

Knowledge about sexually transmitted infections and sexual practices among young university students in the city of Cucuta

Conocimientos sobre infecciones de transmisión sexual y prácticas sexuales en jóvenes universitarios de la ciudad de Cúcuta

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SUMMARY

In Colombia, young people are part of the population group that is most at risk regarding their sexual health and the knowledge associated with this component, which is why we chose to describe the sexual practices and the knowledge they have regarding HIV and other STIs, consolidating an approach to undergraduate students of an HEI in northeastern Colombia from a quantitative perspective with a non-experimental design, descriptive and cross-sectional scope. The population was 2 605 students while the sampling was probabilistic with proportional allocation resulting in a sample of 525 students, considering the 12 academic

programs considered for the study. Broadly speaking, the disjunctive between the knowledge associated with STIs and the sexual practices of young university students is consolidated, and strategies should be focused on sensitizing students to strengthen healthy sexual practices that reduce their risk of acquiring STIs.

Keywords: *University wellness, sexually transmitted infections, sexual health, sexual practices, sexually transmitted infections, sexual practices.*

RESUMEN

En Colombia los jóvenes forman parte del grupo poblacional que más se encuentran en riesgo frente a su salud sexual y los conocimientos asociados a este componente, razón por la cual se opta por describir las prácticas sexuales y los conocimientos que estos dominan en lo referente al VIH y otras ITS, consolidando un acercamiento a estudiantes de pregrado de una IES del nororiente colombiano desde una perspectiva

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cuantitativa con diseño no experimental, de alcance descriptivo y corte transversal. La población fue de 2 605 estudiantes mientras que el muestreo fue probabilístico con afijación proporcional dando como resultado una muestra de 525 estudiantes, considerando los 12 programas académicos tenidos en cuenta para el estudio. A grandes rasgos, se consolida la disyuntiva entre los conocimientos asociados a las ITS frente a las prácticas sexuales de los jóvenes universitarios que se deben focalizar estrategias para sensibilizar a los estudiantes para fortalecer prácticas sexuales saludables que disminuyan su riesgo a la adquisición de ITS.

Palabras clave: *Bienestar universitario, infecciones de transmisión sexual, salud sexual, prácticas sexuales.*

INTRODUCTION

Studies developed in Latin America on sexual and reproductive health in young university students have been conclusive in detecting the level of knowledge that undergraduate students have acquired regarding their sexuality in the course of their academic life (1-3). This clearly indicates a remarkable implementation of strategies based on public health policies by HEIs (higher education institutions) to address the panorama that afflicts them as an institution; the causalities that generate constant research on this topic are diverse since its impact is reflected in the reduction of academic desertion factors attributed to unwanted pregnancies (4-5) to raising awareness about STIs (sexually transmitted infections) for the minimization of discrimination in educational environments and last but not least, the detection of behaviors that promote sexual health (6-8), additionally, the generation gap has left in evidence significant changes regarding behaviors, cognitions, and emotions associated with human sexuality, as well as the implications involved in this student population (10-13).

Therefore, generating an exploratory contribution of the differential notions that students have about HIV (human immunodeficiency virus) and other sexually transmitted infections in addition to referring which are the sexual practices that they usually implement from a diverse sample evidenced in 12 academic programs that belong to different faculties (social sciences and

humanities, health, engineering, and arts) of an HEI in northeastern Colombia, constitutes the epidemiological contribution that allows facilitating an approach to the panorama of sexual health of the university population in various cities in Colombia. The epidemiological contribution of this study is to facilitate an approach to the sexual health panorama of the university population in different cities of Colombia through the use of 2 standardized instruments for the collection of such data.

Seen from this perspective, the epidemiology related to STIs would allow taking forceful measures in terms of public health, in fact, the National Institute of Health during the information bulletin of the year 2021(14) through its official website contextualizes in an updated way everything related to HIV and other STIs, it is worth mentioning that the primary source of information resides in the database of the Portal-SIVIGILA (15) (software of the Colombian Ministry of Health), there a report of communicable diseases is notified by the EPS (health-promoting company) according to Figure 1 with the following characteristics: HIV registers the highest rate of cases were at the historical level it has reported around 17 346 cases and so far in 2021 it evidences a percentage of 26.27 % of new cases, followed by syphilis, which in turn is divided into two typologies, congenital syphilis, with a total of 1 551 cases, while so far this year there have been 48.57 % of reported cases; on the other hand, the difference with gestational syphilis shows a significant gap by reflecting a total rate of 8 290 cases of which only 39.28 % are identified finally it is found that hepatitis B and C which total 2 664 cases of which in the first half of the year 2021 19.29 % is evidenced.

The situation in Latin America as reported by the UNAIDS “Preliminary UNAIDS special analysis, 2021” (16) in relation to HIV, indicates that the infection figures between 2000 and 2020 have had an increase of 2 % in new cases compared to the approximate 110 000 cases reported in 2000, while the number of deaths during this time has decreased by 19 % from the base of 40 000 people reported in 2000; in addition to this, the NGO has registered the approximate amount of 4 000 million dollars as a budget donated by different public and private entities to provide prevention strategies for the disease. Therefore, it can be

inferred that research aimed at detecting, raising awareness, and designing impact strategies in populations with a higher probability of risk, such as young people, is essential to mitigate the increase in the number of new cases and deaths reported for this continent (17-19).

Thus, the occurrence of new cases is evident, although it is true that there are three ways of contagion: a. sexual intercourse, b. blood transfusion and c. inherited during gestation/lactation. However, the greatest possibility of occurrence is evidenced in sexual intercourse, the risk of contagion is higher compared to the other possibilities and sexual abstention is not an effective solution to counteract the problem since sexuality is an inalienable component of human nature and from an evolutionary point of view each individual requires interactions of a sexual nature. At the biological level, the human body prepares itself physiognomically from an early stage of development and finishes until the last stage of the life cycle, which leads to the conclusion that individuals are exposed to contracting STIs (as in this case HIV) during a large part of their lives (20).

However, the population group with the greatest possibility of acquiring HIV are adolescents and young adults who represent the population with the greatest risk of acquiring the virus, the main route of infection would be through sexual intercourse; research on the subject indicates that the beginning of sexual life is presented in most cases within the range of 13 to 24 years; however, most young people who begin their sexual life are located in the ages of 14, 15 and 16 years specifically (2,6,11,21).

This is why the beginning of sexual life means exposure to the risk of contracting an STI, taking into account the above, adolescents and young adults are the population group most likely to be infected with the virus mainly because of the way they engage in sexual practices, which consist of having sexual intercourse under the effects of PAS such as alcoholic beverages, marijuana, ecstasy, cocaine or other stimulants; the high rate of promiscuity by having sexual encounters with more than one sexual partner per year, and finally, avoiding the use of barrier methods represent high-risk sexual behaviors for the acquisition of the virus (3,22,23).

As a result of the exposed panorama on sexual health in Colombia and Latin America, as well as the types of risks to which young people between 16 and 24 years old are exposed within the common range to be undergraduate students, the need arises to inquire about how this HEI describes the level of knowledge about HIV and other STIs as well as the registration of sexual practices of its student body since this population is inevitably exposed to a greater number of novel scenarios and freedom in multiple areas of individual development as reflected in the research of Dominguez et al. (24) and Zapata et al. (25) involving educational, social/family, spiritual and self-care areas.

Objective

To establish the attitudes of undergraduate students of the University of Santander towards HIV/AIDS in 2019 in the municipality of Cucuta, Norte de Santander, Colombia.

Design, setting, and patients

The methodology used for the study was under the quantitative approach proposed by Albayero et al. (26) who were based on what was proposed by Sampieri; for the methodological design, a non-experimental transectional design was chosen and the sample was delimited through a proportional allocation, the analysis of the variables was purely descriptive, as proposed by Rendon-Macias et al. (27). Two standardized quantitative questionnaires were used for data collection. The first was used to detect knowledge about HIV and other STIs, and is called the "Scale of Knowledge about HIV and Other Sexually Transmitted Infections - STIs". This instrument presents high reliability ($\alpha = 0.88$), which was adapted for the Colombian population with a high degree of validity ($\alpha = 0.85$) by Guerra Ramírez et al. (28), the second instrument focused on sexual practices and is known as "Confidential Questionnaire on Active Sexual Life (CCVSA)" the reliability of the instrument is good ($\alpha = 0.66$) and was designed by the Ministry of Health in 1997 which was cited by Uribe (29) and by Uribe Rodriguez (30).

The population used corresponds to 2 605 undergraduate students from an HEI in northeastern Colombia, applying the formula described by Rendon-Macias et al. (27), the stratified sampling yields a total sample of 525 participants.

The analysis of the information was carried out using descriptive statistics considering the structure established by Albayero et al. (26) through the free access software PSPP, which favored the establishment of the results annexed in section VII. Regarding the ethical implications to be considered, this research will be carried out in accordance with Law 1 090 of 2006 (Code of Ethics of the Psychology Professional), which refers to the importance of the principle of confidentiality, in addition to using the consent of the person, safeguarding, and respecting the integrity and well-being of the people participating in the project. There were no conflicts of interest between the users and the institutions.

Design and development of experiments

The project took into account 2 phases to highlight, the first was responsible for the characterization of undergraduate students of the University of Santander campus in Cucuta, followed by the second phase was responsible for collecting the sexual practices and the level of knowledge that they have about sexually transmitted infections.

Main outcomes studied

The main results derived from the process were classified into two aspects, the characterization of the population and the diagnosis of those connected with the intervention process.

The undergraduate students of the Cucuta campus participating in the project were organized as follows: the average age ranged from 20 years to 6 months, a prevalence of 83 % of female students who consider themselves as women (cisgender) while the remaining 17 % of students were male participants self-perceived as men (cisgender), generally on the issue of sexual orientation, the predominance of 91 % is identified for heterosexual preference followed by 6 % with bisexual preference and the remaining 3 % for homosexual preference.

On the other hand, the proportion of students per semester was randomly distributed according to the participants within the sampling, the highest predominance was located in the first 5 semesters with about 74 %, taking into account that this was connected with the time availability of the first semesters compared to the last ones in their study times, in addition, the tendency to present a lower number of students in the higher semesters was observed, according to these results it can be highlighted how heterogeneous was the sample approached (Table 1).

Table 1
Stratified sampling by proportional allocation

Stratum	Identification	Subjects	Proportion	Stratum Sample	Percentage
1	Systems engineering	96	1 %	3	0.01
2	Psychology	122	2 %	9	1.71
3	Marketing and advertising	132	4 %	8	0.02
4	Financial administration	123	3 %	9	1.71
5	Industrial engineering	123	3 %	9	1.71
6	Occupational therapy	139	4 %	28	5.33
7	Foreign trade	149	4 %	6	1.14
8	Bacteriology and clinical laboratory	211	10 %	21	4.00
9	Law	314	12 %	38	7.24
10	Physiotherapy	363	14 %	65	0.12
11	Nursing	423	23 %	247	47.05
12	Medicine	410	20 %	82	15.62
Total		2 605	100 %	525	100.00

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As mentioned, the population participating in the study corresponded to cisgender people with heterosexual sexual preference, where the highest population density was found organized in the first 5 semesters, highlighting the programs of the faculty of health with a share of 84 % among the undergraduate programs of bacteriology

and clinical laboratory, nursing, physiotherapy, occupational therapy, and medicine; on the other hand, the proportion for the faculty of human sciences with law and psychology corresponds to a share of 9 %; finally, the areas of engineering and accounting areas showed a share of 7 % (Table 2).

Table 2
Description of sociodemographic data

Academic Program	Average age	Sex		Gender		Sexual Orientation		
		Female	Male	Man	Women	Bisexual	Heterosexual	Homosexual
Financial administration	19.7	1.14 %	0.57 %	0.57 %	1.14%		1.71 %	
Bacteriology and clinical laboratory	17.4	3.43 %	0.57 %	0.57 %	3.43 %		4.00 %	
Foreign trade	19.2	0.95 %	0.19 %	0.19 %	0.95 %		1.14 %	
Law	22.9	6.86 %	0.38 %	0.38 %	6.86 %	0.19 %	7.05%	
Nursing	21.8	40.19 %	6.86 %	7.24 %	39.81 %	2.6 7%	42.67%	1.71%
Physiotherapy	19.2	9.71 %	2.67 %	2.67 %	9.71%	0.38 %	12.00%	
Systems engineering	19.0		0.57 %	0.57 %			0.57 %	
Industrial engineering	17.1	1.71 %			1.71 %		1.71 %	
Medicine	19.7	12.38 %	3.24 %	3.43 %	12.19 %	1.52 %	13.14 %	0.95 %
Marketing and advertising	17.6	1.33 %	0.19 %	0.19 %	1.33 %		1.52 %	
Psychology	19.7	1.52 %	0.19 %	0.19 %	1.52 %	0.38 %	1.33 %	
Occupational therapy	18.4	3.62 %	1.71 %	1.71 %	3.62 %	0.57 %	4.76 %	
Partial results	20.6	82.86 %	17.14 %	17.71 %	82.29 %	5.71 %	91.62 %	2.67 %

Regarding the socio-economic component, 83 % of the participants are located in strata 1 to 3, the main activity in which they spend their time is studying since about 82 % said they are not working; however, the students who do develop work activities, their participation was in the commerce and health sectors, which is considered consistent with being located in a border territory specialized in commerce in addition to the high student population belonging to the faculty of health.

According to the results obtained after applying the ECI questionnaire of Guerra et al. (31), it should be clarified that the test has 4 criteria to be evaluated, the first corresponds to an overall rating where the level of knowledge about HIV and other STIs is condensed integrally, while

the second focuses on the present knowledge about HIV, the third component focuses on the exploration of the understanding related to the routes of transmission and the last one points directly to the conceptual notions about the other STIs.

RESULTS

Detailing the above, the results of the ECI questionnaire were analyzed through the statistical data processing of the PSPP software (open source data analysis program), which reflects a high level of knowledge on the part of undergraduate students regarding HIV, as well as other STIs and their means of transmission, as expressed in the Table of results.

In reviewing the results, 82 % of the population is identified as having a moderate to medium level of knowledge about HIV and other STIs, followed by 18 % of the population indicating a moderate to medium level of knowledge; this demonstrates a competent command of the undergraduate students' understanding of HIV transmission and acquisition, as well as other STIs.

Therefore, the value of identifying a high competence in terms of knowledge about HIV and the transmission of other STIs derived from implementing the "Confidential Questionnaire on Active Sexual Life" (CCVSA) of Uribe Rodríguez (30) would allow strengthening the attitudes of awareness of good sexual practices and their level of exposure to the risk of contracting

STIs by the undergraduate student population in case of having stable sexual partners or casual encounters.

For the analysis of this set of data, it should be noted that 98 % of the participants have not initiated their sexual life, so they did not mark answers in this questionnaire, thus the evaluations are made based on the 427 answers, although in certain fragments there is a box for "not having initiated sexual life". On the other hand, the initiation of sexual life and the use of condoms are identified in this case, 52.57 % of the participants used condoms and the average age of initiation of sexual life ranged between 16.3 years with an average error of 2 years (Table 3).

Table 3

Distribution of participants by program with respect to average age at sexual debut and condom use

Academic Program	Average age	Condom use (n)			Condom use (fi%)		
		No	Yes	Total	No	Yes	Total
Financial administration	15.5	5	3	8	0.95	0.57	1.71
Bacteriology and clinical laboratory	15.8	5	4	9	0.95	0.76	4.00
Foreign trade	16.0	3	2	5	0.57	0.38	1.14
Law	16.9	16	19	35	3.05	3.62	7.24
Nursing	16.5	77	139	216	14.67	26.48	47.05
Physiotherapy	16.2	11	36	47	2.10	6.86	12.38
Systems engineering	15.7	-	3	3	-	0.57	0.57
Industrial engineering	15.3	-	6	6	-	1.14	1.71
Medicine	16.4	25	43	68	4.76	8.19	15.62
Marketing and advertising	15.5	1	1	2	0.19	0.19	1.52
Psychology	17.2	-	5	5	-	0.95	1.71
Occupational therapy	15.1	8	15	23	1.52	2.86	5.33
Partial results	16.3	151	276	427	28.76	52.57	100.00

Within sexual practices, the questionnaire (CCVSA) of Uribe Rodríguez (30) allows for clarifying certain risk behaviors related to sexual practices, in fact, the first questions clarify specific aspects such as the types of sexual encounters with penetration (penis-vagina, penis-mouth, penis-anus) that they have had during their sexual life, as well as clarifying the use of condoms during that first encounter. Indeed, after their review, 19 % of the total number of participants stated that they had not started their sexual life and among the modalities of sexual encounters the ones that obtained the highest participation

in their first relationship were vaginal sex with a participation of 79.24 %, followed by 65.14 % with oral sex and third position with 19.05 % was anal intercourse; regarding the use of condoms in that first sexual relationship, 52.57 % of the participants affirmed their use, while 28.76 % reported not using a condom during intercourse (Table 3).

In relation to the sexual practices that the participants have had in the last year, the following results have been identified: 69.71 % of the participants reported having sexual intercourse with penetration of the vagina, and in relation

to the use of condoms the participants reflected a low rate of condom use in which the option “sometimes” predominated with 42.48 % followed by “always” with 22.10 % and “never” with 12.95 %. On the other hand, for oral sex, the affirmative participation in this modality of sexual encounter was 55.24 %, while the use of a condom for this encounter was among the lowest, with “always” having a rate of only 2.67 %, while “never” obtained a rate of 50.67 %. Finally, anal intercourse was the modality with the lowest participation, with a rate of 13 %. With regard to condom use, 11.62 % of the participants reported not using condoms, while 9.33 % reported using them in every encounter.

From the above, the fact that condoms were rarely used in their sexual encounters stands out, even if these were with stable and monogamous sexual partners or casual encounters with multiple partners, with the predominant options being “sometimes” and “never”; Therefore, the reason for these unconscious attitudes regarding the non-use of condoms as a barrier may lie in the promiscuity index, where it is identified that most of the young participants in the study (62.86 %) have sexual encounters with only one partner, while the remaining 18.48 % have had encounters with more than one partner, where for either of the 2 cases no arguments of value are expressed for the non-use of condoms, most of the answers being aspects related to the level of subjective trust in the partners without objective confirmation of their current health status, in addition to the fact that sexual encounters are spontaneous, ephemeral and/or under the influence of alcoholic beverages or other substances, where the level of cognitive judgment for those involved before and during the sexual act is affected.

However, it is inevitable to contemplate the high rate of risk to which the participants are exposed during their sexual encounters without condoms, so it was given the task of collecting how many sexual partners the young people have had throughout their sexual journey and the sexual preferences associated with them, from this search it is identified that only 17.33 % of the participants have had between 2 to more than 6 sexual partners in 12 months. In addition to the above, the most probable reasons for not using a condom during the last sexual encounter

were identified, among which the most important ones (almost 56 %) were having only one sexual partner and trusting this person as an argument to avoid using a condom.

Continuing with the exploration of the information found in the (CCVSA) of Uribe Rodriguez (31), it is identified that during the last 12-month period the psychoactive substance with which most sexual encounters were had was liquor with a share of 26.09 % followed by marijuana with 1.14 % and 0.57 % with inhalants and hallucinogenic pills, in fact, the similarity in the results contrasts with the research of Moure-Rodriguez et al. (3) which showed a high prevalence of alcohol and cannabis during their reported sexual encounters.

In relation to the behaviors that represent a protective factor on the part of the participants when it comes to avoiding the acquisition of STIs, it is evident (Table 4) that the young people are aware of the risks related to the routes of transmission; however, the use of condoms obtained the lowest percentage even though it is 54 %, since in general the use of condoms is only used in 37.90 % of the occasions when they have sexual encounters, basing their decision on the two main reasons why it is not used: trust in the partner and monogamous relationships.

In addition, the prevention behaviors associated with sexual practices, such as regular visits to periodic examinations to detect any type of STI, are reviewed, as well as receiving proper instruction from the health professionals in charge of making this process feasible.

Regarding the criterion related to acquiring an STI during the last 12 months, it was identified that about 7.81 % of the participants had reported cases, after eliminating 84.38 % of participants who did not have STIs and those who have not initiated sexual life, the alarming thing is visualized in the behavior used by the participants to care for and treat the STI, where the option “a. Nothing” stands out with a proportion of 12 %. “Nothing” stands out with a proportion of 12 % and it is aggravating that only 2.29 % went to a health professional or a pharmacist to treat their condition.

In other words, the knowledge that was evidenced in the results of the ECI test does

Table 4
Behaviors used by participants to prevent STIs

Behavior	Activities carried out to prevent STIs (n)				Activities carried out to prevent STIs (fi%)			
	N/A	No	Yes	Total	N/A	No	Yes	Total
a. Having sex only with the same person	98	69	358	525	19	13	68	100
b. Condom use	98	144	283	525	19	27	54	100
c. Discuss with the person(s) with whom you have had sex the risk of acquiring the virus.	98	122	305	525	19	23	58	100
d. Agree with the person(s) with whom you have had sexual intercourse on the use of protective measures.	98	120	307	525	19	23	58	100

not reflect a coherence about the behavior to be addressed in case of acquiring an STI, the reasons for which they decided not to do anything remain unclear considering that the questionnaire did not have a question that facilitated access to information. However, based on the information collected, it could be affirmed that one of the lines to be addressed for this HEI at the level of university welfare is to link a process of sensitization regarding the passive practice of attending an annual health check-up as well as attending the service of professional accompaniment on sexual and reproductive health.

DISCUSSION

The main conclusions are derived from contrasting the studies developed in Latin America on sexual and reproductive health in university students that have focused their efforts on general knowledge about HIV, in relation to other STIs and especially regarding the main routes of transmission (1,3,21), since scientific evidence has shown that the high levels of knowledge in the previously mentioned contribute to the minimization of health risks and the refutation of myths associated with the social imaginaries linked to this type of transmissible infection (6,8,32).

In addition, it is also possible to detect in the field that the results obtained when verifying the knowledge scores of the ECI test (28) were

remarkably high, representing 82 % of the participating students of this HEI in northeastern Colombia; however, the next finding to be unveiled was mainly oriented to the reported sexual practices; Among them, the one that is prioritized are the causes for which 28.76 % said they were not using condoms, basing their decision on the perception of protection associated with having a stable, cisgender and monogamous partner with 63 % of participants, to this is added the fact that 58 % of them had conversations and establishment of agreements consolidated by idyllic concepts related to couples such as love, fidelity, loyalty, among others, as reflected in the research, In contrast, those 18 % of participants who reported having more than one sexual partner showed that 13 % of them did not use condoms and were part of the 58 % of participants who simply made agreements and conversations with the person with whom they had a sexual encounter, presenting a higher level of risk and therefore susceptibility to the acquisition of STIs as described in Campos-Rosas et al. (11).

Being consistent with the perspective of Domínguez et al. (24) regarding the importance of distinguishing risk or protective behaviors in terms of sexual practices, the articulation of university welfare would be recommended as mentioned by Zapata et al. (25) and Marrodán-García et al. (23) with impact strategies based on specific needs through student awareness of sexual practices and planning to reduce the 15 % annual growth rates in STI reports from the SIVIGILA portal database (15).

CONCLUSION

In conclusion, the main findings identified after reviewing the disjunctive between the knowledge associated with STIs versus sexual practices of young university students located in the age range of 16 to 25 years, makes evident the need to continue the research by addressing a multifaceted model, among which, participatory link the different spheres of development related during this life cycle, allowing to recognize the aspects as varied in their interaction as they are: learning practices, social activities in which family and spiritual activities are found, as well as those focused on self-care (22,24,32,34-36) as well as their correlation with sexual practices from a narrative perspective capable of eclectically linking the foundations of their discourse in comparison with quantifiable findings from standardized questionnaires that favor the way in which intervention programs are consolidated from the university welfare line on the use of condoms, regular attendance to sexual health exams and participation in awareness-raising sessions on healthy sexual behaviors that will favor the free development of their sexuality.

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