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Evaluation of an online intervention to prevent violence in young people and adolescents. Preliminary results on its effectiveness with health professionals

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Original article

SUMMARY

The Interactive Intervention Model called "Better Without Violence" derives from psychosocial research carried out at the National Institute of Psychiatry Ramón de la Fuente Muñiz. The objective of this article is to evaluate the acquisition and consolidation of knowledge, and the modification of attitudes associated with violence in participants of this online intervention. The call was open to health personnel from all over the country. One hundred and thirty-two health services providers participated. These were submitted to an ad hoc questionnaire to evaluate their knowledge on violence and intolerant attitudes before and after the intervention.

Pre- and post-intervention differences for all the reactives were analyzed individually and by dimension, and they were regrouped to give three dimensions with a higher consistency: 1. Overall knowledge about violence (α =.50), 2. Types and effects of violence (α=.63), and 3. Intolerant attitudes towards difference (α=.58). Significant differences were found for the first ($t_{(131)}$=4.1, p<.000) and second ($t_{(131)}$=6.6, p<.0001 dimensions, but not so for the last, where the change did not reach statistical significance.

This points to an increase in the knowledge of elements which allow for the recognition of a violent act. This is important because it indicates that after the intervention, participants are able to identify if they experience or commit violence. The increase in the participants' knowledge is consistent with their evaluation of the resources in the online intervention in terms of the relevance and usefulness of the information.

Even though attitudes tend to be stable and harder to modify, lower levels of intolerance were observed after the intervention. Given that this dimension is associated with possible discrimination practices towards those who are "different" and that these are associated with the exertion of violence, reviewing the intervention content and the instrument itself is proposed in order to achieve changes.

Key words: Online intervention, violence prevention, young people, health care personnel.

RESUMEN

El Modelo de Intervención Interactiva, denominado "Sin Violencia es Mejor", se deriva de la investigación psicosocial desarrollada en el Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz. Este trabajo tiene como fin evaluar la adquisición y consolidación de conocimientos, y la modificación de actitudes asociadas con la violencia en participantes de esta intervención en línea.

La convocatoria fue abierta para personal de salud de todo el país. Participaron 132 prestadores de servicios de salud, a quienes se les aplicó un pre y post *test* mediante un cuestionario construido *ad hoc* para evaluar conocimientos sobre violencia y actitudes de intolerancia.

Se analizaron las diferencias pre-post en todos los reactivos individualmente y por dimensión, y se reagruparon los reactivos para contar con tres dimensiones de mayor consistencia: 1. Conocimientos generales sobre la violencia (alpha=.50), 2. Tipos y efectos de la violencia (alpha=.63), 3. Actitudes de intolerancia (alpha=.58). Se encontraron diferencias significativas para la primera ($t_{(131)}$=4.1, p<.000) y segunda dimensión ($t_{(131)}$=6.6, p<.0001), pero no en la última, en la que, si bien hubo cambio, no alcanzó significancia estadística.

Lo anterior apunta a un aumento en el conocimiento sobre los elementos que permiten reconocer un acto violento. Esto es significativo porque indica que, luego de la intervención, los participantes pueden reconocer si viven o ejercen violencia. El aumento del conocimiento de los participantes es consistente con la evaluación que éstos hicieron de los recursos de la intervención en línea, en términos de la relevancia y utilidad de la información.

Aunque las actitudes suelen ser estables, pueden ser modificadas, ya sea por decisión propia o mediante una intervención externa. Los resultados indican que tras la intervención se observan menores niveles de intolerancia a la igualdad entre hombres y mujeres, si bien requiere profundizarse y mejorarse esta dimensión.

Palabras clave: Intervención en línea, prevención de violencia, jóvenes, personal de salud.

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INTRODUCTION

The World Bank[1] document "Youth violence in Mexico. Report on the situation, legal framework, and governmental programs" indicates that a third of the Mexican population is aged between 10 and 29 years, and that the rate of juvenile homicide has increased from 7.8 in 2007 to 25.5 in 2010. The figures indicate that males are more affected by homicide, but that the number of female victims has also grown; between 2000 and 2010, the proportion was eight males for every female. Young people were not only the primary victims of violence, but were also responsible for half of all crimes in 2010; according to the aforementioned report, six out of every ten criminals are between 18 and 24 years old (60.5%) and nine out of ten are male (91.5%).

In agreement with Abad and Gómez,[2] we consider that "many young people are used by adults to commit homicides or are the victims of violence by adults […] [and] young people find themselves in the center of a set of factors that make them especially vulnerable to the risk of committing and/or suffering violence; a situation that is outside any deterministic analysis based exclusively on attributions of age, gender, or social class." In other words, to attribute violent behaviors as an "intrinsic" part of this phase of life would be to oversimplify in the extreme, and could also lead to more young people being criminalized, especially in socially excluded sectors.

In this way, to approach violence in this population from another perspective that is not one of repression or control implies developing effective interventions based on scientific evidence, good practice, and results obtained at a local level. In particular, it is important to indicate that the social policies of engagement and unequal opportunities can be related to prevention policies, but not every social policy can be considered preventative. "It is also not the case that (macro) modification is the only possible way to prevent social violence",[2] which requires preventative efforts on the part of individuals, families, schools, and communities.

In a qualitative meta-analysis of 237 interventions that provided information about their likely effectiveness in preventing violence in adolescents and young people in Latin America, some programs stood out that addressed different levels of intervention.[2] For example: at an individual level, stimulating early development and pre-school reinforcement; at an interpersonal level, training first-time parents in risk situations; and at community level, with the participation of men in gender-focused community activities. It is also interesting that community interventions –also used in Mexico– such as strengthening school safety and zero-tolerance of violence have very little evidence of effectiveness. The same situation is applicable to those initiatives that seek to strengthen the laws and/or lower the age of criminal responsibility; so-called "hard-handed" laws.

There are very few assessed experiences in Mexico, although specific efforts have been developed in the prevention of sexual violence in secondary schools.[3] One intervention that has been evaluated is the Training Program "I want to, and I can… prevent violence",[4] the objective of which is to transfer knowledge about violence and develop psychosocial skills in adolescents. Its evaluation in teachers and students showed favorable results in increasing participants' knowledge and the performance of specific skills.

Considering the importance of having this type of strategy, the present article seeks to give an account of the primary results of an intervention to prevent interpersonal violence in young people, which has the new characteristic of being an online intervention – accessible via the internet.

Given that Information and Communication Technologies (ICT) are tools that are reaching ever further at national and global levels, most of all with greater use and access among young people, it is worth finding ways to use them for these purposes. It is also worth pointing out that a third of the global population has access to an internet connection. In Mexico, only 36.5% of the population uses the internet.[5] However, the rapid growth of connections and the popularity of online activities such as social networks does suggest that its great potential be considered in the medium term.

Now, these technologies can be extremely useful for the prevention of violence, as long as consideration is given to the context in which they are applied and they are integrated into local knowledge, among other aspects.[5] Some have been developed and assessed, for example, interventions to tackle bullying in Germany and Great Britain,[6,7] and family violence in the Netherlands.[8] However, these are not a panacea, nor can they substitute ecologically-oriented interventions that tackle different systems, not just individual and interpersonal ones.

Proposal of the study

The proposal of this study is to carry out an assessment of the Interactive Intervention Model called "Better Without Violence", which seeks to consolidate prior knowledge about violence among health professionals, provide new knowledge, and modify attitudes of intolerance in order for them to serve as tutors for said intervention in its version for young adolescents.* It aims to observe whether the intervention is associated with changes in knowledge and attitudes of the participants.

"Better Without Violence" is a model that derives from psychosocial research developed at the National Institute of Psychiatry Ramón de la Fuente Muñiz. Its objectives are: a) Develop skills and attitudes to favor better social coexistence between young people in their interpersonal relationships with peers, friends, neighbors, and in dating relationships, both in the school and the neighborhood environment;

* The workshop can be found at the following link: http://inpsiquiatria.inteliglobe-mex.com/portal/Portada.php

and b) Develop health professionals' skills in managing an interactive and preventive intervention integrated with a set of tools and resources with information, screening, and learning, to facilitate the transfer of this intervention to young people.

Two versions of this intervention were designed –Health Professionals and Young People– and it was structured into five thematic modules: 1. What is violence? 2. Violence in family relationships. 3. Violence between peers, friends, or neighbors in your school or neighborhood. 4. Violence on dates or between boyfriends/girlfriends. 5. Violence in public. The theoretical and conceptual framework for designing the course is related to: a) The World Health Organization's Model for Developing Health Skills, which is centered on the development of interpersonal, critical thinking, and coping skills, that allows young people to effectively and healthily deal with the demands and challenges of everyday life. This is based on Bandura's Social Learning Theory, which establishes that the development of skills implies observation, modelling, and social interaction;[9,10] and b) the Focus on Pedagogical Competence, the center of which is the participant's learning, in order to favor acquisition of knowledge, change of attitudes, and strengthening of skills as attributes that can be put into practice in key activities –in this case, skills– which can be applied in various contexts,[11,12] and c) the Ecological Model, which establishes that changes in attitudes and skills at an individual level lie in the interactions of young people in the different environments in which they develop and which form part of their daily life.[13]

Within this conceptual framework, knowledge is therefore understood as the attribute that represents specific awareness which is relevant and precise. Acquisition of knowledge is achieved when an understanding is reached of something, and this is related with a context to be understood or interpreted; this can be disciplinary, procedural, or attitudinal, and it is applied or put into practice through a set of activities with the intention of changing attitudes or developing skills.

Attitudes represent subjective dispositions and evaluations that predispose a person to act or respond in a predictable way towards people, objects, or situations. Their components are cognitive (beliefs, knowledge, and thoughts), affective (positive or negative emotions), behavioral (type of reaction), and normative (behavior in accordance with social and cultural norms). Attitudes are learned from personal experience in social interactions, and also guide the behavior of the individual in social situations.

Skills for health are focused on positive behaviors; they are structured interpersonally, in terms of critical thinking and coping which allow young people to effectively and healthily deal with the demands and challenges of their daily life. For violence prevention, they incorporate skills for assertive communication, negotiation, problem-solving, informed decision-making, and critical thinking for social coexistence without violence.[9,14]

The design of this intervention followed a process of knowledge transfer that implied the definition of knowledge, skills, and attitudes to develop; the adaptation of content to a textual and visual language, and the use of vignettes with meaningful daily situations in order to generate multimedia resources (comic strips, questionnaires, videos, forums, self-assessments) to be used on a technological platform. It also incorporated expression techniques, situation analyses, discussion, and modelling, as well as individual, group, and integrated activities (with automatic reinforcement and feedback) to facilitate skills development. For health professionals, tools were included to provide feedback, support, and assessment functions for transferring the intervention to groups of young people.

Furthermore, permanent monitoring was followed up in order to validate content, language, and multimedia resources by means of experts and focus groups with young people and health professionals, using indicators structured into five dimensions to assess the quality of the themes, communication, interaction, instruction, and technology.

The aim of the present article is to observe whether significant differences exist in scores in terms of knowledge and attitudes of participants who responded to an instrument before and after participating in the online intervention "Better Without Violence".

MATERIAL AND METHODS

The online intervention was implemented by specialists called *tutor trainers*, previously given hands-on training in the content and management of the intervention and its hosting platform. These tutor trainers served as facilitators in applying the intervention with staff from various health bodies throughout the country, who were in turn called to act as tutors for young people at secondary and junior school level when the intervention was replicated.

Participants

A total of 132 people participated in the intervention. All of these were health service providers; 25% were male and 75% female. The average age was 26.4 years. Some 59% held bachelor's degrees, 31% were students, a small number were interns (10%), and one held a masters. The majority had studied psychology (60%), 6% had studied medicine, and 5% had studied social work and nutrition. The majority of participants came from the north of the country: Tamaulipas (13.64%), Sonora (18.94%), Baja California (10.61%), and Coahuila (10.61%). The rest were from the middle of the country (40%) and there were only seven people (5.3%) from the State of Yucatan.

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Instruments

An *ad hoc* questionnaire of 58 questions was constructed, and this was divided into two dimensions. The first was made up of 37 affirmations on general knowledge about violence with dichotomous responses under four indicators: 1. What is violence? 2. Types of violence (physical, emotional, and sexual). 3. Spaces or environments where violence occurs. 4. Recognition of violence committed or experienced. All responses were recoded as 1 for correct and 0 for incorrect, such that the greater the score, the higher the number of correct responses.

For the second dimension, 20 reactives were used that produced information in terms of intolerant attitudes towards persons and/or groups in general, and by condition of gender, religion, disability, physical appearance, socioeconomic level, ethnic group, sexual orientation, and age. These were responded to on a Likert scale of three options (totally disagree, somewhat agree, and totally agree). The higher the score obtained in this questionnaire, the greater the intolerance towards the aforementioned groups. Due to the lack of responses for some reactives, five participants were lost, which reduced the sample worked with (n=127).

An instrument was also constructed for the Assessment of the Interactive Intervention Resources from the perception of the participants, for five dimensions: a) Theme Quality, b) Communication Quality, c) Interactive Quality, d) Instructional Quality, and 5) Technology Quality. Each questionnaire was responded to through two types of Likert scale to which they assigned specific scores (totally agree [2], agree [1], disagree [-1], totally disagree [-2]; and very useful [2], somewhat useful [1], a little useful [-1], and not at all useful [-2].

Procedure

There was an open call for health staff and social services students on related courses through the State Health Services in the framework of the Opportunities Development Program. Each participant was given registration to a technological platform, a password, and a tutor trainer who provided support, advice, and feedback during the intervention which lasted four weeks.

Before starting the intervention, a questionnaire was applied to the participants (*pre-test*) with the aim of obtaining an initial assessment of their knowledge and attitudes around violence. Upon completing the last module of the intervention, the same questionnaire was applied again (*post-test*). The resources assessment questionnaire was applied upon completing each of the modules in the course.

Table 1. Specific reactives with different meanings in the set of knowledge about violence

Reactive	N	M	DE	Sig	Dimension
CF2 Violence always has the intention of imposing something	125	Pre=.80 Post=.90	Pre=.39 Post=.29	$t_{(124)}$=2.5, p<.014	What is violence?
CF5 Violence occurs in unequal relationships	126	Pre=.42 Post=.84	Pre=.49 Post=.35	$t_{(125)}$=8.2, p<.00	What is violence?
CF6 Violence is as much the responsibility of the victim as it is of the perpetrator(s)	123	Pre=.28 Post=.47	Pre=.45 Post=.5	$t_{(122)}$=4.2, p<.00	What is violence?
CF2 Violence always has the intention of imposing something	125	Pre=.80 Post=.90	Pre=.39 Post=.29	$t_{(124)}$= 2.5, p<.014	Types of violence
CF4A Silence is a form of emotional violence	122	Pre=.88 Post=.97	Pre=.02 Post =.01	$t_{(121)}$=2.9, p<.004	Types of violence
CF6A Not respecting people's privacy, ideas, or beliefs in order to impose your own will is also an act of violence	125	Pre = .94 Post = 1	Pre=.23 Post=0	$t_{(124)}$=2.7, p<.008	Types of violence
CF8A Showing pornography to a child is a form of sexual violence	126	Pre=.96 Post=1	Pre=.19 Post=0	$t_{(125)}$=2.2, p<.025	Types of violence
CF2B Bullying is a type of violence that occurs between schoolchildren	126	Pre=.91 Post=.99	Pre=.28 Post=.08	$t_{(125)}$= 2.9, p<.004	Spaces or environments where violence occurs
CF4B Violence that occurs between men, like in fights, is primarily a product of biology; they behave like animals	125	Pre=.81 Post= .89	Pre=.38 Post=.30	$t_{(124)}$= 2.1, p<.032	Spaces or environments where violence occurs
CFT7B Young men die the most due to criminal or drug violence	121	Pre=.75 Post=.94	Pre=.43 Post=.23	$t_{(120)}$= 4.4, p<.000	Spaces or environments where violence occurs
CF8B Many women are raped when there are wars or armed conflicts	120	Pre = .71 Post = 87	Pre=.45 Post=.33	$t_{(119)}$=4.0, p<.000	Spaces or environments where violence occurs
CF1C A person who acts violently or commits and act of violence is called a perpetrator	123	Pre=.89 Post=.99	Pre=.30 Post=.09	$t_{(122)}$= 3.3, p<.001	Recognition of violence experienced

Ethical aspects

Given that passwords were assigned, the participants' anonymity was maintained; furthermore, the tutor trainers had contact with each one so that they could provide more information or guidance as necessary.

RESULTS

The assessment of the Interactive Intervention includes both the results of the *pre-post* applied to the participants, as well as the results of the intervention resource assessment from the perception of the participants.

A *t* test was firstly applied for samples related by reactive to observe the changes in the responses before and after participating in the program. The hypothesis is that there would be significant changes between the *pre-test* and the *post-test* tendencies to show more elevated averages in the latter for the dimensions of knowledge and a reduced score in the dimension of attitudes.

In terms of *Knowledge about violence*, Table 1 shows the reactives that presented statistically significant differences in the scores before and after the intervention and their respective dimensions. All of them went in the expected direction, in particular the change in reactive CF5, which considered unequal relationships and violence, and which showed an increase of practically double the amount of correct answers. The reactives that showed the greatest change in test scores were CF5 "Violence occurs in unequal relationships", CF6 "Violence is as much the responsibility of the victim as it is of the perpetrator(s)", CF7B "Young men die the most due to criminal or drug violence", and CF8B "Many women are raped when there are wars or armed conflicts". In these affirmations, participants responded correctly less frequently at the start, and in the post assessment they obtained more correct responses to a statistically significant degree.

In terms of the reactives that did not show statistically significant differences, there are interesting observations to make. The scale with which they were measured was dichotomous, meaning that the answer could only be correct or incorrect, scoring 1 or 0 respectively. As such, if the prior knowledge the participants had about the subject was 1, it could not be modified by the intervention, given that they already knew it, and the instrument was not capable of assessing ambiguous information in this respect. The reactives about which the participants had the most knowledge beginning the intervention were: CF3, "Violence (does not) only generate(s) damage on certain occasions"; CF4, "Emotions are hurt when any violence is suffered"; CF8, "Violence has a psychological impact on the victim(s)"; CF1A "Immobilizing someone is considered a form of physical violence"; CF1B, "Violence within families is as serious as that which occurs in the streets"; CF2C, "Cyber-bullying is a serious issue" and CF2C, "A person experiences violence when a peer, friend, or someone they know forces them to do something they do not want to do".

Table 2. Specific reactives with significant differences in the attitudes of tolerance test

Reactive	N	Median	SD	Meaning
AD1C I think that in general, men are better than women	126	Pre=1.14 Post=1.05	Pre=.41 Post=.26	$t_{(125)}$=2.7, p<.007
AD3C I avoid approaching peers who have a defect from birth or illness	126	Pre=1.29 Post=1.15	Pre=.49 Post=.40	$t_{(125)}$=2.7, p<.006
AD12C Indigenous people should live in their towns, not in the city	125	Pre=1.09 Post=1.04	Pre=.32 Post=.19	$t_{(124)}$=2.1, p<.034

It is important to point out that the highest previous score for the affirmations was obtained for CF8, about knowledge around what violence is; in other words, all the subjects that answered the questionnaire responded correctly before the intervention. As such, they knew that violence has a psychological impact on the victim and that "a person experiences violence when a peer, friend, or someone known to them forces them to do something that they do not want to do". Furthermore, given that they answered the reactive as false, they also knew that violence that occurs in the home can be the same as, or much worse than, violence in the street.

In terms of the dimension *Attitudes of intolerance*, the Student's *t* test was also applied in order to compare the medians of each reactive before and after. In spite of the majority of the reactives having their scores modified after the intervention, only three of the reactives showed statistically significant differences. These are shown in Table 2, and they show changes from a higher to a lower intolerance around equality between men and women, disability, and indigenous people. Comparing the results, we found that the affirmation that most drastically reduced was AD3C, "I avoid approaching peers that have some sort of defect from birth or illness"; in other words, after the intervention, fewer people were totally in agreement with this affirmation. It is important to note that in spite of these reactives showing changes, the average of the median of answers is greater than one, meaning that at least one of the participants was somewhat or totally in agreement with said affirmations.

On the other hand, as observed in Table 3, the majority of the reactives in the set of *Attitudes* did not show differences in the *pre-post* scores. However, it is important to note that the average score in these questions is equal to 1, which means that no variation in this score implies that the participants were in disagreement with the affirmations corresponding to these reactives since before the intervention. However, there was one question which obtained an average greater than 1 in both tests, although it did not show changes: "Being a lesbian is the worst thing in the world",

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which implies that some of the participants were in agreement or totally in agreement with this affirmation before and after the intervention.

Analysis by dimension. The dimensions originally set out in the questionnaire showed significant differences by set; however, they were analyzed in terms of their internal consistency and they showed up as much in the four on knowledge as they did in attitudes of intolerance *alphas* less than .45. Due to the above, it was decided to do a correlational analysis that would allow for more consistent dimensions, from which only two sets were derived, the first on knowledge with two dimensions: 1. General knowledge on violence (5 reactives) (*alpha*=.50), 2. Types and effects of violence (15 reactives) (*alpha*=.63), and the second on Attitudes of intolerance (7 reactives) (*alpha*=.58). Table 4 marks with an asterisk those reactives that shaped each dimension, over those that were originally considered in the instrument.

As can be seen, one dimension includes general knowledge about violence, while that of types and effects is more related to the manifestations and consequences that can be brought to both the victim and the perpetrator. Finally, the scale of attitudes of intolerance towards groups or persons makes reference to male superiority, and the non-acceptance of disability, indigenous groups, homosexuals, lesbians, or men that do not have certain characteristics considered to be "manly".

In order to observe whether the scores for the three dimensions showed changes through the intervention, a t test was applied to related samples. As shown in Table 5, significant differences were found between the first and the second application in the dimension of general knowledge and on types and effects of violence, but not in attitudes of intolerance, which reduced but was not statistically significant.

Intervention Resources Assessment. The questionnaire that was applied at the end of every module comprised the five dimensions mentioned, but the number of reactives varied in accordance with the theme and content of the module. For this reason, they were responded to by a variable number of people (Table 6). The average maximum score that each reactive could obtain was two on the Likert scale, which meant 'totally in agreement' or 'very useful', depending on the question. The highest median for all the modules was the index of Theme Quality (1.85 for module 3), which includes the understanding and usefulness of the material. However, the index of Communication Quality and Interactive Quality was very close (almost 1.82 obtained for module 5). Conversely, the lowest score was obtained for Technological Quality (1.4 in module 2), which was especially related with the forums implemented on the platform and which were generally not used much during the course.

Table 3. Reactives without variation in the pre- and post-intervention analyses

Reactive	N	M	DE
AD7C I try to spend time with peers who come from families that have more money	127	Pre=1 Post=1	Pre=0 Post=0
AD9C People from different cultures to ours should learn to be like us	127	Pre=1 Post=1	Pre=0 Post=0
AD10C Pretty girls who dress well have no reason to hang around with ugly or funny-looking girls	126	Pre=1 Post=1	Pre=0 Post=0
AD13C Homosexual people are abnormal	127	Pre=1 Post=1	Pre=0 Post=0
AD14C Homosexuals should have schools and neighborhoods especially for them	126	Pre=1 Post=1	Pre=0 Post=0
AD16C The guys who run the school or the neighborhood can't stand guys who are cowards or act like sissies	127	Pre=1 Post=1	Pre=.08 Post=.08
AD17C I don't usually respect people who think differently to me	127	Pre=1 Post=1	Pre=0 Post=0
AD18C In general, my opinions seem better to me than most people's	127	Pre=1 Post=1	Pre=0 Post=0
AD19C People with some sort of physical defect make me laugh	127	Pre=1 Post=1	Pre=0 Post=0
AD20C If my brother was homosexual, I would stop talking to him	127	Pre=1 Post=1	Pre=0 Post=0
AD21C Being a lesbian is the worst thing in the world	125	Pre=1.03 Post=1.03	Pre=.21 Post=.17

DISCUSSION

The preliminary *pre-test* and *post-test* results indicate that in the dimension of understanding, the course met its objectives. In this sense, knowledge of elements that allow for an act of violence to be recognized was increased: intention, the use of force or power (inequality), and the damage it causes. This is significant, because such knowledge indicates that after the intervention, the participants can recognize whether or not violence is experienced or committed in different areas of their lives –within the family, between friends, with a boyfriend/girlfriend, or in the community– which can favor violence becoming gradually less normalized. Furthermore, changes in understanding that violence is the responsibility of the person who commits it and the identification of a person acting violently as a perpetrator favor the recognition of both victims and perpetrators of violence.

The responses to reactives related to recognizing that inequality is an element of a violent act and that violence is the responsibility of the person who commits it had very low scores, even when the results are statistically significant, which indicates that this is a knowledge that must be integrated, extended, or deepened in future initiatives. The increase in the participants' knowledge is consistent with the assessment they made of the interventions' resources in terms of relevance and usefulness of the information.

Table 4. Reactives corresponding to the pre–post questionnaire by dimension

Indicator		Reactives by dimension		Unit of measurement
Knowledge about what violence is		CF1	Violence always refers to a physical behavior	NUMBER of correct answers to 8 questions
		CF2	Violence always has the intention of imposing something	
		CF3	Violence only causes damage on certain occasions	
		CF4	Emotions are hurt when any violence is suffered	
		CF5	Violence occurs in unequal relationships	
		CF6	Violence is as much the responsibility of the victim as it is of the perpetrator(s)	
	*	CF7	Violence is learned	
		CF8	Violence has a psychological impact on the victims	
Knowledge about types of violence		CF1A	Immobilizing someone is considered a form of physical violence	NUMBER of correct answers to 8 questions
	*	CF2A	Sexual violence only includes rape	
	**	CF3A	Manipulation and blackmail are forms of physical violence	
		CF4A	Silence is a form of emotional violence	
	**	CF5A	Being a witness to violence in the family is as serious a problem as having suffered it directly	
	**	CF6A	Not respecting people's privacy, ideas, or beliefs in order to impose your own will is also an act of violence	
		CF7A	Humiliating or laughing at someone is really just a way of having fun	
	**	CF8A	Showing pornography to a child is a form of sexual violence	
Knowledge of violence experienced in different spaces	**	CF1B	Violence within the family is not as serious as that which occurs in the streets	NUMBER of correct answers to 10 questions
	**	CF2B	Bullying is a type of violence that occurs between schoolchildren	
		CF3B	Violence between boyfriends/girlfriends is mainly physical	
	**	CF4B	Violence that occurs between men, like in fights, is primarily a product of biology; they behave like animals	
	**	CF5B	The majority of sexual abuses committed against children are carried out by adults not known to them	
	**	CF6B	The majority of women who say that they were "touched" or "felt up" on public transport are lying	
	*	CFT7B	Young men die the most due to criminal or drug violence	
		CF8B	Many women are raped when there are wars or armed conflicts	
		CF9B	Cyberbullying is not a serious issue	
	*	CF10B	Violence on television makes us feel more unsafe	
Recognizing violence experienced or committed	**	CF1C	A person who acts violently or commits violence is called a perpetrator	NUMBER of correct answers to 11 questions
		CF2C	A person experiences violence when a peer, friend, or someone they know forces them to do something they do not want to do	
	**	CF3C	An adult who touches a child to excite themselves sexually is called a sexual abuser	
	**	CF4C	People who have experienced violence in their childhood and/or adolescence are very similar to those who had peaceful childhoods	
	**	CF5C	When a family member shouts, insults, threatens to harm, makes fun of, or says things to humiliate or devalue another family member, this is known as physical violence	
	**	CF6C	When someone forces another person to watch pornography, they are violating them sexually	
		CF7C	Making fun of or laughing at someone is just a game, it is definitely not violence	
	*	CF8C	A person who receives photos, images, or messages on their cellphone or online that cause them to feel shame, humiliation, or anxiety is a victim of cyberbullying	
		CF9C	If a woman accepts that her boyfriend or husband hurts her or is even unfaithful, it is proof that she really loves him	
		CF10C	Being jealous and possessive, not allowing friendships with men or women, spying on your girlfriend or wife, and forcing her to do what you want is being a "real man"	
		CF11C	If a son or daughter is very scared of their father or mother, it is a sign that they have been victims of family violence	

Table 4. Continued

Attitudes of intolerance towards groups and people	***AD1C	I think that in general, men are better than women	Score obtained on the scale of 21 reactives (minimum 21, maximum 63). The greater the score, the higher the attitude of intolerance towards groups and people
	AD2C	I don't like to be around people from another religion	
	AD3C	I avoid approaching peers who have some sort of defect from birth or illness	
	***AD4C	People with mental problems do not have to go around interacting with other people	
	AD5C	Ugly people are worth less than good-looking ones, and you can make fun of them	
	AD6C	I feel ashamed to spend time with poor people in my peer group	
	AD7C	I try to spend time with peers who come from families with more money	
	***AD8C	It is better for people with some type of disability not to attend schools for normal people	
	AD9C	People from different cultures to ours should learn to be like us	
	AD10C	Pretty girls who dress well have no reason to hang around with ugly or funny-looking girls	
	AD11C	People from indigenous origins are slower and more foolish than other people	
	***AD12C	Indigenous people should live in their own towns, not in the city	
	AD13C	Homosexual people are abnormal	
	***AD14C	Homosexuals should have schools and neighborhoods especially for them	
	AD15C	I don't like old people	
	***AD16C	The guys who run the school or the neighborhood can't stand guys who are cowards or act like sissies	
	AD17C	I don't usually respect people who think differently to me	
	AD18C	In general, my opinions seem better to me than most people's	
	AD19C	People with some sort of physical defect make me laugh	
	AD20C	If my brother was homosexual, I would stop talking to him	
	***AD21C	Being a lesbian is the worst thing in the world	

Note: Some reactives were taken from this questionnaire in order to increase the consistency of the test and these were grouped into new dimensions, indicated as follows: *Reactives regrouped into the dimension of "General knowledge of violence"; ** Reactives regrouped into "types and effects of violence"; *** Reactives for "Attitudes of intolerance".

As indicated, although attitudes are usually stable, they can be modified by one's own decision or by an external intervention. The results indicate that because of the intervention, lower levels of intolerance were observed, but not to the extent that we would have expected. It should be noted that this dimension is fundamental, given that it is associated with discrimination, understood as practices which give "[…] undeserved unfavorable or scornful treatment which we may not perceive, but which we, at some time, receive or cause to a certain person or group, […] people with disabilities, senior citizens, children, young people, indigenous people, those with HIV, non-heterosexual people, those with a gender identity other than their birth gender, immigrant persons, and refugees, among others, are more likely to experience an act of discrimination, given the existence of false beliefs that lead to fear or rejection of differences".[15]

Table 5. Significant differences before and after per dimension (N=132)

Dimension	Median	SD	Meaning
General knowledge	Pre=4.44 Post=4.72	Pre=.82 Post=.56	$t_{(131)}$=4.1, p<.000
Types and effects	Pre=13.35 Post=14.27	Pre=1.65 Post=0.90	$t_{(131)}$=6.6, p<.000
Attitudes of intolerance	Pre=6.36 Post=6.40	Pre=0.95 Post=1.74	$t_{(131)}$=.273, p<.785

It is possible that due to long-distance interaction, it has been much more difficult to influence attitudes. However, due to the indications here, it is important that in future issues of the intervention "Better Without Violence", a detailed analysis is made of how to reduce *attitudes of tolerance towards violence*, and how to approach *attitudes towards gender stereotypes* and *gender violence*. The same is the case with developing skills for assertive communication, negotiation, problem-solving, informed decision-making and critical thinking for social coexistence without violence. This would allow for a pilot evaluation to be carried out of the intervention's effectiveness in dimensions of knowledge acquisition, skills development, and changing attitudes.

It is also necessary to revise the assessment instrument, as some reactives require reformulation, refining, or more specificity in their wording, with the aim of obtaining more responses for assessment. For example, in the case of reactives 8 and 9 on recognizing violence experienced, the wording of the reactives is ambiguous and very long; which led to erroneous or missing answers for specific questions. The variability presented in questions 5 and 6 of the set about spaces where violence occurs is very small; barely .01 or .02 points.

It is important to understand that topics such as violence are issues that are widely distributed in daily life, which makes it very probable that participants have their own back-

Table 6. Average of the indexes of quality assessment per module

Quality/Median per module	1 N=147	2 N=121	3 N=109	4 N=112	5 N=125
Theme	1.84	1.83	1.85	1.84	1.84
• The information in this module helped me to know more about the theme.					
• How useful was the information in this module?					
Communication	1.68	1.77	1.79	1.79	1.82
• The examples helped me to better understand the theme.					
Interactive	1.64	1.72	1.69	1.72	1.75
• How many activities did I do in this module?					
• The activities I did helped me to better understand the themes.					
• Did the additional reading for this module help you to go deeper into the theme?					
Instructions	Not assessed	1.65	1.6	1.61	Not assessed
• The stories (comic strips) helped me to complete the exercises better.					
• Did the video help you to better understand the theme of this module?					
Technology	Not assessed	1.40	1.51	1.51	Not assessed
• I used the forums as a space to express and share my interests and opinions.					

ground or 'baggage' prior to participating in the intervention in terms of information and experiences. One way of making the assessment instrument more sensitive would be to differentiate between knowledge, beliefs, skills, and attitudes in the previous applications, and in a diagnostic way, influence either the content or on the emphasis given to each theme.

This pilot evaluation allowed the modular scope of the intervention to be measured, and in the medium term the intention is to construct specific online interventions both for violence in dating relationships as well as that between two people.

This model of intervention derived from psychosocial research which has been a process of transferring knowledge and is measured by information and communication technology. It constitutes a brief (four weeks) and innovative intervention that incorporates strategies for knowledge acquisition, skills development, and attitude changes to favor better social coexistence among young people in their interpersonal relationships with peers, friends, or neighbors, and their dating relationships, both in a school and community context.

Optimized resources –ease of access to the internet– allows large sectors of the population that interact with this type of technology online to be reached, and ensures quality and faithful replication. Furthermore, due to its preventative focus, it can impact on the social coexistence of young people.

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