

Original Research Article

Associated factors of precocious sexual intercourse among schooled teenagers in Antsirabe town, Madagascar

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ABSTRACT

Background: Teenagers are defined by world health organization as persons between 10 and 19 years of age. When this generation has a sexual intercourse, it is considered to be early. The main aim of this investigation is to identify associated factors of precocious sexual intercourse.

Methods: A cross-sectional study was conducted at the high schools in Antsirabe town among teenagers.

Results: Among 636 teenagers, 19.8% are prematurely initiated. The median age of first sexual experience is 16 years of age. The average age for this first sexual experience takes place at 15.5 (1.4) years of age for boys and at 16.6 (1.2) years for girls. One kind of sociodemographic profile is associated to the first precocious sexual intercourse. Poor school performance, urban life, alcohol, tobacco and drug use are also significantly associated with this precocious sexual experience. From the relationship standpoint, 6= lack of sexual education by the head of household, the absence of religious diligence, the influence of customs, internet access and accession a social network are indeed associated to this problem.

Conclusions: In order to meet these results, the ministry of public health should design on Facebook, education program about forward sexuality.

Keywords: Antsirabe town, Associated factors, High schools, Precocious sexual intercourse, Teenagers

INTRODUCTION

A taboo subject in some countries, the sexuality, paradoxically, stimulates debate in teenagers and often become a subject where opinions differ. Because of emotional and psychic weakness, some teens focus on sexual activity to feel adult, or sometimes, to demonstrate that their body belongs to them.¹ According to the literature, several factors such as social belonging, the religion and the education level are found linked to an early sexual intercourse.^{2,3} In Africa, in 2014, more than 30.0% of the populations are represented by the young aged between 19 to 24 and 17.2% in Madagascar.⁴ In

Madagascar, in 2013, among the 5.7 million adolescents and young aged from 10 to 24, 8.4% of boys and 17.2% of girls start sexual life.^{5,6} In those African countries, the associated factors to early sexual intercourse are represented by the family factors and the extra family ones. These latter specify the religions, the television and the instruction level. Multipartnership and alcohol consumption are the individual factors.⁶ This early involvement into sexuality leads to more and more serious consequences; in boys, early sexual practices and sexually transmitted infections are closely linked.⁷ In girls, sexually transmitted infections are, in the short term, the dreadful consequences of early sexual

intercourse. In the medium term, early sexual activity induces an early pregnancy, itself a mortality factor for adolescent mothers.^{8,9} Thus, early entry into sexuality often exposes unvaccinated girls to HPV infection (Human Papilloma Virus) whose long-term fear remains cervical cancer.¹⁰ Faced with this situation, the interest of the question lies in the search for factors that can be bound to. In the case of Madagascar, two sets of variables of individual and relational order are examined. The socio-demographic and behavioral characteristics of the adolescent predominate in the individual component. Relational factors are represented by family, religion and customs, as well as friends. However, television and the internet can't be neglected. This study sets the objective of identifying the socio-demographic characteristics of adolescents and identifying the factors associated with early sexuality.

METHODS

A cross-sectional (case-control) study about associated factors to early sexual intercourse of the teenagers has been carried out in the urban commune of Antsirabe, Madagascar (AVE MARIE Hospital). This city is located on the National Road number seven which unites Antananarivo and Tulear at 169 km. Antsirabe city stretches over an area of 179.73 km². Its population was estimated to 254 961 inhabitants in 2015. Almost 24.3% of the population has the age group between 10 to 19. The school district of Antsirabe city has 34 public and private schools functional for level II and level III according to the statistical yearbook. (Source: Urban Commune of Antsirabe). In this high concentration of young people, Antsirabe disposes 30 public and private health infrastructures operating with 74 doctors. Fifteen percent of Antsirabe high schools are drawn at random, which are six institutions (private high school Saint Theresa, private high school Ambavahadimangatsiaka excellence, private high school Arcade Antsirabe, high school Andre Resampa, private high school pillar and private high school Farimbona). The period of this study is spread over 12 months before the survey (January 2016 - January 2017) and this quantitative semi-closed question survey was conducted during the month of February 2016. This study concerns adolescents attending high school. The study population includes adolescents aged 10 to 19 enrolled in the school district of Antsirabe city, having resided in the urban district of Antsirabe since the beginning of the 2016-2017 school year. For each high school, classes were chosen by random draw to get 15% of high school students. High school students in the drawn classes have been included in the study in exhaustive way resulting in 636 adolescents (Sample size). In this study, adolescent sexual intercourse is the dependent variable and all sexual intercourse in adolescents is considered early sexual intercourse. The independent variables concern the socio-demographic profile (age, gender, place of residence, level of study), behavior (age of first menstruation, age of first sexual intercourse, consumption of tobacco and / or alcohol and

/ or other illicit substances, antisocial behavior), the characteristics of the head of the family (age and gender), the economic level of the household (occupation of the head of the family, family size, number of working members in the household, number of rooms in the house, access to water and electricity) and extra familial factors (religion and customs, friends, sources of information, accessibility to new information and communication technologies). The data have been collected from the tested and pre-established investigation files. These files have been filled out under surveillance in individual way. The questions have been explained in advance. An authorization was signed by each head of the selected school with informed consent from the teacher in charge of each class drawn. It's mandatory to have a clear approval to the inquiry which was announced in advance for the respect of confidentiality, of anonymity and rigor in the respect of professional secrecy. The manual acquired data have been typed, treated and analyzed with Epi info 7.1.3 software and the pictures have been treated with Excel. Odds Ratio (OR) constitutes the main associate measure permitting to set up an association between the associated factors and the early sexual intercourse. This Odds Ratio is affected by a confidence interval of 95% (IC95%). For the comparison of the proportions observed, we use the Chi-square and the exact Fisher tests, the statistical significance is fixed at p<0.05.

RESULTS

In this study, 636 adolescents were selected. The average age is 16.9 years with standard deviation at 1.3.

Table 1: Distribution of teenagers having sexual intercourse according to the socio-demographic profile.

Socio-demographic profile	Precocious sexual intercourse		OR [IC95%]
	Yes n=126 N (%)	No n=510 N (%)	
Age groups (years)			
≥17	103 (81.8)	291 (57.1)	3.37
≤16	23 (18.2)	219 (42.9)	[2.07-5.47]
Gender			
Male	91 (72.2)	209 (41)	3.74
Female	35 (27.8)	301 (59)	[2.44-5.74]
Residence area			
Urban	111 (88.1)	390 (76.5)	2.27
Rural	15 (11.9)	120 (23.5)	[1.28-4.05]

For boys, the average age is 17.1 years with standard deviation at 1.3 and for girls, the average age is 16.8 years with standard deviation at 1.3. The median age is 17 years old. Among the 636 teenagers 336 are female, the majority of them and 61.9% are aged 17 and over. 78.8% of adolescents live in urban areas. Concerning the

academic background, almost half, or 43.9% of adolescents say they have already repeated classes and 50.8% of them had a school average less than or equal to 10 out of 20 at the last quarterly exam. According to behaviors, among those 636 adolescents, 10.7% state that they smoke tobacco, 28.4% say they consume alcohol and 7.5% reveal they consume other substances. The most frequently cited illicit substances are cannabis and cola. 53.9% of the adolescents surveyed, girls or boys, say they have a boyfriend or a girlfriend. 61.3% of adolescents are aware of the risks of early sex, including sexually transmitted infections and pregnancy.

Table 2: Distribution of teenagers having had an early sex depending on behavior.

Behavior	Precocious sexual intercourse		OR [IC _{95%}]
	Yes n=126 N (%)	No n=510 N (%)	
Tobacco			
Yes	33 (26.2)	35 (6.9)	4.80 [2.84-8.12]
No	93 (73.8)	474 (93.1)	
Alcohol			
Yes	70 (55.6)	110 (21.7)	4.52 [3.00-6.81]
No	56 (44.4)	398 (78.3)	
Illegal substances			
Yes	21 (16.7)	27 (5.3)	3.58 [1.95-6.57]
No	105 (83.3)	483 (94.7)	
Anti-social behavior			
Yes	89 (70.6)	237 (46.5)	2.77 [1.82-4.22]
No	37 (29.4)	273 (53.5)	
Boy/girlfriend			
Yes	105 (84.7)	237 (46.5)	6.36 [3.78-10.69]
No	19 (15.3)	273 (53.5)	
Youth=sexuality			
Yes	48 (38.1)	46 (9.0)	6.20 [3.88-9.93]
No	78 (61.9)	464 (91.0)	

Only 14.8% of adolescents adhere to a subjective norm that "youth equals sexuality". The average age of first menstruation is 13.6 years with a standard deviation of 1.4. In terms of sexual behavior, the mean age at first intercourse is 15.8 years with standard deviation 1.4. The mean age of sexual initiation is 15.5 years with standard deviation 1.4 for boys and 16.6 years with a standard deviation of 1.2 for girls. For information tools, access to television is 92.9%. Of the 636 adolescents, 460 or 72.4% have access to the internet and 449 or 70.7% are on Facebook.

Table 3: Distribution of teenagers having had early sex according to extra-family factors.

Extra family influences	Precocious sexual intercourse		OR [IC _{95%}]
	Yes N=126 N (%)	No N=510 N (%)	
Religious attendance			
No	53 (42.1)	161 (31.6)	1.57 [1.05-2.34]
Yes	73 (57.9)	349 (68.4)	
Custom's influence on age of first sex			
Yes	22 (17.5)	55 (10.8)	1.75 [1.02-2.99]
No	104 (82.5)	455 (89.2)	
Friend number			
≥100	21 (16.7)	64 (12.6)	1.39 [0.81-2.38]
<100	105 (83.3)	446 (87.4)	
Older friends			
Yes	106 (84.8)	346 (67.8)	2.64 [1.57-4.45]
No	19 (15.2)	164 (32.2)	
Friends who already have sex			
Yes	106 (84.1)	329 (64.5)	2.92 [1.75-4.86]
No	20 (15.9)	181 (35.5)	

Depending on the number of friends, 86.7% have less than 100 friends. According to the family environment, for 73.4% of adolescents, their father represents the head of the family. For the characteristics of the head of the family, the 55.3% have a secondary level of education and work for the 63.0% in the tertiary sector. In this study, 19.8% of adolescents say they have already had sex. Among the 300 boys, 91 of them which represent 30.3%, they already had sex and 35 girls among the 336 which gives 10.4% have sexually initiated. The distribution of adolescents who have sex according to the sociodemographic profile has been represented in the following (Table 1).

According to the socio-demographic profile, age greater than or equal to 17, the male gender and urban life determined early sexual intercourse.

Depending on education level, repetition is associated in meaningful way with early sexual intercourse (OR [95% CI] = 2.29 [1.54-3.42]). Among the young having sexual intercourse, 60.3% have already repeated classes. For the class to which the teenager belongs, « la seconde » is the reference. The higher the level of class, the more the adolescent undertakes early sexual activity (p<0.001). In addition, a quarterly average mean less than or equal to 10 has a significant association with early sexual intercourse (p<0.001). The associations between early sexual intercourse and adolescent behavior are reported in the following table 2 (Table 2).

According to behavior, early sexual initiation has a significant association with consumption of tobacco, alcohol and illicit substances. Anti-social behaviors such

as fighting and threatening the lives of others are associated with early sexual intercourse.

A significant association was found between having a boyfriend or a girlfriend and early sexual initiation. Moreover, adherence to subjective norms such as the principle of "equal youth sexuality" is mainly linked to an early sex.

According to the family factor, the lack of sex education led by the head of the family represents an associated factor (OR [95% CI] = 1.73 [1.09-2.74]) and only 22.2% of chiefs family has conducted sex education in their teenager.

Depending on the socio-economic level of the household, having their own room determines early sexual intercourse with OR = 1.82 and 95% CI = [1.23-2.71].

In addition, there is a non-significant relationship between siblings with fewer than 4 children and early sexual intercourse (OR [95% CI] = 1.21 [0.81-1.80]). The relationship between extra family factors and early sexual intercourse is shown in (Table 3).

Table 4: Distribution of teenagers sexually active according to the exposition to the new information of technology and communication.

Exposition to the new information of technology and communication	Precocious sexual intercourse		OR [IC _{95%}]
	Yes N=126 n (%)	No N=510 n (%)	
Television			
Yes	118 (93.7)	473 (92.7)	1.15 [0.52-2.97]
No	8 (6.3)	37 (7.3)	
Sexual program on television			
Yes	101 (85.6)	364 (76.9)	1.77 [1.02-3.10]
No	17(14.4)	109 (23.1)	
Internet			
Yes	106 (84.1)	354 (69.4)	2.33 [1.39-3.90]
No	20 (15.9)	156 (30.6)	
Social network (facebook)			
Yes	106 (84.1)	343 (67.2)	2.58 [1.54-4.30]
No	20 (15.9)	167 (32.8)	
Facebook friends			
≥500	55 (51.9)	111 (32.4)	2.25 [1.44-3.51]
<500	51 (48.1)	232 (67.6)	
Other social networks			
Oui	74 (58.7)	183 (35.9)	2.54 [1.71-3.79]
Non	52 (41.3)	327 (64.1)	

This study found that the lack of religious attendance and the influence of customs are associated with early sexual intercourse. Having 100 friends or more achieves a non-significant association with early sexual intercourse.

Nevertheless, older friends and sexually initiated friends are associated with early sexual intercourse.

Exposure to new information and communication technology figures among the extra familial factors. This is reported in (Table 4).

According to Table 4, exposure to sexual programs, internet access and Facebook membership determine early sexual intercourse. In addition, a number of virtual friends greater than or equal to 500 and membership in other social networks are associated with early sexual intercourse.

DISCUSSION

The study is based in Antsirabe, more precisely in high schools. The subjects surveyed are therefore limited by their education level. This study draws on the former studies such as the Health Behavior in Schoolchildren (HBSC) survey and the study conducted by the French National College of Gynecologists and Obstetricians (CNGOF) which investigates schooled children and adolescents.^{11,12} The average age of the interviewees is 16.9 years with a standard deviation of 1.3. This falls within the age range of adolescence according to the WHO.¹³ In the gender approach, compared to the 2007 CNGOF study that only concerns girls, this study concerns both girls and boys. Boys represent 47.2% of the surveyed and 52.8% are girls. The CNGOF study was mainly oriented towards girls because of its field of action and its target target especially early pregnancy and sexually transmitted infections.¹⁰ The majority of the teenagers surveyed which is 78.8% live in urban areas. This is explained by the fact that the selected high schools belong to the school district of Antsirabe city. Depending on the level of study, unlike the HBSC survey in France, the interviewees are enrolled at the high school level. In the HBSC survey, college students make up the study population.^{11,12}

The so-called associated factors in this study, the questions asked about sexuality are comparable to those asked during the HBSC survey in France and those of the American Youth Risk Behavior Survey (YRBS).¹¹ This removes any ambiguity on the questions asked. Of the 636 recruits, 19.8% claimed they have ever had sex. According to the socio-demographic profile, age greater than or equal to 17 years is a factor associated with sexual initiation. According to the HBSC France survey, according to the perception of adolescents, the "normal age" of sexual initiation is 17 years old. These results seem to confirm this perception. 81.8% of sexually active adolescents are 17 years of age or older and 18.2% are under 16 years of age. In order word, the global middle age of the first sexual intercourse is about 15.8 years with standard deviation 1.4 and the median age is 16 years. Otherwise, a study conducted in Congo in 2007 states that the majority of young people are sexually active in the adolescence, specifically in their fifteenth birthday.¹⁴

The Malagasy youth of Antsirabe are slightly later than the Congolese youth but rather equal to the French.

The previous survey led in Madagascar affirms that the global middle age of the first sexual intercourse is around 17.5 in 2008-2009.⁶ This age has decreased by about a year and half in 9 years. This study found that in Antsirabe, boys often enter sex life earlier than girls with a median age of 16 years. As a result, the masculine gender is a significantly associated factor. In the female gender, the average age of sexual initiation is 16.6 years with a standard deviation of 1.2. The proportions are 31.4% of boys and 10.4% of girls. In fact, in France, according to Welling, the proportion of sexually active adolescents is 7.2% of boys versus 5.9% of girls.² This is confirmed by the HBSC survey in 2012.¹¹ In a survey conducted in Congo, the average age of sexual initiation in girls is 15.9 years so then earlier compared with the current results which stipulate that the middle age of the first sexual intercourse of the girls is around 17.

Malagasy girls are later to enter this sexual life. The survey conducted in Madagascar by Rwenge in 2013 states that the proportions were 8.4% of boys versus 17.2% of girls.⁶ The median age was 17.8 years for boys versus 17.1 years for girls. Though nowadays, the median ages are respectively 16 years against 17 years. This change in 4 years can be explained by the rise of major campaigns against AIDS in Madagascar and against early pregnancy whose main targets remain girls. There is a significant association between urban living and the early sexual involvement. The current study does not join previous one. According to Rwenge, urbanization increases the decision-making power of adolescents and young people on the moment, the choice of the partner and why to perform a sexual intercourse.⁶

Moreover, a recent survey, in 2014, reports that the middle age of first sexual intercourse and of the first marriage is later on the young in urban areas than in rural areas.¹⁵ According to the results, urbanization has a negative impact on the sexual behavior of these adolescents. The more he lives in the city, the earlier he gets into sex. Here, the grade 12, and repetition class, has a significant association with sexual initiation. Moreover, 43.9% of the interviewees affirm having already repeated classes and 50.8% having got an average inferior or equal to 10 out of 20 during the last school exam. This last is among the associated factors. The theory of deviate syndrom is confirmed.⁶

Bad school performance is effectively associated with early sexual intercourse. Those students of grade 12 have theoretically already attended sex education in class and are supposed to know the risks of early sexuality. This session does not seem to be effective. It becomes more correct to book at least an hour a week for an independent topic on sexuality, its consequences and the precautions to adopt. In behavioral factors, 10.7% state that they smoke tobacco, 28.4% stipulate they consume alcohol

and 7.5% say they take other substances. Consumption of tobacco, alcohol and psycho affective substances determine early sexual initiation.

These results converge with those of the study conducted in Quebec in 2010.¹⁶ A previous survey also confirms that daily smoking and frequent drunkenness are factors associated with early sexual intercourse.¹⁷ Some of these adolescents develop so-called anti-social behaviors. There is a significant association between antisocial behavior and early sexual intercourse. This is in line with the theory of the deviant syndrome which asserts that there is an association between antisocial behavior, the consumption of psycho-effective substances which are legal or not and early sexual intercourse.¹⁶ For behavior towards sexuality, 53.9% of the adolescents surveyed, girls or boys, say to be engaged to a love relationship. The existence of a boyfriend or girlfriend is a factor associated with sexual initiation. This assumes that Malagasy adolescents do not practice intercourse outside of a romantic relationship. Delaying the age of the first relationship can then push back the age of first intercourse. Only 14.8% of teenagers think that "youth equals sexuality". This way of thinking participates in early sexual initiation. There is a standard on the principles of these adolescents in which they feel that their youth passes in vain if they do not try this surprisingly forbidden sexuality.

The lack of sex education by the head of the family is a factor associated with early sexual initiation. That joins the survey led by Rwenge who found that a discussion or even sexual education by the head of household has a good influence on sexual behavior.⁶ Some notions can explain this fact. Still in the concept of adolescent rebellion, a sex education performed by the head of the house, figure of authority, can have the opposite effect. Or, talking about sexuality with a teenager is likely to create more conflict and it pushes parents to delay or ignore the role they have to play.

It is therefore necessary to encourage parents to talk about sexuality with their children and thus establish greater comfort on this subject and even remove the taboo. In addition, the absence of a family influence felt by the adolescent is linked to early sexual initiation in a powerful way. A good family environment implies good parent-child communication and efficient sexual education according to previous studies.^{6,18} A parents' counseling program on the education of their children, can be started by high schools. Or, in a larger sphere, youth aid associations can request sponsorships to launch this kind of program in the audiovisual field and even on the internet. It should be noted that the fact that a teenager has his own bedroom participates in early sexual initiation according to this study. This is explained by the existence of intimacy, sign of freedom for the teenager and therefore promotes any sexual experimentation.

Apart from family influence, other factors come into play. Indeed, lack of religious attendance is a significant factor associated with early sexual intercourse. The existence of religions seems adequate in the prevention of these risks related to early sexuality. It is inappropriate to pursue them because of their positive impact. As far as customs are concerned, a significant association has been established between the influence of customs felt by the adolescent and premature sexual intercourse. It seems that these customs have an adverse effect on the entry into sexuality. The results of the ECPAT (Child Pornography and Trafficking of Children for Sexual Diseases) study in 2015 converge on those of current studies. The latter noted that in Madagascar, some traditional practices tend to engage girls early in sexuality.¹⁹

Apart from religion and customs, communication with peers is one of the extra familial factors. Depending on the number of friends, 86.7% count fewer than 100 friends. A number of friends greater than 100 is a non-significant factor. Previous studies claim that teens depend more on their friends rather than their family.¹² On other hand, communication with friends is easier. The bad influence of older friends and / or sexually initiated friends is here demonstrated by the great association with early sexual intercourse. This is consistent with previous studies.²⁰ Indeed, following a communication without pressure, without stress and without judgment, the friends of the same age but more experienced or older badly experienced can be bad advisers.

Access to television is 92.9%. Concerning a study which took place in Central Africa, the source of information most associated with premature sex was radio 68.7% against 18.2% for television.⁵ During the current study, the only sources of information studied are television and the internet, including as well NICTs or new information and communication technologies. As a result, a non-significant association was established between television exposure and sexual initiation. This is not consistent with other survey in Africa, which states that with the rise of major campaigns against HIV / AIDS, access to television proves otherwise beneficial.⁶ However, exposure to sex programs is an associated factor. The explanation becomes obvious that these sex programs lead teenagers to inappropriate behavior. Another interpretation can be linked to that.

A simple television exposure is not dangerous, but some programs remain to be avoided. In Antsirabe, 72.4% of teenagers have access to the internet and 70.7% are on Facebook. Exposure to the internet is greatly associated with early sexual intercourse. In addition, membership to Facebook overhangs this association. In fact, these are young people's affairs, thus giving them a semblance of intimacy and freedom and therefore a field of practice or apprehension of sexuality. It is a very advanced communication tool, facilitating communication with partners. Moreover, the number of virtual friends greater

than or equal to 500 and membership of other social networks achieve a significant association with early sexual initiation. This proves the influence of friends and the internet.

The limit of this study is the information bias, the sincerity of the answers and untruthful answers from respondents. Before the inquiry, a prior authorization request was addressed to the head of the Antsirabe city school district.

CONCLUSION

A relatively large number of Malagasy teenagers from Antsirabe were sexually initiated early. As associated factors, this survey identified a particular socio-demographic profile in the context of individual factors. This study also blames the behavioral factors, including smoking, alcohol and psycho affective substances. Moreover, the existence of love relationship is linked to an early sexual initiation. The lack of sex education by the head of family is among these factors. In the extra familial context, the influence of customs, non-religious attendance, the influence of older friends, and exposure to sexual programs are associated with early sexual intercourse. The worry about the bad influence of the internet and social networks is founded during this survey.

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