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Abstract

Introduction: Adolescence is a stage of biopsychosocial changes, it is considered a vulnerable group because risky sexual behaviors are observed, with an increase in Sexually Transmitted Infections.

Objective: Develop an educational intervention on sexually transmitted infections in adolescents in a co-school.

Method: Study of quasi-experimental educational intervention pre-test-post test without control group in seventh grade students of the Manuel Azcunce Domenech Mixed School Center during the 2019 - 2020 school year, San José de las Lajas, Mayabeque province.

Results: Prior educational intervention, there was difficulty in identifying sexually transmitted infections, clinical manifestations, routes of transmission and their consequences. Deficiency in condom use. They did not perceive the vulnerability of infection with the first sexual intercourse, of unprotected sex and that the contagion is independent of biological sex or sexual orientation. They think that all sick people are diagnosed and followed by the health system. Post-intervention significantly raises all the results of the studied variables.

Conclusion: Knowledge, risk perception and beliefs towards STIs-HIV/AIDS were raised, considering the applied educational intervention as effective.

Keywords: Adolescence; STI-HIV/AIDS; Educational Intervention

Introduction

In adolescence there are continuous biopsychosocial changes, where it is sought to strengthen the personality and the roles that will develop in society. It is considered a period of human development in which an important decision-making process of the subject begins with respect to himself; it is also the beginning of the transition to adulthood [1,2].

Adolescence and youth are times in life when risky behaviors are the majority of the causes that originate: injuries, health disorders, sequelae and even death in both sexes.

Adolescence is considered a vulnerable population group, as it is often observed that they adapt risky behaviors which can be sexual or social. The combination of the two is frequent and very dangerous for sexual and reproductive health [1-4].

The main consequence of risky sexual behavior is framed in reproductive damage with the presence of the increase in early pregnancies, abortions and sexually transmitted infections (STIs) and that in turn if related to risky social behaviors unfortunately can culminate in the frustration of the life project [5,6].

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Adolescents face various risks such as accidents, alcoholism, smoking, illicit drug use, STI. In general, it is proposed that it is given by low perception of risk and that they are in contradiction with their attitudes, behaviors and knowledge, because they perceive the risk, they have knowledge, but they assume risky behaviors and attitudes [5-7].

It is proposed that among the factors that favor the increase of STIs in adolescence are the initiation of early sexual relations, the lack of adoption of preventive measures and having multiple sexual partners [7].

In 2014, the United Nations Population Fund (UNFPA) estimated that 27% of the population aged 10 to 24 lived in Latin America and the Caribbean. Currently the population of adolescents and young people in the region is above 165 million, in addition, negative levels in the indicators of health status confirm this [8].

In 2015, adolescent fertility accounted for 15.2%. Latin America and the Caribbean is the only region where births to girls under 15 increased [8].

Statistics worldwide estimate that in 2015, 1.2 million adolescents died, or more than 3000 a day, mostly from preventable or treatable causes. These causes include those caused by sexually transmitted infections [8].

The World Health Organization (WHO) has estimated that sexually transmitted infections (STIs) including acquired immunodeficiency virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) are, globally, the most important cause of disease among men aged 15 to 49 and the second (after maternal causes) among young women in developing countries [9-11].

The global incidence of curable STIs is estimated at 333 million cases, 62 for Blenorrriasis, 89 for chlamydia, 12 for syphilis and 170 for trichomoniasis. In the U.S., 15 million people are infected with one or more STIs annually. The highest proportion is observed in South and South-East Asia, followed by sub-Saharan Africa and Latin America and the Caribbean. Millions of sexually transmitted infections attributable to human herpes viruses, human papillomaviruses (HPV) and hepatitis B viruses 3, 20, also occur every year [8-11].

In relation to HIV, around 38.6 million people worldwide suffer from it; of these, 10.3 million are young people aged 15 to 24, 42% were recently infected. On the other hand, 50% of new infections, almost 6 thousand daily, happen in young people. If a sex analysis is done, an increasing number of women are infected, and at significantly younger ages than in the case of men. One million pregnant women are infected each year with Syphilis [10,11].

In 2012, Syphilis affected 360,000 pregnancies [11-15]. Cuba does not escape this situation, appreciating that the average age at which sexual relations are beginning is lower and lower; the earlier the first intercourse occurs, the greater the risks of pregnancy and of contracting sexually transmitted diseases [13].

The authors propose that adolescence becomes a vulnerable group, by making poor decisions and that it is based on scarce or inaccurate knowledge of STIs-HIV/AIDS. This is accompanied by the lack of perception of risk in the prevention of these.

The main consequence of risky sexual behavior is framed in reproductive damage with the presence in the increase of early pregnancies, abortions and STIs and that in turn if related to risky social behaviors unfortunately can culminate in the frustration of the life project [6,7,12].

There are trends worldwide that make this population characteristic as it is the fact that the age of initiation of sexual relations is earlier, being around 15 years [12].

Latin America and the Caribbean is the only region where births to girls under 15 increased. Rural areas predominate with adolescent fertility accounting for 21 per cent of total fertility [13].

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Contraceptive prevalence has increased modestly, but with discontinuous use. In the structure of contraceptive use, condoms predominate (67%), followed by IUD and pill. But there continue to be high rates of voluntary terminations of pregnancies at these ages, which exceed the rest of the age groups [8-13].

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In Cuba, the average age of initiation of sexual intercourse is increasingly lower; the earlier the first intercourse occurs, the greater the risks of pregnancy and sexually transmitted diseases [4].

This calls for greater actions aimed at protecting adolescents in terms of sexuality, as it is a universal right of all people in relation to full, healthy enjoyment and free from all discrimination and social injustice [4,13-15].

The authors agree with other authors that adolescents can be assertive, that they can discern between right and wrong, and that they can be responsible for their actions, that they must demand and live their rights [14-17].

The World Health Organization (WHO) has set targets for 2030, including: ending the AIDS epidemics, ensuring universal access to sexual and reproductive health services, including family planning, information and education, and integrating reproductive health into national strategies and programmes [18].

We are obliged to think about adolescence to prevent responsibly. The formula is that comprehensive sexuality education (EIS) is needed, thus favoring responsible sexuality [19,20].

We proceeded to develop educational intervention on sexually transmitted infections in seventh grade students of the Manuel Azcunce Domenech Mixed School Center during the 2019 - 2020 school year, with the objectives of identifying knowledge, risk perception and beliefs about sexually transmitted infections before and after the educational intervention and finally evaluating its effectiveness.

Methods

Quasi-experimental educational intervention without control group was carried out in the Manuel Azcunce Domenech Mixed School Center, in the municipality of San José de las Lajas, Province of Mayabeque, in the period from October 2019 to February 2020. The universe of study was constituted by the 36 subjects that constitute the total of students of 7th grade.

As part of the quantitative research, a questionnaire created by the Department of Energy of the National Institute of Hygiene, Epidemiology and Microbiology (INHEM) was used, which allowed work with sociodemographic variables, knowledge, risk perception and beliefs [21].

The educational intervention was based on the Sexuality Education Program with a Gender and Sexual Rights Focus in the national education system (Ministerial Resolution No.139/2011) [22].

Participatory affective techniques were linked [23,24].

Didactic materials made for the prevention of STIs were used, such as: Videos of the National Institute of Radio and Television of Cuba (ICRT) of the Cuban animated series: "Puberty"; excerpts from the Cuban television series: "La cara oculta de la luna" (ICRT); recorded program of the Radio Progreso Radio Station: "Por nuestros campos y ciudades" (ICRT); magazines for the Cuban teenager "Pionero" and "Lazo Adentro" in addition to the book "Selecciónde cuentos sobre la prevención de las STI-VIH/Sida: Cuento contigo" [25-28].

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The workshop was extended for 15 weeks with a weekly session and the questionnaire was applied again after four weeks without sessions performed.

Analysis and processing of information

The questionnaire was applied and with the data obtained an automated database was developed using the commercial packages of Microsoft office 2010.

For the summary and analysis of the information, numbers and percentages were used.

Tabulated Epidemiological Analysis was used. Version 3.1. (EPIDAT 3.1) for the quantitative study of the results obtained.

Pearson's Chi-square test was applied to the comparison of proportions. A significance level of $p \le 0.05$ was considered.

Data were displayed in tables and graphs for better understanding and to reach conclusions and recommendations [28].

Ethical aspects

Communication was made to the scientific council of the institution. Respect for confidentiality and ethical aspects in working with students and teachers was maintained. It was specified to them that the data obtained would be used for scientific purposes, presentation at events and publication.

Results

Table 1 shows that before performing the educational intervention the percentages in the identification of the different sexually transmitted infections, the routes of transmission, the fundamental characteristics of their clinical pictures, the repercussions after suffering them (between 22 to 36%) and the appropriate use of condoms were inadequate, after the intervention it was significant the increase in the percentage of each subvariables studied rising between 86 and 97%.

	Before*				After**				
Knowledge variables	Adequate		Inadequate		Adequate		Inadequate		
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Identification of STIs	9	25	27	75	32	88.8	4	11.1	
Transmission routes	8	22.2	28	77.7	35	97.2	1	2.8	
Clinical manifestations	10	27.7	16	44.4	34	94.4	2	5.5	
Consequences of STIs	13	36.1	23	63.8	31	86.1	5	13.8	
Condom use	17	47.2	19	57.5	33	91.6	3	8.3	

 Table 1: Knowledge about sexually transmitted infections before and after the educational intervention in adolescents of 7th grade. Mixed School Center: "Manuel Azcunce Domenech". 2019-2020.

 The second state of 7th grade. Mixed School Center: "Manuel Azcunce Domenech". 2019-2020.

*P = 0.0002; **p= 0.4574.

It is appreciated that the route of transmission of sexually transmitted infections before the intervention presented the lowest percentage (22%) and after the intervention reaches the highest percentage (97%).

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	Educational Intervention							
Level of knowledge	Bef	ore	After					
Kilowieuge	No.	%	No.	%				
High	9	25	31	86.1				
Middle	3	8.3	4	11.1				
Low	24	66.6	1	2.8				
Total	36	100	36	100				

 Table 2: Adolescents' knowledge levels about STIs. 7th grade. Mixed School Center:

 "Manuel Azcunce Domenech". 2019 - 2020.

P = 0.0000.

When we studied the levels of knowledge about STIs that the students had prior to the intervention, it was shown that the low level predominated by 66.6%. After the intervention it increases significantly to a high level in 86.1% of students.

	Before				After			
Perception of risk	Adequate		Inadequate		Adequate		Inadequate	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Being able to become infested at first sexual intercourse.	2	5.5	34	94.4	35	97.2	1	2.8
Known person may be infested with HIV	1	2.8	35	97.2	33	91.6	3	8.3
Being able to become infested when you have unprotected sex with people receiving antiretroviral treatment	5	13.8	31	86.1	35	97.2	1	2.8
Perceiving that you may be vulnerable to HIV	6	16.6	30	83.3	34	94.4	2	5.5
Vulnerability to be infested in- dependently of biological sex.	3	8.3	33	91.6	32	88.8	4	11.1

Table 3: Perception of risk towards sexually transmitted infections before and after educational intervention. 7th grade. Mixed School Center: "Manuel Azcunce Domenech". 2019 - 2020.

P = 0.3538.

Table 3 shows how before the intervention the perception of risk is inadequate, with the lowest percentage (2.8%) considering that they are not vulnerable to contracting an STI-HIV/AIDS if the person with whom they have sex is known. Perception increases significantly after performing the educational intervention in each item that is analyzed.

	Educational Intervention						
Level of risk perception	Bef	ore	After				
	No.	%	No.	%			
High	8	22.2	28	77.7			
Middle	5	13.8	7	11.1			
Low	23	63.8	1	2.8			
Total	36	100	36	100			

Table 4: Levels of risk perception. 7^{th} grade teenagers. Mixed School Center: "Manuel Azcunce Domenech". 2019 - 2020.P = 0.0000.

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Table 4 shows that before the educational intervention the level of perception was low (63.8%) and that as a result of this rises significantly by 77.7%.

	Before				After				
Beliefs	Adequate		Inadequate		Adeq	luate	Inadequate		
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
PVVIH incorporated into society	29	80.5	7	19.4	35	97.2	1	2.8	
Infested people controlled by public health	8	22.2	16	44.4	33	91.6	3	8.3	

Table 5: Beliefs towards sexually transmitted infections before and after educational intervention. 7^{th} grade. Mixed School Center: "Manuel Azcunce Domenech". 2019 - 2020.

P = 0.0069.

It is observed in 80.5% of the students before the intervention agree that people living with HIV are incorporated into society and are productive however at this very moment they inappropriately express the belief that all infested people are diagnosed, controlled and followed by the public health system, these considerations are increased, subsequent to the educational intervention.

	Edu	cational I	_			
Variables studied	Be	efore	A	fter	Increment percent	
	No	%	No	%	percent	
Knowledge	9	25	31	86	61%	
Perception of risk	8	22.2	28	77.7	55.5%	
belief	29	80.5	33	91.6	38.9%	

 Table 6: Levels of effectiveness of educational intervention in adolescents about STIs. 7th grade.

 Mixed School Center: "Manuel Azcunce Domenech". 2019 - 2020.

Table 6 it allows to show how when evaluating the results obtained after the general qualification of the questionnaires applied to the adolescents studied, we find that the levels of knowledge, perception of risk and belief of the students increase above the parameters plotted (61, 55.5 and 38.9%) therefore, the educational intervention is considered effective.

Discussion

In Cuba, the national survey on HIV prevention indicators in 2013 reported that six out of ten young females and males aged 15 to 24 correctly identify ways to prevent sexual transmission of HIV and reject the main misconceptions about the transmission of the virus. The knowledge of STI prevention measures also did not reach a good evaluation in Rodríguez Cabrera's study. There is knowledge about diseases and how to prevent them, however, 45% perceived sex with penetration as a means or route of transmission. Only 60% of students were aware of the routes of transmission of HIV/AIDS. Which shows that despite the extensive information that exists, it does not correspond to behaviors.

A study conducted in Cuba by Álvarez Mesa and Vaillant Correoso reveals the dissonance between the knowledge that adolescents have about condom use and inappropriate behavior with respect to its systematic use in sexual relations, which could be conditioned by the characteristics of this stage of life, where many behaviors are in the conformation phase, among them, those that correspond to the area

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of sexuality. This is an aspect of special importance as part of the life project of each young person, which is established in their ways of manifesting value organizations, knowledge, beliefs and attitudes in a stable way in their sexual life [30,31].

The authors appreciate the existence of certain misconceptions such as: that when having sex for the first time it is not possible to get infected and when the person is known previously it is unlikely that they will be infested, in addition, if the person lives with the virus, but carries treatment it is not necessary to protect themselves with condoms in addition to the fact that the female sex and homosexuals are more likely to get sick.

In this last assertion, the authors consider that it is permeated by macho aspects that still remain in society and that are transmitted to the new generation [32].

This century has seen an increase in research related to risk perception, directed towards communicable diseases and specifically with the prevention of STIs and HIV/AIDS. Currently these studies are carried out throughout society, to promote responsible behaviors in the face of health and sexuality [33,34].

The authors agree with these studies that the perception of risk in the prevention of STIs-HIV/AIDS presupposes the integration of knowledge about the biological, psychological and social characteristics of adolescents that make them more vulnerable to contracting an STI. The knowledge about these infections means that by reaching information, they allow you to understand the importance of making appropriate decisions for the satisfaction of your needs, linked to the prevention of STIs and therefore a healthy sexual and reproductive life.

All the studies consulted by the authors have corroborated the low perception of risk of adolescents in relation to these infections. It has been shown that although there is a certain level of knowledge about these risks, based on the systematicity of the information received by the Cuban adolescent population at school, in the community and through the different mass media, the perception of risk is still low.

Rodríguez Cabrera and collaborators, when exploring the knowledge of adolescents and young university students in Havana, obtained a level of general knowledge evaluated as bad, with less than 60% of correct answers. They mostly consider sexuality innate or related to biological sex, they do not see it as an aspect of personality that has its biological, psychological and social components. This reinforces the need to work on it so that we have a proper concept of it [33].

It is considered a low perception of risk in the prevention of STIs-HIV/AIDS when adolescents do not conceive or awareness of the significance of the harms of contracting these infections. On the contrary, the perception of risk will be high when they conceive and awareness the significance of the damage that these infections produce to the body [4-6].

If adolescents have a high perception of risk and on that basis make the decision to reject risky behaviors, they will manifest a responsible sexual conduct in the face of these infections. The perception of adequate risk becomes an indicator of correct sex education, as it empowers the adolescent to sexuality, in accordance with their needs and those of the context [4-6,34].

The authors agree that all this will contribute to responsible sexuality and to ensuring high levels of sexual and reproductive health, that is, integrating into adolescents the somatic, emotional, intellectual and social aspects of sexual behaviour, in order to contribute to the development of their personality and facilitate their possibilities of communication and of giving and receiving love. It also contributes to their being able to manifest a general state of physical, mental and social well-being in all aspects related to their reproductive system, functions and processes [35].

The research shows the characteristics in communication in adolescents and well described by several authors [4,6,36].

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The authors reaffirm that the peer group and its influence on the adolescent is one of the factors that has been linked to the decision or not to initiate sexual relations. It is known that the time that the adolescent shares with his friends increases during the course of adolescence. Most of the time this is enjoyed more than in other activities, and they say that they feel more understood and accepted by them, so they spend less and less time with their parents and other family members [37].

However, the study demonstrated the character and value of friendship in adolescence as part of the characteristics of relationships between contemporary's.

However, psychologist Laura Dominguez found that among the adolescents' preferences for obtaining information were parents and then teachers [38].

According to the authors' opinion, it is that, despite the importance for this age of friendly relations with contemporary's, relations with parents also have them.

Peer pressure exerts great force on decision-making, but education prior to this age can serve as a buffer in the event that decisions are inadequate. Communication with parents plays a major role in this. The trust gained by teenagers in is vital [38].

The authors take the view that trust with adults is not only concerning the parent figure, but that teachers are involved in this role [39].

This research confirms the importance of including the topic of STIs in curriculum education. Attention to sexuality in Cuban schools is assumed from the subject of Biology and directed, among other aspects, to the formation of values. However, the research included the adolescents' request for a more enjoyable form of sexuality education. Different strategies and educational interventions carried out by the authors have obtained relevant results. The active participation of adolescents has been essential [22,40].

It corresponds to interventions carried out to adolescents of the III educational level and in which they have covered several aspects about STIs-HIV/AIDS, taking into account not only the teaching of the types of infections that cause them but also the wide routes of transmission, the consequences of suffering them with the wide range of sequelae and potentiate the importance of condom use as an important prevention method at this age [39,41].

The impact has been positive in these educational interventions and has led not only to the teaching of these conditions, but the perception of risk has been raised and moral values such as responsibility have been reinforced.

It is shown that the educational intervention positively influences the increase of the level of knowledge in adolescents.

All these results converge on one point: the need for sex education work with adolescents due to the high vulnerability of contracting an STI more easily.

Conclusion

- 1. It was identified that before the educational intervention they had a low level of knowledge of the various STIs, the perception of risk, and the belief about STIs-HIV/AIDS and that post-intervention, they changed significantly to a high level.
- 2. The educational intervention on STIs is effectively evaluated, and the methodology used is shown to be useful.

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