



# “USANDO CONDÓN”: A THEORY-BASED QUASI-EXPERIMENTAL INTERVENTION TO IMPROVE PERCEIVED SELF-EFFICACY FOR CONDOM USE AMONG MEXICAN ADOLESCENTS

*“USANDO CONDÓN”: UNA INTERVENCIÓN CONDUCTUAL CUASI-EXPERIMENTAL BASADA EN TEORÍA PARA MEJORAR LA AUTOEFICACIA PERCIBIDA DEL USO DEL CONDÓN EN ADOLESCENTES MEXICANOS*

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## Abstract

**Aim:** Sexually transmitted infections and pregnancy are public health problems in adolescence, preventable with the consistent condom use. This article presents the preliminary efficacy of “Usando Condón”, a theory-based behavioral intervention to increase the perceived self-efficacy for condom use. **Method:** “Usando Condón” consisted in two 90-minute sessions targeting Mexican adolescents aged 15-19 years. The sampling method was divided into three phases: a) randomization of high schools; b) randomization of selected high schools; c) non-probabilistic participants sampling. Three hundred ninety-two adolescents were included and distributed in three groups: experimental group experimental-group ( $n = 132$ ), control-pamphlet group ( $n = 130$ ) and control-control group ( $n = 130$ ). The intervention was measured with the Self-efficacy Scale for Condom Use among Mexican Adolescents. Inferential statistics were used. **Results:** The groups were equivalent (sociodemographic variables), except for age ( $p > .05$ ). Significant statistical difference between controls and experimental groups was found at the re-test ( $p < .05$ ,  $F = 18.089$ ,  $CI\ 95\%$ ). **Conclusion:** “Usando Condón” increased the perceived self-efficacy for condom use levels among adolescents. The intervention needs to be further tested in different contexts.

## Resumen

**Objetivo:** Las infecciones de transmisión sexual y el embarazo representan problemas de salud pública en la adolescencia, prevenibles con el uso consistente del condón. Este artículo presenta la eficacia preliminar de “Usando Condón”, una intervención teórica-conductual para aumentar la autoeficacia percibida para el uso del condón. **Método:** “Usando Condón” consta de dos sesiones de 90-minutos dirigida a adolescentes mexicanos de 15 a 19 años. El muestreo se dividió en tres fases: a) aleatorización de preparatorias; b) aleatorización de preparatorias seleccionadas; c) muestreo no probabilístico de participantes. Se incluyeron 392 adolescentes distribuidos en tres grupos: grupo experimental ( $n = 132$ ), grupo control-folleto ( $n = 130$ ) y grupo de control-control ( $n = 130$ ). La intervención se evaluó con la Escala de Auto-eficacia para el Uso del Condón en Adolescentes Mexicanos. Se utilizó estadística inferencial. **Resultados:** Los grupos fueron equivalentes (variables sociodemográficas), a excepción de la edad ( $p > .05$ ). Se encontró diferencia estadística significativa entre los controles y el grupo experimental en la post prueba ( $p < .05$ ,  $F = 18.089$ ,  $IC\ 95\%$ ). **Conclusión:** “Usando Condón” aumentó los niveles de autoeficacia percibida para el uso del condón. Se necesita seguir probando la intervención en contextos diferentes.

## Keywords

Condom; Mexico; STIs; HIV; Adolescents.

## Palabras clave

Condón; México; ITS; VIH; Adolescentes.

## Introduction

Adolescents (i.e., individuals in the 10-19 years age group) are considered a vulnerable group as they experience multiple psychological (e.g., sensation seeking, impulsivity), bio-physiological (e.g., adrenarche, gonarche), and social (e.g., social and sexual identity search) transitions (Sawyer, Azzopardi, Wickremarathne, & Patton, 2018; World Health Organization, 2017), which lead them to the realization of their existence as sexual subjects (Ritchwood, Penn, Peasant, Albritton, & Corbie-Smith, 2017), and frequently the initiation of sexual exploration and behaviors (Rosabal García, Romero Muñoz, Gaquín Ramírez, & Hernández Mérida, 2015).

Sexual initiation is indeed a life event with deeply personal and social significance, and it can represent the adolescents' transition from childhood to adulthood. Furthermore, sexual initiation is marked by the culture and hegemonic models of social and structural organization, which entrench myths, values and beliefs about sexuality while impacting gender inequalities in and access to sexual and reproductive health (SRH) education and services (Borges et al., 2016; de Jesús Reyes & Menkes-Bancet, 2017). However, lack of access or difficulties in accessing to reliable SRH education can result in adolescents' increased vulnerabilities to health-related outcomes, such as the acquisition of sexually transmitted infections (e.g., HIV infection) and unplanned and/or unwanted teenage pregnancies (Baams, Dubas, Overbeek, & Van Aken, 2015).

In 2018, the middle age reported for first sexual intercourse among women was 17.5 years (INEGI, 2018). The proportion of Mexican adolescents who experienced sexual intercourse increased from 15% in 2006 to 23% in 2012, with a lower change in women (from 14% to 20.5%) than men (from 17% to 25.5%) (Gutiérrez et al., 2012). Furthermore, recent data in Mexico indicate that women aged 15-19 years comprised the largest group in fertility age, with adolescent's fertility rates of 77 births per every 1000 adolescents (Gobierno de la República, 2016). Mexico face a high burden of teenage pregnancy among women in reproductive age of 15-19 years (United Nations Population Division & World Population Prospects, 2017). In Mexico, 205,351 people have been living with HIV since the first case in 1983 until the first trimester of 2019, of whom 2.3% are adolescents, and the overall most frequent HIV acquisition route is the sexual (94.8%) among the identified HIV-positive cases (Centro Nacional para la Prevención y el Control del VIH y el sida [Censida], 2019).

Mexican evidence shows that both women in fertility age and sexually active adolescent women reported the highest levels of unmet contraceptive need, with 27.6% and 28.2%, respectively (Consejo Nacional de Población [CONAPO], 2018). Additionally, only nearly half (54.6%) of sexually active adolescent women reported using contraceptive methods (CONAPO, 2016a), which is the lowest estimation relative to women in other age groups. While reports show that a high proportion of reproductive age women informed using a condom in their first sexual intercourse (e.g., 91% in 2014) (CONAPO, 2016b), the extent of its use appears to decrease in subsequent sexual intercourses (Gutiérrez et al., 2012).

Adolescent's knowledge toward condom use is also poor; for example, around 15% of Mexican adolescents stated that they did not know that condoms are used only once, and 24% reported “don't know” when they were asked whether condom can be used to prevent both STIs and pregnancies (Gutiérrez et al., 2012). In Mexico, although access to sex education and SRH services are subscribed within the adolescents and youth sexual rights, multiple barriers remain for them to access SRH services due predominantly to the strong influence religious and conservative beliefs (Chandra-Mouli, Gómez Garbero, Plesons, Lang, & Corona Vargas, 2018).

Condom use is important for the prevention of sexually transmitted infections and the promotion of sexual health; however, the effectiveness of condoms can decrease if not used consistently and correctly (e.g., breakage, slippage). Condom incorrect and inconsistent use is related to beliefs of pleasure reduction, cultural beliefs, lack of ability, power, and skills for condom use negotiation, shame and stigma associated with condom use, condoms inaccessibility, and poor sexual education (Higgins & Wang, 2015; Protogerou, Johnson, & Hagger, 2018).

To address adolescents' sexual health needs such as condom use, well-targeted integral interventions have been recommended. Previous evidence suggests that theory-based interventions have a significant impact on the mo-

dification and improvement of sexual behaviors (Lopez, Tolley, Grimes, & Chen-Mok, 2011; Lopez, Grey, Chen, & Tolley, 2016; Stockton, Protogerou & Johnson, 2014). One of the widely accepted theories in relation to condom use interventions is the Social Cognitive Theory (SCT) (Bandura, 1978, 1986). SCT argues that self-efficacy (SE) is based on perceived self-efficacy and outcome expectations. Perceived self-efficacy is “people’s judgments of their capabilities to organize and execute courses of action required to attain designed types of performances” (Bandura, 1986, p. 391). The outcome expectation is a sense of the probable behavior result. For example, the belief that one can correctly use a condom is an efficacy judgment, and HIV prevention is an outcome expectation. There are four sources of self-efficacy information: 1) *enactive attainment*, referring “authentic mastery experiences”; 2) *vicarious experiences*, referring to experiences observed in others; 3) *verbal persuasion*, referring to verbal judgments of others about one’s own behavior; and 4) *physiological states*, referring to emotional states. Under SCT, knowledge is a necessary but insufficient antecedent to accomplish a behavior.

Previous evidence has shown that self-efficacy is a theoretical concept that helps explain sexual and reproductive related outcomes such as condom use to prevent STIs and teen pregnancy, and also as an important determinant of sexual risk behaviors (Palacios, 2019). For example, in the study by Navarrete-Ochoa et. al. (2017), self-efficacy to prevent HIV influenced safe sexual practices. They found that, the greater the self-efficacy to prevent HIV, the greater the safer sex practices. Many of the adolescents included in studies in Mexico and Latin America show low levels of self-efficacy Castillo-Ávila et. al., 2017).

Condom is a promising method that according to national evidence (CONAPO, 2016b; Gutiérrez et al., 2012), needs interventions that improves perceived SE for condom use. Recommendations from descriptive studies that have measured self-efficacy for condom use and/or STI prevention are oriented toward the development of interventions that incorporate this theoretical concept, as it has been found to gain relevance for the manipulation of condom use behavior (Palacios-Delgado, & Ortego-García, 2020). The objective of this study was to evaluate the preliminary efficacy of a theory-based behavioral intervention based on enactive attainment, verbal persuasion, vicarious experience and psychological states as sources of SE information, to increase the perceived SE of condom use among Mexican adolescents.

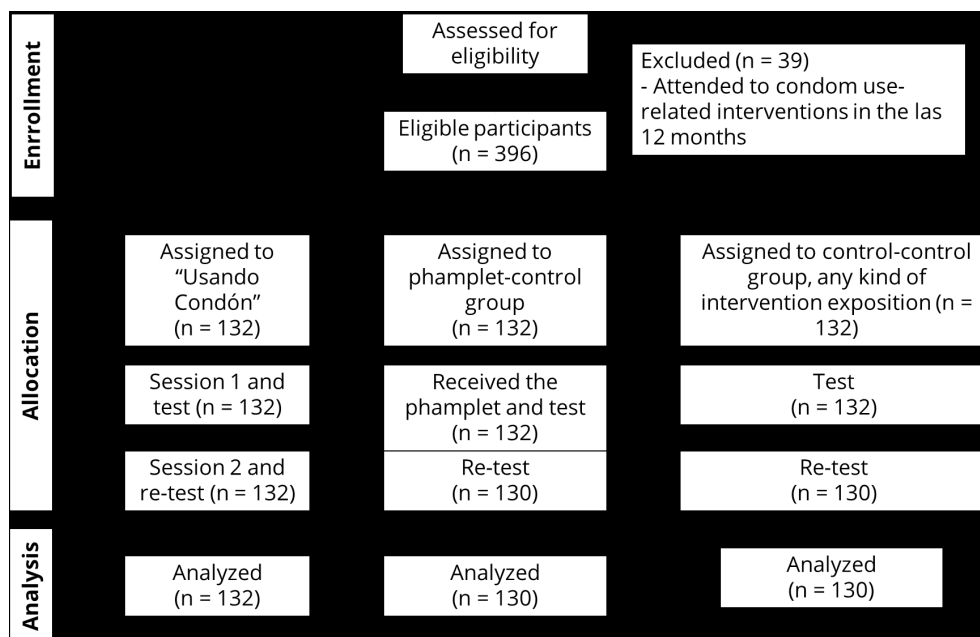
## Methods

### Study Design, Setting and Population

A quasi-experimental posttest only with non equivalent groups pilot study was conducted among high-school adolescents in Puebla, Puebla, Mexico, in 2016. Of a matrix of 10 available high schools affiliated under a local University in Puebla, three high schools were randomly selected. The sample size was determined for 90% of statistical power at 0.5 level significance, with the formula for finite populations, considering a 10% for attrition. The selected high schools were randomized to three groups: a) experimental group (EG; N = 132), b) pamphlet-control group (PCG; N = 132), and c) control-control group (CCG; N = 132). Within each group, participants were selected via a non-probabilistic approach (convenience sampling) as the schools’ authorities took the responsibility for the selection of adolescent students in each group.

Students aged 15 to 19 who had not attended to condom use-related interventions in the last 12 months were included in the study. Only the experimental group received the intervention of interest (Usando Condón), while the other two groups did not. The PCG was provided with a pamphlet with the correct algorithm to use a male condom and the CCG didn’t receive any intervention. According to Glitin & Czaja (2016) it is recommended to have a control group with standard intervention, the one to which individuals are usually exposed. In this case is the pamphlet with the condom use algorithm provided at the SRH Mexican services and another control group without intervention in order to compare the three kind of exposition. For the ethical considerations, the CCG received the same pamphlet once data collection was completed.

Figure 1 shows the flow diagram of participants’ recruitment, allocation and analysis process. We used a single-blind approach where participants were reserved from the treatment condition to which they were exposed.



**Figure 1.** Flow diagram of participant’s recruitment, allocation and analysis.

## Intervention

“Usando Condón” is based on the four sources of self-efficacy information and was adapted and implemented by nurses between February-April 2016 (Villa-Rueda, Landeros-Olvera, Manjarres-Posada & Benavides-Torres, 2020). “Usando Condón” consisted of two 90-minutes sessions with one week apart and it was administered at the high-schools setting. The intervention was applied by a single nurse, with training in adolescent sexual health and cognitive behavioral interventions. The facilitator was assisted by a bachelor nursing student who was in charge of providing the material (e.g. anatomical models, condoms) to the participants. Assessment of the other control groups was in charge of three nurses trained in the application of the assessment scale for condom use self-efficacy. Participants in the EG were divided in groups of 15 participants for the intervention.

**First session:** At the beginning of the first session, a test to assess condom use self-efficacy was conducted. The intervention provided educational information concerning sexually transmitted infections (STIs), teenage pregnancy, abortion, sexual and reproductive rights, the need for intimacy, stigma management (when carrying condoms, using and negotiating condom use), and communication skills with partners. The intervention included activities and development of “node-link mapping” (Czuchry, Timpson, Williams, Bowen, & Ratliff, 2009) to reinforce knowledge on pathways and mechanisms of HIV and STIs acquisition and transmission, remove myths and incorrect beliefs about STIs acquisition routes, and develop communication skills to negotiate condom use with their partners. Imaginary scenarios were generated for adolescents placing them in situations where they could buy condoms, carry and bring them with themselves without feeling stigmatized, and negotiate condom use with potential sexual partners. Scenarios about condom negotiation with hypothetical partners were also created where other participants assumed the possible partner role and vice-versa.

**Second session:** This section started with a brief remainder of the last session content. After that, gender roles and relationship expectations were worked. Consecutively, intending to make participants aware of the characteristics of condoms, the facilitator gave condoms to the participants and asked them to feel their texture (feels condom’s consistency), resistance (pull it from end-to-end and introduce the hand inside of it), and smell. Then, the facilitator organized the participants in groups and then provided them with an anatomical model of male external genitalia

(i.e., penis) along with condoms. The facilitator put on a condom incorrectly in the anatomical model (e.g., the wrong side, without pinching the air out of the tip and unrolling it at the middle of the penis), and examined what it would have happened (e.g., risk of failure) if someone uses condoms in such incorrect way. Information concerning the relevance of reading the instructions of the condom packages, expiration date, condom's safe storage, and using lubricants were also provided.

Finally, the facilitator modelled and showed the proper ways to use a condom. After that, the facilitator asked the participants to replicate and model the condom use technique individually several times while they were expecting to receive feedback from their peers and the facilitator. To overcome the negative outcome expectancies, different types of condoms according to colors, flavors, and textures were exhibited by the facilitator, giving several samples to each group for their exploration with the aim of motivating them for using condoms and explaining that using condoms can be fun and enjoyable.

The facilitator also provided information on the "morning after-pill", an emergency contraception method. Additionally, as the governmental organizations typically provide different types of condoms in terms of their size, lubrication, and thickness, the facilitator displayed these types of condoms and gave them a set of condoms to each one to allow them to pick the one with which they felt more comfortable. To address myths and beliefs towards condom use (e.g., it reduces pleasure, it is boring), analyze the condom use algorithm, we node-link mapping. At the end of the second session, a re-test to assess condom use self-efficacy was conducted.

## Measurement Instruments

### 1) Demographic data

Demographic data included age, gender, place of origin, religion, the person with whom they lived, and whether the participant had ever engaged in a sexual intercourse.

### 2) Self-efficacy for condom use

To assess the extent the intervention was impactful, a self-efficacy scale used in the Mexican context called "*Escala de Auto-eficacia para el Uso del Condón en Adolescentes Mexicanos*" (Carrera Huerta et al., 2016) was used. It is written in Spanish with colloquial language so that the Mexican adolescent can understand it in a simpler way. The original reported value for reliability estimate was  $\alpha = .86$ . The statistical analysis to build the instrument included the experts technique with a Content Validity Index of 8.64. This scale consisted of 17 items; each item on a five-point Likert response ranging from never (score 1) to ever (score 5). The items were summed for each participant, resulting in a minimum score of 17 and a maximum of 85, with a higher score indicating a higher SE in condom use. For the present study the Cronbach's Alpha was 0.795 and 0.824 for test and re-test assessments, respectively.

## Statistical Analyses

The analyses were performed at the group level. Categorical demographic data were described using absolute and relative frequencies. Mean along with standard deviations (SD) were reported for continuous measures. The Kolmogorov Smirnov test with Lilliefors correction was applied to determine the distribution of the data. Based on the values obtained (EG  $p = .109$ ; PCG  $p = .58$ ; CCG  $p = .167$ ) parametric statistic was used. To compare SE mean score at baseline (test), post-intervention (follow-up, or re-test), and mean change, we used One-Way Analysis of Variance (ANOVA) along with post-hoc comparisons using Tukey procedure. Chi tests were applied to determine significant differences between the sociodemographic variables among the three groups. The Statistical Package for Social Sciences (SPSS v.21) was used for the data analysis. Data was analyzed to assess interventions effects at group level.



## Ethical Considerations

Written consents were obtained from both parents and adolescents before the start of the intervention. The Institutional Review Board from the (Benemérita Universidad Autónoma de Puebla) approved the study protocol (Register Number: FE/SIEP/1560/2016).

## Results

Four-hundred and thirty-five adolescents were assessed for eligibility, from which 39 were excluded. Of the entire study population, four participants did not complete the intervention (analytic  $N = 392$ ). The overall mean age was 16.0 ( $SD: .79$ ), with the age range from 15 to 19 years. Most of the participants were women in the three study groups (EG: 56.8%; PCG: 70.0%; CCG: 70.0%). The majority of them were living with their parents at the time of the study (EG: 95.5%; PCG: 95.4%; CCG: 93.3%) and did not have a history of previous sexual intercourse (EG, 62.8%; PCG, 66.1%; CCG 58.5%). Table 1 shows that group characteristics at baseline were similar.

**Table 1.** Characteristics of the three study groups

	Overall ( $N = 392$ )	Experimental Group (EG; $N = 132$ )	Control Group (CG1; $N = 130$ ) <sup>a</sup>	Control-Control Group (CCG; $N = 130$ ) <sup>a</sup>	P-value
Means age [SD]	16.86 [0.7]	16.60 [0.8]	16.75 [0.6]	17.35 [0.5]	.001
Sex					.095
Female	244 (62.2)*	75 (56.8)	78 (70.0)	91 (70.0)	
Male	148 (37.8)	57 (43.2)	52 (40.0)	39 (30.0)	
Living with					.975
Parents	372 (94.9%)	126 (95.5%)	124 (95.4%)	122 (93.3%)	
Relative	13 (3.3%)	4 (3%)	4 (3.1%)	5 (3.9%)	
Other	7 (1.8%)	2 (1.5%)	2 (1.5%)	3 (2.3%)	
Religion					.814
Catholic	257 (65.6%)	91 (68.9%)	86 (66.2%)	80 (61.5%)	
Christian	31 (7.9%)	10 (7.6%)	10 (7.7%)	11 (8.5%)	
None	86 (21.9%)	24 (18.2%)	30 (23.1%)	32 (24.6%)	
Other	18 (4.6%)	7 (5.3%)	4 (3%)	7 (5.4%)	
Previous sexual intercourse					0.415
Yes	147 (37.5%)	49 (37.2%)	44 (33.9%)	54 (41.5%)	
No	245 (62.5%)	83 (62.8%)	86 (66.1%)	76 (58.5%)	

\* Data are expressed as N (%) <sup>a</sup> Two participants were missed at the second session in each of these two groups

Additionally, no statistically significant difference was observed among the three study groups with regard to the SE mean score at baseline (pre-intervention test) (ANOVA  $P$ -value = 0.068). At follow-up, however, there was a statistically significant difference among the study groups (ANOVA  $P$ -value < 0.001). A Tukey procedure was run to compare for statistical significance among CCG, PCG and EG. The test showed a non-significant difference when CCG and PCG were compared to EG ( $P$ -value .997) while it showed a significant difference when control groups (CCG, PCG) were compared to EG ( $P$ -value < 0.05) Table 2 also shows the mean change in each study group. ANOVA test demonstrated that SE mean score increased in EG greater than the other control groups ( $P$ -value < .05).

**Table 2.** Mean self-efficacy scores at baseline (test) and re-test (after the interventions) in the three study groups

	Experimental Group (EG; $N = 132$ )	Control Group (CG1; $N = 130$ )	Control-Control Group (CCG; $N = 130$ )	Between-group P-value <sup>a</sup>
<b>SE mean score</b>				
At baseline (test)	65.98 (16.4)*	71.37 (13.0)	72.81 (14.3)	.068
Post-intervention (re-test)	82.94 (12.0)	78.54 (14.5)	79.86 (14.6)	<0.001
Within-group	<.05	<.05	<.05	
P-value <sup>b</sup>				
Change score (from baseline to post)	-16.912 (20.868)	-7.172 (19.828)	-7.059 (20.690)	

\* Data are presented as mean (standard deviation) <sup>a</sup> Using ANOVA to compare mean score among the three study groups at baseline, post-intervention, and the change from baseline to after intervention. <sup>b</sup> Using paired- t-test

## Discussion and Conclusions

We aimed to test a theory-based behavioral intervention in order to increase condom use self-efficacy among Mexican adolescents. Our findings showed that adolescents who exposed to the study intervention received higher levels of condom use self-efficacy compared to the two control groups who were exposed to either the traditional delivery of the pamphlet with the condom use algorithm (PCG) or any intervention except the study intervention (CCG).

These findings indicate that increase in condom-use self-efficacy is promising evidence for the effectiveness of the program— which is based on enactive attainment, verbal persuasion, vicarious experience and psychological states as sources of self-efficacy information, relative to the conventional method of pamphlet used for delivery of the most of the SHRs.

Findings were consistent with previous studies that aimed to increase condom use self-efficacy through theory-based interventions (Downs et al., 2018; Mmbaga et al., 2017). Evidence highlights the relevance of the use of theory-based evidence in structuring of the interventions to generate positive outputs in condom use efficacy. For example, a systematic review of theory-based interventions for contraception found that interventions using the SCT have been effective in increasing condom use, and that the use of theory helps explain conduct modification (Lopez et al., 2011). A recent version of the systematic review included 10 more new trials, of which 5 used TSC and targeted adolescents. The review highlighted the importance of the explicit use of theory in interventions aimed at preventing STIs, as well as for behavior modification (Lopez et al., 2016).

Kalamar, Bayer, & Hindin (2016) developed a systematic review aimed to identify theory-based interventions for the prevention of STIs and risky behaviors among young people in low and middle-income countries informed that condom use was the most common behavior outcome, where 12 from 17 articles presented a positive impact resulting from such interventions. Additionally, health education and SHR were the most frequent type of intervention design often targeting condom use. Sex education beyond the abstinence approach and closer to the right to updated, scientific and secular information, has proven to be a critical component to prevent sexual and reproductive health adverse outcomes among adolescents (Lopez et al., 2011; Rojas et al., 2017) and for promoting changes in sexual behaviors (Denford, Abraham, Campbell, & Busse, 2017).

Results acquire relevance in the epidemiological context of adolescent pregnancy and STIs in Mexico. In order to respond to the growing public health problem related to adolescent pregnancy, the Mexican government in 2016 developed the National Strategy for the Prevention of Pregnancy in Adolescents-ENAPEA (Gobierno de la República, 2016), which aim to reduce by 2030 the fertility rate by 50 percent among adolescents women between 15 and 19 years old. The strategy also seeks to eradicate pregnancies among those aged 14 or younger. While this strategy emphasizes that adolescents have the right to access SRH services, it also acknowledges that SHR do not always provide a sexual and reproductive rights based care and free of adultcentrism behaviors, which is important for adolescents. Therefore, the ENAPEA and recent scientific evidence urges the need for the development of interventions beyond the clinical contexts, such as educational programs (Denford et al., 2017). Using evidence-based sexual health interventions is imperative for healthcare providers if there is any goal to prevent or reduce STIs and teenage pregnancies (Chandra-Mouli, McCarraher, Phillips, Williamson, & Hainsworth, 2014).

We acknowledge that our study was not without limitations. Although the selection of the institutions was randomized, a non-probability approach was employed to allocate participants to the study groups. As the study participants were mainly in the last high-school semester, it was not possible to follow-up the research for more duration to assess the long-term effects of the study intervention. The same difficulties related to the randomization of participants and follow-ups have been related in previous systematic reviews, to the availability of funding and participants for follow-ups (Salam et al., 2016).

The use of a more robust analytic method is needed in order to control for conflation of school and intervention, as well as to control for clustering effects within schools by use of multi-level modeling to control for non-random va-



riance at the school level. However, study sample was too small to allow such models to converge. Our findings are generalizable to Mexican adolescents in similar conditions and characteristics as the sample used here. According to the knowledge translation processes regarding interventions, the re-adaptation, implementation, evaluation and modification of the interventions is a necessary continuum for the expansion and validation of knowledge (Straus, Tetroe, & Graham, 2013).

Increase in condom-use self-efficacy is promising evidence for the effectiveness of the program “Usando Condón” (Villa-Rueda et. al., 2020). This is good preliminary data, and will need to be further tested as the knowledge translation processes indicate. The intervention is promising in the extent to which it would help prevent sexual transmitted infections. Finally, readers should consider that many adolescents do not access education. The most common contexts of intervention are usually schools, clinics and community centers, which indicates that there are other groups of adolescents in disadvantaged situations that would not be accessing this type of intervention (Lopez et. al., 2016). Upcoming studies toward sexual and reproductive health need to analyses and improve the strategies to integrate those adolescents into prevention strategies.

Some of the recommendations we make based on our experience with this study is to include adolescents in the design of interventions, as recommended by the Sexual and Reproductive Rights of Adolescents and Young People (CONAPO, Secretaría de Gobernación & INMUJER, 2016). They, as experts, should be where decisions are made about their health. Sexual and reproductive health interventions for adolescents should consider adolescents as subjects of human rights, with the capacity to make their own decisions about their sexuality, where the right to pleasure beyond reproduction is legitimized, and where a hetero-cisnormative education is not imposed, since adolescences are diverse. It should be considered that sexual practices and condom use evolve and that some population groups, such as gay men, use risk reduction strategies (e.g., sero-positioning and sero-classification) where self-efficacy for condom use will be different (Villa-Rueda et. al., 2021).

It should be considered that access to condoms is a multilevel phenomenon that does not depend solely on the decision of the individual, but also on political, institutional and community factors. Similarly, it is important to qualitatively gather perceptions and feedback on the intervention, since these data help to improve the structure of the intervention.

In conclusion, this research indicates that theory-based interventions as well as condom use negotiation scenarios and programs appear to be effective in improving condom use perceived self-efficacy among adolescents.

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