

Knowledge and attitudes in relation to sexual risk behavior towards Sexual Transmitted Infections and HIV among university students: A systematic literature review

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Γνώσεις και στάσεις σε σχέση με τη σεξουαλική συμπεριφορά κινδύνου ως προς τις Σεξουαλικά Μεταδιδόμενες Λοιμώξεις και του ιού HIV μεταξύ των φοιτητών/τριών Πανεπιστημίων: Συστηματική ανασκόπηση

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Introduction: A large proportion population of the target group (15-24) highly risk to STIs and HIV infections is founded among Universities internationally. WHO and ECDC challenge the researchers to investigate predictors of sexual risk behavior in the light of recent epidemiology results.

Aim: The aim is to present and discuss the review of the literature on the knowledge, attitudes and their association with the high risk behavior of university students towards Sexually Transmitted Infections, including HIV.

Methodology: A systematic review was applied. The search strategy was based on electronic databases: Cinahl, Medline, SCOPUS & PubMed databases in December 2020 until January 2021. The identification of the 16 articles relevant to the subject was done according to the inclusion criteria the present study stated.

Results: Processing the results, revealed correlations and factors adopted in 5 topic sections major indicators of sexual risk behavior towards STIs and HIV. 1) the number of sexual partners, 2) the use of a condom, 3) the sex workers, 4) the Contextual indicators and 5) the Composite indicator of HIV and STIs knowledge. The average level of the general knowledge on STI's and HIV was moderate to high (ranged samples 67.30% - 82% and 8.18 Likert scale) and higher score correlated with: students staying inside the university, those who did not get drugs,

older students and level of participant's education. Also, men prevalence to women, older age participants and correlational factors like (paid sex workers, consumed alcohol 17.4% and drugs 9.4%), tended to have two or more sexual partners. The frequency in condom use (samples range 25% -63.8%). Frequent use of condom correlated with: believes protected from STI's, students' mother graduated from high school, decision was taken by both partners while, less frequent use correlated with: not spoiling the sexual moment, showed their commitment to their partner and homosexual students. The frequency on testing HIV and/or STI's, (samples range 4.4 %-30.4%) and make the test more often correlated with: females, participants over the age of 21, to be married and not to have a critical attitude towards HIV positive people.

Conclusion: Results are worried and emerges that the knowledge is low to moderate to some sub target groups among students university students, who they underestimated consequences of STI's and HIV and for a number of reasons they are less likely to use protection during their sexual activities.

Keywords: STI's, HIV, attitudes, behavior, university students, knowledge

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Introduction

In 2019, according to the CDC epidemiological data In USA, prevalence rates of most common Sexual transmitted infections (STI's), was chlamydial infections were highest among adolescents and young adults. Among women infected population, (61.0%) of them aged 15-24, accounted for 3,728.1 cases per 100,000 women which noted an increase rate of 10.0% from 2015. ⁽¹⁾ In addition, 616,392 cases of gonorrhea were

reported, making it the second most common of the STI's, followed by 129,813 cases of all stages of syphilis, an increase of 11.2% in 2018-2019. In particular, 37,832 new cases of HIV infection had been diagnosed, of which 21% were young adults while the death role climbed up to 15,820 incidents. ⁽¹⁾

The updated epidemiological data relevancy in Europe noted that nine countries did not have an STI strategy, Austria, Croatia, Denmark, Estonia, Greece,

Hungary, Poland, Romania, and Slovenia.⁽²⁾ ECDC upon updated data encourage researchers to identify predictors towards sexual risk behavior among young adducts and the target age group (15-24), which are vital to establish and adapt preventive strategies. A large proportion of this target group population is founded among Universities internationally. Taking an overview in few conducted surveys aimed to investigate this subject among University students, the critical question risen was: Is there any consensus among researchers specifying indicators of sexual risk behavior towards HIV infection and STI's when they proceed in the investigation of predictors related either on demographic factors, or on knowledge and attitudes?

The answer is not clear, as the researchers in an attempt to determine the behavior in their studies, used different models, sampling processing, multicultural elements of demographic data and research tools in their studies. One better answer published by ECDC was the guidelines United Nations General Assembly Special Session (UNGASS) on HIV/AIDS on construction of core indicators recommended as to be applied to all population when investigating sexual risk behavior towards HIV.⁽³⁾ More specifically, the ECDC publication proposed, UNGASS five core indicators which are common to all populations, within a period of 12 months and researchers should include them in their questioners which are also adapted in some studies sampling University students.⁽⁴⁾ These indicators are: the number of sexual partners, the use of a condom, the sex work (having paid for sex), the Contextual indicators (like Level of education, Nationality/ethnic origin mobility, Sexual orientation) and the Composite indicator of HIV and STI's knowledge.

Clarifying better the focus of which indicators are included in determining sexual risk behavior towards STI's and HIV infections among university students, a systemic literature review is challenged.

Aim

The aim of this paper is to present and critically discuss the review of the literature on knowledge and attitudes in relation to sexual risk behavior towards STI's and in particular HIV among university students.

Methodology

A systematic review of the related literature was

performed at the Cinahl, Medline, SCOPUS & PubMed databases in December 2020 until January 2021, in English and Greek language. Initially, the key words HIV, attitudes, behavior, university students, knowledge, STI's were applied, showed 2,430 articles from the first data base, from the second 6,290, from the third 1,580 and from the fourth 6,570. Further, in the second attempt of search additional inclusive criteria were applied such as: The title and its content to be relevant to the paper, access full content within the specific databases, all types of primary research and meta-analysis only were acceptable and the sample of the research had to be university/college students with more than 200 participants. From the 48 articles found from the second search, 4 were removed being duplicates, 3 because they were not an epidemiological study and 13 because they were reviews.

The final search included criterion of applying the guidelines of UNGASS on HIV/AIDS on construction that should have at list include 4-6 core indicators about sexual Risk behavior. After a deep learning in the content, 12 articles were removed as they did not meet the last criterion. All the 16 studies founded aimed to identify all or some factors impaling students to present the attitude and/or the knowledge towards behavior in relation to STI's and/or HIV. All of them, were either online survey studies (n=4) or paper and pencil survey studies (n=12). The tools used in all 16 studies, were anonymous questionnaires investigating STI's in general or specifically, except in one study that data analysis system was used since their research was a secondary data analysis of the results, as well as in another study that gathered data from different data bases.

Results

The major results of each study follows, were in relation to the indicators of sexual risk behaviors toward STI's and HIV, giving attention to correlated factors such as demographics, attitudes and knowledge elements.

A study among students at historically Black colleges and universities in 2013, results showed that, 90,6% were heterosexual, 51,8% were women and 86% of the students were sexually active. Only 35% stated that they use condom, while 63,8% stated that they had used the male condom during their last sexual intercourse. Most likely to use a condom correlated with, students who perceived that use condom protects from STI's and their

mother graduated from high school or had a college education. Those students who perceived they were at low risk of HIV infection, or did not want to spoil the sexual moment, or did not have scheduled intercourse, or even simply showed their commitment to their partner, they were correlational factors not to use the condom.⁽⁵⁾

The results of a trial study in China, showed that 7,6%, who received an educational intervention for protection of HIV, from them 7,3% tested for the virus and from all the sample, only 30% expressed willingness to take the test, while 16,4% stated they were homosexual men (MSM). The constant condom use was unsatisfactory especially among homosexual students. Also, the participants who were older, at the end year of their studies, or consumed alcohol and willing to the paid sexual worker for sex, were less likely to make use of the information services about the HIV.⁽⁶⁾

A cross-sectional trial study among students of «Namik Kemal University» at Turkey, showed 32% of the participants who had received sexual education intervention, from them only 15,3% had expressed willingness for testing HIV. Sexually active from all the participants, 11% were women and 50,3% were men, while 46,6% did not take any protection against STI's and HIV. The preferred method by 37,6% was the male condom and the rate of its use was 58,7% for those who had received the intervention and 43,9% for those who did not have.⁽⁷⁾

Among African-American students students of 24 universities a survey results reported, 82% received moderate to high scores of knowledge about the HIV. However, 79% considered themselves to be at low risk of contracting the virus. Knowledge higher score were correlated with, gender (women had higher scores), students staying inside the university and those who did not use a syringe to get drugs. Also, 73% knew about the testing services provided for the virus, while, 61% of men and 44% of women had 2 or more sexual partners.⁽⁸⁾

A Nigerian private sector University students' survey results noted high score of knowledge about the HIV virus, 8.18 (Likert scale 1-10), with the men to had better knowledge than the women. The main source of information about the virus was the media, followed by health professionals. The majority of the participants answered correctly, 93,7% knew that unprotected

sexual intercourse is the means of infection risk, 96,1% included infection risk through infected blood transfusion and 70,4% infection risk through mother to child during birth. In relation to testing for the virus, 95% knew where to go to make the test, but only 30,4% were tested in the last 6 months, although 72,2% expressed an intention to make the test with women prevalence (76,5%). The participants over the age of 21 and had good knowledge of the virus were more likely to make the test. In relation to the knowledge of treatment of AIDS, the percentages were not high, as 60, 5% stated that the virus had no cure, while 82% they did not distinguish whether someone was infected or not by appearance.⁽⁹⁾

A cohort 6 year study among students of one university of south America noted that, the type of sexual intercourse through the female vagina had an increase from 44% to 51%, through the anal sex type there was a decrease use of male condom from 37% to 25% and in general there was a decrease of male condom from 60% to 51% during the period of 6 years. Also, approximately 2/3 of the sample participants, stated that the decision to use a condom was taken by both partners. A correlation also found to those students that they used drugs or consumed alcohol during their sexual intercourse they were more luckily not to use condom, with an increases from 20% to 33%. In relation to the ethnicity, color students and especially African women were more luckily to make the test for the virus.⁽¹⁰⁾

The results of a study in five Universities of China reported that 8, 48% stated that they were homosexual, while 63,25% of the participants noted that they did not accept homosexuals. In general, 67,30% answered correctly to questions regarding knowledge about AIDS, while homosexuals had a lower rate (42,86%), compared to the rate (69,57%) of heterosexuals. Significantly, homosexuals were more at risk to non- constant use of condom correlated with, smoking, alcohol consumption, and drug abuse.⁽¹¹⁾

An online survey in various universities of Wales at UK, noted that the main source of information participants received about sexual health, 49,1% was through the internet, 38,9% through the family and the personal doctor and 28,4% through sexual clinics centers. Regarding their choices to seek treatment for a sexual health problem, the most common choice were

the clinics of National Health Services (24,9%) and the personal G.P. doctor (20,2%). The 46% of participants had stated that they never needed any treatment for sexual health problem.⁽¹²⁾

A secondary data analysis of a cross-sectional survey in Georgia included samples from public and private Universities students. Results noted, that the men were more likely to be tested for the HIV virus than women at a rate of 7% versus 2,1%. Also, 95,6% never did counseling and/or testing for the virus, while those they adopted counseling and/or testing correlated with, been married/cohabiting, not to have a critical attitude towards HIV positive people, reading science fiction literary books, going out at the evenings for socialization and being with friends most of the time.⁽¹³⁾

The major results of the survey in various universities of Asia countries regarding sexual behavior noted that, 10,8% they had only one sexual partner in the last 12 months, 8,3% they had two sexual partners and 2,5% they had more than two partners. Male students (4,8%) had a greater tendency to have 2 or more sexual partners than female students (1,1%). Also, 54,2% of not married participants, stated that their partner did not use a condom during their last sexual intercourse. The percentages of STI's participants infected cases noted in the survey were almost zero. The male age group 20-21 and 22-30 years, with depressive symptoms and smokers were most likely to have more than one sexual partner.⁽¹⁴⁾

A study in Malaysia noted that, 86,6% had been informed about of STI's and 50,4% participants stated that they might be symptomless. Better knowledge about STI's correlated with, students (24-30 years) and the educational level of participants. Regarding testing of STI's, 88,8% considered the test as an important, as well as the use of condom to prevent STI's transmission (63,8%). Regarding sexual activity, 66,7% were sexually active and 18% had multiple sexual partners correlated with paid sex workers, while before having sexual contact they consumed alcohol (17,4%) and drugs (9,4%).⁽¹⁵⁾

A cross-sectional, an online survey was conducted in two university students at UK. In general, 25% of the sample demonstrated a sexual risk behavior towards HIV and STI's. In specific, risk sexual attitude perceptions about casual sex was high for both, men and women. For men consuming alcohol before sex (CI=1, 90-164,

23) and for women the age and the frequent consuming of alcohol (CI=1, 08-3, 31) were significant correlational factors for high risk sexual behavior respectively.⁽¹⁶⁾

A survey conducted on historically Black Colleges and Universities between the years 2013-2014 in the Southern United States. The major correlational results factors associated with high rates of HIV infection were, black population, unemployment, female head of household, poverty, fewer owner-occupied housing units, and greater urbanity, ($p < 0,05$) respectively.⁽¹⁷⁾

At a university of South Africa, one of the studies aimed to investigate male attitude towards the use of female condoms among students. The results revealed, that the proper information and discussing with the partner about the use of female condom (CI=1.04–9.77, $p=0.043$) were the most successful combination for stable use of the condom. Also, those participants who underestimated STI's risk infections, presented correlation to have multiple sexual partners. Non use of condoms correlated with the attitude that the use of condoms spoils the sexual moment and shows low commitment to their partner.⁽¹⁸⁾

Another study conducted in Poland University among medical students, aimed to investigate attitudes, beliefs and predictors of Male Circumcision (MC). The 16,7% of the participant stated that they had MC. Regarding, HIV/AIDS knowledge, 66,6% of the participants scored more than 75% correct answers and 34,2% were aware that MC reduces risk infection with HIV, while 9,1% relate the MC with more sexual pleasure. Also, 54,8% stated that they could introduced MC to adult patients to minimize the risk of HIV.⁽¹⁹⁾

A cross-sectional study was conducted at the University of Palermo among students of health profession studies. The participants' age group (18-22 years) had higher risk of transmission of STI's, due to believe that they were not had enough appropriate knowledge to prevent cross infection of STI's (CI=2.18-7.06), never gone to make STI's tests (CI=2.21-3.80), ignorance of the HPV vaccine (CI=1.13-3.07) and ignorance that vaccine can be administered to men also (CI=1.96-3.53), in comparison with the age group (23-27 years).⁽²⁰⁾

Discussion

In general, all the studies included in the review aimed to identify all or some factors related to knowledge and attitudes toward the risk sexual behavior of University

Table 1. Summarized characteristics of included studies

| Author, Year published country | Methodology Sample Sampling method | Aim | Tool | Main findings |
|---------------------------------|--|---|----------------------------------|--|
| Bcheraoui et al., 2013 (U.S.A.) | *Online survey study *824 students *males & *females *mean age 20 years old | Condom use patterns among African-American students in relation to HIV | Anonymous questionnaire | 1/3 of the sample did not use condom Those perceived condom prevented STI's, used condoms more frequent (n=78,7%, p=0.001). Students' mothers graduated from high school correlated with constant use of condom. |
| Xu et al., 2019 (China) | *Online cross-sectional survey study *1431 students *all males | Investigate attitudes and behavior among male students in relation to the use of HIV prevention services | Anonymous questionnaire | 7,6% received intervention but only 7,3% took HIV testing The consistent use of condoms was unsatisfactory among MSM |
| Saragoglu et al., 2014 (Turkey) | *Cross-sectional trial survey study *1314 students males & females *mean age 20 years old | Investigation of sexual attitudes, behavior, and knowledge of students regarding sexual health and STI's | | 32,0% received sexual health education-15,3% had expressed willingness for testing HIV. 46,6% did not take any preventive measures against STI's and HIV. The preferred method by 37,6% was the male condom and the frequency of its use was 58,7% for those who had received the intervention and 43,9% for those who did not have. |
| Sutton et al., 2011 (U.S.A.) | *Online survey study *1051 students males & females *mean age 18-21 years old | Investigation of knowledge, perceptions and sexual risk behavior towards HIV/AIDS among African-American students | Self-administrated questionnaire | 82% had average/high HIV knowledge 79% perceived themselves to be low risk for HIV infection 64% who had at least 2 partners had not used a condom at last sexual encounter |
| Abiodun et al., 2014 (Nigeria) | *Cross-sectional survey study *1250 students *males & females *mean age 19.13 years old | Assess the knowledge and factors influence the willingness to take up an HIV counselling and testing | Self-administrated Questionnaire | 97,1% have good knowledge of HIV/ AIDS Main source of information is the mass media Males had better knowledge 30,4% had been tested for HIV within 6 months. |

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| Blignaut et al., 2015 (U.S.A.) | * Cohort Survey study *6731 students *males & females *age 16-24 years old *(from 2007 up to 2012) | Investigation of Correlation factors on existing risk-taking behavior in relation to HIV infection | Self-administrated questionnaire | <ul style="list-style-type: none"> • Increase of vaginal sex from 44% to 51% • Decrease from 60% to 51% of condom use in vagina sex • Decrease from 37% to 25% of condom use in anal sex • Increase from 20% of sex after alcohol to 35% • Increase of HIV testing especially black females |
| Lai et al., 2020 (China) | *Cross-sectional survey study *578 students all males | Investigation of the HIV/AIDS prevention publicity and education among MSM students | Self-administrated questionnaire | <ul style="list-style-type: none"> • 8.48% were MSM • 63.25% lack of acceptance of MSM • 67.3% had good knowledge of AIDS • The MSM answered questions 42,86% correctly vs 69,57% of non MSM. |
| Gray et al., 2019 (United Kingdom) | *Survey study *3007 students *males & females | Exploration of sources of sexual health advice and treatment | Self-administrated Sex Survey Questionnaire | main source: 49,1% the internet 38,9% G.P. 24,9% sexual health clinics Males are less likely to need advice |
| Djibuti et al., 2015 (Georgia) | *Secondary data analysis of a cross-sectional survey *962 students *males & females *age 18-24 years old | Exploration of the stigmatizing attitude towards HIV/AIDS and the intention of having a virus examination among students | Data analysis | 95,6% never received HCT Those adopt counselling or/and testing for the HIV correlated with critical attitude to people having the virus, being married ($p=0.03$), not perceived HIV negative attitude ($p=0.03$) out home at evenings ($p=0.00$) and being with friends most of the time ($p=0.01$). |
| Yi et al., 2018 (Cambodia, Indonesia, Thailand, Laos, Malesia, Myanmar, Philippines, Singapore, Vietnam) | *Cross-sectional survey study *8836 students *males & females *mean age 20.6 years old | Exploration of the social and behavioral factors associated with risky sexual behaviors among students | Self-administrated structured questionnaire | Males were more likely to have two or more sexual partners 4.8% vs 1,1% Correlated factors were: smoking, alcohol drinking, depressive symptoms and physical fights |

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| Folasayo et al., 2017 (Malesia) | <p>*Survey search</p> <p>*700 students *males & females</p> <p>*age 17-30 years old</p> | Assess the knowledge, attitudes, risky behaviors related to STI's among students | Self-administrated International questionnaire for AIDS | <p>86,6% heard of STI's</p> <p>50,4% knew STI's could present without symptoms</p> <p>63,8% knew condoms were protective</p> <p>88,8% knew STI's screening was important</p> <p>Correlation factors of regarding better knowledge, for safe methods against STIs were the:</p> <p>age ($p=0.005$), older students aged 24-30 years old ($CI=0.377-0.859$), university department ($CI=4.019-8.057$), educational level ($p=0.015$), females($p=0.026$).</p> |
| Chanakira et al., 2015 (United Kingdom) | <p>*Cross-sectional web survey study</p> <p>*1504 students *males & females age 17-30 years old</p> | Investigation of factors associated with high risk STIs among students | Self-administrated questionnaire | <p>25% reported high risk sex</p> <p>Correlated with men were drinking alcohol, for women were age and frequent drinking</p> |
| Sutton et al., 2017 (U.S.A.) | <p>*Survey study</p> <p>*Black students in 69 southern counties</p> | Investigation of factors associated with the HIV infection | Data from: CDC National HIV Surveillance Systems National Centre for HIV, Viral Hepatitis, STD's, and Tuberculosis Prevention Atlas | <p>80% of the southern counties have above the average rates of HIV 831 per 100 thousand.</p> <p>Two additional influential factors which were poverty ($p=0.0251$) and unemployment ($p=0.024$) affects the sexual risk behavior.</p> |
| Mantell et al., 2020 (South Africa) | <p>* Survey study (trial)</p> <p>*199 students</p> <p>*all female</p> <p>*mean age 19 years old</p> | Investigate factors influence the constant use of the female condom | Anonymous questionnaire | <p>Simultaneous acceptance from both partners and proper information was the most successful combination for stable use of condom.</p> <p>Regular use of female condom correlated with: Discussing with the partner about the use of female condom ($CI=1.04-9.77$, $p=0.043$) the acceptance of a female condom from their partner ($CI=1.24-2.10$, $p=0.001$) related to lower risk sexual behavior.</p> |

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|---------------------------------|--|--|-------------------------|---|
| | | | | <p>High sexual risk associated with: the believe that having multiple partners they are in low sexual risk.</p> <ul style="list-style-type: none"> • The believe that the use of condoms spoils the sexual moment and shows low commitment to their partner. |
| Ganczak et al., 2017 (Poland) | <p>*Survey study</p> <p>*539 students</p> <p>*all male</p> | Investigate male circumcision in relation to the prevention of the HIV virus transmission risk | Anonymous questionnaire | <ul style="list-style-type: none"> • Male circumcision correlated with: perception for more sexual pleasure (CI=3.35 1.44, p=0.008) , • Knowledge (CI=1.22-3.77, p=0.008) of better prevention towards HIV. • HIV/AIDS knowledge, noted the 66,6% of the participants scored more than 75% and 34,2% • 9,1% relate the MC with more sexual pleasure |
| Santangelo et al., 2018 (Italy) | <p>*Survey study</p> <p>*1022 students</p> <p>*males and females</p> | Assess knowledge and risk behaviors in relation to STI's | Anonymous questionnaire | <ul style="list-style-type: none"> • Study participants (n=69.3, p=0.022), didn't know in their majority that HPV vaccine is administered to males as well as to females. • Younger students (n=59,7%, p=0.038) had higher risk of transmission of STI's since they considered themselves to be enough informed under estimated the transmission. |

students, in relation to STI's and /or HIV.

Processing the results of the 16 studies revealed 6 topic sections related in general indicators of sexual risk behavior in relation to STI's and HIV, including the guidelines UNGASS on HIV/AIDS on construction of core indicators recommended as to be applied to all population when investigate sexual risk behavior toward HIV. These are: 1) the number of sexual partners, 2) the use of a condom, 3) the sex work (having paid

for sex), 4) the Contextual indicators (like Level of education, Nationality/ethnic origin mobility, Sexual orientation) and 5) the Composite indicator of HIV and STI's knowledge.

Regarding the number of sexual partners sexual, four studies were identified.^{(8), (14), (15), (18)} Two or more sexual partners in samples of some studies founded and correlated with, men (61%) prevalence to women (44%) without clarifying if the number of partners were during

the period of 12 month,⁽¹⁴⁾ male age group 20-21 and 22-30 years, with depressive symptoms and smokers,⁽¹⁴⁾ paid sex workers, while before having sexual contact they consumed alcohol (17,4%) and drugs (9,4%),⁽¹⁵⁾ the attitude to underestimated STI's risk infections.⁽¹⁸⁾ However, in one of these studies, the percentage of STI's participants infected cases stated in this survey were almost zero, the validity of the results is questioned⁽¹⁴⁾. Regarding the rate, 8,3% had two sexual partners and 2,5% had a more than two sexual partners in the last 12 months.⁽¹⁴⁾

Seven studies revealed, either rates or correlational factors on the use of condom as is considerable important indicator of risk behavior.^{(5), (10), (6), (14), (15), (18), (7)} In terms of the sample rates using the condom the studies ranged (25%-63,8%).^{(10), (5)} In one study 86% of students who were sexually active, only 35% stated that they use the condom, while 63,8% had stated that they had used the male condom during their last sexual intercourse,⁽⁵⁾ while in another cohort 6 year study, through the anal sex type there was a decrease use of male condom from 37% to 25% and in general there was a decrease of male condom from 60% to 51%.⁽¹⁰⁾ The factors correlated with the use of condom were, the attitude of the participants to use the condom to be protected from STI's^{(5), (15)} and had mother graduated from high school or had a college education,⁽⁵⁾ when the decision to use a condom was taken by both partners.⁽¹⁰⁾ Another study revealed, that the proper information and discussing with the partner about the use of female condom (CI=1.04-9.77, p=0.043) were the most successful combination for stable use of the condom.⁽¹⁸⁾ On the contrary, correlational factors associated with the condom to been used less frequent, were: Participants did not want to spoil the sexual moment,^{(18), (5)} or simply showed their commitment to their partner,^{(18), (5)} or did not have scheduled intercourse,⁽¹⁰⁾ those students that they used drugs or consumed alcohol during their sexual intercourse.⁽¹⁰⁾ In one study from all not married participants, 54,2% stated that their partner did not use a condom during their last sexual intercourse.⁽¹⁴⁾ Also, in one study the preferred method against STI's, 37, 6% was the male condom and the frequency of its use was 58,7% for those who had received educational intervention and 43.9% for those who did not have.⁽⁷⁾

Regarding the test on HIV and/or STI's, six studies were identified.^{(6), (7), (9), (10), (13), (15)} In terms in what rate the

students made the test for the virus, one study noted 95% knew where to go to make the test, but only 30,4% were tested in the last 6 months, although 72, 2% expressed an intention to make the test with women prevalence (76,5%),⁽⁹⁾ while in another study the majority of the total sample (95,6%) never did counseling and/or testing for the virus.⁽¹³⁾ Furthermore, it is seemed that the frequency on trials studies showed moderate results regarding the testing of HIV, with those had the intervention one study (74,6%) and another study (32%), made the test for the virus (7,3%) and (15,3%) respectively.^{(6), (7)} Regarding the attitude and perception of testing for HIV and/or STI's, one study noted that 88,8% were considering the STI's, tests as an important.⁽¹⁵⁾ Some of the studies correlated the decision to make the test with, older participants ranged (21-27 years),^{(9), (20)} men were more likely to be tested for the HIV virus than the women at a rate of 7% versus 2,1%,⁽¹³⁾ being married/cohabiting, not to have a critical attitude towards HIV positive people, reading science fiction literary books, going out at the evenings for socialization and being with friends most of the time, were increasing the adoption of being tested for HIV.⁽¹³⁾

Regarding correlational factors on issues related with the sex workers, one study noted that the participants who were willing to the paid sexual worker for sex, were less likely to make use of the information services about the HIV.⁽⁶⁾ Also another study noted, 18% had sexual intercourse with multiple partners and paid sex workers.⁽¹⁵⁾

In terms of Contextual indicators risk sexual behavior, there was unsatisfactory constant use of the condom among homosexual students (MSM),^{(6), (11)} correlated with, smoking, alcohol consumption, drug abuse to non- constant use of condom.⁽¹¹⁾ Also, homosexuals had a lower rate (42,86%) of correct answers, compared to 69,57% of heterosexuals on knowledge about AIDS.⁽¹¹⁾ In relation to the ethnicity, one study noted that color students and especially African women were more luckily to make the test for the virus,⁽¹⁰⁾ while high rates cases of HIV infection correlated with, black population, unemployment, female head of household, poverty, fewer owner-occupied housing units, and greater urbanity, (p<0,05) respectively.⁽¹⁷⁾

In terms of knowledge indicator risk sexual behavior, seven studies were identified.^{(8), (9), (11), (12), (15), (19), (20)} The average level of the general knowledge on STI's and HIV was moderate to high (ranged samples 67,30%-

82% and 8.18 Likert scale), ^{(11), (8), (9)} and higher score correlated with: students staying inside the university ⁽⁸⁾ and those who did not get drugs, ⁽⁸⁾ women, ⁽⁸⁾ men, ⁽⁹⁾ older students, ^{(9), (15)} and level of students' education. ⁽¹⁵⁾, ⁽¹⁹⁾ In specific issues of knowledge towards HIV and STI's, correct answers had average high score ranged (70,4%-96,1%). ⁽⁹⁾ Medical students sample in one study noted, 34,2% were aware that MC reduces the possibilities to be infected with HIV. ⁽¹⁹⁾ In another study was found correlation of younger students had higher risk due to knowledge ignorance of the HPV vaccine (CI= 1.13-3.07) and due to ignorance that vaccine can be administered to men also (CI 1.96-3.53). ⁽²⁰⁾

Conclusion

The University is an appropriate environment where students can be informed about STI's and HIV. Taking into account the results obtained and the correlation factors related to the sexual risk behavior, percentages of those

who are not aware of the importance of prevention STI's and HIV, causing worry. Sexual habits of a person is an extremely sensitive issue, even embarrassing for someone to discuss, alarms that this appropriate valid knowledge should come by special scientists, bests knowledgeable on education against STI's and how to scientifically approach a target group. Thus, also emerges the reforms in the preventive strategy, encountering these results in the multidisciplinary professional bodies dealing with organizational context on college and university students', focusing on educational programs and methods use for prevention acquiring STI's and HIV. Moreover, it is absolutely necessary to strengthen health education primarily at school at early stage of their lives, when risk behaviors had not been adapted. Further, future researchers, investigating this review subject are encouraged using the significant results in more qualitative studies to explicit further analytical the explanation why this phenomenon happened.

ΠΕΡΙΛΗΨΗ

Γνώσεις και στάσεις σε σχέση με τη σεξουαλική συμπεριφορά κινδύνου ως προς τις Σεξουαλικά Μεταδιδόμενες Λοιμώξεις και του ιού HIV μεταξύ των φοιτητών/τριών Πανεπιστημίων: Συστηματική ανασκόπηση

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Εισαγωγή: Ένα μεγάλο ποσοστό πληθυσμού της ηλικιακής ομάδας (15-24) υψηλού κινδύνου μετάδοσης Σεξουαλικά Μεταδιδόμενων Λοιμώξεων (Σ.Μ.Λ.) βρίσκεται και φοιτά εντός της Πανεπιστημιακής κοινότητας διεθνώς. Ο ΠΟΥ και το ECDC ενθαρρύνουν τους ερευνητές να διερευνήσουν τους προσδιοριστές της σεξουαλικής συμπεριφοράς κινδύνου υπό το φως των πρόσφατων επιδημιολογικών αποτελεσμάτων. **Σκοπός:** Η ανασκόπηση της βιβλιογραφίας σχετικά με τη γνώση, τις στάσεις και τη σχέση τους με τη συμπεριφορά υψηλού κινδύνου των φοιτητών προς τις Σεξουαλικά Μεταδιδόμενες Λοιμώξεις, συμπεριλαμβανομένου του HIV. **Μεθοδολογία:** Εφαρμόστηκε συστηματική ανασκόπηση. Η στρατηγική αναζήτησης περιέλαβε τις ηλεκτρονικές βάσεις δεδομένων: βάσεις δεδομένων Cinahl, Medline, SCOPUS & PubMed τον Δεκέμβριο του 2020 έως τον Ιανουάριο του 2021. Ο προσδιορισμός των 16 άρθρων που σχετίζονται με το θέμα έγινε σύμφωνα με τα κριτήρια ένταξης που αναφέρονται στην παρούσα μελέτη. **Αποτελέσματα:** Η επεξεργασία των αποτελεσμάτων, ανέδειξε συσχετίσεις και παράγοντες που συμπεριλήφθηκαν σε 6 θεματικές ενότητες που προέκυψαν και συνδέθηκαν με δείκτες συμπεριφοράς σεξουαλικού κινδύνου έναντι των Σ.Μ.Λ. και του HIV. 1) ο αριθμός των σεξουαλικών συντρόφων, 2) η χρήση προφυλακτικού, 3) η εξέταση για Σ.Μ.Λ. και HIV, 4) οι σεξουαλικά εργαζόμενες, 5) οι δείκτες ευρύτερου πλαισίου και 6) ο σύνθετος δείκτης της γνώσης του ιού HIV και των ΣΜΝ. Το μέσο επίπεδο της γενικής γνώσης σχετικά με τις Σ.Μ.Λ. και τον HIV ήταν μέτριο έως υψηλό σε ποσοστό ορθών απαντήσεων (δείγματα 67,30% - 82% και 8,18 κλίμακα Likert) και η υψηλότερη βαθμολογία συσχετίστηκε με: φοιτητές που μένουν στο πανεπιστήμιο, εκείνοι που δεν έλαβαν φάρμακα, ηλικιακά συμμετέχοντες και το επίπεδο εκπαίδευσης των συμμετεχόντων. Περισσότερο οι άνδρες παρά οι γυναίκες, συμμετέχοντες μεγαλύτερης ηλικίας και παράγοντες συσχέτισης (όπως αμειβόμενοι σεξουαλικοί εργαζόμενοι, κατανάλωση αλκοόλ 17,4% και ναρκωτικά 9,4%) έτειναν να έχουν δύο ή περισσότερους σεξουαλικούς συντρόφους. Η συχνότητα συνεχούς χρήσης προφυλακτικού (τα δείγματα κυμάνθηκαν από 25% - 63,8%). Η συχνή χρήση προφυλακτικού συσχετίστηκε με όσους: πίστευαν ότι προστατεύονται

από τις Σ.Μ.Λ., η μητέρα τους αποφοίτησε από το λύκειο, η απόφαση πάρθηκε και από τους δύο συντρόφους, ενώ η λιγότερο συχνή χρήση συσχετίστηκε με όσους: ήταν ομοφυλόφιλοι, δεν ήθελαν να χαλάσει η σεξουαλική στιγμή και θεωρούσαν ότι έδειχναν τη δέσμευσή τους στον σύντροφό τους. Η συχνότητα εξέτασης των HIV και/ή Σ.Μ.Λ., ήταν μέτρια (τα δείγματα κυμάνθηκαν από 4,4 %-30,4 %). Συχνότερα τεστ συσχετίστηκαν με: γυναίκες, συμμετέχοντες άνω των 21 ετών, όταν ήταν παντρεμένοι και όταν δεν είχαν κριτική στάση απέναντι στα οροθετικά άτομα. **Συμπεράσματα:** Τα αποτελέσματα κρίνονται ανησυχητικά, καθώς προκύπτει ότι η γνώση είναι χαμηλή έως μέτρια σε ορισμένες υπό-ομάδες φοιτητών, οι οποίοι υποτιμούν τους κινδύνους των Σ.Μ.Λ. και του ιού HIV και για διάφορους λόγους είναι λιγότερο πιθανό να χρησιμοποιήσουν προστασία κατά τη σεξουαλική τους δραστηριότητα.

Λέξεις-ευρητηρίου: ΣΜΝ, HIV, στάσεις, συμπεριφορά, φοιτητές, γνώσεις.

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