilchrist, et al., 2020; Silva et al., 2022; Soleymani et al., 2018). Furthermore, as the literature suggested that the focus on recidivism as the main outcome in assessing PIPs is reductionist (Velonis et al., 2016), in this nRCT we sought to assess the impact of the intervention in proximal and final outcomes. In addition, differences between mean scores in the MIT plus SPIP and SPIP group alone were analyzed at post-treatment with a focus on the clinical change. The analysis of clinical change represents another important contribution as it has been the subject of little consideration in studies with offenders (Hollin et al., 2013). Despite these contributions, our results should be interpreted cautiously due to the small sample size.

Regarding the proximal outcomes, although SPIP plus MIT participants revealed higher treatment adherence than SPIP alone participants, results did not reach statistical significance following other studies (e.g., Lila et al., 2018), and the dropout rate is high even in the SPIP plus MIT group. The free-of-charge nature of the intervention (in both sites) might explain the high dropout rate (Cunha et al., 2022). However, SPIP plus MIT participants finished the intervention in a more advanced stage of change and revealed more readiness to change than participants in the SPIP alone condition. The referral source (i.e., self- or court-mandated) did not influence this result as there were no observed differences between self- and court-ordered individuals. These results show that MIT seems to be useful for improving motivation, which is an important requirement for program adherence and change (Lila et al., 2020; Santirso, Lila, et al., 2020).

Post-treatment scores showed significant differences between the groups in attitudes toward IPV with SPIP plus MIT subjects presenting significant reductions. Overall, SPIP plus MIT participants differed from SPIP participants alone at the end of treatment, revealing greater clinical improvements. Thus, implementing motivational strategies seems to be a promising approach to improving PIPs' effectiveness (Lila et al., 2020; Romero-Martínez et al., 2019; Scott et al., 2011). This result is of particular interest as MIT seems to have a global impact on the individual, as individuals who benefit from MIT revealed improvements in other dimensions than motivation or readiness to change. Another element that supports the use of MIT is the fact that the SPIP

alone group revealed lower levels of motivation and readiness to change at the end of the intervention and the highest number of individuals with global deterioration, which might be associated with the highest deterioration in attitudes toward IPV being observed in the SPIP alone group. Using MIT at an earlier intervention stage seems to improve overall motivation. These results align with what has been reported in other studies that concluded participants submitted to MIT plus SPIP at different stages of change showed a positive progression (Murphy et al., 2012). However, it is important to note that in our study SPIP plus MIT participants had greater readiness for change and higher levels of contemplation and action at intake than SPIP alone participants, which may influence their results at the posttest (despite the absence of differences in dropout rate). However, this also could mean that MIT can be useful with both motivated and resistant participants since there was an overall improvement in the MIT group. Although self-referred participants revealed higher motivation at the pretest, no differences were found between the groups at the posttest. The fact that they had higher previous scores of readiness for change, action, and contemplation can also confirm that more motivated individuals tend to drop out of the intervention less since the dropout rate in the SPIP plus MIT group was lower.

Problem-solving skills results did not reach statistical significance and only a few differences between SPIP plus MIT and SPIP alone participants were found. As participants from both groups self-reported, on average, adaptative coping skills at intake and posttest (Serra, 1988), this might explain the absence of differences between pre- and posttest in both conditions. The absence of differences between the groups may also be related to the fact that problem-solving skills are mostly worked in the SPIP, and both groups benefited from it.

Regarding the final outcomes, results indicated that SPIP plus MIT and SPIP alone participants reported less physical and psychological violence and a significant reduction in IPV recidivism risk at the end of the intervention. Although both groups presented reductions in the two outcomes, there were statistically significant differences among them. SPIP plus MIT participants reported higher reductions in total IPV and psychological violence and more participants from SPIP alone group reported having been violent with their partners at the end of the intervention. Such results once again reinforce the importance of using MIT to potentiate the intervention's effects in achieving behavioral changes. However, groups did not differ concerning physical violence, reporting both levels of physical violence close to zero. A possible explanation for this result is that as physical violence is easier to recognize and prove in court, participants refrain from perpetrating such acts to avoid penal consequences. Otherwise, as psychological violence often is more subtle and more relativized and normalized by intimate partners, more individuals might assume continuing to adopt such behaviors. Other authors (e.g., Lila

et al., 2018) pointed out that SPIP participants may not consider psychological violence as serious and do not consider changing it during treatment. Our results suggested that, although MIT was mainly focused on motivation and readiness to change, it seems to affect other outcomes as motivation to change is a crucial element for effective change. When we are talking about IPV perpetrators, the real and effective change includes necessarily behavioral changes, i.e., the ending of violence toward intimate partners. The absence of differences at the posttest between self- and court-referred individuals strengthens the usefulness of MI techniques in improving PIPs' effectiveness.

Although the present study presents valuable contributions, some limitations should be mentioned. First, the present study uses an nRCT design since the SPIP and SPIP plus MIT were provided in different sites, and participants were assigned to each site according to their area of residence (the sites are 28 miles apart), and further studies should privilege RCT designs to better evaluate the effectiveness of the intervention. Second, the two conditions, i.e., SPIP alone and SPIP plus MIT, were delivered in two different sites and by different therapists, which may impact the results. Third, our sample is small, which may have influenced the statistical power of the results obtained as well as the results themselves, which should be interpreted cautiously. Our sample additionally is not wholly reflective of IPV perpetrators in Portugal. A larger sample is recommended for future studies.

Fourth, this study was fundamentally based on the perpetrators' self-report to assess the different variables which may have affected the results. Thus, given that social desirability is frequently present in perpetrators' reports (Dutton & Hemphill, 1992), future studies should consider other assessment strategies or even include an instrument to assess social desirability. Furthermore, future studies may include, for example, assessment from facilitators concerning motivation to change and partner' reports of IPV perpetration. Fifth, the higher motivation to change at the initial assessment of the SPIP plus MIT group is also a limitation since it might influence the results in the posttest. Sixth, the absence of a follow-up period made it impossible to assess the maintenance of results over time, which should also be considered in future studies. Finally, the lack of data on officially reported recidivism also makes it impossible to carry out a more contextualized analysis of the results of this variable.

In sum, our results have several important practical implications. To the best of our knowledge, this is the first study in Portugal that assesses the addition of MIT during the intake phase of a SPIP. In addition, this study considers other outcomes than recidivism, which might impact recidivism, focusing on clinical change, which is little considered when assessing the effectiveness of offenders' intervention. This study reinforces the importance that efforts to improve perpetrators' motivation should be seen as a requirement for commitment to intervention and motivation to change.

Using MIT is fundamental to motivating IPV perpetrators to attend, remain committed to treatment, and complete the intervention, reducing abandonment/dropout and recidivism rates. As in other works (e.g., Santirso, Gilchrist, et al., 2020), MITs proved to be crucial in improving the main intervention processes (e.g., pro-therapeutic behaviors) in SPIPs, thus increasing their effectiveness.

Disclosure statement

No potential conflict of interest was reported by the authors.

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