

Assessment of an intervention to reduce the impact of stigma on people with HIV, enabling them to cope with it

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Título: Evaluación de una intervención dirigida a reducir el impacto del estigma en las personas con VIH capacitándolas para afrontarlo.

Resumen: Este estudio tuvo como objetivo evaluar un programa de intervención dirigido a disminuir el impacto del estigma en las personas con VIH y a capacitarlas para afrontarlo. Se utilizó un diseño cuasi-experimental, con grupo control no equivalente, y prueba previa y posterior. Participaron 221 personas con VIH, 164 recibieron la intervención y 56 formaron parte de los grupos de control no equivalente. Las variables dependientes fueron la percepción de estigma—declarado e internalizado—, la autoestima, la percepción de autoeficacia, las estrategias de afrontamiento del estigma—control primario, secundario y de evitación—y, la calidad de vida. Se realizaron análisis de las varianzas (MANOVAS y ANOVAS) para comprobar las diferencias en el pre-test y en las puntuaciones diferenciales en ambos grupos, y análisis de la covarianza (MANCOVAS y ANCOVAS) para evaluar la eficacia del programa. Los resultados mostraron una reducción del estigma percibido y de las estrategias de evitación y, un incremento en la autoeficacia percibida para afrontar el estigma, en la disposición al uso de estrategias de aproximación y en la autoestima y la calidad de vida. Estos resultados indican que es posible capacitar a las personas con VIH para afrontar el estigma.

Palabras clave: Estigma; VIH; afrontamiento; calidad de vida; evaluación intervención.

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Abstract: The goal of this study was to assess an intervention program to reduce the impact of stigma on people with HIV and to enable them to cope with it. A quasi-experimental design, with non-equivalent control group and pre- and posttest was used. Participants were 221 people with HIV, of whom 164 received the intervention and 56 made up the non-equivalent control groups. The dependent variables were perception of stigma—enacted and internalized—, self-esteem, perception of self-efficacy, strategies used to cope with stigma—primary control, secondary control, and avoidance—and quality of life. Analysis of variance (MANOVAS and ANOVAS) was conducted to determine pretest differences and differential scores in both groups, and analysis of covariance (MANCOVAS and ANCOVAS) was performed to assess the efficacy of the program. The results showed reduction of perceived stigma and avoidance strategies and an increase in perceived self-efficacy to cope with stigma, disposition to use approach strategies, self-esteem, and quality of life. These results indicate that it is possible to train people with HIV to cope with stigma.

Key words: stigma; HIV; coping; quality of life; intervention assessment.

Introduction

Different investigations have revealed that people with HIV constitute one of the most stigmatized collectives worldwide. The perception of the severity of the infection, erroneous beliefs about its transmission through casual or social contact, and controllability of stigma (blaming the people with HIV) influence prejudicial attitudes (Cao et al., 2010) and place people with HIV in a scenario of rejection that has an important impact on their psychological and physical health and quality of life (Logie & Gadalla, 2009; Steward et al., 2011). In Spain, where this work was carried out, people with HIV live in a social context where prejudice and discrimination against them are a documented reality (Fuster, Molero, Gil de Montes, Vitoria, & Agirrezabal, 2013). Such prejudicial attitudes turn into different forms and expressions of stigma that extend across the most intimate spheres to the most institutional.

The literature on stigmatization (UNAIDS, 2002; Tsutsumi & Izutsu, 2010) indicates the existence of different types of stigma, among them enacted stigma and internalized stigma. Enacted stigma consists of real experiences of prejudice and discrimination described by the stigmatized people. That is, the stigma expressed by society. However, internal-

ized stigma consists of the acceptance by people with HIV of the existing rejection towards them. That is, the internalization of the negative beliefs and attitudes that society holds about them. Stigmatization leads to feelings of guilt, self-contempt, isolation, depression, anxiety, or hopelessness that contribute to the deterioration of well-being (Kalichman et al., 2009). Internalized stigma is closely related to self-esteem (Bunn, Solomon, Millar, & Forehand, 2007). Berger, Ferrans, and Lashley (2001) found measures of low self-esteem associated with internalized stigma in aspects such as: feeling dirty, not as good as others, being a bad person for having HIV, and feelings of shame and guilt. On the other hand, Visser, Kershaw, Makin, and Forsyth (2008) found significant correlations between high levels of internalized stigma and low self-esteem, low social support, and depression.

Coping with stigma

Stigmatized people are not passive victims of prejudice, but instead they are active people who respond to stigmatization. Some authors have used the theoretical framework of coping with stress to classify the strategies for coping with the effects of stigma. For example, Miller (2004) classifies these strategies according to the coping model of Compas, Connor-Smith, Saltzman, Thomsen, and Wadsworth (2001). These authors consider that different types of prejudice can create different stressors for the stigmatized people

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and they may require different types of coping. In this sense, they divide coping strategies into two large groups: approach or engagement strategies and avoidant or disengagement strategies. Within the former are distinguished, firstly, primary control coping, in which efforts are aimed at influencing events or objective conditions that increase the feeling of personal control over the environment or over one's reactions (Compas et al., 2001). This type of coping includes strategies aimed at solving the problem as well as regulating emotions or their expression. Secondly, Secondary Control coping includes the efforts made to adapt to the situation, to change the way one feels about what occurred. Lastly, avoidant coping involves efforts to avoid the stressor (Miller, 2004). This model has not only been studied with regard to coping with stigma in general, but also in the concrete case of coping with stigma by people with HIV (Fuster, 2011).

The literature indicates that there are various factors can moderate the strategies that stigmatized people use to cope with the stress derived from stigma. Among the most important is the degree to which stigma can be concealed, and the degree to which the person perceives control over the stigma or over his or her responses (Miller & Major, 2000).

In Spain, the study of Fuster (2011) analyzed the role played by these variables in the process that starts when the person with HIV perceives or experiences HIV-related stigma, both enacted and internalized stigma, and its effects on quality of life. Her results showed that both the perception of enacted stigma and, especially, the symptoms of internalized stigma had a negative impact on the quality of life of people with HIV. In the latter case— internalized stigma—, the negative effect on quality of life occurred through the mediation of coping strategies, perceived self-efficacy for such coping, and also concealment of serology.

One of the challenges for research on stigma is its reduction (Bos, Pryor, Reeder, & Stutterheim, 2013). However, there are a limited number of interventions aimed at improving strategies to cope with stigmatization in people with HIV (Sengupta, Banks, Jonas, Miles, & Smith, 2011). The fact that these people actively cope with stigma can have important benefits on the quality of their lives. Therefore, drawing from the results found in the literature, we designed an intervention aimed at decreasing the impact of stigma on people with HIV and enabling them to cope with it (Fuster-Ruiz de Apodaca, Molero, Biel, & Barranco, 2013). Specifically, the purpose of the study was to assess the effects of the program, aimed at restructuring erroneous beliefs about the perception of enacted stigma, reduce internalized stigma, and increase self-esteem and perceived self-efficacy to cope with stigma, identify forms of coping, train in concrete coping skills, and increase quality of life.

Method

Participants

Throughout the three editions of the intervention, 221 people with HIV participated. Of them, 164 received the intervention and 57 made up the non-equivalent control groups. Table 1 shows the sociodemographic characteristics of the participants, and the participation data of each edition of the intervention. The contingency analyses (Pearson's chi-square) and analysis of variance found no significant differences in any of the sociodemographic variables ($p > .10$) in the experimental and control groups.

Design and Procedure

The project was carried out by CESIDA (Coordinadora Estatal de VIH-Sida [National Coordinator of HIV-AIDS]). The technical staff of this organization was in charge of selecting the participants according to the criteria established in the project, by means of a personal interview. These criteria were: that the people had psychosocial difficulties derived from stigma such as isolation or lack of social support, anxiety, depression, some emotional charge derived from concealment or any other symptom related to internalized stigma. This staff was also in charge of selecting people with similar characteristics to those who were going to receive the intervention to form part of the non-equivalent control group.

After selecting the people who met the criteria, they were informed about the goals of the intervention, and their informed consent was obtained. The participants' traveling and maintenance expenses were covered by the National AIDS Strategy (Ministerio de Sanidad, Servicios Sociales, e Igualdad [Ministry of Health, Social Services, and Equality]). The study met the ethical values required in research with human beings, respecting the fundamental principles included in the Declaration of Helsinki (informed consent and right to information, protection of personal data and guarantees of confidentiality, nondiscrimination, gratuity, and freedom to leave the study at any stage).

The intervention was assessed by means of a quasi-experimental design, with a non-equivalent control group and pretest and posttest measures. A battery of assessment instruments was administered to the experimental and control participants in order to measure the dependent variables. The pre-intervention measure of this battery was administered to the participants during the recruitment interview after they had signed their informed consent. The post-intervention measure was completed at the end of the workshop sessions, at a time reserved for this purpose. The mean time needed to complete the questionnaire was 15 minutes.

Variables and Instruments

The independent variable of this investigation consisted of the intervention program described in the following section. The dependent variables were the participants' perception of stigma—enacted and internalized stigma—, self-esteem, the perception of self-efficacy to cope with stigma, and the coping strategies used—primary control, secondary

control, and avoidant. In the last two years of intervention, quality of life was added as a dependent variable. This led us to modifying some of the measurement instruments in order to simplify the assessment and not overburden the participants with an excessive number of items. Below are described the dependent variables and the instruments used in the successive editions.

Table 1. Sociodemographic and participation data.

	1st edition	2nd edition	3rd edition
<i>N</i> total participants	80	65	76
<i>N</i> experimental group	52	65	47
<i>N</i> control group	28	—	29
Valid questionnaires experimental group	50	39	39
Valid questionnaires control group	22	—	17
Sociodemographic data			
Sex (%)			
Male	63.8	80.6	76.9
Female	34.8	19.4	23.1
Transgender	1.4	0	0
Age (M±SD)	43.8 ± 6.9	39.5 ± 7.3	43 ± 7.7
Educational level			
No studies	7.2	0	0
Primary	37.1	27.8	34
Secondary	41.4	41.7	37.7
Higher studies	14.3	30.6	22.6
Work situation			
Working with contract	20.8	45.7	30.2
Working without contract	8.3	5.7	3.8
Does not work	70.8	48.6	66
Sexual orientation			
Heterosexual	63.9	30.6	50
Homosexual	22.2	58.3	38.5
Bisexual	6.9	5.6	5.8
Prefers not to respond	6.9	5.6	5.8
Transmission pathway			
Sexual relation	40.3	71.4	62.3
Injection material	27.8	8.6	15.1
Transfusion	1.4	2.9	1.9
Doesn't know	29.2	14.3	20.8
Other	1.4	2.9	0
Years of infection (M±SD)	14.7 ± 7.8	7.14 ± 7	10.8 ± 7.6

Perceived stigma. In the first edition of the project, we used the revised and reduced version (Bunn et al., 2007) of the Stigma Scale of Berger et al. (2001). This 30-item scale has four factors (Personally Perceived Stigma, Disclosure Concerns, Negative Self-Image, and Concerns with Public Attitudes Attitudes about People with HIV) and it is rated a 4-point Likert-type response format. This scale was adapted and used in people with HIV in Spain and has shown evidence of construct validity (Fuster, 2011). In this study, we found a second-order factor structure made up of two latent dimensions related to Enacted Stigma and Internalized Stigma. The internal consistency of the dimension Enacted Stigma in the first edition was $\alpha = .88$ and $\alpha = .86$, and of Internalized Stigma of $\alpha = .80$ and $\alpha = .79$, in the pre- and post-intervention measures, respectively.

In the last two editions of the project, we used two facets of the Battery of Psychological Predictors of Well-being and Quality of Life of People with HIV in Spain (Remor et al., 2012). These facets assess two dimensions of stigma: Enacted Stigma and Internalized Stigma. The facet Enacted Stigma is made up of four items and that of Internalized Stigma of six items. These items had a 10-cm visual analogical response format. The internal consistency of the dimension of Enacted Stigma was $\alpha = .46$ at pretest and $\alpha = .61$ at posttest, and in the case of Internalized Stigma, it was $\alpha = .79$ both before and after intervention.

Coping with stigma. We used the 25-item scale designed by Fuster (2011). This scale had obtained evidence of validity construct. Its internal structure has three factors related to the strategies of Primary Control, Secondary Control and

Avoidance. This scale has a 4 point Likert-type response format. The internal consistencies of the factors, taking the three editions of the intervention as a whole, were the following for the pre- and post-intervention measures, respectively: $\alpha = .78$ and $\alpha = .79$ for Primary Control Coping, $\alpha = .66$ and $\alpha = .70$ for Secondary Control Coping, and $\alpha = .37$ and $\alpha = .30$ for Avoidant Coping.

Self-esteem. This dependent variable was measured in the first edition by means of a visual analogical scale with two words anchored at the poles (“My self-esteem is very low”—“My self-esteem is very high”). In the last two editions of the project, we used the items of the Self-esteem facet from the Battery of Psychosocial Predictors of Well-being and Quality of Life of Remor et al. (2012). This dimension is made up of three items and with a 10-cm visual analogical response format. The internal consistency of the scale at pretest was $\alpha = .77$ and at posttest, $\alpha = .82$.

Perceived self-efficacy to cope with stigma. We used the scale designed in the study of Fuster (2011). The construct of this scale was also validated by means of confirmatory factor analysis, and the results showed a first-order one-dimensional structure. The scale is made up of four items that are rated on a 4-point Likert-type response format. The internal consistency ranged between $\alpha = .81$ at pretest and $\alpha = .71$ at posttest.

Quality of life. In the last two editions of the project, quality of life of the participants was measured with the Quality of Life Questionnaire of Ruiz and Baca (1993). This scale is made up of 39 items and it measures four factors of quality of life: Social Support, General Satisfaction, Physical and Psychological Well-being, and Absence of Occupational Overload/Free Time. As a high percentage of people with HIV do not work due to their health or for other reasons (Agirrezabal, Fuster, & Valencia, 2009; Oliva, 2010), we decided to disregard the items referring to the work setting.

The scale was therefore made up of 20 items measured on a 5-point Likert scale. The joint internal consistency for the two editions in which this scale was used at pre- and post-intervention were the following: $\alpha = .90$ and $\alpha = .90$ for the total scale, $\alpha = .79$ and $\alpha = .78$, for the factor Physical and Psychological Well-being, $\alpha = .83$ and $\alpha = .85$ for the factor General Satisfaction, and $\alpha = .82$ and $\alpha = .81$ for the factor Social Support.

We also included a section of sociodemographic and health data.

Description of the intervention

The intervention program was carried out for three years, in five different Spanish cities each year. It was carried out over the weekend in each city. It had a duration of 16 hours, distributed in four 4-hour sessions. The mean number of participants per session was 12 people.

The program combined explanations and group dynamic techniques to deal with the implications of stigma from a psychosocial perspective, with cognitive-behavioral techniques and educational information about juridical aspects. The sessions had the following goals. The first session aimed to assess the participants' perception of stigma, restructure any erroneous beliefs regarding stigma, and analyze the consequences of stigma with special attention to internalized stigma and its symptoms. The second session had a first part aimed at promoting self-esteem, and a second one aimed at identifying and explaining different forms of coping with stigma. The third session had the goal of training in different skills to cope with stigma: legal training, communication skills, and skills of emotional self-control. The intervention ended with an exercise on planning personal goals and a qualitative group assessment. Figure 1 presents a summary of the agenda of each session of the treatment.

Figure 1. Content of the sessions of the intervention program.

<p>SESSION 1.</p> <p><i>First part Presentation</i></p> <ol style="list-style-type: none"> Presentation of the therapist. Presentation of the participants, explanation of their expectations for the intervention program. Explanation of the goals and contents of the intervention program. Group members take turns to identify their difficulties. <p><i>Second part. Stigma and discrimination, characteristics and consequences.</i></p> <ol style="list-style-type: none"> Group members take turns to discuss their perception of enacted stigma. Theoretical explanation of the current situation of stigma in Spain, its origins and consequences for people with HIV. Group members take turns to identify their symptoms of internalized stigma. Group analysis of its origins and implications. Brief theoretical presentation of the implications of concealing stigma. Group exercise aimed at analyzing when and to whom one wishes to disclose one's condition and training in strategies to do so¹. <p>SESSION 2.</p> <p><i>First part Training self-esteem.</i></p> <ol style="list-style-type: none"> Group exercise aimed at identifying and appraising self-esteem by each participant. Theoretical presentation of self-esteem: concept and importance, characteristics of low self-esteem. Exercises of identification of personal criticism as a defining element of low self-esteem. Group analysis of its origins and implications. Theoretical presentation of self-esteem: characteristics of positive self-esteem and ways to improve it. Group exercise in identification of personal qualities. <p><i>Second part. Coping with stigma.</i></p> <ol style="list-style-type: none"> Group members take turns identifying personal situations of stigma they experienced.

- b) Group exercise of identification of ways to cope with the situation of stigma experienced.¹
- c) Theoretical explanation of ways to cope with stigma from the perspective of stress management.

SESSION 3

First part Skills to cope with stigma: communication skills

- a) Group exercise about situations of discrimination experienced.
- b) Explanation of the concept of discrimination and its distinction from other forms of social rejection
- c) Group exercise on ways to react to the situation experienced.
- d) Theoretical explanation of the Fundamental Rights and the area of application of Anti-discriminatory Law. Distinction from other forms of social protection and their explanation: collective action, political action, information, education.
- e) Group exercise in training skills and knowledge of application of Anti-discriminatory Law and Fundamental Rights to three habitual situations of discrimination.
- f) Final exercise of summary and assessment: Specifying the learnings in one's personal experience.

Second part: skills to cope with stigma: communication skills

- a) Theoretical explanation of communication skills: key elements in communication, elements that facilitate and hinder communication, communication styles: assertive communication.
- b) Group exercise: Reading the fable "The oyster and the fish". Group discussion to apply the learnings.
- c) Group exercise through role-playing of the application of communication skills to assertive verbal confrontation in the situations of stigma experienced.
- d) Final sharing.

SESSION 4

First part Skills to cope with stigma: techniques of emotional self-control.

- a) Theoretical presentation: stress and its consequences, stigma as a stressor. Ways to cope with stress.
- b) Training in techniques of emotional self-control:
 1. Presentation of the ABC model
 2. Explanation of the steps for cognitive disputing of negative thoughts. Exemplification of an exercise of rejecting irrational ideas.
 3. Explanation of the importance of using positive thoughts for coping.
 4. Group exercise of progressive relaxation and visualization.

Second part. Planning goals and ending the workshop.

- a) Brief theoretical presentation of the steps to plan personal objectives and goals.
- b) Group members take turns to identify their concrete goals for after the workshop.
- c) Group members take turns for the final assessment of the workshop.

Data analysis

Firstly, exploratory analysis was performed to detect missing, atypical, or extreme data, as well as to ensure that the statistical assumptions of multivariate analysis techniques were met. We eliminated the questionnaires of the participants whose pairs of pre- and post-intervention questionnaires we could not recover. In the case of questionnaires with missing values on the items, if they were less than 25%, they were substituted by multiple imputation under the multivariate normal model. Table 1 presents the valid questionnaires for analysis in each one of the editions the project.

To assess the effect of the intervention, we performed the following analyses. In all cases, we applied analysis of variance (MANOVAS and ANOVAS) in order to: (a) determine possible statistically significant differences in the scores obtained by the experimental and control groups at pretest and (b) to determine possible statistically significant differences in the differential or change scores (posttest scores - pretest scores) of both groups. We also conducted analysis of covariance (MANCOVAS and ANCOVAS) to estimate the efficacy of the program, controlling for the scores obtained at pretest. We also found the effect size of the differences of means (Gamst, Meyer, & Guarino, 2008). For this purpose, we used the SPSS-pc statistical program for Social Sciences for Windows (v.18.0).

Results

Although all the variables were measured in all the editions—except for quality of life (which was measured in the last two)—some of them, such as self-esteem and stigma, were assessed with different scales. Therefore, three blocks of results are presented: (a) specific variables of the first edition (self-esteem and stigma) that were measured with different scales from the rest of the editions (see measurement instruments), (b) data derived from the common variables of the last two editions (stigma, self-esteem, and quality of life), and (c) data derived from the common variables of all three editions (coping strategies and self-efficacy).

Results of the assessment of the specific variables of the first edition of the intervention program

Firstly, we examined the effects of the intervention program in the specific variables of the first edition of the program (stigma and self-esteem). Bartlett's sphericity test was statistically significant ($\chi^2 = 145.092$, $p < .001$), indicating sufficient correlation between the dependent measures to apply MANOVA to the set of pretest scores. The Box test was significant ($p < .050$), that is, the covariance matrixes of the dependent variables were different in the two groups (experimental y control); hence, we used the Pillai's trace to assess the multivariate effects. The results indicated no sig-

nificant differences between the experimental and control groups in the pretest scores obtained in both variables, Pillai's trace = .013, $F(2, 69) = 0.46$, $p > .10$. The ANOVAs confirmed that there were no significant differences in the means of any of the dependent variables before the intervention (Table 2).

The MANOVA applied to the change scores of both groups (Bartlett's sphericity test: $\chi^2 = 155.321$, $p < .001$), using Pillai's trace as criterion, revealed the influence of the program on the dependent variable made up of stigma and self-esteem, Pillai's trace = .189, $F(2, 69) = 8.04$, $p < .001$, $\eta^2 = 0.189$ (Box test: $p < .050$). The results obtained with MANCOVA (Bartlett's sphericity test: $\chi^2 = 163.236$, $p < .001$), using the pretest scores as covariates, were similar, Pillai's trace = .225, $F(2, 67) = 9.70$, $p < .001$, $\eta^2 = 0.225$ (Box test: $p < .050$). The effect size our instrument can be considered relatively strong.

Both the ANOVAs and the ANCOVAs applied to each change score yielded statistically significant differences between the experimental control groups in all the variables. The participants of the experimental group, compared with those of the control group, experienced a reduction of stigma, both enacted¹ and internalized, and improvement in self-esteem. The effect sizes were moderate to strong in the case of total stigma, particularly in internalized stigma (Table 2).

Results of the assessment of the common variables of the last two editions of the intervention program

Secondly, we verified the results of the intervention program in the variables with common measures in the last two editions of the program—stigma, self-esteem, and quality of life. As in the former case, we applied MANOVA to the set of all the pre-intervention scores (Bartlett's sphericity test: $\chi^2 = 597.724$, $p < .001$). The results showed that there were no significant differences between the experimental and control groups at pretest, Pillai's trace = .072, $F(4, 90) = 1.74$, $p > .10$ (Box test: $p < .010$). As can be observed in Table 3, the ANOVAs applied to each pretest score confirmed that there were no statistically significant differences between the experimental and control groups in any of the dependent variables.

Next, we applied MANOVA to the differential scores obtained by the two groups (Bartlett's sphericity test: $\chi^2 = 661.275$, $p < .001$). The results confirmed that the change was significant, Pillai's trace = .156, $F(4, 90) = 4.15$, $p < .01$, $\eta^2 = 0.156$ (Box test: $p < .001$). The MANCOVA (Bartlett's sphericity test: $\chi^2 = 633.762$, $p < .001$) in which the pretest scores were included as covariates, produced the same result, Pillai's trace = .141, $F(4, 86) = 3.54$, $p < .01$, $\eta^2 = 0.141$ (Box test: $p < .001$). The effect sizes of both analyses were moderate.

In Table 3, it can be confirmed that only the ANCOVAs of the differential scores of the two conditions were significant in quality of life in general, and in its dimensions of satisfaction² and physical and psychological well-being, as well as in internalized stigma. The effect sizes in general could be considered low.

Results of the assessment of the variables common to all three editions of the intervention program

Lastly, we analyzed the effect of the program on the variables with common measures in all three editions of the intervention program: self-efficacy, primary control coping, secondary control coping, and avoidant coping. The MANOVA (Bartlett's sphericity test: $\chi^2 = 94.623$, $p < .001$) revealed the existence of differences between both conditions before the intervention, Wilks' Lambda = .913, $F(4, 162) = 3.84$, $p < .01$, $\eta^2 = 0.087$ (Box test: $p > .10$). Table 4 presents the results of the ANOVA applied to each pretest score, reflecting statistically significant differences between the experimental and control groups in self-efficacy. Thus, the control group had higher scores than the experimental group at pretest.

To verify the efficacy of the program on these variables, we applied MANOVA to the total series of differential scores (Bartlett's sphericity test: $\chi^2 = 114.180$, $p < .001$). The results revealed significant differences between the experimental and the control groups in the series of change scores of the four variables (self-efficacy, primary and secondary control coping, and avoidant coping), Wilks' Lambda = .833, $F(4, 162) = 8.13$, $p < .0001$, $\eta^2 = 0.17$ (Box test: $p > .050$). The effect size can be considered moderate. Likewise, the MANCOVA (Bartlett's sphericity test: $\chi^2 = 94.631$, $p < .001$) carried out with the pretest scores as covariates yielded the same result, Wilks' lambda = .857, $F(4, 158) = 6.60$, $p < .0001$, $\eta^2 = 0.143$.

¹ Applying strict criteria, the ANOVA yielded no significant differences: $p < .001$.

² The ANOVA also revealed statistically significant differences between the experimental and control groups.

Tabla 2. Estadísticos descriptivos, análisis de la varianza y de la covarianza en las variables dependientes de la primera edición del programa.

Variable	Experimental group						Control group						Experimental-Control				
	Pre-test		Post-test		Post-Pre		Pre-test		Post-test		Post-Pre		ANOVA		ANCOVA		
	(n = 50)		(n = 50)		(n = 50)		(n = 22)		(n = 22)		(n = 22)						
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	Pre-test	Post-Pre	Post-Pre		
												F(1,70)	F(1,70)	η^2	F(1,69)	η^2	
Self-esteem	4.84	2.23	6.77	2.39	1.93	2.38	5.42	3.58	5.64	2.94	.22	3.18	5.22 ^a	6.38*	.084	5.91*	.079
Total stigma	2.42	0.58	2.01	.39	-.41	.51	2.29	.63	2.31	.61	.01	.29	.74	13.46 ^{b***}	.161	15.94 ^{b***}	.188
Enacted stigma	2.44	0.65	2.11	.52	-.33	.58	2.35	.67	2.37	.70	.02	.28	.27	7.15 ^{b**}	.093	7.83 ^{b**}	.102
Internalized stigma	2.41	0.63	1.91	.40	-.50	.54	2.24	.68	2.25	.65	.01	.38	1.11	15.69 ^{b***}	.183	18.45 ^{b***}	.211

^aANOVAs (pretest), ^bANOVAs (differential scores): As Levene tests of variance equality were significant ($p < .050$), the level of significance was established at $p < .001$.

* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

Tabla 3. Estadísticos descriptivos, análisis de la varianza y de la covarianza en las variables dependientes comunes a las dos últimas ediciones del programa.

Variable	Experimental group						Control group						Experimental-Control				
	Pre-test		Post-test		Post-Pre		Pre-test		Post-test		Post-Pre		ANOVA		ANCOVA		
	(n = 78)		(n = 78)		(n = 78)		(n = 17)		(n = 17)		(n = 17)						
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	Pre-test	Post-Pre	Post-Pre		
												F(1,93)	F(1,93)	η^2	F(1,92)	η^2	
Total Quality of life (QL)	3.38	.64	3.69	.56	.31	.49	3.37	.45	3.35	.55	-.02	.24	.002 ^a	7.24 ^{b**}	.072	9.60 ^{b**}	.095
Physical-psycho-logical well-being	3.40	.75	3.77	.66	.37	.59	3.35	.59	3.29	.65	-.06	.39	.068	8.02 ^{b**}	.079	11.67 ^{b***}	.113
Satisfaction	3.11	.70	3.49	.68	.37	.58	3.17	.54	3.07	.74	-.09	.37	.085	10.20 ^{b**}	.099	11.37 ^{b***}	.110
Social support	3.62	.79	3.83	.69	.21	.61	3.59	.49	3.68	.59	.09	.25	.020 ^a	.605 ^b	.006	.957	.010
Self-esteem	60.30	20.09	70.90	18.15	10.60	19.33	68.29	11.66	68.53	11.78	.24	7.56	2.492 ^a	4.69 ^{b*}	.048	2.30 ^c	.024
Enacted stigma	58.33	17.86	43.43	19.53	-14.90	23.42	54.09	14.10	51.31	15.53	-2.78	11.05	.843	4.32 ^{b*}	.044	3.48 ^c	.036
Internalized stigma	52.97	22.08	32.11	19.97	-20.86	27.27	41.35	26.71	42.78	22.48	1.43	14.42	3.577	10.64 ^{b**}	.103	6.82 [*]	.069

^aANOVAs (pretest), ^bANOVAs (differential scores), and ^cANCOVAS (differential scores): As Levene tests of variance equality were significant ($p < .050$), the level of significance was established at $p < .001$.

* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

As seen in Table 4, both the ANOVAs of the change scores and the ANCOVAS, in which the pretest scores were taken into account, confirmed that the means of primary and secondary control coping, avoidant coping, and self-efficacy of the experimental group differed significantly from those of the control group. That is, the people who

participated in the intervention program significantly increased their scores of primary and secondary control coping and their self-efficacy, and their scores in avoidant coping decreased. The effect sizes were relatively low.

Tabla 4. Descriptive statistics, analysis of variance analysis and covariance of the dependent variables common to all three editions of the program.

Variable	Experimental group						Control group						Experimental-Control				
	Pre-test		Post-test		Post-Pre		Pre-test		Post-test		Post-Pre		ANOVA		ANCOVA		
	(n = 128)		(n = 128)		(n = 128)		(n = 39)		(n = 39)		(n = 39)						
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	Pre-test	Post-Pre	Post-Pre		
												F(1,165)	F(1,165)	η^2	F(1,164)	η^2	
Primary control coping	2.32	.58	2.60	.58	.28	.44	2.51	.54	2.48	.57	-.03	.29	3.36	17.73 ^{b***}	.097	14.16 ^{b***}	.079
Secondary control coping	2.79	.54	3.05	.50	.26	.44	2.63	.52	2.63	.55	-.01	.43	2.48	11.25 ^{b**}	.064	20.38 ^{b***}	.111
Avoidant coping	2.38	.60	2.18	.54	-.20	.59	2.20	.65	2.30	.67	.10	.63	2.67	7.56 ^{b**}	.044	4.80 [*]	.028
Self-efficacy	2.39	.70	2.75	.60	.36	.68	2.67	.79	2.53	.65	-.14	.66	4.46 [*]	16.65 ^{b***}	.092	12.05 ^{b**}	.068

^bANOVAs (pretest) (differential scores): As Levene tests of variance equality were significant ($p < .050$), the level of significance was established at $p < .001$.

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Discussion

The results of this investigation have shown the possibility of enabling people with HIV to cope with stigma and the positive impact this has had on the quality of their lives. The results showed a reduction of perceived stigma, an increase

in perceived self-efficacy to cope with stigma, an increase in the disposition to use approach strategies, and a decrease in avoidant strategies, and improvement of self-esteem and quality of life.

Firstly, with regard to stigma, we obtained different results depending on the dimension assessed. On the one

hand, the perception of enacted stigma was only reduced in the people who participated in the first edition of the program. We wish to make the following considerations concerning this result. This dimension of stigma assessed the personal experiences of rejection that the participants had had, as well as their concern about public attitudes of rejection. Although perception is subjective, the experiences of discrimination constitute a reality for the participants. Moreover, the existence of rejection of people with HIV in Spanish society is documented (Fuster et al., 2013). This could explain not having found significant changes in this dimension. However, as the intervention contemplated the restructuring of participants' erroneous beliefs that magnified the degree of rejection existing in society, other considerations may explain the results. These are related to the measures used. In the first edition, we used the scale of Berger et al. (2001), and the internal consistency of this dimension of stigma was very high. However, in the other two editions, we used a facet of the battery of Remor et al. (2012), which presented low internal consistency. This low reliability may have affected the results.

On the other hand, we obtained a reduction of the dimension of internalized stigma. Moreover, this reduction was the one with the largest effect size. This result is relevant because the literature has consistently shown the negative effects of internalized stigma on the well-being of people with HIV, on their positive social identity, their capacity to seek social support, or their coping with stigma (Fuster, 2011; Herek, Saha, & Burack, 2013; Stutterheim et al., 2011; Visser et al., 2008).

Diverse investigations also show that the effects of internalized stigma on well-being are mediated by other variables, among them, self-esteem (Herek, Gillis, & Cogan, 2009). However, the present study found that this only improved in the participants of the first edition of the intervention. Some authors indicate that, as internalized stigma is a negative attitude towards an aspect of oneself, this constitutes some sort of specific domain of low self-esteem (Herek et al., 2013). The explanation that there are other domains in the self-esteem of participants with HIV that were affected by variables other than stigma and that require specific interventions is therefore plausible.

The intervention assessed also had the goal of enabling participants to cope with stigma. For this purpose, we not only trained the necessary skills, but we also had to intervene on an important moderator of coping: perceived self-efficacy (Bandura, 1977; Lazarus & Folkman, 1984). The results showed that the participants increased their perception of self-efficacy to cope with stigma. Likewise, an increase was found in the disposition to the use approach strategies—primary and secondary control coping—and a reduction in the tendency to use avoidant strategies. These results indicate the utility of training in anti-discriminatory law and of the use of the available legal tools, communication skills, and techniques of emotional self-control to promote approach coping strategies to stigma.

Lastly, we also found a significant improvement in quality of life. The positive changes were the result of the efficacy of the intervention in the variables that modulate the impact of stigma on quality of life. According to the empirical evidence, internalized stigma influences the decrease of perceived self-efficacy to cope with stigma (Fuster, 2011) and the increase of avoidant coping strategies (Herek et al., 2013). This type of strategies has important costs in terms of reduction of social support (Stutterheim et al., 2011) and increase of diverse symptoms of psychological distress (Herek et al., 2009; Link, Castille, & Stuber, 2008). In contrast, active coping styles are related to better health behaviors and greater physical and psychological well-being (Moscowitz, Hult, Bussolari, & Acree, 2009; Sanjuán, Molero, Fuster, & Nouvilas, 2013). Therefore, the decrease of internalized stigma, the increase of perceived self-efficacy to cope with stigma, the increase of approach coping strategies, and the reduction of avoidant coping strategies achieved by the intervention are revealed as key variables to reduce the impact of stigma on the quality of life of people with HIV.

In addition to the above findings, this study has several of the strengths recommended in the literature (Bos et al., 2013; Sengupta et al., 2011). Firstly, it is a study about one of the challenges for research of stigma: its reduction. In the systematic review of the interventions to reduce stigma carried out by Sengupta et al. (2011), only three studies out of the 19 that were finally selected had the main goal of reducing stigma. Secondly, this intervention was based on our current knowledge and on the empirical evidence. Thirdly, this investigation used measurement instruments that were previously validated in people with HIV in Spain. In the above-mentioned systematic review, none of the 19 studies included in the review used measures previously developed and validated. Fourthly, as mentioned, this study included a measure of quality of life. None of the interventions reviewed by Sengupta et al. (2011) included any measure of health. Given the impact of stigma on health, both individual and public (Clum, Chung, & Ellen, 2009; Logie & Gadalla, 2009; Steward et al., 2011), these authors (Sengupta et al., 2011) recommended including some health-related measure that would show the impact of the interventions on these aspects. Likewise, this study, in contrast to the previous ones, included measures of various types of stigma, and its target population was the people with HIV. Only one of the above-mentioned studies used this population as the target of the intervention. Lastly, this study was carried out with the collaboration of the target group of the intervention and of the interested parties (Bartholomew, Parcel, Kok, Gottlieb, & Fernandez, 2011; Bos, Schaalma, & Pryor, 2008).

The results of this investigation have important implications. Enabling people with HIV to cope with stigma can not only lead to an improvement in their physical and psychological well-being, but can also have important repercussions in terms of reduction of HIV-related stigma. Self-acceptance, self-esteem, and visibility of people with HIV

may affect this (Bos et al., 2008; Fuster et al., 2013). However, we should not forget that the affected people should not be held responsible for reducing the stigma and discrimination they suffer, so it is necessary to simultaneously carry out interventions aimed at the majority population.

Limitations

This study presents some limitations. Firstly, the low reliability of some of the measures used, specifically, the dimension of enacted stigma used in the last two editions of the program and the dimension of avoidant coping. One of the possible reasons that have may have influenced this are the small number of items that measured these dimensions. It is therefore necessary to take into account the effects of the low precision of the measures in terms of attenuation of the correlations. Likewise, it is necessary in future studies to improve these measures.

Secondly, there are limitations related to the quasi-experimental nature of the design. The number of people recruited to participate in the non-equivalent control groups was small. Moreover, only one post-intervention measure could be taken. These limitations imply important threats to internal validity. The literature recognizes the difficulty of using completely random experiments in the area of program assessment (Cook, 1991), due, among other things, to the complexity of social reality. In the case of this investigation, the limitations of resources—both economic and human—of the participant non-governmental organizations

(NGOs) were an obstacle to be able to carry out an assessment design with higher level of intervention. However, taking into account the limitations acknowledged in the assessment of social programs, the literature also indicates some circumstances that can help overcome some of the threats to validity. Among them is drawing from some prior theory that can foresee a pattern of responses in the post-intervention measures (Shadish, Cook, & Campbell, 2003). Likewise, the utility of decreasing as much as possible the time interval between the two measurements is also indicated (pre-test y post-test), as only this way can one ensure that fewer strange variables may affect the results (Pérez-Llantada, López de la Llave, & Gutierrez, 2009). In this sense, the intervention program that we applied was designed based on a prior theory and, as the intervention was carried out over the weekend, there was a brief lapse between the two measures. This, along with the fact of having a non-equivalent control group, the consistency of the results, and the above-mentioned strengths indicate that the intervention produced the changes and not other strange and uncontrolled variables. Despite the limitations, it is necessary to acknowledge the important effort of performing the assessments in the intervention programs carried out by the NGOs, so the limitations will not be an obstacle to the diffusion of these results. Such diffusion could lead to investing more resources, furthering our knowledge, and improving the quality of the assessment designs, thus reinforcing the evidence of the efficacy of these interventions.

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(Article received: 07-02-2014; revised: 25-06-2014; accepted: 25-06-2014)