
Secondary School Adolescents' Knowledge About Hiv/Aids in the State of Guerrero, Mexico

Dra. Hernandez Nava Imelda Socorro¹, Med. Sex. Sanchez Castillo Martha Leticia², Dra. Cruz Velazquez Ma. Del Carmen³, Dra. Sepulveda Covarrubias Maribel⁴ and Dr. Diaz Gonzalez Lucio⁵

Universidad Autonoma de Guerrero.

Corresponding author email id: imeldashllv113@gmail.com

Date of publication (dd/mm/yyyy): 28/02/2019

Abstract – Objective: To determine the level of knowledge (NC) about HIV / AIDS by adolescents from Secondary School of Mazatlán, Guerrero, Mexico. **Methods:** cross-sectional descriptive study, stratified random sampling, with allocation proportional to the size of the school grade, 95% confidence and 5% error, shows 63 students from 12 to 16 years old, out of a total population of 234. **Results:** average age of the participants is 13 years old, and 48% are of the female gender. 73% Reported a good NC, 22% regular and 5% deficient, those of higher degree lack knowledge about the transmission routes of HIV / AIDS. Those of 2 "degree demonstrated greater knowledge in preventive measures. **Conclusion:** When evaluating knowledge 3 out of 10 adolescents showed deficient knowledge. Women presented more knowledge than men. What makes it necessary to implement educational interventions to increase knowledge of HIV / AIDS, protecting this group at risk.

Keywords – Acquired Immunodeficiency Syndrome, Knowledge, Prevention and Adolescents.

I. INTRODUCTION

In the world there is concern about the infection of the human immunodeficiency virus (HIV) and the Immunodeficiency Syndrome (AIDS) and it is considered again in the 2030 agenda and the sustainable development objectives, in objective 3, goal 3.3 End the AIDS epidemics. Within the framework of the Strategic Plan 2014-2019 commented by the Pan American Health Organization (PE2014-2019), member countries approved the monitoring of nine goals and their indicators to evaluate the impact towards the end of 2019 of public health actions countries do, thus contributing to a better level of health in the region.

One of the nine goals is the HIV / AIDS mortality rate, the projection of the HIV / AIDS mortality rate indicator, its target reduction of at least 15%, the 2014 projection is 3.8 and the expected value for 2019 is 3.2. In Latin America and the Caribbean, the HIV diagnosis rate in 2014 was 14.9 per 100,000 (2). For Mexico in 2015, an HIV diagnosis rate of 4.7 per 100,000 inhabitants was presented.

As Mexico advanced to achieve the Millennium Development Goals (MDGs) in the follow-up to Goal 6 Combat HIV / AIDS, in 2015 it presented a 3.9 rate and in the State of Guerrero in the same year it presented a rate of 4.7, I reach the national goal of reducing to 3.5, which is why we must continue with health education strategies for the prevention of the transmission of HIV / AIDS.

In Guerrero, Mexico, there were no studies to report the level of knowledge about HIV / AIDS in high school students, so this research was important to identify knowledge about transmission and preventive measures in adolescents in high school with the In order to contribute to education on the subject and reduce HIV infection.

The objective of this research was to determine the level of knowledge about HIV / AIDS by adolescents from Secondary School of Mazatlán, Guerrero, Mexico.

II. METHODOLOGY

Transversal descriptive quantitative study, the total population of 234 students between 12 and 16 years of age, distributed in a group by year of the first, second and third year of the Gerardo Rafael Catalán Calvo secondary school, in the town of Mazatlán Guerrero. Mexico. This school has only one morning shift, both sexes are included. The sampling design was randomized stratified, with allocation proportional to the size of the school grade, with 95% confidence and 5% error, the sample was 63 students distributed in 21 students for each grade level, who agreed to participate and signed the consent informed. And they were present at the time of the application of the questionnaire.

A scale was developed to evaluate knowledge with the following score: 10-8 good knowledge, 7-5 regular knowledge and 4-1 poor knowledge. For the statistical analysis of the data we used the SPSS statistical package version 20, Pearson's Chi square test for the association of variables. The ethical principles applied were no harm, autonomy, confidentiality, fairness and respect.

III. RESULTS

When performing the analysis on the general characteristics, the sample was characterize as follows. The minimum age of 12 years, the maximum age of 16 and the average age of 14 years. 33% and 31.7% are 13 and 14 years old respectively, those of 16 years are 4.8%. 52% are men and 48% are women. The distribution by grade level corresponds to 33.3% for each grade level. In the graph 1. It is exposed the level of knowledge of adolescents about HIV / AIDS shows that 73% have a good NC, 22% regular NC.

In table 1. The NC and gender of adolescents is presented. There is a statistically significant difference between the variables, the highest percentage is represented by 42.8% women with a good NC, while the men in smaller proportion 30.2%.

In table 2 shows the level of knowledge of adolescents about HIV / AIDS according to age group. When performing the bivariate analysis of these variables was observed in the group of 14 -15 years with a higher prevalence of the participants 39.7% have a good NC, secondly the age group of 12-13 years reported 31.8 % a good NC.

In the graph 2. The analysis of the variable Level of knowledge on prevention measures for HIV / AIDS, consisting of 5 variables of the instrument is presented, 44.4% were determined to have both good NC and in the same proportion NC regular.

Table 3 shows the frequencies and percentages of correct and incorrect answers according to the knowledge questionnaire on HIV / AIDS in high school students in Mazatlan Guerrero, Mexico. 95% correctly answered the question "HIV / AIDS can be contracted by having unprotected sex with a carrier person". On the contrary, 81% of students answered incorrectly to the question "HIV is transmitted by kissing". Regarding the question "there is no way to protect against HIV", 73% replied correctly, it is important to note that a high percentage 60% responded to the item "the HIV virus is transmitted during lactation" incorrectly.

BIVARIATE ANALYSIS: To determine the relationship between the level of knowledge about HIV between the variables age, gender and knowledge about HIV prevention among the gender variable, the Chi-square test was used, considering a level of significance of the 10% It was found that there is a relationship between the level

of knowledge and age, gender. (See table 4).

Table 5. shows the frequencies and percentages of correct and incorrect answers according to the questionnaire on HIV / AIDS prevention in high school students in Mazatlán Guerrero, Mexico. 48% of adolescents did not recognize abstaining from sex as a preventive measure, on average, 29% of students do not know about prevention measures. The students of 14 years and those who attend the second year of secondary school showed high percentages on the prevention measures. In terms of gender, women have more information than men.

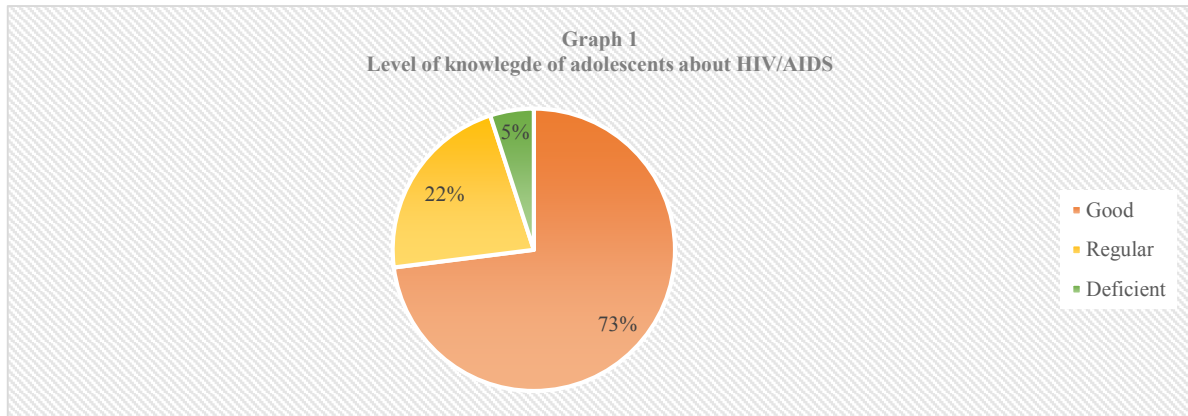


Table 1. Level of Knowledge and Gender of Adolescents

Level of knowledge	Gender					
	Male		Female		Total	
	N°	%	N°	%	N°	%
GOOD	27	42.8	19	30.2	46	73
REGULAR	2	3.2	12	19	14	22
DEFICIENT	1	1.6	2	3.2	3	5
Total	30	47.6	33	52.4	63	100

Table 2. Level of Knowledge of Adolescents about Hiv / Aids According to Age Group

Level of knowledge	Age							
	12-13		14-15		16+		Total	
	N°	%	N°	%	N°	%	N°	%
Good	20	31.8	25	39.7	1	1.6	46	73
Regular	5	7.9	7	11	2	3.2	14	22
Deficient	0	0	3	4.8	0	0	3	5
Total	25	39.7	35	55.5	3	4.8	63	100

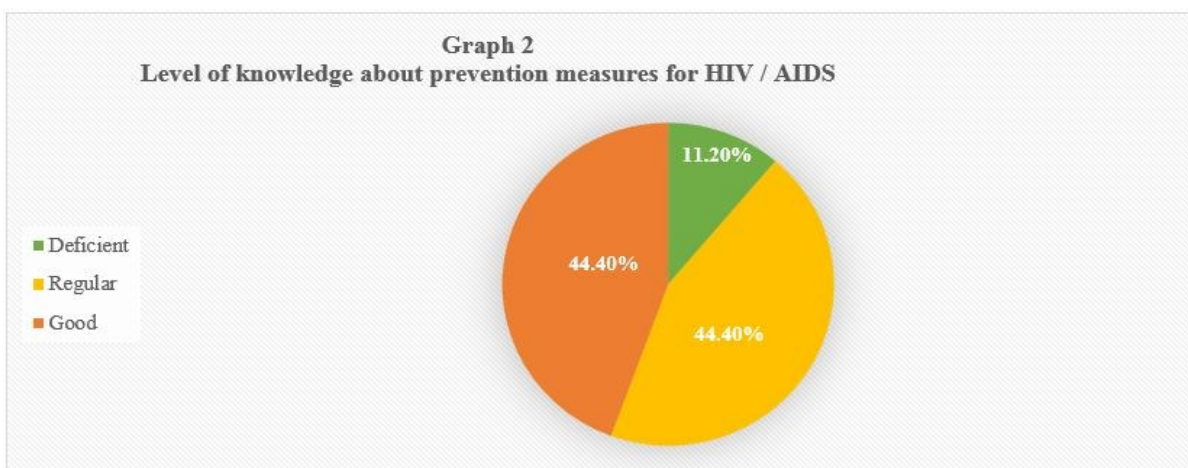


Table 3. Frequencies and percentages of answers about HIV / AIDS knowledge in high school students in Mazatlán Guerrero, Mexico.

Questions	True		False	
	N°	%	N°	%
AIDS causes HIV	44	70	19	30
There is no cure for AIDS	47	75	16	25
There is no way to protect against HIV	17	27	46	73
A person can be positive and not know it	56	89	7	11
HIV / AIDS can be contracted by having				
Unprotected sex with an infected person	61	97	2	3
A person can become infected with HIV through blood transfusion	54	86	9	14
HIV is transmitted by kissing	12	19	51	81
A person who looks healthy may be infected with AIDS	54	86	9	14
The HIV virus can be transmitted from the mother to the child	57	90	6	10
The HIV virus is transmitted during lactation	25	40	38	60

Table 4. Bivariate analysis

Association of pearson	Chi2 de pearson
Age / knowledge	0.042
Gender / knowledge	0.013
Gender / prevention	0.003

Table 5. Frequencies and percentages of responses on hiv / aids prevention in high school students in Mazatlán guerrero.

Questions	True		False	
	f	%	f	%
Abstain from sex	33	52	30	48
Using condoms	60	95	3	5
Not having many sexual partners	42	67	21	33
Be a mutually faithful	47	75	16	25
Avoid sex with promiscuous people	44	70	19	30
Avoid sex with prostitutes	48	76	15	24
Avoid homosexual sex	47	75	16	25
Do not share syringes or razors	46	73	17	27
Have information about the risks of contracting HIV / AIDS	59	94	4	6
Circumcision reduces the risk of transmission of the virus from women to men	41	65	22	35

IV. DISCUSSION

In the present study it was observed that 28% of first year students have better knowledge than those of higher academic degree. The study that reported the level of knowledge on HIV / AIDS with the same measurement instrument was done by Davila et al. (2008), who observed that 40.9% of students have a good NC, 51.9 NC regular and 7.2 NC deficient. In our study we observed 73% have a good NC, 22% regular NC and 5% poor NC.

Gomez- Bustamante (2011). Notes that 38.4% of students correctly answered the prevention questions, in our study more students aged 12-16 years old, 44.4% correctly answered the prevention item.

Broche Morera et al., (2009). The regular category was the most represented in the evaluation of knowledge by all the respondents by 45.7%. In the analysis by sexes it can be seen that the highest per hundred of good and regular knowledge about HIV / AIDS were oriented towards the female sex, while the highest percent of evil was contributed by the male sex in our study, opposite data are shown because 73% of all respondents have a good NC. There is similarity in sex, the highest percent of NC was good for women (43%) and men presented good NC (30%).

Quoted in Gomez-Bustamante, it is necessary to strengthen education in sexual and reproductive health in adolescent students with a comprehensive vision that allows the adoption of knowledge and personal and social values that are expressed daily in healthy behaviors, self-care, and respect for the physical integrity and of the couple (Gallegos, 2008). In the same way, it is important to improve teacher training in this area since students receive the most information about HIV-AIDS in the school context (Caballero, 1997).

The high school students of Mazatlán Guerrero, Mexico. Three out of ten have limited knowledge about HIV / AIDS, which is why we need to continue strengthening education in sexual and reproductive health. Our commitment as a nursing staff is to carry out effective educational interventions, to increase knowledge in high school students because they are in the process of continuing their studies in high school, and that is where they most often have risky sexual relations. As reported by Hernández et al (2017) 20.9% have had sexual relations and for the first time they were between 15, 17 years old, and 88% obtained an average level of knowledge in sexual health.

V. CONCLUSION

Secondary school students of Chilpancingo, Guerrero, México evidenced in the evaluation, a regular and deficient knowledge about HIV/AIDS, between both levels of knowledge it prevails the 27% of students, with the following trends are between 15 and 16 years old. They study the higher academic level and male sex predominated, comparing the level of knowledge, it was higher in women.

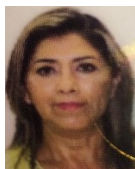
However, the lack of knowledge is present about some aspects related to HIV/AIDS and preventive measures. Therefore, it is important to carry out educational interventions in sexual and reproductive education to allow the improvement for the knowledge level found, because these adolescents are going to proceed a high school level, and this is where the beginning of sexual relationships prevails. We should be alert to parents and educational authorities to implement strategies to prevent HIV infections.

REFERENCES

- [1] Broche, M., Rafael, A., Martín, R., Diana, M., Soler, P., Aida, B., & Alonso, L. (2009). Knowledge about HIV / AIDS by adolescents of the Parish January 23. Caracas Venezuela. *Medical Humanities*, 9 (1) 1-31. ISSN 1727-8120. Retrieved on October 11, 2018, from http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1727-81202009000100007&lng=es&tlng=es.
- [2] Caballero, H, Villasenor, S & Hidalgo, S. (1997). Sources of information and its relationship with the level of knowledge about AIDS in adolescents in Mexico. *Magazine Saude Public*. 1997; 31(4) 351-359.
- [3] Dávila, M., Tagliaferro, A., Bullones, X., & Daza, D. (2008). Levels of knowledge of adolescents about HIV / AIDS. *Magazine. Public Health (Bogotá)* 10(5), 716-722.
- [4] Gallegos, E., Villarruel, A., Loveland, C., Runis, D., & Zhou, Y. (2008) Intervention to reduce risk in adolescent sexual behaviors: a randomized controlled trial. *Public Health Mex.*, 50 (1), 59-66. ISSN 0036-3634.
- [5] Gómez, B., & Cogollo, M. (2011). Knowledge about HIV-AIDS in high school students of Cartagena, Colombia. *Magazine. Public health*. 13(5), 778-84. ISSN electronico 2539-3596
- [6] Hernández, N., Sepúlveda, C., Cruz, V., & Sánchez. (2017). Knowledge about adolescent pregnancy prevention, in students of the Autonomous University of Guerrero, Mexico. *Academia Journals*, 9 (6), 3131-3136.
- [7] Hernández, N., Sepúlveda, C., Cruz, V., & Sánchez. (2017). Knowledge about prevention of adolescent pregnancy, in students of the Autonomous University of Guerrero, Mexico *Investigative Compendium of Academia Journals Celaya 2017* with ISBN 978-1-939982-32-2.

- [8] Recovered <https://drive.google.com/open?id=1V9woYc19tmiAUU33vrbAC8TGpRLDJLAK>
- [9] Pan American Health Organization / World Health Organization (PAHO / WHO). (2017) Communicable Diseases and Health Analysis / Health Information and Analysis. PLISA database. Health Situation in the Americas: Basic Indicators. Washington, D.C PAHO / WHO; 2017. Available en: <http://www.paho.org/data/index.php/es/indicadores.html> Acceso el 20 de octubre de 2017. » <http://www.paho.org/data/index.php/es/indicadores.html>
- [10] United Nations. CEPAL. (2017). Schedule 2030 and the Sustainable Development Goals: An opportunity for Latin America and the Caribbean. Available in: <http://www.cepal.org/es/publicaciones/40155-agenda-2030-objetivos-desarrollo-sostenible-opportunidad-america-latina-caribe>

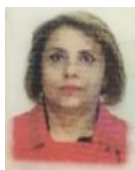
AUTHORS PROFILE



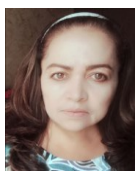
Imelda Socorro Hernández Nava, Doctor in Nurse Science (DNS), full time associate professor in Universidad Autónoma de Guerrero, she performs research, teaching, tutorship and negotiation functions in Escuela Superior de enfermería No. 1 in Chilpancingo Guerrero, México. She's a member in a registered academic faculty group in Consolidation, "nursery and reproductive health Reproductive" recognized by the undersecretary of higher education –SEP with the code (UAGRO-CA-162) in Higher education dependency (DES), it's PRODEP profile, her research line works in educative intervention about pregnancy and childbirth, she has published in national and international publication journals, in extensive memories refereed at national congresses, participation in funded projects and undergraduate thesis adviser. Member of RED-ENSI MÉXICO scientific committee, member of the state register of researchers 2016-2019 (COCYTIEG), quality certificate for accomplishing quality standards by the national certification system in nursery since 2009-2019 COMCE. Active partner of nursing professional college in Guerrero A.C, feb. 2019. Mail: imeldash@yahoo.com.mx, imeldashllv113@gmail.com



Ma. Del Carmen Cruz Velázquez, Doctor in Nurse Science (DNS), full time associate professor in Universidad Autónoma de Guerrero, she performs research, teaching, tutorship and negotiation functions in Escuela Superior de enfermería No. 1 in Chilpancingo Guerrero, México. She's a member in a registered academic faculty group in Consolidation, nursery and reproductive health 162, it's PRODEP profile, her registered personal line is for public politics about reproductive health, with published results in international and national publication journals, she's a undergraduate thesis adviser and she has participation in funded projects. Member of RED-ENSI MÉXICO scientific committee, member of the state register of researchers 2016-2019 (COCYTIEG), quality certificate for accomplishing quality standards by the national certification system in nursery since 2009-2019 COMCE. Active partner of nursing professional college in Guerrero A.C, feb. 2019. Mail: carmencruz26@hotmail.com



Martha Leticia Sanchez Castillo, clinical sexology teacher and specialism in educational sexology, full time associate professor in Universidad Autonoma de Guerrero, she performs research, teaching, tutorship and negotiation functions in Escuela Superior de enfermería No. 1 in Chilpancingo Guerrero, México. She's a member in a registered academic faculty group in Consolidation, nursery and reproductive health 162, it's PRODEP profile, the line of research develops in educational intervention on sexual education, it has been published in International and National Publication Journals, refereed in national congresses, she's a undergraduate thesis adviser. Member of RED-ENSI MÉXICO scientific committee, member of the state register of researchers 2016-2019 (COCYTIEG). Mail leticias59@hotmail.com



Maribel Sepulveda Covarrubias, full time research profesor graduated from bioethics doctorate in Universidad Anáhuac Norte Huixquilucan Edo de México. Diploma in applied statistics and capability to perform research, teaching, tutorship and negotiation functions. Coordinator of academic faculty group in consolidation "nursery and reproductive health Reproductive" recognized by the under secretary of higher education –SEP with the code (UAGRO-CA-162) in Higher education dependency (DES) of nursery. Member of RED-ENSI MÉXICO scientific committee, member of state register of researchers 2016-2019 (COCYTIEG), quality certificate for accomplishing quality standards by the national certification system in nursery since 2009-2019 COMCE. Active partner of nursing professional college in Guerrero A.C, feb. 2019. Mail: maribel_sepcev@hotmail.com



Dr. Lucio Díaz González, Teacher-Researcher of Facultad de Matematicas in Universidad Autónoma de Guerrero, graduated from mathematical sciences doctorate in Universidad de La Habana, Cuba, Master degree in applied statistics (Universidad Autónoma de Guerrero), 18 years of experience in teaching on statistics área. He has participated on multiple local and state projects on health and social areas. e-mail: luciodiaz@uagro.mx.