Contraception: School Knowledge and Practical Attitudes in the Urban Commune of Segou, Mali

Tidiani Traoré¹*, Cheickna Sylla², Kassoum Sidibé¹, Babou Traoré¹, Sylvain Guindo¹, Adama Coulbaly¹, Seydouna A. Beye¹, Seydou Z. Dao³, Famakan Kané⁴, Youssouf Traoré⁵, Ibrahima Téguété⁵, Moustaph Touré⁶

¹Nianankoro Fomba Hospital, Ségou, Mali
²Department of Gynecology and Obstetrics, Reference Health Centre in Koutiala, Sikasso, Mali
³Department of Gynecology and Obstetrics, Reference Health between the Commune II, Bamako, Mali
⁴Mali Reference Health Centre Bla, Ségou, Mali
⁵Department of Gynecology and Obstetrics, Gabriel TOURE University Hospital, Bamako, Mali
⁶Department of Gynecology and Obstetrics, University Hospital of the Hospital of Mali, Bamako, Mali
Email: *tidiobongoso@yahoo.fr

Abstract
The aim was to describe aspects of students' knowledge of sexuality and contraception and their sexual behaviour in schools in Ségou, Mali. 

Materials and Methods: This was a one-pass cross-sectional survey with reasoned choice at the first level and random choice at the second level over a 3-month period from January 2013 to March 2013. 

Results: The majority of the students involved in our study reside in the commune of Ségou, 90.4%. The average age of our students was 18. The female sex was the most represented in our study with 59.7%. The majority of students had casual sex at 60.3% and 70.9% irregularly. The change of sexual partner affected 47.9% of school-children. Of our sexually active students, 72.6% had sexual partners and 37.4% had more than 2 partners. The main sources of information are respectively the media with 72.1% followed by teachers with 12.9% and friends with 09.7%. Among the most well-known contraceptive methods, condoms rank first with 72.6%, followed by injectable with 72.0%. 70.6% of the population had not yet used a contraceptive method at first sexual intercourse and in 72.9% of cases was condoms. The most cited source of contraceptive supply is pharmacy with 49.5% followed by family planning centres and maternity wards at 16.2% and shops at 16.2%. 

Conclusion: The referral of young people to approved health facilities for contraception could prevent them from risky sexual behaviours.

Keywords
Teenagers, Youth, School Environment, Contraception, Sexuality
1. Introduction

The concept of reproductive health as defined by the International Conference on Population and Development in 1994 was adopted by Mali. This concept is defined as reproductive health or reproductive health, we mean the general well-being, both physical, mental and social of the human person for everything related to the genital tract, its functions and functioning and not just the absence of disease or infirmity [1]. According to the United Nations Population Fund (UNFPA), reproductive health means that people are able to have a satisfying and unsafe sex life and that they have both the means to procreate and the freedom to decide whether, when and how often they do so [2]. According to the WHO, adolescence and youth range from 10 to 24 years of age [3]. During this phase of life, many changes occur in adolescents who are transitioning to adulthood. In 1994, at the International Conference on Population and Development, it was reported that 1.3 billion women worldwide and of childbearing age had more than 1.2 billion pregnancies which in more than 25% of cases were unwanted. These unwanted pregnancies resulted in the deaths of nearly 700,000 women, the majority of whom were complicated by complications of unsafe abortions [4].

Mali, for its part, has doubled its population by less than 40 years, from 4,100,000 in 1960 to 9,800,000 in 1998 [5]. Women are characterized by very high fertility at a young age (188 to 15 - 19 years) and which increases rapidly to reach its maximum at 25 - 29 years (292 euros), before declining steadily with age. The total fertility rate thus amounts to 6.6 children per woman [6]. However, Mali is one of the countries with one of the lowest contraceptive prevalence, despite efforts in reproductive health. The purpose of this work is to assess students' knowledge, attitudes and practices about contraception; and, above all, to identify barriers to the use of contraception in schools in Ségou.

Objectives

To describe aspects of students, knowledge of sexuality and contraception and their sexual behaviour in schools in Ségou, Mali.

2. Materials and Methods

This was a one-pass cross-sectional survey with reasoned choice at the first level and random choice at the second level over a 3-month period from January 2013 to March 2013. The study population was students from high schools and vocational schools in the city of Ségou. The sample size was calculated using the following formula: N-4.P.Q/I2 P—represents the prevalence of use of contraceptive methods by students in previous studies (5%). Q-1-P-0.95 I—the desired accuracy at 2% No. 4 (0.05 × 0.95)/475 (0.02)2. This minimum size is 475 students and for greater representation we have retained 1000 students. Inclusion criteria: Girls and boys aged 13 to 26 who attended high schools and vocational schools in the city of Ségou and agreed to participate in the study. Non-inclusion crite-
ria: Girls and boys from high schools and vocational schools who did not agree to participate in the study. Data collection: Data support was a questionnaire administered to the student at the time of the survey. The questionnaire consisted of three parts: Student Identification; knowledge of family planning, identification of risky behaviours. The data collection technique was a direct interview between the student and the investigator. The data were collected from an individual questionnaire developed for this purpose. Data processing and analysis: Data entry and analysis were done on Microsoft Word and on co info (version 2000).

3. Results

3.1. Socio-Demographic Characteristics

The majority of the students involved in our study reside in the commune of Ségou, 90.4%. The average age of our students was 18. The female sex was the most represented in our study with 59.7%. High school students were represented by 75.9% of the population surveyed compared to 24.1% students from vocational schools. In our study, among 10.9% of the married 57.8% were female. Table 1 and Table 2 show us the epidemiological characteristics of schoolchildren.

| Age in Year       | Staff | Frequency (%) |
|-------------------|-------|---------------|
| 13 - 15 years     | 75    | 7.5           |
| 16 - 20 years     | 795   | 79.5          |
| 21 - 26 years old | 130   | 13.0          |

| Sex               |       |               |
|-------------------|-------|---------------|
| Female            | 597   | 59.7          |
| Male              | 403   | 40.3          |

| Marital status    |       |               |
|-------------------|-------|---------------|
| Single            | 891   | 89.00         |
| Bride             | 109   | 10.9          |

| Residence         |       |               |
|-------------------|-------|---------------|
| City of Ségou     | 904   | 90.4          |
| Out of the city of Ségou | 96   | 9.6           |

Table 1. Epidemiological characteristics of schoolchildren in the urban commune of Ségou in Mali in 2013.
3.2. Sexual Behaviour

The majority of girls had their first period at an age between 13 - 15 years of age or 68.3%. 60.3% of students had had casual sex and in 70.9% had an irregular sexual relationship. In our study, 47.9% of schoolchildren had changed sexual partners. In our series, the time between menarche and first sexual intercourse was on average 3 - 4 years for 33.9% of girls. It was less than 1 year for 6.9% of girls. Of the 69.2% of schoolchildren who were aware of the fertility period only 10.8% knew the possibility of pregnancy from the first sexual encounter. Table 3 and Table 4 show the sexual behaviour of schoolchildren.

Table 2. Epidemiological characteristics of schoolchildren in the urban commune of Ségou in Mali in 2013.

| Busy class       | Staff | Frequency (%) |
|------------------|-------|---------------|
| High school      |       |               |
| 10th             | 230   | 23.0          |
| 11th             | 284   | 28.4          |
| 12th             | 245   | 24.5          |
| Professional school |     |               |
| 1st year         | 77    | 7.7           |
| 2nd year         | 60    | 6.0           |
| 3rd year         | 73    | 7.3           |
| 4th year         | 31    | 3.1           |

Table 3. Sexual behaviour of schoolchildren in the urban municipality of Ségou, Mali in 2013.

| First sexual intercourse | Staff | Frequency (%) |
|--------------------------|-------|---------------|
| Yes                      | 952   | 95.2          |
| Not                      | 48    | 4.8           |

| Age first sexual intercourse | Staff | Frequency (%) |
|------------------------------|-------|---------------|
| 10 - 13 years                | 24    | 2.5           |
| 14 - 17 years                | 362   | 38.0          |
| 18 - 21 years                | 309   | 32.5          |
| 22 - 26 years                | 09    | 0.9           |
| Unknown                      | 248   | 26.1          |

| Programmed character        |       |               |
|------------------------------|-------|---------------|
| Not Programmed              | 574   | 60.3          |
| Programmed                  | 378   | 39.7          |
Table 4. The sexual behaviour of students (continued) by schoolchildren in the urban commune of Séguo in Mali in 2013.

| Regularity of reports | Staff | Frequency (%) |
|-----------------------|-------|---------------|
| Irregular             | 675   | 70.9          |
| Regular               | 277   | 29.1          |

| Changing sexual partners |       |               |
|--------------------------|-------|---------------|
| No change                | 614   | 61.4          |
| Once                     | 185   | 18.5          |
| Twice                    | 83    | 8.3           |
| Three Times and More     | 118   | 11.8          |

3.3. Risky Sexual Behaviour

More than half of our sexually active students, 72.6%, had a sexual partner and 37.4% had more than 2 sexual partners. Table 5 represents data on school-risk sexual behaviour.

3.4. Sources of Information

The main sources of information are the media (72.1%) respectively followed by teachers (12.9%) and friends (09.7%). Table 6 shows the source of information for schoolchildren.

3.5. Practical Knowledge and Attitudes

The majority of respondents, 93% say they have heard of family planning (PF). Among the most well-known contraceptive methods, condoms rank first with 72.6% of students, followed by injectables with 72.0% regardless of gender and age. The majority of students (70.6%) in our study had not yet used a contraceptive method at first sexual intercourse. Of those surveyed who used a contraceptive method, 72.9% had used condoms. Contraception is known in schools and practical attitudes are most often problematic in its use. Table 7 and Table 8 present schoolchildren’s knowledge of the existence of contraceptive methods and the use of methods at first sexual intercourse. Table 9 shows us the reasons for school use and non-use of contraceptives.

3.6. Sources of Supply

The main source of supply of contraceptive methods was the pharmacy represented by 49.5% of the workforce followed by the 16.2% FP centers, maternity wards and shops. Table 10 shows us the source of contraceptive supplies for schoolchildren.
Table 5. At-risk sexual behaviours of schoolchildren in the urban commune of Ségou in Mali in 2013.

| Knowledge of the fertility period | Staff | Frequency (%) |
|----------------------------------|-------|---------------|
| Not                              | 308   | 30.8          |
| Yes                              | 692   | 69.2          |

| Possibility of pregnancy from first sexual intercourse |
|------------------------------------------------------|
| Not                                                  | 892   | 89.2          |
| Yes                                                  | 108   | 10.8          |

| Number of sexual partners |
|---------------------------|
| 1 partner                 | 691   | 72.6          |
| 2 partners                | 160   | 16.8          |
| 3 partners and more       | 101   | 10.6          |

Table 6. A source of information for schoolchildren in the urban commune of Ségou in Mali in 2013.

| Source of information | Staff | Frequency (%) |
|-----------------------|-------|---------------|
| Friends               | 90    | 9.7           |
| Media                 | 671   | 72.1          |
| Teachers              | 120   | 12.9          |
| Parents               | 49    | 5.3           |

Table 7. Knowledge of the existence of school contraceptive methods in the urban commune of Ségou in Mali in 2013.

| Contraceptive methods | Knowledge | Yes | Not |
|-----------------------|-----------|-----|-----|
| Methods/contraceptives| Staff     | Percentage | Staff | Percentage |
| Periodic abstinence   | 665       | 66.5      | 335   | 33.5       |
| Female Preservative   | 695       | 69.5      | 305   | 30.5       |
| Male Preservative     | 726       | 72.6      | 274   | 27.4       |
| Spermicide ovule      | 383       | 38.3      | 617   | 61.7       |
| Vaginal diaphragm     | 415       | 41.5      | 585   | 58.5       |
| Implant               | 367       | 36.7      | 633   | 63.3       |
| Pill                  | 658       | 65.8      | 342   | 34.2       |
| Emergency Contraception| 313     | 31.3      | 687   | 68.7       |
| IUD/STERILE           | 318       | 31.8      | 682   | 68.2       |
| Female sterilization  | 594       | 59.4      | 401   | 40.1       |
| Male sterilization    | 588       | 58.8      | 492   | 49.2       |
| Necklace              | 607       | 60.7      | 393   | 39.3       |
Table 8. Contraceptive method used at first sexual intercourse by schoolchildren in the urban commune of Ségou in Mali in 2013.

| Types of contraceptive methods at first sexual intercourse | Staff | Frequency (%) |
|----------------------------------------------------------|-------|---------------|
| Periodic Abstinence                                      | 7     | 2.5           |
| Necklace                                                | 2     | 0.7           |
| Implant                                                 | 7     | 2.5           |
| Injection                                                | 30    | 10.7          |
| Ovule Spermicide                                        | 1     | 0.3           |
| Pill                                                    | 24    | 8.6           |
| Female Preservative                                     | 5     | 1.8           |
| Male Preservative                                       | 204   | 72.9          |

Table 9. Reasons for contraceptive use and non-use by schoolchildren in the urban commune of Ségou in Mali in 2013.

| Reasons for use                          | Staff | Frequency (%) |
|------------------------------------------|-------|---------------|
| Imposed by partner                       | 34    | 12.1          |
| Pregnancy prevention                     | 216   | 77.1          |
| STI prevention                           | 30    | 10.7          |

| Reasons for not using                    |       |               |
|------------------------------------------|-------|---------------|
| Lack of willpower                        | 357   | 53.1          |
| Lack of information                      | 311   | 46.3          |
| Financial problems                       | 4     | 0.6           |

Table 10. Source of school supplies for contraceptives in the urban commune of Ségou in Mali in 2013.

| Place of sourcing Contraceptives          | Staff | Frequency (%) |
|------------------------------------------|-------|---------------|
| Pharmacy/Earth                            | 14    | 1.5           |
| Friends                                  | 101   | 10.7          |
| Neighbourhood shop                       | 104   | 11.2          |
| PF Center                                | 100   | 10.6          |
| Maternity                                | 151   | 16.2          |
| Pharmacy                                 | 460   | 49.5          |

| Time between menarche-1st sexual report   |       |               |
|------------------------------------------|-------|---------------|
| 1 year                                   | 40    | 6.9           |
| 1 - 2 years                              | 134   | 23.1          |
| 3 - 4 years                              | 196   | 33.9          |
| Sup 5 years old                          | 74    | 12.8          |
| Unknown                                  | 135   | 23.3          |
4. Discussion

4.1. Socio-Demographic Characteristics

4.1.1. Socio-Demographic Characteristics

In the literature, the average ages found by the authors are superimposed. In Mali, in Sikasso MAIGA O. L. [7] reports an average age of 17.25 years, SANGARE A. K. [8] in Bamako also reports an average age of 17.5 years. The average age of our students was 18 in our series. The majority of the students involved in our study resided in the city of Ségou, 90.4%. The female sex was the most represented in our study with 59.7% despite the low overall enrolment rate of girls. High school students were represented with 75.9% of the population surveyed compared to 24.1% students from vocational schools. The organization of African societies with its cultures and customs makes us observe that early marriage is still relevant through our rate of married girls of 10.9%, generally hindering the academic career of its daughters.

4.1.2. Risky Sexual Behaviour

According to the literature, several authors give different ages compared to first sexual intercourse. In the UNAZIGO et al. [9] study 40% were sexually active. Among sexually active students in the sample (38%) had had their first sexual intercourse between the age of 14 and 17. In network 2000 [10], the authors indicate that in Chile studies have found that 1/3 of adolescents had their first sexual intercourse before the age of 15. KAMTCHOUING et al. [11] found that 56% of their sample had their first sexual intercourse before the age of 15. It was between 15 and 17 years old for SIDIBE et al. [12]. In Zimbabwe, the age at first sexual intercourse was 9 years [13], in Burkina Faso it is around the age of 15 [14]. In Niger, it was 12 years old [14]. In Senegal, 27% of adolescents reported having had their first sexual intercourse before the age of 15 in 1992, according to a study by the United Nations Development Fund (UNFPA) [14]. In our series, he was between 14 and 17 years old. Of the sample, 95.2% of students had had their first sexual intercourse and 40.5% before 17 years.

According to the WHO, anyone who has had a single sexual partner would be considered a low risk of being infected by sexually transmitted infections and the behaviour is only at high risk if the person has had more than two sexual partners. The risk of being contaminated in schools is high by the results reported by the literature. Multiple sexual partners are vectors of HIV/AIDS transmission and a factor promoting cervical cancer (human papilloma virus). This risk of contamination by sexually transmitted infectious diseases is very high in the context of unprotected casual sex, change of sexual partner, multiple sexual partners, especially since this risk is ignored by the majority of these students. 60.3% of students in our study had had casual sex and 47.9% of schoolchildren had changed sexual partners. In addition to these risks, there is also the risk of early pregnancy, clandestine induced abortions, dropping out of school. Fortunately, 69.2% of schoolchildren in our series say they have heard about the fertil-
ity period and 10.8% of schoolchildren say they have heard about the possibility of pregnancy from the first sexual intercourse through awareness campaigns around family planning and fertility. Thus among our sexually active students 72.6% had a sexual partner considered low risk behaviour and 10.6% had more than 2 partners considered high risk behaviour. Authors like SACKO-D [15] and CISSE A [16] were found 11.45% and 9.17% of sexually active students respectively to be at low risk. Similarly, SACKO-D [15], CISSE A. [16] and SANGARE A. K. [8] found 73.12% respectively; 60% and 67% of sexually active students had high-risk behaviour. Our high risk rate of 10.6% is superimposed on that of BERTHE B. B. [17] who found 8% high-risk behaviour.

4.2. Sources of Information

The main source of information was the media, with a rate of 72.1% followed by teachers or 12.9% and friends or 09.7%. As with other studies including SIDIBE et al. [12], SANGARE A. K. [8], and BERTHE B. [17]), the media have been the main source of information for adolescents. SIDIBE et al. [12] found 96.3% for the media, 72.4% for friends and 19.6% for parents. FayE [18] had instead found the following order: the media, the school, the counselling centre for teenagers. We think like BERTHE B. [17] that contraception, which is a subject related to sexuality, is considered taboo in our society. They concluded that the family is a rare source of family planning information.

4.3. Practical Knowledge and Attitudes

The majority of respondents, 93% say they have heard of family planning (PF). This result is confirmed by other studies such as: BOMIA M. A. D. [19], conducted in the district of Bamako in school that found 93.8%. And a school-based study conducted in Bamako by CAMARA M. [20] found that 73.10% of schoolchildren had heard of PF. Among the most well-known contraceptive methods, condoms rank first with 72.6% of students, followed by injectables with 72.0% regardless of gender and age. SIDIBE et al. [12] found 96.9% and 91.6% for condoms and pills respectively. Other authors found comparable results, as well as SACKO-D [15]; and MAIGA-K [21] in their studies found in Mali, the same results with the most well-known methods: pills and condoms. In its study, SANGARE A. K. [8] had 31% of its respondents who claimed to have used a contraceptive method, while 42.6% of students said they had used condoms. The majority of students (70.6%) in our study had not yet used a contraceptive method at first sexual intercourse. Of those surveyed who had used a contraceptive method, 72.9% had used condoms.

Elsewhere BOMIA-M [19] found that 21% of his sample had used a condom at the first report. A study carried out in 6 schools (secondary level) in Côte d’Ivoire [22] found that condoms were the most used by adolescents with 38.06%. Regarding the reasons for the use of a contraceptive method at first sexual intercourse respectively 77.1% and 10.7% of respondents thought it was to
avoid pregnancy and STIs. Similar results are found by SANGARE A. K. [8] and BERTHE B. [17]. Lack of willpower and information are the most cited causes of non-use of contraception with 51.3%, 46.3% respectively. As evidenced by SANGARE A. K. [8], the lack of information or a lack or malfunction of youth-friendly FP services attests to the low use of contraceptive methods.

4.4. Source of Supply

Various sources of contraceptive supply have been reported. Among them the pharmacy comes first with 49.5% followed by family planning centers 16.2% and 16.2% for shops as well. BERTHE B. B. [17] found 89.6% for pharmacy and 18.8% for health centre.

5. Conclusion

The referral of young people to approved health facilities for contraception could prevent them from risky sexual behaviours.

Authors’ Contributions

All the authors participated in the writing of the manuscript. They all approve the final version of the manuscript.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

[1] Pro Fam/USAID/PSI MALI (2007) Contraception Technology/Clinical PF. Reference Manual. January.
[2] Robert A. Hatcher. Contraceptive Technology, Web. http://www.managingcontraception.com
[3] Oms, G. (1994) Not/Dsf/Oms. Pregnancy and Abortion during Adolescence: Report of a WHO Expert Meeting. Technical Report Series, No. 583, 1975, 10.
[4] Daulaire, N., et al. (2002) Promises to Keep. The Toll of United Pregnancies on Women Live in the Developing World. Global Health Council, Washington DC.
[5] Agi, Sharing Responsibility (1999) Women, Society and Abortion Worldwide. Alan Guttmacher, Institute, New York, 51.
[6] Reynolds, H.W., Wong, E.L. and Tucker, H. (2006) Teenagers Use of Maternal and Child Health Services in Developing Countries. International Family Planning Perspectives.
[7] Maiga, O.L. (2001) Knowledge, Attitude and Sexual Behaviour in School: Bougouni Secondary Normal School and Mon Lord de Mont Clos High School in Sikasso. Thesis Medicine, FMPOS, Bamako, No. 79, 55p-annexs.
[8] Sangare, A.K. (2003) Knowledge, Attitudes and Practices of Schoolchildren at Three High Schools in Bamako Regarding Family Planning and STIs/AIDS. Thesis Medicine, Bamako, No. 6, 162 p.
[9] Amazigo, U., Silva, N., Kaufman, J. and Obikeze, D. (1997) Sexual Activity and
Knowledge and Practice of Contraception among Nigerian High School Students. International Perspectives on Family Planning, Special, 15-20.

[10] Network Family Health International (1994) The Parents of Tomorrow. Flight 9 No. 4, October 1994, 8-15.

[11] Kamtchouing, P., Takougang, I., Ngoh, N. and Yakam, I. (1997) The Sexuality of Adolescents in Schools in Yaounde, Cameroon. Contraception, Fertilité, Sexualité, 25, 798-801.

[12] Sidibe, T. (2006) Knowledge and Practices of Students at a High School in Bamako Regarding Contraception and Prevention of STIs/AIDS. Medical Mali, N1, 39-42.

[13] Onusida (2009) Update on the AIDS Epidemic. 52 p.

[14] Cerpod (1996) Regional Study on Adolescent Reproductive Health in the Sahel “Focus Group” and One-on-One Interview in Burkina Faso, Mali and Niger. Research Report; Number One.

[15] Sacko, D. (2002) LBAD Adolescent Knowledge, Attitudes and Practices on Family Planning, STDs and AIDS. Thesis Med. Bko. No. 62.

[16] Cisse, A. (1993) Knowledge and Sexual Behaviour of 15-29 Year Olds on STDs-AIDS in Bamako. Memo. Med. Quebec. 1993. No. 117.

[17] Berthe, B.B. (2000) Knowledge, Attitude, Practice of Adolescents at Askia Mohamed High School in Family Planning, Sexually Transmitted Diseases and AIDS. Thesis Med., No. 47 Bamako, Mali.

[18] Faye, M. (2005) Knowledge, Attitudes and Practices Regarding Adolescent Reproductive Health at the Anonymous and Free CDVAA Screening Centre in Pikine-Guédiawaye. Master’s Thesis, Cheick Anta Diop University, Dakar, 73 p.

[19] Bomia, M.A.D. (2004) Knowledge, Attitude and Practice on Reproductive Health in Schools (2nd Basic and High School) in Bamako from March to June 2004. Medicine Thesis, No. 17, Bamako, Mali.

[20] Camara, M. (1992) Teenage Contraception. Med. Bamako Thesis.

[21] Maiga, K. (1994) Light on Sex Life. Edition. Jamana Edition. Bko No. 6686.

[22] Guie, P., Tegnan, J., Amoumatacky, A., N’guessan, E., Osondu, J.N., Anongba, S. and Toure Coulibaly, K. (2001) Contraception in Schools Based on a Survey of 3013 Students in 6 Schools in Côte D’Ivoire.