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DEDICATION

I dedicate this work to my parents **Mr. SAKE MALOKA** and **Mrs. Kwedi SAKE Agnes.**

Thank you for your unceasing sacrifices to see me become the best version of myself.

ACKNOWLEDGMENT

Firstly, I would like to thank GOD ALMIGHTY for His continuous love and blessings in my life.

I am immensely grateful to:

- My supervisor, **Pr. KOKI NDOMBO Paul**, you are an admirable professor and researcher, a constant source of inspiration. It was an honor and privilege for me to share your time and enriching experience. Thank you for your availability and commitment despite your very tight schedule.
- My co-supervisors, **Pr. NSEME ETOUCKEY Eric** and **Dr. MEGUIEZE Claude Audrey**, for accepting to co-supervise this work and providing the platform to carry out this research. Your contribution to the success of this work is inestimable. You were always available and patiently gave me correction and contributions going a long way to be of help in every manner. Words cannot express my heartfelt gratitude.
- **The President and honorable members of the jury** for accepting to read through my work and for evaluating it. Thank you for your comments needed to improve this piece of work.
- **The Dean and entire staff of the Faculty of Medicine and Biomedical Sciences**, University of Yaoundé I, for the knowledge and virtues transmitted to me throughout my training.
- Special thanks to all **the administrative staff** of the various schools in which the work was carried.
- **To the students**, I express my sincere gratitude for the confidence you had in me to carry out this study till the end. Your contribution was indispensable to the success of this work.
- My parents, **Mr. SAKE MALOKA** and **Mrs. Kwedi SAKE Agnès**, for your steadfast love, overwhelming care and limitless support to me throughout medical school and life.
- **My siblings**, SAKE MALOKA, Sissako SAKE Vanessa, Kwedi SAKE Agnès, Maloka SAKE Berthe, Mrs. SAKE Bon Enfant epse BIKOKA, Mony SAKE Rosine, Ngangue MALOKA Jacques, Ekoule MALOKA Valerie and Chave SAKE Venceslas for the emotional, moral and financial support.

- **My mentors, spiritual parents and pastors,** Dr. Mr. Loni Ekali Gabriel and Dr. Mrs. Solange Ekali for their support, encouragement, care and love.
- **My seniors**, Dr. Eboutou Asse Ivan, Dr. Elong Jules, Dr. Ngong Agrippa F., Dr. Gwan Emmanuel, Dr. Atabe Neri, Dr: Ashu George, Dr. Morfaw Bebongnkeng, Dr. Sayap Elysée, Dr. Nana Kevin, Dr. Nzie Nzindo Simon Prince and Dr. Ebah Beckley for patiently instructing me and correcting me.
- **My teammates** Nlend Diane, Ewane Lynn, Tsimi Michelle Sandra, Ndangue rose.
- **My sisters and friends**, Thom Claude, Ayeni Doris, Leyuga Senka'a, Fondzewong Larissa, Meniemoh Ranibel and Awa Clavice your words of encouragement, contributions and precious advice fueled my motivation throughout this work.
- **My beloved juniors** Azemafack Babel, Lonla Darrel and Menda Noamie for accepting to go down to the schools to help me in the recruitment process.
- **My beloved sisters from CHAYIL family** for their prayers and care.
- The entire **team of the Ekalis House Assembly** for their prayers, love and support.
- The **Christian Healthcare Fellowship and Bible Club** for building me into what I am today by God's grace.

Time will fail me to name all of you. I sincerely thank you for your respective contributions in my training and the realization of this work.

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259	ABA'A Marthe Dereine	L	Drug Analysis
260	FOUMANE MANIEPI NGOUOPIHO Jacqueline Saurelle	L	Pharmacology
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Keywords:

HD = Head of Department

P = Professor

AP = Associate Professor

SL = Senior Lecturer

L = Lecturer

PHYSICIAN'S OATH

Declaration of Geneva adopted by the Geneva Assembly of the World Medical Association in Geneva, Switzerland, September 1948 and amended by the 22nd World-Medical Assembly, Sydney, Australia (August 1968). On admission to the medical profession:

I will solemnly pledge myself to consecrate my life to the service of humanity

I will give my teachers the respect and gratitude which is their due

I will practice my profession with conscience and dignity

The health of my patients will be my first consideration

I will respect secrets confided in me, even after the patient has died

I will maintain by all the means in my power the honor and noble traditions of the medical profession

My colleagues will be my brothers

I will not permit considerations of religion, nationality, race, party politics

or social standing to intervene between my duty and my patient

I will maintain the utmost respect for human life from the time of conception, even under threat I will not use my medical knowledge contrary to the laws of humanity

I make these promises solemnly, freely and upon my honor.

ABSTRACT

Introduction: Initiation of early sexual activity in adolescence is associated with numerous adverse consequences. This may affect the sexual and reproductive health of the young population. To avoid the unwanted consequences of early sexual initiation we need to understand the factors that influence adolescent early sexual decision-making. Therefore, this study aimed to assess the determinants of early sexual initiation among teenage students in Yaoundé.

Methodology: We carried out a cross-sectional study in nine secondary schools in Yaoundé from November 2023 to May 2024 (7 months). Ethical and administrative authorization was obtained from the faculty of medicine and biomedical sciences and the Mfoundi regional delegation of secondary school respectively. We included in the study, adolescents aged 10-19 years who were willing to participate in this study. Data were collected using a structured self-reported questionnaire and analyzed using Statistical Package for Social Sciences. Binary and multivariate logistic regression models were used to determine factors associated with early sexual activity ($p < 0.05$).

Results: We consecutively enrolled 908 students, 777 consented and completed the questionnaire. Among the study participants, 61.9% were females giving a sex ratio of 1:1.6. The median age at sexual initiation was 15.46 ± 1.47 years. The prevalence of early sexual intercourse was 28.12%. Most participants had their first sexual experience during the holiday period (51.1%). The most frequent name for a sexual partner was described as boy/girlfriend (75.9%). The act was consensual in 99.6%, preceded by drug use (10.5%), and unprotected in 20.5%. On multivariate analysis, the main factors associated with early sexual initiation were the male gender (OR=2.15; p<0.001), being transgender (OR=2.96, p=0.002), sexually active group of friends (OR=3.97; p<0.001), night club attendance (OR=4.18; p<0.001), and public school (0R=2.37; p<0.001).

Conclusion: There exist factors associated with early sexual initiation among adolescents in secondary schools in Yaoundé. Interventions must be carried out at an individual, family, and community level to address this problem.

Keywords : Adolescents, Associated factors, Sexual initiation, Yaoundé.

RESUMÉ

Introduction : L'initiation à une activité sexuelle précoce à l'adolescence est associée à de nombreuses conséquences négatives. Cela peut affecter la santé sexuelle et reproductive de la jeune population. Afin d'éviter les conséquences indésirables de l'initiation sexuelle précoce, il est nécessaire de connaitre les facteurs qui influencent la prise de décision des adolescents en matière de sexualité précoce. Par conséquent, cette étude a visé à évaluer les déterminants de l'initiation sexuelle précoce chez les adolescents scolarisés à Yaoundé.

Méthodologie : Nous avons réalisé une analyse transversale dans neuf établissements secondaires de Yaoundé de Novembre 2023 à Mai 2024 (soit une durée de 7 mois). Les autorisations éthiques et administratives ont été obtenues de la faculté de médecine et des sciences biomédicales de l'Université de Yaoundé I et la délégation départementale de l'éducation secondaire du Mfoundi. Nous avons inclus dans l'étude des adolescents de 10 à 19 ans qui étaient volontaire. Les données ont été collectées à l'aide d'un questionnaire structuré et analysées à l'aide du logiciel Statistical Package for Social Sciences (SPSS). Des modèles de régression logistique binaires et multivariés ont été utilisés pour déterminer les facteurs associés à l'initiation sexuelle précoce ($p < 0.05$).

Résultats : Nous avons consécutivement recruté 908 adolescents, 777 ont consenti à remplir le questionnaire. Parmi la population étudiée, 61,9% étaient des filles, soit une sex-ratio de 1,6. L'âge médian à l'initiation sexuelle était de 15,46 ± 1,47 ans. La prévalence des rapports sexuels précoces était de 28,1 %. La plupart des participants ont eu leur première expérience sexuelle pendant la période des vacances (51,1 %). Le partenaire sexuel le plus fréquent était un(e) petit(e) ami(e) (76,9 %). L'acte sexuel était consensuel dans 99,6 % des cas, précédé d'une consommation de drogue (10,5 %) et non protégé dans 20,5 % des cas. En analyse multivariée, les principaux facteurs associés à l'initiation sexuelle précoce étaient le sexe masculin (OR=2,15 ; p<0,001), le fait d'être transgenre (OR=2,96, p=0,002), un groupe d'amis sexuellement actifs (OR=3,97 ; p<0,001), la fréquentation de boîtes de nuit (OR=4,18 ; p<0,001) et l'école publique (0R=2,37 ; p<0,001).

Conclusion : Il existe de facteurs associés à l'initiation sexuelle précoce chez les adolescents des établissements secondaires de Yaoundé. Des interventions doivent être menées au niveau individuel, familial et communautaire pour faire face à ce problème.

Mots clés : Adolescents, Facteurs associés, Initiation sexuelle, Yaoundé.

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LIST OF ABBREVIATIONS

AIDS: Acquired Immune Deficiency Syndrome

CDC: Centre for Disease Control

CNS: Central Nervous System

ESI: Early Sexual Initiation

FMBS: Faculty of Medicine and Biomedical Science

FSH: Follicle Stimulating Hormone

GnRH: Gonadotropin-releasing hormone

HIV: Human Immunodeficiency Virus

LH: Luteinising Hormone

OR: Odds Ratio

SPSS: Statistical Package for Social Sciences

STD: Sexually Transmissible Diseases

SSAH: Survey of Secondary School Adolescent Health

TV: Tele-Vision

WHO: World Health Organisation

INTRODUCTION

Adolescence is the period of life that sums the transition from childhood to adulthood. According to the World Health Organisation (WHO), adolescence is defined as the period from 10 to 19 years old [1], while recognizing that age is only one characteristic to define this critical period of human development. Adolescents across the world face considerable emotional as well as social challenges regarding their reproductive health and sexuality [1]. Initiation of adolescents to sexual activity poses a major problem to both social and public health, especially in developing countries like Cameroon [2]. Early sexual initiation (ESI) has been associated with an increased risk of having multiple lifetime sexual partners and, unprotected sex leading to unwanted pregnancies, as well as sexually transmitted diseases (STDs) such as HIV/AIDS. According to WHO, early sexual activity is defined as having had sex before the age of 15 years [3]; meanwhile, the perceived right age for sexual debut varies from one individual to another and across societies [4].

Early adolescent sexual activity remains a global problem with a variety of factors linked to it. A study in the Netherlands revealed that adolescents exposed to electronic devices such as televisions, telephones, and computers were significantly more likely to engage in early sexual intercourse [3]. Gazendam *et al*. in Canada noted that among early-aged sexually active adolescents (12 or 13 years), the proportion of boys exceeded that of girls with factors such as family structure, physical activity, social media use, and perception of family affluence being correlated with early sexual activity for both males and females [5]. In West Africa, factors associated with early sexuality were found to be male gender, intake of alcohol, and having friends who engaged in sex [6]. Conversely, in East African studies, factors found to predict early sexuality were parents' educational level, sex, place of residence, and exposure to pornography amongst others [7].

In Cameroon, Meguieze *et al*. reported a mean age at sexual initiation around 15.5 years [8]. Similar results were obtained in another study with a mean age of 15.2 years and 33% STD exposure, with key determinants identified to be parents educational level (especially mothers' educational level), sex of the student, circumstances of first sexual intercourse (forced or voluntary), and information on sex health education [9].

CHAPTER I: STUDY FRAMEWORK

1.1 PROBLEM STATEMENT AND JUSTIFICATION

Early initiation of sexual activity may affect the sexual and reproductive health of adolescents. Despite the significance of early sexual activity among adolescents, there is a research gap on this topic in Yaoundé, Cameroon. Existing studies in Cameroon have primarily focused on the prevalence of sexual initiation and its associated factors. However, there is a need for more nuanced understanding of the determinants of early sexual activity among adolescents in Yaoundé, taking into account the local context and cultural nuances. This study therefore aims to investigate the determinants of early sexual activity among adolescents in Yaoundé.

This study will contribute to the existing body of knowledge on ESI among adolescents by providing understanding of this phenomenon in Yaoundé. Our findings will be useful for policymakers, healthcare providers, and educators seeking to develop targeted interventions to prevent ESI among adolescents.

1.2 RESEARCH QUESTION

What are the determinants of early sexual intercourse among adolescent students in Yaoundé?

1.3 RESEARCH HYPOTHESIS

Early sexual activity among adolescents in Yaoundé is a result of multiple factors.

1.4 RESEARCH OBJECTIVES

i. General objective

To assess the determinants of early sexual intercourse among adolescent students in Yaoundé.

ii. Specific objectives

1. To determine the age of sexual initiation.
2. To describe the characteristics of the first sexual encounter in adolescents.
3. To investigate the factors associated with early sexual activity among adolescents.

1.5 STUDY VARIABLES

According to our research objectives our variables were as follows:

- Concerning the age at sexual initiation, the analysed variable was: the age of the study participants at the moment of their first sexual encounter.
- Concerning the descriptive characteristics of the first sexual encounter, the analysed variables were: circumstance of the sexual encounter, pre-sex drug use, period of sexual encounter, reason and motivation for the sexual encounter, nature of the relationship with the first sexual partner, gender of first sexual partner.
- Concerning the factors associated with early sexual initiation, the analysed variables were: sex, sexual orientation and identity, religion, family type, parental level of education, school type, educational system type, weekly allowance, group of friends who are sexually active, use of pornography and practice of masturbation, notion of sex education at home, legal and illegal drugs use, nightclub attendance.

1.6 DEFINITION OF TERMS

- **Early sexual initiation:** sexual intercourse before age 15 according to WHO and before age 16 in Cameroon. However, we shall define it in our study as consenting or non-consenting sexual intercourse before age 15.
- **Late sexual initiation:** sexual intercourse at or after age 16.
- **Abstinence:** practice of refraining from all form of sexual activity (oral, vaginal or anal).
- **Primary abstinence:** absence of sexual experience since birth.
- **Secondary abstinence:** sexually experienced persons who henceforth decide to abstain from further sexual experience.
- **Sex**: The traits usually used to distinguish between males and females. Sex refers especially to the physical and biological traits that are physically evident at birth.
- **Sexual identity:** The pattern of emotional, romantic, and/or sexual attractions that people have towards others. There are many different sexual identities such as heterosexual (attraction to the opposite sex), homosexual (attraction to the same sex), bisexual (attraction to both sexes), and asexual (attraction to neither sex).
- **Cisgender:** Having a gender identity which matches the sex one was assigned at birth.
- **Transgender:** Having a gender identity which is different from one's assigned sex at birth.
- **Puberty:** A phase of development between childhood and complete functional maturation of the reproductive glands and external genitalia (adulthood).

- **Adolescence:** According to WHO, Adolescence is the stage of development between childhood and adulthood which includes ages 10 - 19 years.
- **Public school:** A school funded by the state or national government.
- **Private school:** A school funded wholly or partly by students´ tuition and administrated by a private body.
- **Denominational school:** A private school associated with a particular religious' denomination.
- **Non-denominational school:** A private school not associated with a particular religious' denomination.
- **Religiousness:** The measure of participation in institutional worship
- **Peers:** A social group made up of people who have similar interests, ages, background, or social status.
- **Media:** A diverse array of media technologies that reach a large audience via mass communication. This includes televisions, radios, the internet, and newspapers.
- **Single parenthood:** A parent who is the only guardian of an offspring.
- **Primary education:** The stage of schooling from kindergarten toclass six in the Anglophone system or from kindergarten and `Cours Moyen 2´ in the francophone system.
- **Secondary education:** the stage of schooling from form 1-5 in the Anglophone system or from `sixieme´ and `troisieme´ in the francophone system.
- **Higher education:** the stage of schooling from lower sixth to upper sixth in the Anglophone system or between `seconde´ and `terminale´ in the francophone system.
- **Tertiary education:** University education.
- **Beliefs:** mental acceptance of a claim as true

CHAPTER II: LITERATURE REVIEW

2.1 OVERVIEW

In this part of our work, we will outline a literature review adopting the following headlines.

- A general introduction on our topic
- Interest and epidemiology of adolescent sexuality
- A review and recall of scientific knowledge on:
    - Functional anatomy and physiology of adolescents
    - Adolescent development
    - Determinants of adolescent sexuality
- A review of publications findings on the topic under scrutiny

2.2 GENERAL INTRODUCTION

Adolescence, derived from the Latin word "*adolescere*" meaning "to grow up" is a critical developmental period. During adolescence, major biological as well as psychological developments take place. Development of sexuality is an important bio-psycho-social development, which takes an adult shape during this period. During adolescence, an individual's thought, perception as well as response gets coloured sexually. Puberty is an important landmark of sexuality development that occurs in the adolescence. The myriad of changes that occurs in adolescents puts them under enormous stress, which may have adverse physical, as well as psychological consequences. Understanding adolescent sexuality has important clinical, legal, social, cultural, as well as educational implications [10].

Few elements of the human experience combine physical, intellectual and emotional aspects of the human interactions as thoroughly as sexuality and all the feelings that goes along with it [11]. Helping adolescents put sexuality and their sexual identity into a healthy context is extremely important. Some adolescents struggle with these issues. Therefore, adolescents and parents should be encouraged to speak openly regarding their attitudes towards sex because it has been proven in some researches that parents' opinion remain an important determinant of adolescent behaviour in spite of the ubiquitous influences of social media and internet sources of information on sexuality. Social media may form the basis for most information and misinformation on sexuality obtained by adolescents [12].

2.3 INTEREST AND EPIDEMIOLOGY

The most common problems amongst adolescents relate to growth and development, academics, mental health disorders and the consequences of risky or illegal behaviour,

unwanted pregnancies, substance use and infectious diseases [1]. The psychological and physiological changes in adolescence contribute to such risk-taking behaviour. It is therefore important to study sexuality in adolescents.

There are 1.3 billion adolescents in the world today, making up 16% of the world's population. Up to 18 years old most adolescents are protected under the Convention on the Rights of the Child. Yet, their vulnerabilities and needs are distinctly different from those of children and therefore often remain unaddressed [13].

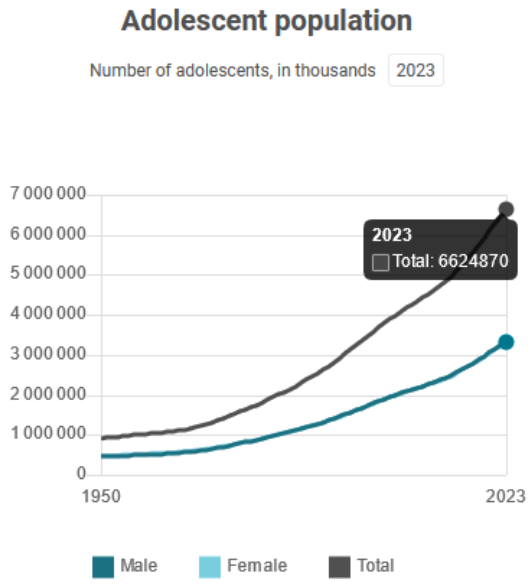


Figure 1. Adolescent population in Cameroon according to WHO

The National Survey of Secondary Students and Sexual Health collected data from Australian adolescents every five years starting in 1992 [14]. The results show that young people are starting sexual activity at a younger age than in previous generations. Most recently in 2021, 60.6% of secondary school students in years 10 to 12 (about aged 15 to 18 years) reported some sort of sexual activity; with about 52% reporting vaginal intercourse [14].

The Global School-based Health Survey from 50 countries in adolescents aged 12-15 years old estimated the prevalence of early sexual initiation at 18.4% in the Americas which was the highest, 5.3% in the South-east Asia region which was the lowest. Adolescents from the high-income and lower middle income countries had the highest (19.5%) and lowest (7.3%) prevalence respectively [4]. Adolescents in Vietnam had the lowest (1.2%) prevalence of early sexual initiation and adolescents in Samoa had the highest (33.2%) prevalence among the

surveyed countries [4]. In all 50 countries, girls had lower prevalence of early sexual initiation than boys [4].

A study in Ethiopia to determine the prevalence and factors associated with early sexual initiation among college students revealed that the mean age of sexual initiation was 17.6 years. The respondent's reason for having sex was falling in love. 62.2% used condoms for their first sexual intercourse and 45.6% had multiple partners. Finally, sex, exposition to pornographic materials at age < 18years and knowledge of STD were found to significantly be associated with early onset of sexual intercourse [15].

In Yaoundé-Cameroon, it was found out that 30.7% adolescents were sexually active, 41.1% had multiple sexual partners, mean age of coitarche was 15years old [16]. Another study obtained similar results in mean age of coitarche [8].

2.4 GENERAL INFORMATION ON ADOLESCENCE

A. FUNCTIONAL ANATOMY AND PHYSIOLOGY

Puberty and adolescence are developmental stages through which children progress during the second decade of life. During this phase, several physical, biochemical and emotional changes occur[17]. The most important changes are discussed below:

- **Endocrine changes:**

Puberty is initiated by pulsatile increases in gonadotrophin-releasing hormone (GnRH) by the hypothalamus, which in turn stimulates pulsatile release of luteinising hormone (LH) and follicle-stimulating hormone (FSH) by the pituitary. In males, the increased production of LH stimulates Leydig cells in the testes to produce testosterone, and FSH acts on Sertoli cells to stimulate sperm production. The rise in testosterone increases skeletal growth, promotes development of the male genital organs and stimulates growth of pubic, facial and axillary hair. In females, FSH and LH act on the ovary to promote follicle production, ovulation and menstruation. Other hormonal changes in all adolescents include a rise in adrenal androgens and a rise in growth hormone, which in turn stimulates production of insulin-like growth factors 1 and 2 (IGF-1 and IGF-2). Insulin production also rises by about 30% during puberty. These hormonal changes contribute to the biological, morphological and psychological changes seen during the teenage years. Adolescence (as opposed to puberty) comprises not only the physical changes of puberty, but also the wider emotional and psychological changes of progression into

early adulthood. The emotional and psychological changes are associated with physical maturation but also with sociocultural influences. The normal feelings and behavioural development of normal adolescence are complex but tend to follow fairly predictable patterns. The hormonal and physical stages of progression through puberty in males and females are summarised in figure 2 and 3.

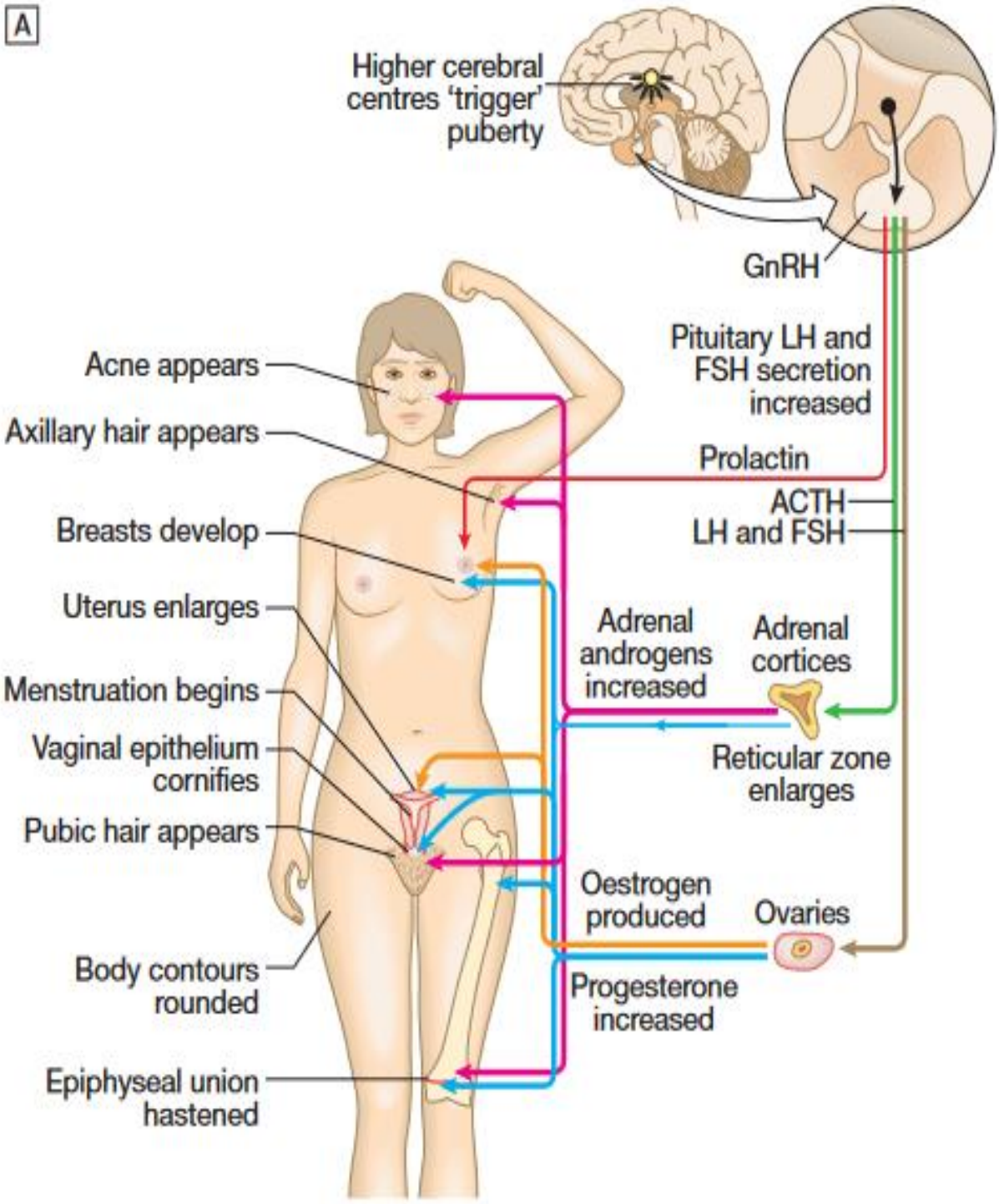


Figure 2. The hormonal and puberty stages in females

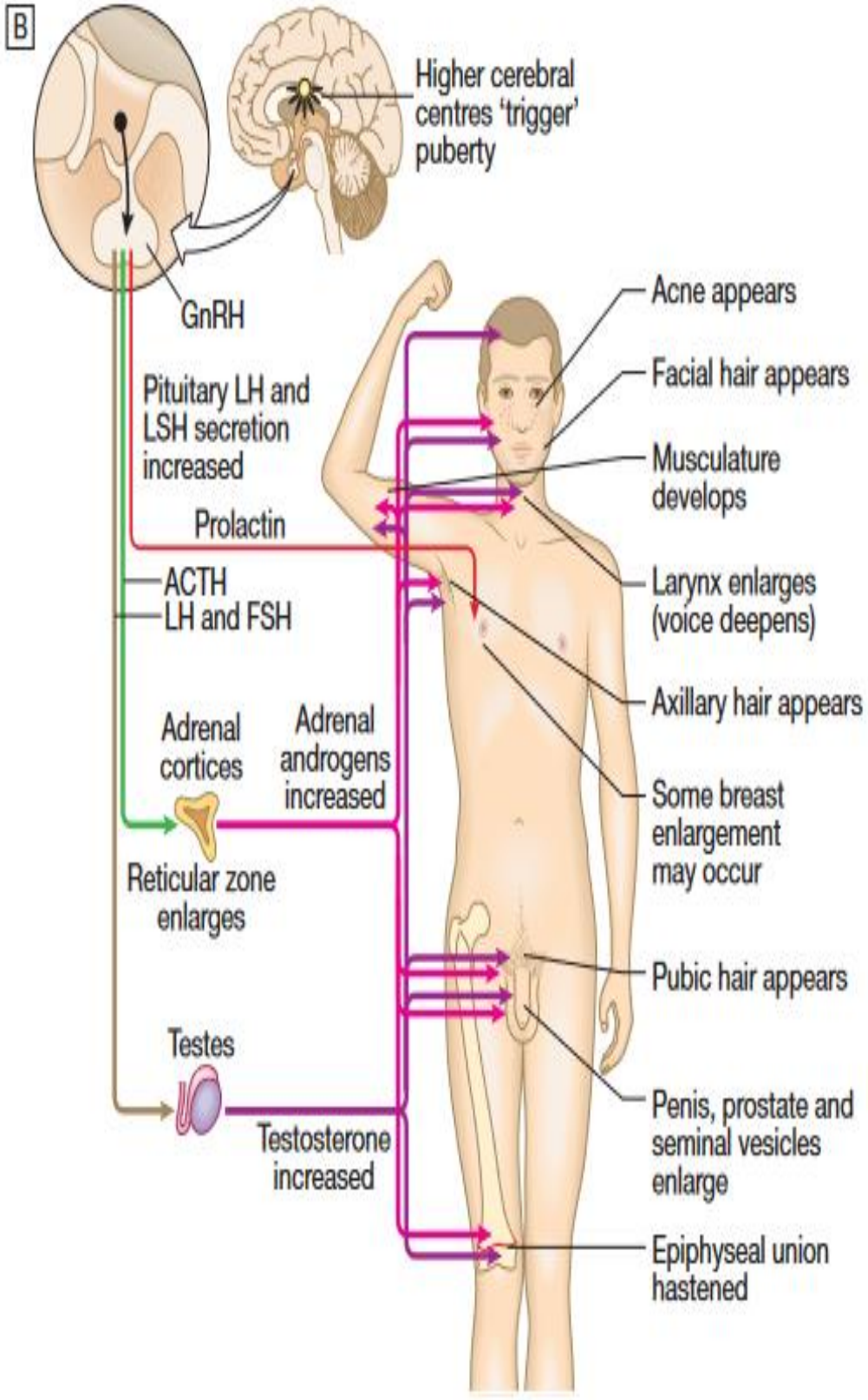


Figure 3. The hormonal and puberty stages in males

- **Physical changes:**

In girls, there is an increased rate of growth, followed soon after by the development of breasts and pubic hair. Menstruation typically starts after the rate of growth has peaked. In boys, puberty begins with testicular enlargement, followed soon after by a growth spurt and the development of pubic hair. In clinical practice, Tanner staging is used as a method of documenting progression of physical changes that occur during puberty (figure 4).

The average age at onset of puberty in the UK is about 11 years in girls and 12 years in boys but normal puberty has a very wide range of onset. Factors that are important in predicting age of onset of normal puberty include family history (age of onset is strongly predicted by the parents' pattern of onset) and body mass, with heavier children entering puberty at a younger age. The current trends towards improved nutritional status and increased obesity in particular are driving earlier onset of puberty. Delayed puberty is defined to have occurred when the age at onset is more than 2.5 standard deviations above the national average, which in the UK is about 13 years in girls and 14 years in boys. If puberty is delayed beyond this point, investigations may be needed to determine the underlying cause [17].

- **Cognitive and behavioural changes:**

As young people move from their early teenage years to later adolescence there is move away from the family towards personal independence. This is often characterised by change from a self-centred focus, associated with a sense of awkwardness and worries about being normal, towards increased self-confidence and an awareness of weaknesses in parents and others in authority. In late adolescence, young people reach a stage of self-reliance, increased emotional stability and improved ability to think ideas through. Finally, young adults begin to develop firm belief systems, autonomy and independence. With time, there is reduced conflict with parents and other figures in authority and full maturity develops.

In terms of cognition, there is a transition from being mostly interested in the present, in short-term outcomes and instant gratification, through to increased concern for the future and a greater focus on one's longer-term role in life. Sexuality and relationships clarify during adolescence, and individuals move from early awkwardness and uncertainty to a firmer sense of their sexual identity, and then development of more serious and longer-term relationships. In terms of morals and values, young people move from a period of risk-taking behaviour and experimentation through to understanding the potential consequences of such behaviour for their future health and well-being. Young adults develop a greater capacity for setting personal

goals and an increased focus on self-esteem. Finally, family, social and cultural traditions regain some of their previous importance, and by the time young people emerge from adolescence, they have usually developed insight and a greater focus on self-esteem and long-term well-being. It is the development of these more mature personality traits that are important for the more active role in health care that is needed to function well within an adult model of medicine. Some teenagers do vary slightly from these broad patterns but the feelings and behaviours described are, in general, considered normal for each stage of adolescence. Understanding these changes in emotional and psychological behaviour underpins the approaches that are needed to meet the challenges of managing long-term conditions in older teenagers and young adults.

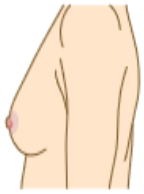
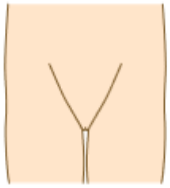
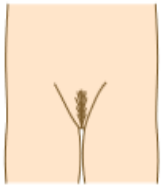
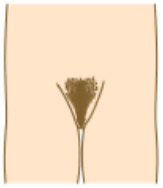
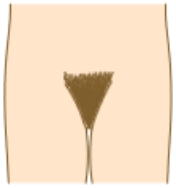
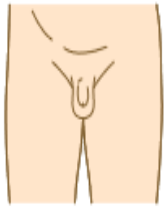
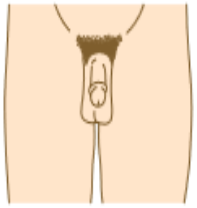
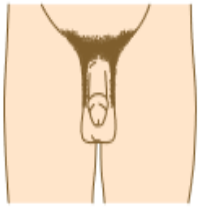
Tanner stage	I	II	III	IV	V
Female					
					
Breast	Pre-adolescent	Elevation of breast and papilla as a small mound	Further enlargement of breast and areola with no separation of contours	Projection of areola and papilla to form mound above breast	Mature stage. Projection of papilla with recession of areola to contour of breast
					
Pubic hair	None	Sparse, long and straight	Darker, coarse and curled hair	Darker, coarse and curled hair but covering smaller area than in adult. No spread to medial surface of thighs	Dark, coarse and curled hair extending to inner thighs
Male					
					
Genitalia	Pre-adolescent	Growth of testes and scrotum. Skin on scrotum reddens and becomes wrinkled	Growth of penis and further growth of testes and scrotum. Skin of scrotum becomes darker and more wrinkled	Further growth in length and width of penis, testes and scrotum	Penis, testes and scrotum of adult size
Pubic hair	None	Sparse, long and straight	Darker, coarse and curled hair	Darker, coarse and curled hair but covering smaller area than in adult	Dark, coarse and curled hair extending toward umbilicus

Figure 4. Tanner staging of puberty.

B. ADOLESCENT DEVELOPMENT

Growth and development are continuous processes, which bring a change in an individual, every moment. Development of sexuality starts as early as in intrauterine life following conception and continues through infancy, childhood, adolescence, adulthood till death [18]. During infancy, there is no awareness of gender. The child acknowledges its gender in early childhood as early as by 3 years [19]. Self-awareness about sexuality (gender role, gender identity) evolves during the childhood.

Adolescence is a phase of transition during which major developments of sexuality takes place. Puberty is reached during adolescence, which is a major landmark in the development of sexuality. The hypothalamo-pituitary-gonadal axis function is highly essential for the sexual development during puberty. Adolescence is divide into three stages: Early (10–14 years), middle (15–16 years), and late (17–19 years) [20]. Physical changes start in early adolescence, where they are very concerned about their body image.

- **Intellectual and behavioural development in adolescents:**

In early adolescence, children begin to develop the capacity for abstract, logical thought. This increased sophistication leads to an enhanced awareness of self and the ability to reflect on one's own being [21]. Because of the many noticeable physical changes of adolescence, this self-awareness often turns into self-consciousness, with an accompanying feeling of awkwardness. The adolescent also has a preoccupation with physical appearance and attractiveness and a heightened sensitivity to differences from peers [21].

As adolescents encounter schoolwork that is more complex, they begin to identify areas of interest as well as relative strengths and weaknesses. Adolescence is a period during which young people may begin to consider career options, although most do not have a clearly defined goal. Parents and clinicians must be aware of the adolescent's capabilities, help the adolescent formulate realistic expectations, and be prepared to identify impediments that need remediation [21]. Many adolescents begin to engage in risky behaviors, such as fast driving. Many adolescents begin to experiment sexually, and some may engage in risky sexual practices. Some adolescents may engage in illegal activities, such as theft and illicit drug use. Experts speculate that these behaviours occur in part because adolescents tend to overestimate their own abilities in preparation for leaving their home. Studies of the nervous system also have shown that the parts of the brain that suppress impulses are not fully mature until early adulthood [21].

Table I: Stages of adolescence

Stages of adolescence	Physical development	Cognitive development	Psychosocial development	Sexuality and relationships
Early adolescence (10-14 years)	Start of growth spurt and appearance of secondary sexual characteristics.	Growing intellectual interests, concrete thinking, limited capacity for abstract thinking, little interest in the future.	Preoccupation with body image and self-esteem. Mood swings. Struggles with rules and desires independence.	Increased interest in sexuality and sexual orientation. Growing peer identification and strong friendships.
Middle adolescence (15-16 years)	Physical growth continues for boys but slows down for girls.	Growing interest in the future. Enhanced moral reasoning. Enhanced capacity for abstract thinking and problem solving.	Exploration of identity and lifestyle. Experimentation with interest, hobbies and risks (eg cigarette smoking, drugs, sex). Increased drive to become independent and questioning of authority.	Strong orientation to peer group that can influence behaviour and preferences. Self-exploration of sexual interest and relationships.
Late adolescence or early adulthood (≥ 17 years)	Physical maturity (end of physical puberty changes).	Long-term planning and goal setting. Capacity for rational and abstract thoughts continue to develop.	Firmer sense of identity and independence.	Development of stable intimate relationships.

- **Emotional development in adolescents:**

During adolescence, the regions of the brain that control emotions develop and mature. This phase is characterized by seemingly spontaneous outbursts that can be challenging for parents and teachers who often receive the brunt. Adolescents gradually learn to suppress inappropriate thoughts and actions and replace them with goal-oriented behaviours [21].

The emotional aspect of growth is most trying, often taxing the patience of parents, teachers, and clinicians. Emotional lability is a direct result of neurologic development during this period, as the parts of the brain that control emotions mature. Frustration may also arise from growth in multiple domains. A major area of conflict arises from the adolescent's desire for more freedom, which clashes with the parents' strong instincts to protect their children from harm. Parents may need help in renegotiating their role and slowly allowing their adolescents more privileges as well as expecting them to accept greater responsibility for themselves and within the family [21]. Communication within even stable families can be difficult and is worsened when families are divided or parents have emotional problems of their own. Clinicians can be of great help by offering adolescents and parents sensible, practical, concrete, supportive help while facilitating communication within the family [21].

- **Social and psychological development of adolescents:**

The family is the center of social life for children. During adolescence, the peer group begins to replace the family as the child's primary social focus. Peer groups are often established because of distinctions in dress, appearance, attitudes, hobbies, interests, and other characteristics that may seem profound or trivial to outsiders. Initially, peer groups are usually same-sex but typically become mixed later in adolescence. These groups assume an importance to adolescents because they provide validation for the adolescent's tentative choices and support in stressful situations [21].

Adolescents who find themselves without a peer group may develop intense feelings of being different and alienated. Although these feelings usually do not have permanent effects, they may worsen the potential for dysfunctional or antisocial behaviour. At the other extreme, the peer group can assume too much importance, also resulting in antisocial behaviour [21].

- **Physical development in adolescents:**

A growth spurt in boys occurs sometime between ages of about 12 and 16, with the peak typically between ages 13 and 14; a gain of > 10 cm can be expected in the year of peak velocity. A growth spurt in girls occurs sometime between ages of about 9½ and 13½, with the peak typically between ages 11 and 12½; the gain may reach 9 cm in the year of peak velocity. The growth spurt is associated with the appearance of secondary sex characteristics in puberty [22]. All organ systems and the body as a whole undergo major growth during adolescence; breasts in girls and genitals and body hair in both sexes undergo the most obvious changes. Even when this process goes normally, substantial emotional adjustments are required. If the timing is atypical, particularly in a boy whose physical development is delayed or in a girl whose development occurs early, additional emotional stress is possible. Most children who grow slowly have a constitutional delay and catch up eventually [23].

- **Sexual maturation in adolescents:**

Sexual maturation generally proceeds in an established sequence in both sexes. The age at onset and rapidity of sexual development vary and are influenced by genetic and environmental factors. Sexual maturity begins earlier today than a century ago, probably because of improvements in nutrition, general health, and living conditions—e.g., the average age of menarche has decreased by about 3 years over the past 100 years [23].

In boys, sexual changes begin with enlargement of the scrotum and testes, followed by lengthening of the penis and enlargement of the seminal vesicles and prostate. Next, pubic hair appears. Axillary and facial hair appears about 2 years after pubic hair. The growth spurt usually begins a year after the testes start enlarging [24]. The median age for first ejaculation (between 12½ years and 14 years in the United States) is affected by psychologic, cultural, and biologic factors. First ejaculation takes place about 1 year after penis growth accelerates [23].

In most girls, breast budding is the first visible sign of sexual maturation, followed closely by the initiation of the growth spurt. Shortly thereafter, pubic and axillary hair appears. Menarche generally occurs about 2 years after onset of breast development and when growth in height slows after reaching its peak [25]. Menarche occurs within a wide range, with most girls in the United States starting their periods at 12 or 13 years [23].

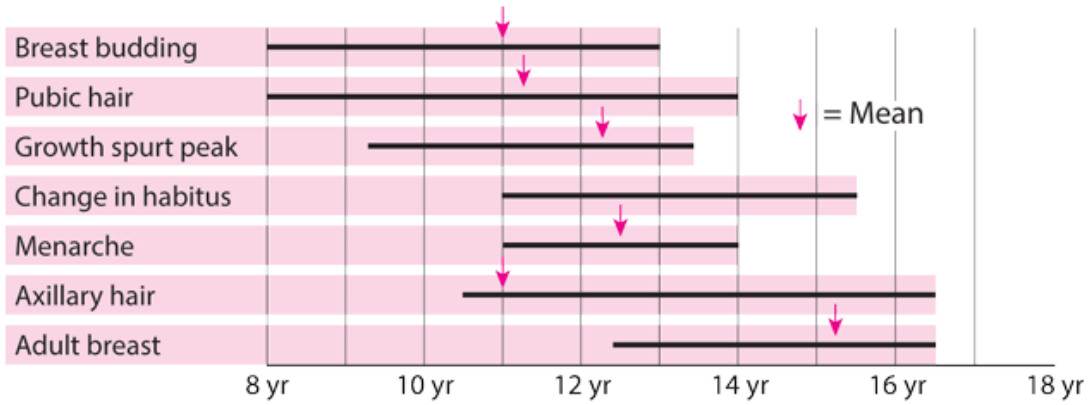


Figure 5. Development of female sexual characteristics

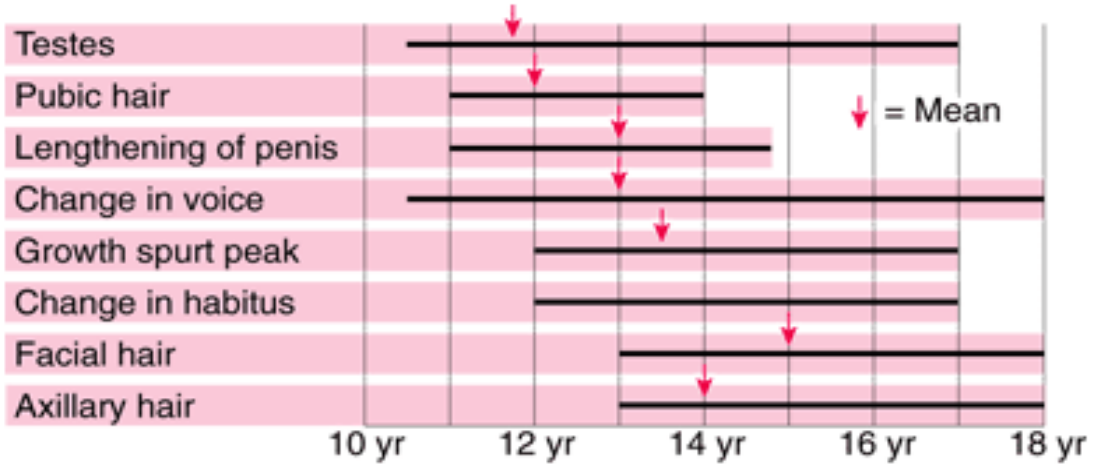


Figure 6. Development of male sexual characteristics

2.5 RISKY BEHAVIOURS OF ADOLESCENT SEXUALITY

The human brain is not fully developed until age twenty-five. Adolescents function primarily from the amygdala. The amygdala is the area of the brain that controls feelings and pleasure. Typically developed adults rely primarily on the prefrontal cortex of their brain when it comes to decision-making [26]. The pre-frontal cortex is the area of the brain that rules rational thought. This means that teenagers make decisions based on their *feelings*. The way a teenage brain works implies that engaging in thrill-seeking behaviours can be somewhat attributed to the massive emotional stimuli input with minimal regard for subsequent (rational) consequences [26].

The adolescent age period is often characterized as a health paradox because it is a time of extensive increases in physical and mental capabilities, yet overall mortality/morbidity rates increase significantly from childhood to adolescence, often due to preventable causes such as risky behaviours [27].

There are a number of risky behaviours that are commonly exhibited among teenagers. Some examples can include the following:

1. Sexual promiscuity (unprotected sex, multiple sexual partners, STD's. unwanted pregnancies, unsafe abortions etc.)
2. Fighting
3. Truancy
4. Dangerous driving
5. Use of illegal substances
6. Smoking
7. Partaking in illegal activities (i.e., trespassing, vandalism…etc.)

Researchers have identified a number of emotional and cognitive processes that develop during adolescence that are related to the behavioural changes observed during this time. These processes are part of an overarching construct of self-control. The development of these processes has been linked to the maturation of the prefrontal cortex (PFC) [28]. Adolescents' behaviour is more affected by emotional information. Adolescents are less able than children or adults to inhibit impulsive behaviours in response to emotional information, like happy faces and they engage in more risk-taking in the presence of peers in comparison to when they are alone [28].

2.6 DETERMINANTS OF ADOLESCENT SEXUALITY

Determinants of early sexual activity just like the determinants of health fall under the following categories of factors:

- Individual
- Socioeconomic
- Sociocultural
- Environmental

Within each category are various influences on an individual's health. The determinants influence all individuals and combine together to affect a person's health at large be it positively or negatively. The determinants of health are the fundamental knowledge that must be grasped in order to get a good understanding of the degree of control individuals can exert over their health knowing that adolescent sexuality affects their state of wellbeing.

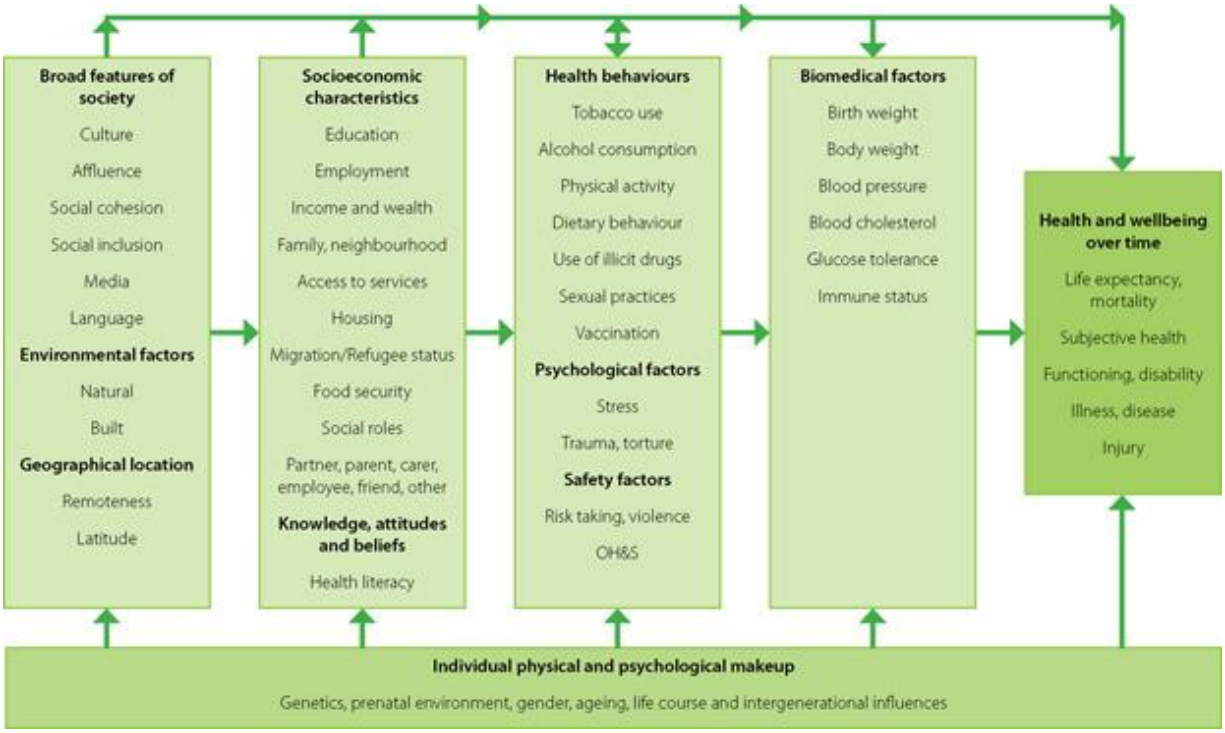


Figure 7. Determinants of health

Sexual promiscuity is a risky behaviour among adolescents with a number of determinants. Multiple factors affect whether (and when) youth engage in consensual sexual intercourse and other sexual activities. These factors can influence youth and their decisions long before an unintended pregnancy or other undesired outcome occurs. Factors influencing sexual risk

activity occur at multiple levels—from a person's environment to his or her interpersonal relationships and individual characteristics. Factors at the environmental, interpersonal, and individual levels influence decisions among sexually inexperienced youth related to sexual activity. The factors identified through research to be associated with outcomes are discussed below.

- Environmental factors—neighbourhood, media and policy:

  Neighbourhood characteristics, along with media and policy, influence ESI at the environmental level. As identified in the literature, living in an unsafe community or a high-poverty neighbourhood was associated with early sexual initiation. Exposure to sexually explicit media through the Internet, TV, and movies emerged as a risk factor for sexual initiation, increased sexual activity, and increased permissive attitudes about sex during adolescence. In particular, exposure to Internet pornography was associated with permissive sexual attitudes. Evidence also suggested that some sexual health education programs help delay sexual initiation.

- Interpersonal factors—parents and families, peers, partners and connection to community:

  Family, peers, and other individuals who have close relationships with youth can have potentially large influences on their behaviour. Relationships and social networks can provide support or leave youth feeling pressured or isolated. The behaviour and values of peers can affect youth's decision-making processes, including around intentions and behaviours related to sex. Romantic involvement and the characteristics, expectations, and intentions of partners were related to youth's sexual behaviours.

- Individual factors—biological, psychological, behavioural, cognitive characteristics along with behaviours, intentions and beliefs:

  Biological factors such as age, gender, and race emerged as influential on sexual initiation on their own. Psychological well-being and skills and cognitive ability can also influence youth engagement in sexual activity.

2.7 REVIEW OF RECENT PUBLICATIONS ON ADOLESCENT SEXUALITY

Many researches have been done across the world with the aim of studying adolescent sexuality. Here are some reviews of what has been done in the world, Africa and in Cameroon according to our research objectives.

A. In the world:

Table II. Summary of some published works in the world

Author and Title	Site and Year of study	Methodology	Results and Conclusions
Determinants of sexual intercourse initiation among incarcerated adolescents: a mixed-method study carried out by Nik and collaborators[29]	Malaysia, 2013	This was a sequential mixed-method research project that was conducted in two phases. Quantitative and qualitative methods were used in the first and second phases, respectively. Data was collected via a survey using self-reported questionnaires from 1,082 adolescents, and from in-depth interviews and the written essays of 29 participants. The participants were	Overall, 62.3% of the incarcerated adolescents had initiated sexual intercourse at least once. The mean age at first sexual intercourse for both genders was 14.0 years. Individual factors found to be associated with previous sexual intercourse were the female gender, previous alcohol use, previous illicit drug use, permissive attitude toward premarital sex and sexual abuse during childhood. Qualitative findings revealed that the reasons for initiation of sexual intercourse among these adolescents were partner influence, inability to

		recruited from 22 welfare institutions in peninsular Malaysia.	control sex drive, family issues, and the perception of sex as an expression of love.
***Adverse childhood experiences and health risk behaviours among adolescents and young adults: evidence from India by Maurya and collaborator*[30]**	India, 2023	A multi-stage systematic sampling design longitudinal in nature was adopted and conducted in 2 states in India with a self-administered questionnaire. The substantial sample size for this study were adolescents and young adults aged 13–23 years (boys- 4,221 and girls- 5,987).	The majority of the study participants had multiple ACEs. Boys who experienced more than three or more childhood adversity had two times higher odds (OR: 2.04; CI: 1.01–4.16) of the early sexual debut, while the same figure for girls was thirteen times (OR: 13.13; CI: 3.95–43.69) than their male counterparts. The findings show that nearly 30% of boys and 10% of girls had violent behaviour. Substance use prevalence was much higher among boys (34.11%) than girls (6.65%).
***Early sexual behaviour and Chlamydia trachomatis infection – a population based cross-sectional study on gender differences among adolescents in Norway by Gravningen and collaborators* [31]**	Norway, 2012	A population based cross-sectional study was conducted among all high school students in five towns in Finnmark county. Using a web-based	Girls reported earlier sexual debut, older partners, higher lifetime number of partners, and were poorer condom users. Prevalence of chlamydia infection was 5.7%. Girls were twice as likely to be infected as boys. In girls,

		questionnaire and real-time Chlamydia trachomatis PCR in first-void urine samples. Participation rate was 98% (1,618 of 1,664) among the eligible students, while overall participation rate was 85% (1,618 of 1,908). Crude and multivariable logistic regression models were applied with chlamydia test result as dependent variable.	higher maternal education, ≥2 sexual partners past 6 months, and partner meeting venue at a private party, bar or disco increased the odds of infection in the multivariable model. In boys, condom use at first intercourse decreased the odds of infection, while having an older last sexual partner increased the odds. In all participants, the risk of infection increased if residence outside the family home during school year, and decreased if condom was used at last intercourse.
***Correlates of sexual initiation among European adolescents by Gambadauro et al.*[32]**	Europe, 2018	A questionnaire addressing socio-demographics, behaviours, mental health and sexual activity, was delivered to 11,110 adolescents recruited from 168 randomly selected schools in 10 European countries	Baseline sexual experience was reported by 19.2% of 10,757 respondents (median age 15). This was significantly more frequent among pupils older than 15 (41%) and males (20.8%). Of 7,111 pupils without previous experience who were available at follow-up (response rate 81.8%), 17% reported sexual initiation,

		between 2009 and 2011. A follow-up questionnaire was delivered after 12 months. The longitudinal association of baseline risk behaviours, psychological attributes and contextual vulnerabilities, with sexual initiation during follow-up was evaluated through simple and multivariable age/sex stratified logistic regression. Multinomial logistic regression measured the association between predictors and sexual initiation with or without coexisting reproductive risk factors, such as multiple partners or infrequent condom use.	without differences between females and males. Baseline smoking, alcohol use, illegal drugs use and poor sleep predicted sexual initiation. Stratified analyses showed a particularly strong association in case of younger and female pupils, and, among girls when initiation was reported together with multiple partners and/or infrequent condom use. Externalizing (i.e. conduct and hyperactivity) symptoms independently predicted sexual initiation. Internalizing difficulties (i.e. emotional and peer problems) were negatively associated with early and risky sexual initiation among boys. Significant predictors included also being bullied, fighting, truancy, and low parental involvement.

B. In Africa:

Table III. Summary of some published works in Africa

Author and Title	Study site and Year	Methodology	Results and conclusions
Determinants of Risky Sexual Behaviour among Secondary School Adolescents by Eyam et al [33]	Cross River State, Nigeria, 2021	The study design was cross sectional and involved the use of semi-structured self-administered questionnaire that had two sections A and B. Non-co-educational secondary schools, co-educational secondary schools with sexuality education programs, and private secondary schools were excluded, and only co-educational public secondary schools without sexuality education programs and students 10–19 years were included in the study.	Prevalence of sexual intercourse was 41.5% and was statistically significantly higher among the boys than the girls. Among the sexually exposed boys, 33% of them were sexually active, while among the girls, 32.7% were sexually active. Among the age groups, 33% of students within the ages of 14–16 years and 82.6% within the ages of 17–19 years were sexually exposed. Similarly, students in Science class and students that were not monitored by parents had higher percentages of ever indulging in sexual activity, with 79.7% and 52.3%, respectively.
Attitude and prevalence of early sexual debut and associated risk sexual behavior among adolescents in Tanzania;	Tanzania, 2023	The study included 647 randomly chosen in-school adolescents from Tanzania and used an analytical cross-section survey in a quantitative research approach.	The mean age was 15 ± 1.869 years while 57.5% of adolescents were females. 69.7% of adolescents were sexually active whereas 44.8% of them practised sexual behaviours

Evidence from baseline data in a Randomized Controlled Trial by Millanzi et al [34]		Sexual-risk Behaviour Beliefs and Self-esteem Scale from previous studies were the main data collection tool. According to the Statistical Analysis Software (SAS), computer software version 9.4 descriptive analysis established respondents' socio-demographic profiles, attitudes, prevalence, and determinants linked to teenagers' early sexual debut. The link between the variables was established via multivariate logistic regression at a 5% significance level and a 95% confidence interval.	willingly against 24.9% who practised coerced sexual behaviours. The majority (44.4%) and 16.2% of them initiated sexual behaviours during the early and middle adolescence stages respectively. Most adolescents had the ideology that sex was okay to them even before the age of 18 years. Their odds of practicing sexual behaviours were significantly high with the ideology that sex was okay to them even before 18 years of age, exposure to drug abuse, using media and/or exposure to social groups (Jogging, Gym, health clubs, betting, Games). Findings suggest that holding a positive attitude towards early sexual debut is a precursor to early sexual activity among adolescents. Unsafe sex, coercive sex, and other risky sexual behaviours are not uncommon among

			adolescents starting sex before the age of 18 years. Exposure to drug abuse, online sexual content, and/ or social groups significantly influenced early sexual debut irrespective of other known factors. Age-appropriate school-based sexuality education programs should be promoted and implemented to address the most prevalent positive attitude towards early sexual debut and associated risk sexual behaviour among adolescents in Tanzania and other similar settings.
Determinants of communication on sexual issues between adolescents and their parents in the Adaklu district of the Volta region, Ghana: a multinomial logistic regression analysis by Klu et al[35]	Ghana, 2022	A baseline cross-sectional household survey of 221 adolescents aged 10–19 years in 30 randomly selected communities was used. A well-structured questionnaire was developed. A multinomial logistic regression analysis was used to examine factors that significantly	Only 11.3% of adolescents had discussions on sexual issues with both parents while 27.6% of communicated sexual issues with only one parent in Adaklu district. Adolescent males, those aged 10–14 years, non-members of adolescent health clubs, and those living with only a father had lower odds of

		influenced communication between adolescents and their parents regarding sex.	communicating with their parents on sexual issues. Adolescent-parental communication on sexual issues in Adaklu district is very low. Poor communication on sexual issues between adolescents and their parents results in high rates of negative sexual practices such as teenage pregnancy.
Factors associated with early sexual initiation among preparatory and high school youths in Woldia town, northeast Ethiopia: a cross-sectional study by Kassahun and collaborators[36]	Ethiopia, 2019	An institution based cross-sectional study was conducted on 723students selected by the simple random sampling technique on March 7, 2016. A pre-tested and structured self-administered questionnaire was used for data collection. Descriptive statistics, bivariate and multivariable logistic regression were computed. Adjusted odds ratio (AOR) with a 95% confidence interval (CI) was calculated to examine the strength of association. In the	The prevalence of early sexual initiation among preparatory and high school students in Woldia town was 18.4%. Not attending religious programs, peer pressure, cigarette smoking, poor parental monitoring, and exposure to pornographic materials were significantly associated with early sexual initiation. A large number of students initiated sexual activity at an early age. The practiced is associated with sexual and reproductive health problems. Therefore, raising awareness of students about the risk

		multivariable analysis, a p-value < 0.05 was considered as statistically significant.	factors for and implication of early sexual initiation through teachers, religious leaders, and parents is highly recommended.

C. In Cameroon:

Table IV. Summary of some published works in Cameroon

Author and Title	Site and year of study	Methodology	Results and conclusions
The usage of contraceptive among adolescent school girls in Mbanga, Littoral region in Douala by Kum et al[37].	Douala 2023	A cross sectional study was conducted in Mbanga, Littoral region-Douala during the month of February to march 2023 among 201 adolescent school girls to evaluate the knowledge, attitude and practices of contraception. Data was collected with the used of structured questionnaires and inputted in Microsoft excel and analysed using SPSS version 23. With a 5% confidential interval. 56.7% of the participants were sexually active and 38.8% had used a contraceptive	95.5% (192/201) of adolescent school girls had knowledge of contraceptives. Most of them (41.8%) got the information from health workers in hospitals. With respect to attitude, they had a negative attitudes towards contraceptives use; 43.3% declared that after using contraceptives it is difficult to get pregnant, 42.8% said pills and contraceptive injections affects female health, 37.3% said sex with condoms reduces pleasure. 56.7% of the participants were sexually active and 38.8% had used a contraceptive method. 16.4% and 15.9% of the participants used condom and calendar methods respectively.

Sexual initiation among adolescents in eight secondary schools in Yaoundé and Douala by Meguieze and collaborators [8]	Douala and Yaoundé, 2023	They conducted a descriptive study with prospective data collection in eight secondary schools, four in the city of Yaoundé and four in the city of Douala, over a period of three months, from November 2021 to April 2022. A pre-tested self-administered questionnaire was administered to all students who met the inclusion criteria. The variables studied included socio-demographic characteristics and the circumstances of sexual initiation. 1 274 adolescents were included.	The average age of sexual initiation was 15.54 ± 2.35 years. In 84.1% of cases, the first sexual intercourse was consensual. Early sexual intercourse was strongly associated with male sex, with partners from the 'buddy/friend' and with technical education
Adolescent Sexual Behaviour in an Urban Area of a Resource-Limited African Country, Cameroon by Essiben and al[16]	Yaoundé V District	They carried out a cross-sectional descriptive study in District number V of Yaoundé from August 1st to 31st 2018. To characterize their sexual lives, we surveyed 1800 adolescents between 10 and 19, and analysed the data using SPSS version 25.0.	In this study, 1023 (56.8%) adolescents were female, and 777 (43.2%) were male. Most of the adolescents were between ages 18 and 19 years (25.4%), unmarried (93.1%), had a secondary level of education (81.9%) and lived with their families (87.3%). One-third of the adolescents (30.7%) were sexually active and 41.1% had multiple sexual partners. The average age of coitarche was 15.1 years. Among the females, 17.1% reported one prior pregnancy and

			30.8% had one abortion. Most of the sexual encounters were heterosexual (82.6%) and 30.2% regularly used male condoms. 66.0% and 47.7% obtained information about sexuality primarily from social media and mass media, respectively. Sexual encounters in adolescents of District V of Yaoundé were premature, mostly heterosexual and often unprotected. The consequences were an increased incidence of early pregnancies and abortions.

We realized that most of the published works used a descriptive, analytic cross-sectional approach to properly carry out the aforementioned researches. They made use of self-administered pre-tested questionnaires which permitted the collection, analysis and publication of data on adolescents' sexuality. In light with these findings, we adopted the following methodology as described in the next chapter.

CHAPTER III: METHODOLOGY

3.1 STUDY DESIGN

We carried out a school based cross-sectional study in secondary schools in Yaoundé, Cameroon that sought to explore the determinants of early sexual activity among adolescent students.

3.2 STUDY PERIOD

This study was carried out over a duration of 7 months from November 2023 to May 2024.

3.3 STUDY AREA AND SETTING

We carried out this study in secondary schools in the city of Yaoundé, the capital of Cameroon. It is located in the Centre region in the Mfoundi division and is the second most populous city in the country with a population of approximately 2.8 million spread over 7 subdivisions (Yaoundé I to Yaoundé VII). It is an administrative zone with a high level of urbanization, industrialization, and education. Owing to its high-profile structure, Yaoundé has a higher standard of living than most cities in Cameroon. The school system consists of 2 broad categories based on the type of funding: public schools (government funding) and private schools (fee-paying).

Table V: Distribution of schools in Mfoundi subdivision

Subdivision	**Population (inhabitants)**	**Population density (inhabitants/km^2)**	**Number of public schools**	**Number of denominational schools**	**Number of non-denominational schools**
Yaoundé I	281 586	5072	6	5	33
Yaoundé II	238 927	10 388	3	7	14
Yaoundé III	252 501	3702	10	6	16
Yaoundé IV	477 350	8118	6	8	44
Yaoundé V	265 087	10 235	4	11	36
Yaoundé VI	268 428	12 091	4	4	37
Yaoundé VII	97 997	2776	3	4	14

3.4 SAMPLING METHOD

Schools were randomly selected in subdivisions of Yaoundé. The schools of each subdivision were divided into three subgroups: public, private denominational, and private non-denominational. From each sub division, one public, one private denominational, and one private non-denominational school were randomly selected.

Table VI: Selected schools as per subdivision and source of financing

Subdivision	**Public school**	**Private nondenominational school**	**Private denominational school**
Yaoundé 1	Lycée Technique Charles Atangana	College Prive Laic Mvom-Nnam	College Jean-Tabi
Yaoundé 2	Lycée de la Cite Verte	Christ winners Bilingual college	CETI Sacre-Cœur de Mokolo
Yaoundé 3	Lycée Technique de Yaoundé III	College Bilingue la Rosiere	College Saint-Benoit
Yaoundé 4	Lycee Bilingue de Minkan	Institut Petou	Complexe Scolaire Adventiste d'Odza
Yaoundé 5	Lycée Bilingue de Mimboman	Institut La Reference	Collège Notre Dames des Victoires
Yaoundé 6	Lycée Bilingue de Mendong	Institut Djonou	Collège Jesus Marie
Yaoundé 7	Lycee Technique de d'Ekorezock	College Polyvalent Perle Plus	Institut Rene Graffin

However, some school authorities did not approve our study and rejected our request to carry out our study among their students. The 09 schools in which we were permitted to carry out our research are listed in Table VII.

Table VII: List of schools who approved our study

Subdivision	Public school	Private nondenominational school	Private denominational school
Yaoundé 1		College Prive Laic Mvom-Nnam	
Yaoundé 2	Lycée de la Cite Verte	Christ winners Bilingual college	
Yaoundé 3	Lycée Technique de Yaoundé III	College Bilingue la Rosiere	College Saint-Benoit
Yaoundé 4		Institut Petou	
Yaoundé 5	Lycée Bilingue de Mimboman		Collège Notre Dames des Victoires

The study population consisted of adolescents aged 10-19 years in forms 4 and 5, lower, and upper sixth according to our context. A simple random sampling method was employed. The minimum sample was determined using the formula below:

$$\text{Sample size}(n) = \frac{(z_{1-\alpha/2})^2 * (p)(q)}{(d)^2}$$

n = Desired sample size
$Z_{1-\alpha/2}$ = Critical value and a standard value for the corresponding level of confidence.
(At 95% CI or 5% level of significance (type-I error) it is 1.96 and at 99% CI it is 2.58)
P = Expected prevalence or based on previous research
q = 1-p
d = Margin of error or precision

Figure 8. Cochrane formula for cross-sectional studies

Assuming a critical value of 1.96, margin of error at 0.05, and a prevalence of p = 26.4 % according to a study by Meguieze and collaborators on sexual initiation among adolescents in eight high schools in Yaoundé and Douala in 2022 [8].

$$n = \frac{(1.96)^2(0.26)(1-0.26)}{(0.05)^2}$$

From Cochran's formula, the sample size was (n)=296 participants.

A potential nonresponse of 10 % was added increasing the minimum sample size to 326 participants.

3.4.1 Inclusion criteria:

This study recruited both male and female students registered in the randomly selected schools, who were willing and available at the time of study. We used the following inclusion criteria:

- Adolescents registered in the selected schools
- Adolescents between aged between 10 to 19 years
- Adolescents who provided assent

3.4.2 Exclusion criteria:

From this study were excluded:

- Students whose questionnaires had controverted or incomplete responses

3.5 STUDY PROCEDURES

Administrative considerations

To carry out our study, we did the following:

- Validated our protocol with our supervisors and the scientific and ethical committee of the Faculty of Medicine and Biomedical Sciences of the University of Yaoundé I.
- Obtained Administrative authorizations from the Centre regional delegation of secondary education and from the Mfoundi divisional delegation of secondary education,
- We were led and supervised by a well-trained team in this research.
- We obtained an application for research authorization from each school involved in our study.
- All participants were asked to participate voluntarily. Students in the selected classes were given information sheets about the study after obtaining authorisation from the school authorities.
- Apart from the information on the questionnaires, no other data or sample was collected during this research. The questionnaires were anonymized and analysed with strict confidentiality.

- The privacy and anonymity of all participants was respected,
- Our study caused no harm nor collateral damage on the participants and the community, and no participation fee was required to be enrolled in the study.
- We have no conflict of interest to declare.

3.6 RECRUITMENT

After obtaining study authorizations and ethical clearance, recruitment of participant was done at each institution through an anonymous questionnaire completed beforehand by the participants. We proceeded to achieve this as follows:

- Discussed ethical principles with the students which involved voluntary participation in the study, anonymity of the participants and confidentiality of the data.
- Briefly presented the study through an information notice to participants.
- Obtained consent from participants.
- Administered the questionnaire relating to the study to the participants.

3.7 DATA COLLECTION AND ANALYSIS

3.7.1 DATA QUALITY ASSURANCE

The questionnaire was pretested on students of a nearby secondary school not included in the study population. The data collectors had 2 days of training, before the survey. The collected data was reviewed and checked for completeness before data entry.

3.7.2 DATA COLLECTION

Participants were interviewed using a self-reported questionnaire which assessed determinants of early sexual activity among adolescents. Our study used a closed end type questionnaire which consists pre-set questions designed based on the study objectives with a limited number of multiple-choice questions. These questionnaires collected quantitative data in the form of multiple-choice questions/items written in the format of a descriptive research.

3.8 DATA MANAGEMENT AND ANALYSIS

We entered data from validated questionnaires into an automated data entry form in SPSS. We visually checked for obvious errors and inconsistencies in the data. We imported data into the Statistical Package for Social Sciences (IBM SPSS) for analysis. The categorical variables were expressed in frequency and percentage, and the numerical variables were expressed using means, standard deviations, minimums, medians, maximums, and valid observation totals. In

cases where variables had missing data, we calculated the rates and frequencies with the available data only. Associations between variables in the study were analyzed using Fisher's exact or Chi-square test. In all the analyses, a p-value < 0.05 was considered significant. The results were presented in tables, generated by SPSS after necessary editing.

3.9 RESOURCES

- **MATERIAL RESOURCES**
  - Reams of A4 paper
  - Ballpoint pens, Bic® brand
  - Pencils
  - Erasers
  - Face masks
  - Hydro-alcoholic solutions
  - A pre-established questionnaire (see appendix)
  - A laptop
  - A projector
  - An internet connection
  - USB sticks
- **HUMAN RESOURCES**
  - The Investigator, SAKE JOLIE COEUR
  - The Study Director, Pr. KOKI NDOMBO Paul
  - The Co-Directors, Dr. NSEME ETOUCKEY Eric and Dr. MEGUIEZE Claude-Audrey
  - Research Assistants (medical students, medical and paramedical personnel)
  - The Statistician

3.10 ETHICAL CONSIDERATIONS

We conducted our study following the standards of the Declaration of Helsinki and the Nuremberg Code, respecting people and submitting our study protocol to the ethics committee. The study was carried out with respect for human dignity. The necessary authorizations were obtained from the competent authorities of the various establishments, the Faculty of Medicine and Biomedical Sciences of the University of Yaoundé I, and the National Ethics Committee.

CHAPTER IV: RESULTS

4.1 RECRUITMENT SCHEME

Data was collected from adolescents in 09 secondary schools (public, private nondenominational, and private denominational) in the city of Yaoundé.

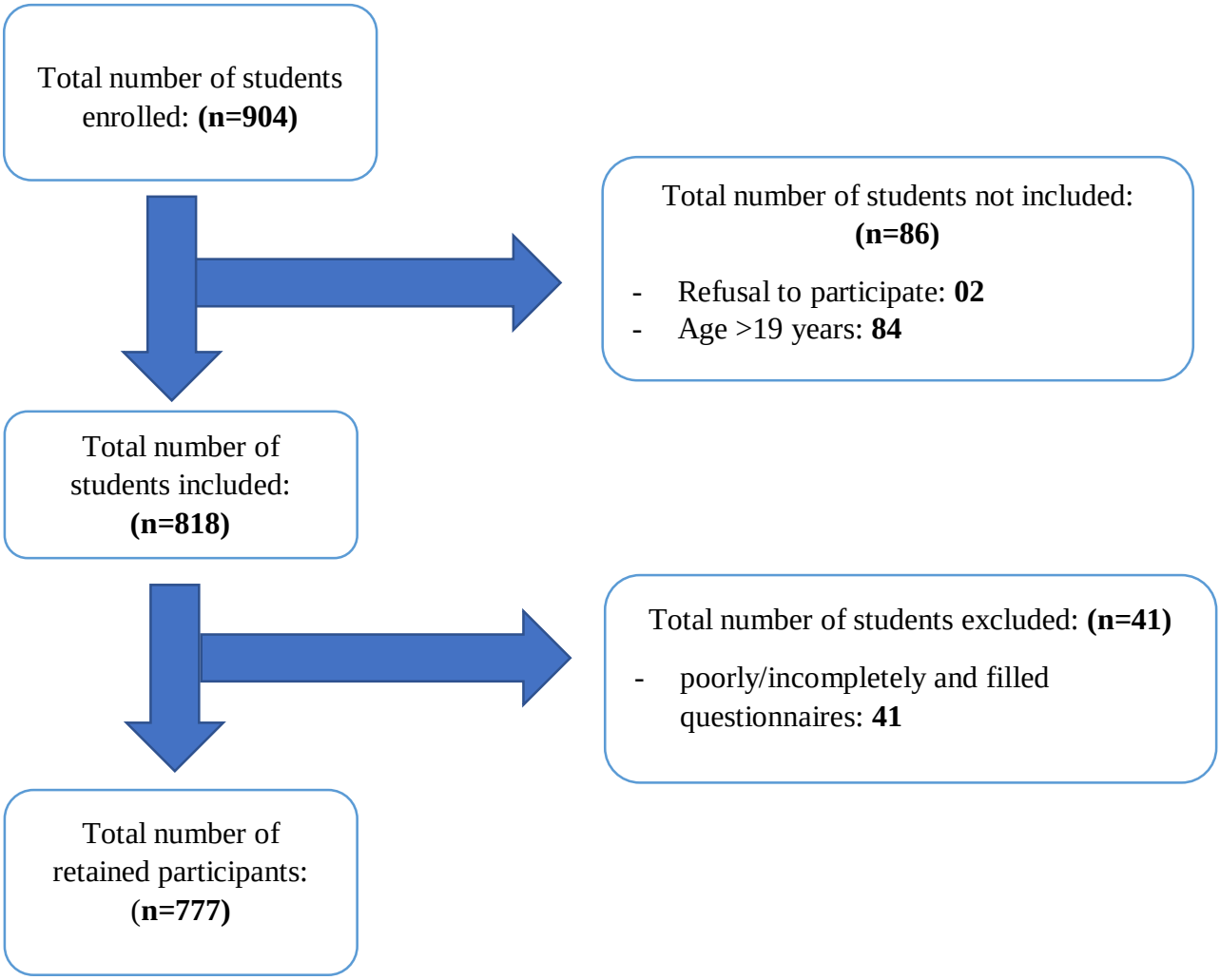


Figure 9. Population recruitment diagram

A total of 777 students met our inclusion criteria giving a response rate of 85.95%. Out of the 777 participants, 448 (57.65%) were sexually active with most of them aged between 16 and 17 years old (43.0%).

4.2 PRESENTATION OF THE STUDY POPULATION

Our study involved 777 adolescents. In this chapter, we shall describe their socio-demographic characteristics, their behaviour, habits and lifestyle.

4.2.1 Sociodemographic characteristics of adolescents

The mean age of adolescents in school was 16.37 ± 1.54 years, with age ranges between 12 and 19 years. The modal age was between 16 and 17 years old (43.0%). Adolescents girl constituted most of our study population (61.9%), with a sex ratio of 1:1.6. The median weekly pocket allowance of our study population was 2000 [1000-3875] FCFA, with extremes of 0 and 25000 FCFA. Regarding religion, most adolescents were Christians (89.6%). These socio-demographic characteristics are captured in Table IX below.

Table VIII**:** Distribution of the population by socio-demographic characteristics

Variables	Effective (n=777)	Frequencies (%)
Age groups (years)		
12-13	18	2.3
14-15	233	30.0
16-17	334	43.0
18-19	192	24.7
Sex		
Female	481	61.9
Male	296	38.1
Pocket money per week (CFA francs)		
None	85	10.9
< 1000	51	6.6
1000-2499	256	32.9
2500-4999	204	26.3
5000-9999	123	15.8
≥ 10000	58	7.5
Religion		
Christian	696	89.6
Muslim	74	9.5
Animist	5	0.6
Atheist	2	0.3

4.2.2 Behavioural characteristics

Students in the Anglophone system of education were the most represented at 51.7%. Most students came from private nondenominational schools (46.1%), and general education (74.0%), and were in Form 5 (52.3%).

Table IX: Distribution of the population by behavioural characteristics.

Variables	Effective (n=777)	Frequencies (%)
Self-consideration		
Cis gender	728	93.7
Transgender	49	6.3
Sexual preference		
Heterosexual	731	94.1
Homosexual	7	0.9
Bisexual	12	1.5
Asexual	27	3.5

4.2.3 School Characteristics

Students in the Anglophone system of education were the most represented at 51.7%. The majority of students came from private nondenominational schools (46.1%), and general education (74.0%), and were in Form 5 (52.3%).

Table X: Distribution of the population by educational characteristics.

Variables	Effective (n=777)	Frequencies (%)
Educational system		
Anglophone	375	48.3
Francophone	402	51.7
Type of school		
Public	200	25.7
Private denominational	219	28.2
Private nondenominational	358	46.1
Type of teaching system		
General	575	74.0
Technical	202	26.0
Class Attended		
Form 4	112	14.4
Form 5	406	52.3
Lower sixth	72	9.3
Upper sixth	187	24.1

4.2.4 Family Characteristics

As shown in the table below, just about half of all students were from a bi-parent household (50.3%). Furthermore, we found that in most homes, the head of household was educated to tertiary level (46.1%).

Table XI: Distribution of the population by family characteristics.

Variables	Effective (n=777)	Frequencies (%)
Family type		
Both parents	391	50.3
Single parent	287	36.9
Reconstituted	73	9.4
Adoptive	26	3.3
Level of education of the head of household		
None	20	2.6
Primary	117	15.1
Secondary	276	35.5
Tertiary	358	46.1
Unknown	6	0.8

4.2.5 Sexual habits

Table XIII below shows that 79.2% of students had a sexually active company. Pornography and masturbation were common in 61.4 and 55.9% of cases, respectively.

Table XII: Distribution of the population by sexual habits.

Variables	Effective (n=777)	Frequencies (%)
Sexually active company		
Yes	615	79.2
No	162	20.8
Pornography consumption		
Yes	477	61.4
No	300	38.6
Masturbation		
Yes	434	55.9
No	343	44.1

4.2.6 Lifestyle

We found that 45.6% of students received sex education at home. Attendance at nightclubs was found among 45% of students. Regarding the use of legal drugs, it was frequent in 45.4% of cases, mainly alcohol; and the illicit drugs that were common in 31.5% of cases were mainly represented by shisha (31%). (Table XIV)

Table XIII: Distribution of the population by lifestyle.

Variables	Effective (n=777)	Frequencies (%)
Sex education at home		
Yes	354	45.6
No	423	54.4
Nightclub attendance		
Yes	350	45
No	427	55
Legal drugs		
Alcohol	353	45.4
Other	0	0
Illicit drugs		
'Chicha'	241	31
Tramadol	12	1.5
Marijuana	9	1.2
Cocaine	7	0.9
Cannabis	5	0.6
Narcotics	4	0.5

4.3 SEXUALITY OF THE STUDY POPULATION

In this section, we attempt to meet our first and second specific objectives which were to determine the age at sexual initiation among adolescents and to describe the characteristics properties of the first sexual act.

4.3.1 Prevalence of sexual initiation

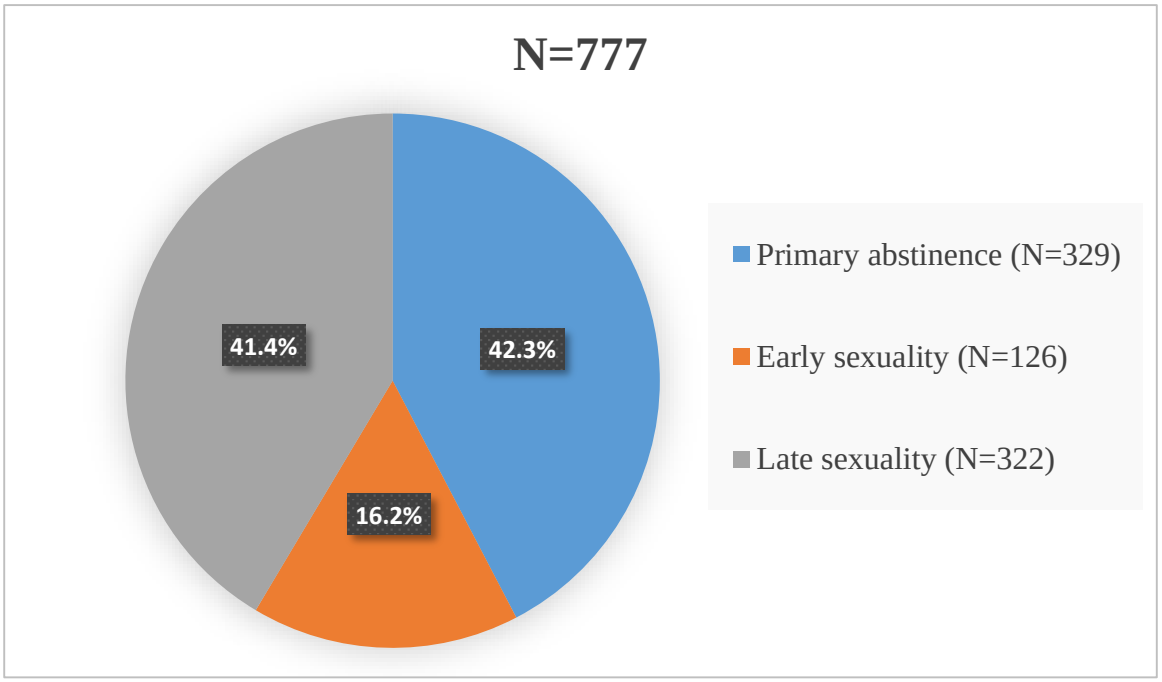


Figure 10: Distribution of the population by sexual activity

A total of 448 students were sexually active with frequency of sexuality at 57.6% in the entire study population. Out of these 777 participants, 126 were sexually active at an early age, as shown in Figure 8 above.

Moreover, among the sexually active (early sexuality and late sexuality, N=448) participants, the prevalence of ESI was 28.1% and late sexual initiation was 71.9%.

4.3.2 Age at sexual initiation and circumstance of occurrence

The mean age at sexual initiation was 15.46 ± 1.47 years, with extremes of 7 and 19 years. The act was consensual in 99.6% of cases, preceded by drug use in 10.5% of cases and unprotected in 20.5% of cases (Table XV).

Table XIV: Distribution of the sexually active population by age and circumstances of occurrence

Variables	Effective (n=448)	Frequencies (%)
Age at 1st intercourse		
< 10	4	0.9
10-14	122	27.2
15-19	322	71.9
Circumstances of the 1st encounter		
Planned	279	62.3
Unexpected	167	37.3
Forced	2	0.4
Pre-sex drug use		
Yes	47	10.5
No	401	89.5
Condom use		
Yes	356	79.5
No	92	20.5

4.3.3 Timing and reasons for sexual initiation

This primary sexual intercourse had occurred mainly during the holidays in 51.1% of cases. In 86.8% of cases, the initiation to sexuality was due to pleasure out of love for the partner (Table XVI).

Table XV: Distribution of the sexually active population by period of onset and reason for sexuality

Variables	Effective (n=448)	Frequencies (%)
Onset period		
Holidays	229	51.1
School period	155	34.6
End of year celebrations	29	6.5
Valentine's day	23	5.1
Birthdays	12	2.7
Reason for first intercourse		
Love for the first partner	389	86.8
Pressure from friends	48	10.7
Partner pressure	6	1.3
After using drugs	1	0.2
Rape	1	0.2
Unconscious	3	0.7

4.3.4 Identity of first sexual partner

The 1st sexual partner was of the opposite sex in almost all cases (99.1%), and was mainly referred to as boy/girlfriend (75.9%). (Table XVII)

Table XVI: Distribution of the sexually active population by period of onset and reason for sexuality

Variables	Effective (n=448)	Frequencies (%)
Nature of the relationship with the 1st partner		
Boy/girlfriend	340	75.9
Classmate	73	16.3
Friend of social media	9	2.0
Adult	25	5.6
Relative	1	0.2
Gender of the 1st partner		
Opposite sex	444	99.1
Same sex	4	0.9

4.4 FACTORS ASSOCIATED WITH EARLY SEXUAL INITIATION

A. Bivariate analysis

4.4.1 Sociodemographic, behavioural and educational characteristics

We found that being a male increased the risk of early sexuality by 2 ($p < 0.001$). Similarly, trans identity increased the risk of sexuality in our study population by 3 ($p = 0.001$). (Table XVIII)

Table XVII: Association between sociodemographic, behavioural and educational characteristics and early sexuality

Variables	**Early Sexuality**	**Late/absent sexuality**	**Odds Ratio**	**P value**
	N=126; n(%)	**N=651; n(%)**	**(95% CI)**	**P**
Sex				
Female	58 (12.5)	423 (87.9)	1	
Male	68 (23.0)	228 (77.0)	**2.17 (1.47-3.19)**	**< 0.001**
Pocket money per week (CFA francs)				
< 5000	101 (16.9)	495 (83.1)	0.78 (0.48-1.26)	0.188
≥ 5000	25 (13.8)	156 (86.2)	**1**	
Religion				
Christian	111 (15.9)	585 (84.1)	0.83 (0.46-1.51)	0.324
Other	15 (18.5)	66 (81.5)	1	
Self-consideration				
Cis gender	109 (15.0)	619 (85.0)	1	
Transgender	17 (34.7)	32 (65.3)	**3.01 (1.61-5.62)**	**0.001**
Sexual preference				
Heterosexual	119 (16.3)	612 (83.7)	1.08 (0.47-2.48)	0.523
Gay/bisexual	6 (31.6)	13 (68.4)	2.45 (0.91-6.58)	0.071
Asexual	1 (3.7)	26 (96.3)	0.19 (0.02-1.43)	0.050

4.4.2 School and Family Characteristics

Table XIX below shows that being enrolled in a school having the Francophone system of education or who attended public schools, or technical education significantly increased the risk of early sexuality ($p < 0.05$). However, attending private denominational schools reduced the risk of early sexuality (OR=0.42; $p < 0.001$). In addition, adolescents whose parents had a higher level of education had a lower risk of early sexuality (OR=0.65; $p = 0.019$).

Table XVIII: Association between school and family characteristics and early sexuality

Variables	**Early Sexuality**	**Late/absent sexuality**	**Odds Ratio**	**P value**
	N=126; n(%)	**N=651; n(%)**	**(95% CI)**	**P**
Educational system				
Anglophone	44 (11.7)	331 (88.3)	1	
Francophone	82 (20.4)	320 (79.6)	**1.92 (1.29-2.86)**	**0.001**
Type of establishment				
Public	50 (25.0)	150 (75.0)	**2.19 (1.47-3.28)**	**< 0.001**
Private denominational	20 (9.1)	199 (90.9)	**0.42 (0.25-0.71)**	**< 0.001**
Private nondenominational	56 (15.6)	302 (84.4)	0.92 (0.63-1.35)	0.381
Type of teaching system				
General	74 (12.9)	501 (87.1)	1	
Technical	52 (25.7)	150 (74.3)	**2.34 (1.57-3.49)**	**< 0.001**
Family typology				
Both parents	62 (15.9)	329 (84.1)	0.94 (0.64-1.38)	0.430
Single parent	55 (19.2)	232 (80.8)	1.29 (0.95-2.06)	0.055
Reconstituted	7 (9.6)	66 (90.4)	0.52 (0.23-1.16)	0.068
Adoptive	2 (7.7)	24 (92.3)	0.42 (0.09-1.80)	0.178
Level of education of the head of household				
None	2 (10.0)	18 (90.0)	0.56-0.13-2.47)	0.345
Primary	15 (12.8)	102 (87.2)	0.72 (0.40-1.29)	0.173
Secondary	61 (22.1)	215 (77.9)	**1.90 (1.29-2.79)**	**0.001**
Tertiary	47 (13.1)	311 (86.9)	**0.65 (0.43-0.96)**	**0.019**
Unknown	1 (16.7)	5 (83.3)	1.03 (0.12-8.92)	0.655

4.4.3 Lifestyle associated with early sexuality

Having sexually active company (OR=4.57; p<0.001), masturbating (OR=1.95; p = 0.001), going to nightclubs (OR=4.32; p<0.001), using licit drugs (OR=2.40; p< 0.001) as well as illegal drugs (OR=2.91; p< 0.001) significantly increased the risk of early sexuality; while receiving sexuality education from parents, tutors or caretakers reduced the risk of sex education (OR=0.54; p = 0.002). (Table XX)

Table XIX: Association between lifestyle and early sexuality

Variables	**Early Sexuality**	**Late/absent sexuality**	**OR**	**P value**
	N=126; n(%)	**N=651; n(%)**	**(95% CI)**	**P**
Sexually active company				
Yes	118 (19.2)	497 (80.8)	**4.57 (2.18-9.56)**	**< 0.001**
No	8 (4.9)	154 (95.1)	1	
Pornography consumption				
Yes	85 (17.8)	392 (82.2)	1.37 (0.91-2.05)	0.076
No	41 (13.7)	259 (86.3)		
Masturbation				
Yes	87 (20.0)	347 (80.0)	**1.95 (1.30-2.93)**	**0.001**
No	39 (11.4)	304 (88.6)	1	
Sex education at home				
Yes	42 (11.9)	312 (88.1)	**0.54 (0.36-0.81)**	**0.002**
No	84 (19.9)	339 (80.1)	1	
Nightclub attendance				
Yes	93 (26.6)	257 (73.4)	**4.32 (2.81-6.62)**	**< 0.001**
No	33 (7.7)	394 (92.3)	1	
Legal drugs				
Yes	80 (22.7)	273 (77.3)	**2.40 (1.62-3.57)**	**< 0.001**
No	46 (10,8)	378 (89,2)	1	
Illicit drugs				
Yes	66 (26.9)	179 (73.1)	**2.91 (1.96-4.28)**	**< 0.001**
No	60 (11.3)	472 (88.7)	1	

B. Multivariate analysis

The analysis showed that the independent factors associated with early sexuality were male sex (OR=2.15; adjusted p<0.001), trans identity (OR= 2.96; adjusted p = 0.002), enrolment in public institutions (OR=2.37; adjusted p< 0.001), sexually active companionship/friends (OR=3.97; adjusted p< 0.001) and nightclub attendance (OR=4.18; adjusted p< 0.001). (Table XXI)

Table XX: Independent Factors Associated with Early Sexuality

Variables	**Early Sexuality**	**Late/absent sexuality**	**OR**	**p**
	N=126; n(%)	**N=651; n(%)**	**(95% CI)**	**Adjusted**
Sex				
Male	68 (23.0)	228 (77.0)	**2.15 (1.40-3.30)**	**< 0.001**
Self-consideration				
Transgender	17 (34.7)	32 (65.3)	**2.96 (1.49-5.85)**	**0.002**
Type of establishment				
Public	50 (25.0)	150 (75.0)	**2.37 (1.52-3.68)**	**< 0.001**
Lifestyle				
Sexually active company	118 (19.2)	497 (80.8)	**3.97 (1.85-8.51)**	**< 0.001**
Nightclub attendance	93 (26.6)	257 (73.4)	**4.18 (2.67-6.54)**	**< 0.001**

CHAPTER V: DISCUSSION

Early sexual activity is a global public health problem. There is a worldwide rapidly increasing frequency of youths indulging in sex. This rise is associated with a negative impact on student's health, as well as their future professional and social lives. For this reason, we carried out a cross-sectional study in nine secondary schools in Yaoundé to assess the factors associated with early sexual activity among adolescents. The sexual practices considered in this study were oral sex, vaginal or anal penetration, and masturbation.

Study strength: This study builds on previous studies on adolescent sexuality in Cameroon in terms of:

1. Its methodological approach. A random sampling method was used as opposed to a non-probabilistic sampling methods employed in other studies.
2. The focus of the study: Our study addresses the gap in knowledge regarding description of the first sexual intercourse and associated factors for adolescent early onset of sexual activity in secondary schools in Cameroon.

Study limitations: A major limitation of this study is that our findings of association do not imply causation. In addition, we used self-reported data from adolescents; it is that possible the students may have misreported their sexual history despite our assurances of confidentiality and ensuring privacy during data collection. Furthermore, the study was limited to adolescents in secondary school; student adolescents may be different from non-student adolescents. The application of our results to environments that are different from our study area has to be done with caution.

5.1 SOCIO-DEMOGRAPHIC CHARACTERISTICS

A total of 908 students were enrolled in this study with 777 students meeting our inclusion criteria. The overall prevalence of sexual activity among adolescents in this study was 57.66%. Our prevalence was higher than what was reported by Foumane & al [38] among female adolescents in Yaoundé, Cameroon in 2013. This could be explained by the sexes of participants in our study. Indeed, we recruited both female and male participants to have a general view of adolescent sexuality in Yaoundé. Our finding suggests that more and more adolescents engage in sexual activity.

Most of the participants were older than 15 years with a mean age of 16.37 ± 1.54 years. This results is similar to those published in 2018 by Girmay & al [7] in northern Ethiopia, which

reported an average of 16.3 years. This similarity could be due to the nature of the participants who were adolescents in secondary school settings.

In our study, 61.90% of the participants were female. This value is slightly higher than values (57.7%) obtained by Millanzi & al [34] among adolescents in Tanzania in 2023. This rise may be due to the higher sample size in our study and the different geographical locations. However according to WHO adolescent's population in Cameroon in 2023 (Figure 1), there are more male adolescent than females.

Concerning the religiousness of the study population, 89.6% were of Christian faith. With 50.3% reporting to be living with both parents at the time of the study. A similar study in Ido-ekiti and Ekiti state Nigeria conducted by Durowade & al [6] in 2017 to determine the prevalence and risk factor of early sexual debut among adolescents in secondary school obtained a slightly lower rate of Christian faith (88.5%) and 64.7% of participants living with both parents. This finding may have to do with the differences in total surface land areas and rural nature of these states in Nigeria. While commitment to a religion is associated with more restrictions sexually, religion do not appear to influence sexual behaviour uniquely [55].

5.2 AGE OF SEXUAL INITIATION

The mean age of first sexual onset of was 15.46 ± 1.47 years, with most participants (71.9%) aged ≥ 15 years at first intercourse. The prevalence of ESI in our study was 28.12%. These findings are similar to values reported in Cameroon by Eboutou & al [56] in 2023. In their study the mean age of ESI was 15.54 years while the prevalence of ESI was 26.37%. Early sexual initiation may be attributed to rapid urbanization, access to new communication techniques and changes in social norms which arouses adolescent's curiosity and thus exposes them to ESI [39]. In general, adolescence is a time of major risk for ESI marked by interest in sexuality and sexual orientation during early adolescence, self-exploration of this sexual interest and relationships during middle adolescence as described in Tables I. Nonetheless, studies have shown that age at first sexual experience varies from place to place and among different individuals usually due to different factors.

5.3 CHARACTERISTICS OF THE FIRST SEXUAL ACT

In our study, 99.6% of participants consented at the first sexual intercourse. In most cases, the sexual partner was described as a boy/girlfriend (75.9%). This finding is higher than that of

Meguieze & al [8] who obtained a consent rate of 84.1% and slightly higher rate (69.7%) of sexual partners described as boyfriend/girlfriend.

Most of the first sexual act occurred during holiday periods at 51.1%. This finding is opposite to the findings reported by Essiben et al [16] in Cameroon in 2019. They reported that 82.3% of adolescents were sexually active during academic year periods. This discrepancy could be attributed to the difference in sampling methods and sample sizes. We can assume that educational environment creates opportunities for adolescents to network among themselves and make decisions pertaining to sexuality among others[16]. However, periods of ongoing classes are not idle as compared to holidays periods.

Licit drug use at first sexual intercourse was present in only 10.5% of cases. This finding was similar (13.4%) to that of James et al [40] who sought to investigate the sexual risk behaviours among school going adolescents in Sierra Leone in 2022. This is possibly so because intake of alcohol especially if excessive can cause to loss of self-control.

In 79.5% of cases, sexual intercourse at initiation was protected with use of condom. A study carried out by Gravningen et al [31] to study early sexual behaviour and Chlamydia infection among Norway adolescents reported 57.8% of contraceptive use at sexual initiation. This increased difference in our study could be attributed to the fact that most adolescents in our survey reported to have planned (62.3%) the sexual act and probably because male condoms are easier to purchase and more accessible. However, Girma & al [41] reported to have 31.7% planned sexual act among adolescents in Addis Ababa in Ethiopia in 2018. This difference could be explained by the type of schools considered in our survey (74.2% private school's) versus 100% government school in Ethiopia.

In our survey, participants reported love for partner (86.8%) and pressure from group of friends (10.7%) as the motivation to engage in first sexual activity. Whereas, other studies in Ethiopia, Nigatu & al [42] reported pressure from group of friends (peer pressure) at 52.8% while Girma & al [41] reported love for partner in only 24.8% of cases in 2018.

5.4 FACTORS ASSOCIATED WITH EARLY SEXUAL ACTIVITY

1. Individual factors

This study found out that gender was significantly associated with early sexual debut. The male gender significantly increased the risk of early sexual debut among adolescents by 2 ($p<0.001$). This result is in line with the study conducted in Cameroon in 2022 by Meguieze & al [8] and in Nigeria by Durowade & al [6] in 2017. This could be due to the fact that males have lower levels of impulse control, higher levels of sensation seeking, more adventurous, and desirous than female counterparts[43].

Trans identity increased the risk of sexuality in our study population by 3 ($p = 0.001$). According to Mernitz & al [46] in the United States in 2023 lesbians/gay delay a first relationship compared to their heterosexual peers, which suggest that patterns of dating relationships differs by context of sexual orientation. However, in 2017 in the United States according to Eisenberg & al [57] relative to cisgendered youths their transgender counterparts were more likely to have early sexual debut. Similar results were obtained by Kattari & al in 2019 [58].

In our study population, adolescents of Christian faith [OR=0.83 (0.46-1.51) seemed to be protected from ESI. A study in Ghana by Kyei-Arthur F & al [45] in 2024 reported that Muslims and other categories of religions were more vulnerable to early sexual activity compared to those of Christian faith.

Adolescents who reported using licit drugs (OR: 2.40; $p< 0.001$) as well as illegal drugs (OR: 2.91; $p< 0.001$) respectively were more likely to engage in ESI. This fining is similar to Durowade & al [6] and Omona & Ssuka[44] in Uganda in 2023. The impaired effects of these drugs on the decision-making of adolescents could explain this result.

In our survey adolescents who reported masturbation (OR: 1.95; $p = 0.001$) and going to nightclubs (OR: 4.32; $p<0.001$) were more exposed to early sexual debut. Exposure to online sexual content such as pornography leads to the desire to experience sex which is primarily sought through masturbation and later in the sexual act properly. This explains our finding which was similar to that reported by Millanzi & al [34] in Tanzania in 2023.

2. Family and community factors

Adolescents from a single-parent family type [OR=1,29 (0,95-2,06) p=0,055] were close to significance to be more predisposed to indulge in early sexual intercourse. This is coherent with results obtained by Furlanetto & al [48] in Brazil and Gazendam & al in Canada in 2019 [5].

Perharps adolescents from disrupted families experience less parental supervision[49], also, adolescents without close family ties may seek it in sexual relationships[50].

In our study, those whose parents attained tertiary level of education [OR 0.65; p = 0.019)] had a lower risk of early sexuality. According to White & Warner[51] in 2015 mean parental educational attainment moderates the influence of adolescent's attitudes towards sex. Likewise, Guetto & al [52] reported in 2022 that higher parental education is associated with higher likelihood of protected first sexual intercourse for their adolescent children while lower parental education exposes adolescents to ESI and risky sexual behaviour.

We found that having a sexually active company (OR: 4.57; p<0.001) increased the risk of early sexual debut among adolescents in Yaoundé. This is similar to the report of Millanzi & al [34] in Tanzania who reported that exposure to a group of friends favours sexual-decision making. Indeed, adolescence as a period where youths seek for reward and feeling of belonging especially to a social group.

Receiving sexual education from parents, tutors and care takers reduced the risk of early sexual debut (OR 0.54; p = 0.002) among adolescents in Yaoundé. A study carried by Klu & al [35] in Ghana in 2022 reported that the degree of communication on sexual issues between adolescents and their parent's affects adolescent sexual decision making in a directly proportional manner.

CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

At the end of our study on the factors associated with early sexual activity among adolescents in secondary schools in Yaoundé, the following conclusions could be drawn.

- The lifetime prevalence of early sexual onset is high making it a public health problem as more and more adolescents engage in sexual activity. Most students started early sexual activity during middle adolescence with opposite sex partners.
- The most commonly descriptive criteria of the sexual act initiation were sex occurring during holidays periods, sex was with boy/girlfriend and protected sex. Motivations was pleasure out of love for partner and peer pressure.
- Individual and community factors such as sex, age, religiousness, sexual orientation, group friends, type of household, parental level of education, and licit drug consumption were the strongest determinants of early sex among adolescents.

6.2 RECOMMENDATIONS

- **To school authorities**

- To develop a robust, solid, and fluid communication flow with parents and guardians of students.

- **To researchers**

- To carry out further research exploring the determinants of early adolescent sex in different populations of the nation.

- **To Ministry of Secondary education**

- To organize school-based health talks on sexuality, its adverse consequences on adolescents and their mental health in the secondary schools of Yaoundé.
- To integrate age-appropriate comprehensive sexual education.

- **To health professionals**

- To encourage parents and guardians to enhance sexual education talks with their children.

- To parents

- To receive comprehensive sex education training to help them communicate about sexual issues with their children and to also share their life experiences, good or bad with their children.

- **To adolescents**

- To be opened to their parents, guardians, and teachers about their sexual life and challenges.
- To be good friends and make good friendships

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CHAPTER VII: APPENDIX

APPENDIX I: INFORMATION SHEET IN ENGLISH

TITLE: THE DETERMINANTS OF EARLY SEXUAL ACTIVITY AMONG ADOLESCENTS IN SECONDARY SCHOOLS IN YAOUNDE

Investigator: SAKE JOLIE COEUR, 7th year General medicine student in the Faculty of Medicine and Biomedical Sciences, University of Yaoundé I

Supervisors:

- Prof. KOKI NDOMBO Paul, Director of CME-FCB, Pediatrician, Faculty of Medicine and Biomedical Sciences, University of Yaoundé I
- Dr. NSEME ETOUCKEY Eric, Forensic Medicine Specialist, Faculty of Medicine and Biomedical Sciences, University of Yaoundé I
- Dr. MEGUIEZE Claude Audrey, Pediatrician, Faculty of Medicine and Biomedical Sciences, University of Yaoundé I

Aim of study: Early sexual activity among adolescents is a risk factor to unwanted pregnancies, STD's and others. This is major public health problem. Previous studies have proven that early sexual activity is as a result of multiple factors. The aim of our study is to study the determinants of early sexual activity among solarized adolescents in Yaoundé.

Study duration: This study will be carried out over a period of 7 months from November 2023 to May 2024

Risks and benefits: There is a risk that you may share some personal or confidential information by chance, or that you may feel uncomfortable giving your opinion about some of the topics. However, we do not wish for this to happen. You do not have to answer any question if you feel the question(s) are too personal or if talking about them makes you uncomfortable. You will be given health talks on the consequences and advice on how to prevent/stop early sexual activity among adolescents in our schools.

Compensation: We shall not offer you any incentive to take part in the research. We regret that we do not have money to pay for your time, and travel expenses.

Confidentiality: We shall keep all the records of this study private. We will not be sharing information about you to anyone outside of the research team. Any information about you will have a number on it instead of your name. Only the researchers will know what your number is

and we will lock that information up with a lock and key. It will not be shared with or given to anyone except the researcher.

Taking part is voluntary: Taking part in this study is voluntary. You may skip any questions that you do not want to answer. If you decide not to take part or to skip some of the questions. If you decide to take part, you are free to withdraw at any time.

For more information or further clarifications about the study you can contact the investigator through the following phone number: **693862384** and e-mail address: **sakejoliecoeur1@gmail.com**

APPENDIX II: INFORMATION SHEET IN FRENCH

TITRE : LES DÉTERMINANTS DE L'ACTIVITÉ SEXUELLE PRÉCOCE CHEZ LES ADOLESCENTS SCOLARISÉS À YAOUNDE

Investigateur : SAKE JOLIE CŒUR, étudiante en 7ème année de médecine générale à la Faculté de Médecine et des Sciences Biomédicales, Université de Yaoundé I.

Superviseurs :

- Pr KOKI NDOMBO Paul, Directeur du CME-FCB, Pédiatre, Faculté de Médecine et des Sciences Biomédicales, Université de Yaoundé I
- Dr NSEME ETOUCKEY Eric, Spécialiste en Médecine Légale, Faculté de Médecine et des Sciences Biomédicales, Université de Yaoundé I
- Dr MEGUIEZE Claude Audrey, Pédiatre, Faculté de Médecine et des Sciences Biomédicales, Université de Yaoundé I

Objectif de l'étude : L'activité sexuelle précoce chez les adolescents est un facteur de risque de grossesses non désirées, MST (maladies sexuellement transmissibles) et autres. Il s'agit d'un problème majeur de santé publique. Des études antérieures ont prouvé que l'activité sexuelle précoce est le résultat de plusieurs autres facteurs. Le but de notre étude est de savoir quels sont les déterminants de l'activité sexuelle précoce chez les adolescents scolarisés de Yaoundé.

Durée de l'étude : Cette étude sera réalisée sur une période de 7 mois de Novembre 2023 à Mai 2024.

Risques et avantages : Il existe un risque que vous partagiez par hasard des informations personnelles ou confidentielles, ou que vous vous sentiez mal à l'aise de donner votre avis sur certains sujets. Cependant, nous ne souhaitons pas que cela se produise. Vous n'êtes pas obligé de répondre à une question si vous pensez que la ou les questions sont trop personnelles ou si en parler vous met mal à l'aise. Vous recevrez des discours éducatifs sur les conséquences et des conseils afin de prévenir/arrêter l'activité sexuelle précoce chez les adolescents dans nos écoles.

Compensation : Nous ne vous offrirons aucune incitation à participer à la recherche. Nous regrettons de ne pas avoir d'argent pour payer votre temps et vos frais de déplacement.

Confidentialité : Nous garderons tous les dossiers de cette étude privés. Nous ne partagerons aucune information vous concernant avec qui que ce soit en dehors de l'équipe de recherche. Toute information vous concernant comportera un numéro au lieu de votre nom. Seuls les chercheurs sauront quel est votre numéro et nous verrouillerons cette information avec un cadenas et une clé. Il ne sera partagé ou donné à personne d'autre que le chercheur.

La participation est volontaire : La participation à cette étude est volontaire. Vous pouvez sauter toutes les questions auxquelles vous ne voulez pas répondre. Si vous décidez de ne pas participer ou de sauter certaines questions. Si vous décidez de participer, vous êtes libre de vous retirer à tout moment.

Si vous avez des questions : Veuillez poser toutes les questions que vous avez maintenant. Si vous avez des questions plus tard, vous pouvez contacter le chercheur par Tél : **693862384,** adresse e-mail : **sakejoliecoeur1@gmail.com**

APPENDIX III: PARTICIPANTS CONSENT FORM IN ENGLISH

Mr. / Mrs. / Ms.....

(Name, Surname)

Title: **DETERMINANTS OF EARLY SEXUAL ACTIVITY AMONG ADOLESCENTS IN SECONDARY SCHOOLS IN YAOUNDE**

The final year medical student, **SAKE JOLIE COEUR**, proposed to me to participate in a study they are carrying out in Yaoundé in view of her M.D. Thesis. The principal investigator is **Professor KOKI NDOMBO Paul**, to study the determinants of early sexual activity among secondary school students in Yaoundé

She precised to me that I was free to accept or deny the proposal. I have received and understood the following information:

- The aim of this study
- The procedure
- Possible constraints and risks

I accept that entries be consulted by the research personnel and used for research purposes only. My entries will be discussed with me at the end of the study if I wish. My participation can be interrupted at any time if the principal investigator deems it necessary or if I wish. All data concerning me will be strictly confidential. Only the research personnel, and eventually a health authority representative will be given access to my data. The research protocol for this study has been reviewed and validated by the National Research Ethical Committee. At any time, I can ask for supplementary information from the student investigator, **Sake Jolie Coeur**, using the phone number: **693862384**

I hereby accept to participate in the study under the aforementioned conditions. A signed copy of this consent form will be given to me and will serve its purpose in time of need.

Date : ...../...../.....

Investigator's signature Volunteer's signature

APPENDIX IV : PARTICIPANTS CONSENT FORM IN FRENCH

M. / Mme / Mme.....

(Nom, prénom)

Titre : **LES DETERMINANTS DE L'ACTIVITE SEXUELLE PRECOCE CHEZ LES ADOLESCENTS DES LYCEES DE YAOUNDE**

L'étudiante en dernière année de médecine, **SAKE JOLIE COEUR**, m'a proposé de participer à une étude qu'elle mène à Yaoundé en vue de sa thèse de doctorat. L'investigateur principal est le **Professeur KOKI NDOMBO Paul**, pour étudier les déterminants de l'activité sexuelle précoce chez les adolescents du secondaire à Yaoundé.

Elle m'a précisé que j'étais libre d'accepter ou de refuser la proposition. J'ai reçu et compris les informations suivantes :

- L'objectif de cette étude
- La procédure
- Les contraintes et risques éventuels

J'accepte que les inscriptions soient consultées par le personnel de recherche et utilisées à des fins de recherche uniquement. Mes entrées seront discutées avec moi à la fin de l'étude si je le souhaite. Ma participation peut être interrompue à tout moment si l'investigateur principal le juge nécessaire ou si je le souhaite. Toutes les données me concernant seront strictement confidentielles. Seul le personnel de recherche et éventuellement un représentant des autorités sanitaires aura accès à mes données. Le protocole de recherche de cette étude a été revu et validé par le Comité national d'éthique de la recherche. A tout moment, je peux demander des informations complémentaires à l'étudiant investigateur, **Sake Jolie Coeur**, au numéro de téléphone suivant : **693862384**

J'accepte par la présente de participer à l'étude dans les conditions susmentionnées. Une copie signée de ce formulaire de consentement me sera remise et servira en cas de besoin.

Date : ...../...../.....

Signature du chercheur Signature du volontaire

APPENDIX V: QUESTIONNAIRE IN ENGLISH

QUESTIONNAIRE FOR THE DETERMINANTS OF EARLY SEXUAL ACTIVITY AMONGST HIGH SCHOOL STUDENTS IN YAOUNDE.

Students code _____ Date____/____/_____.

Your participation in this interview is important as it will help us achieve the aim of the study. All information given will be confidential, during and after the research process. Your participation is voluntary and you do not have to answer questions you do not wish to. If you have any question, please ask them now or later at the end of the interview. All questions are in bold text. Answer the questions by writing the corresponding answer or answers in the answer column provided.

For example:

S/N	Questions	Coding categories	Response	Skip/Filter
101	Sex of respondent **(OBSERVE)**	FEMALE = 1 MALE = 2	**2**	

SECTION I : SOCIODEMOGRAPHIC INFORMATION

S/Q	Questions	Coding categories	Response	Skip/Filter
S1Q1	**Sex of respondent**	Female = 1 Male = 2		
S1Q2	**How old were you at your last birthday?**	Age in years:_____		
S1Q3	**System of education**	Anglophone = 1 Francophone = 2		
S1Q4	**What class are you in?**			
S1Q5	**School type**	Public school=1 Private denominational school=2 Nondenominational private school=3		
S1Q6	**What is your religion?**	Christianity = 1 Islam = 2 Animist=3 Atheist = 4 Others (specify)_____ = 5		
S1Q7	**To who are you sexually attracted to ?**	Opposite sex=1 Same sex=2 Both sexes=3 Neither male nor females=4		

S1Q8	**How do you define yourself ?**	As a male=1 As a female=2		

SECTION II: SOCIOECONOMIC CHARACTERISTICS AND FAMILY RELATIONSHIP

S/N	Questions	Coding categories		Response	Skip/Filter
S2Q1	**In which household were you brought up?**	Single parent=1 Both parents=2 Reconstituted family=3 Adoptive family=4 Other (specify)_____=5			
S2Q2	**Are you living with your parents OR guardian in the same house?**	Yes = 1 No = 2 Live alone = 3 Other(specify)_____=4			
S2Q3	**Who is the household head of where you reside?**	Father = 1 Mother = 2 Guardian = 3 Myself = 4 Grandparent = 5 Other (specify)_____=6			
S2Q4	**What is the profession of the household head?**	Farmer = 1 Entrepreneur = 2 Artisan (*e.g. carpenter, plumber, electrician, mechanic)* = 3 Employee in the public sector (*e.g. civil servant, police, teacher*) = 5 Pastor/minister in church = 6 Retired = 7 Not employed = 8 Private sector=9 Other (specify)_____=10			
S2Q5	**What level of education did your parents/guardian attain?**	**<u>Father</u>** None=1 Primary=2 Secondary=3 University=4	**<u>Mother</u>** None=1 Primary=2 Secondary=3 University=4		**E.g 1 and 2**
S2Q6	**How much is your weekly allowance?**	Amount in FRS CFA_____			
S2Q7	**Who gives you allowance?**	Father =1 Mother= 2 Guardian= 3 Myself =4 Other (specify)_____=5			
S2Q8	**Have you ever discussed sex-related matters with your**	Often=1 Occasionally=2 Never=3			

	parent/guardian? If YES, often or occasionally?			
S2Q9	**Do you attend night clubs or parties?**	Yes = 1 No = 2		**If 'NO' go to S2Q11**
S2Q10	**How often do you attend night clubs or parties?**	Every weekend = 1 Once/twice a month = 2 Once every six months = 3 Once a year =4 Can't remember = 5		
S2Q11	**Have you ever taken any substance to get high?**	Yes = 1 No = 2		**If 'NO', go to S3Q1**
S2Q12	**Which substances have you ever taken to get high?** **(MULTIPLE RESPONSE ALLOWED)**	Alcohol = 1 Cigarettes = 2 Chicha=3 Marijuana = 4 Codeine = 4 Tramadol = 5 Other (Specify)_____ = 6		**E.g: 1 and 2**
S2Q13	**How often do you take any of these substances?**	Daily = 1 Once/twice a week = 2 Once/twice a month = 3 Once every six months = 4 Once a year = 5 Can't remember = 6		

SECTION III : INFORMATION ON SEXUAL INITIATION

S3Q1	**Have you ever had sex before?**	Yes=1 No=2			
S3Q2	**At what age did you have your first ever sexual intercourse?**	Age in years_____			
S3Q3	**What was the sex of the first person you had sex with?**	Opposite sex=1 Same sex=2 Other (please specify)_____=3			
S3Q4	**Who was the first person you had sexual intercourse with?**	Boyfriend =1 Girlfriend = 2 Older person = 3 Others (specify)_____ = 4			
S3Q5	**Was the first sexual intercourse planned, unexpected or forced?**	**Circumstance** Planned = 1 Unexpected = 2 Forced =3	**Agreement** Consentful = 1 Not consentful=2		**Eg: 1 and 2**

S3Q6	**Where you drunk or high during the first sexual act?**	Yes=1 No=2 I don't remember=3		
S3Q7	**In which period did you have your first ever sexual act?** **(MULTIPLE RESPONSE ALLOWED)**	Christmas period=1 Valentine's period=2 Holidays period=3 Birthday period=4 After success in exam=5 During schooling period=6 Other (please, specify)_____=7		
S3Q8	**Did you or your partner use any contraceptive?**	Yes = 1 No = 2 Don't remember = 3		**If 'NO', 'DON'T KNOW', go to S3Q10**
S3Q9	**What contraceptive method did you use?** **(MULTIPLE RESPONSE ALLOWED)**	Male condom = 1 Female condom = 2 Pill = 3 Injection = 4 withdrawal = 5 Other (Specify)_____= 6 Don't know = 7		
S3Q10	**What influenced your decision for engaging in sexual activity for the first time?** **(MULTIPLE RESPONSE ALLOWED)**	Love for my partner=1 Pressure from friends=2 Pressure from my partner=3 Pornographic movies=4 Social media sexual content=5 I was drunk=6 I was high=7 I was forced=8 Other (please, specify)_____=9		
S3Q11	**In which class where you during your first ever sexual act ?**	_____		
S3Q12	**What was your class average prior to your first sexual act ?**	Average in number:_____/20.		
S3Q13	**Do you have friends who are sexually active ?**	Yes=1 No=2		
S3Q14	**How often do you engage in with media content (TV, movies, social media) that portrays sexual activity (like pornography)?**	Frequently=1 Occasionally=2 Rarely=3		

Thank you for answering.

APPENDIX VI: QUESTIONNAIRE IN FRENCH

QUESTIONNAIRE SUR LES DETERMINANTS DE L'ACTIVITE SEXUELLE PRECOCE CHEZ LES ADOLESCENTS DE YAOUNDE.

Code du répondant : _____ Date___/____/_____.

Votre participation à cet entretien est importante car elle nous aidera à atteindre l'objectif de l'étude. Toutes les informations fournis resterons confidentielles pendant et après le processus de recherches. Votre participation est volontaire et vos n'êtes pas obliger de répondre aux questions si vous ne le souhaiter pas. Si vous avez des questions, veuillez les poser maintenant ou plus tard à la fin de l'entretient. Toutes les questions sont en caractères gras. Répondez aux questions en écrivant la ou les réponses correspondantes dans la colonne prévue à cet effet.

Par exemple :

S/N	Questions	Catégories de codage	Réponse	Saut/Filtre
101	Sexe du répondent **(OBSERVE)**	Féminin = 1 Masculin = 2	**2**	

SECTION I : RENSEIGNEMENTS SOCIODÉMOGRAPHIQUES

S/Q	Questions	Catégories de codage	Réponse	Saut/filtre
S1Q1	**Sexe du répondant**	Feminin = 1 Masculin = 2		
S1Q2	**Quel âge aviez-vous à votre dernier anniversaire ?**	Âge en années :_____		
S1Q3	**Système éducatif**	Anglophone = 1 Francophone = 2		
S1Q4	**Dans quelle classe êtes-vous ?**			
S1Q5	**Type d'école**	École publique = 1 École confessionnelle privée = 2 École privée non confessionnelle = 3		
S1Q6	**Quelle est votre religion ?**	Christianisme = 1 Islam = 2 Animiste = 3 Athée = 4 Autres (à préciser)_____ = 5		
S1Q7	**À qui êtes-vous attiré sexuellement ?**	Sexe opposé = 1 Même sexe = 2 Aux deux sexes = 3 Ni hommes ni femme = 4		

S1Q8	**Comment vous définissez-vous ?**	En tant qu'homme = 1 En tant que femme = 2		

SECTION II : CARACTÉRISTIQUES SOCIOÉCONOMIQUES ET RELATIONS FAMILIALES

S/N	Questions	Catégories de codage		Réponse	Saut/filtre
S2Q1	**Dans quel type de ménage avez-vous grandi ?**	Monoparentale = 1 Biparentale = 2 Famille reconstituée = 3 Famille adoptive = 4 Autres (à préciser)_____=5			
S2Q2	**Vivez-vous avec vos parents OU votre tuteur dans la même maison ?**	Oui = 1 Non = 2 Je vie seul = 3 Autre (à préciser)_____=4			
S2Q3	**Qui est le chef de famille de votre domicile ?**	Père = 1 Mère = 2 Tuteur = 3 Moi-même = 4 Grands-parents = 5 Autres (à préciser)_____=6			
S2Q4	**Quelle est la profession du chef de famille ?**	Agriculteur = 1 Entrepreneur = 2 Artisan (*p.ex. menuisier, plombier, électricien, mécanicien*) = 3 Employé du secteur public (*p. ex., fonctionnaire, policier, enseignant*) = 5 Pasteur/ministre dans l'église = 6 Retraité = 7 Sans emploie = 8 Secteur prive=9 Autres (à préciser)_____=10			
S2Q5	**Quel niveau d'éducation vos parents/tuteurs ont-ils atteint ?**	**<u>Père</u>** Aucun = 1 Primaire = 2 Secondaire = 3 Universitaire = 4	**<u>Mère</u>** Aucun = 1 Primaire = 2 Secondaire = 3 Universitaire = 4		**Par exemple : 1 et 2**
S2Q6	**Combien est votre allocation hebdomadaire (argent de poche)?**	Montant en FRS CFA_____			
S2Q7	**Qui vous donne l'allocation (argent de poche) ?**	Père = 1 Mère = 2 Tuteur = 3 Moi-même = 4 Autres (à préciser)_____=5			

S2Q8	**Avez-vous déjà discuté de questions liées au sexe avec votre parent/tuteur ? Si OUI, a quelle frequence? Souvent ou occasionnellement?**	Souvent = 1 Occasionnellement = 2 Jamais = 3		
S2Q9	**Allez-vous en boîtes de nuit ou à des fêtes ?**	Oui = 1 Non = 2		**Si la réponse est « NON », passez à S2Q11.**
S2Q10	**À quelle fréquence assistez-vous aux boîtes de nuit ou aux fêtes ?**	Chaque fin de semaine = 1 Une/deux fois par mois = 2 Une fois tous les six mois = 3 Une fois par an =4 Je ne me souviens pas = 5		
S2Q11	**Avez-vous déjà pris de la drogue pour vous défoncer ?**	Oui = 1 Non = 2		**Si la réponse est « NON », passer à S3Q1.**
S2Q12	**Quels types de drogue avez-vous déjà prises pour vous défoncer ?** **(RÉPONSE MULTIPLE AUTORISÉ)**	Alcool = 1 Cigarettes = 2 Chicha = 3 Marijuana = 4 Codéine = 4 Tramadol = 5 Autre (préciser)_____ = 6		**Par exemple : 1 et 2**
S2Q13	**À quelle fréquence prenez-vous ces drogues ?**	Quotidien = 1 Une/deux fois par semaine = 2 Une/deux fois par mois = 3 Une fois tous les six mois = 4 Une fois par an = 5 Je ne me souviens pas = 6		

SECTION III : RENSEIGNEMENTS SUR L'INITIATION SEXUELLE

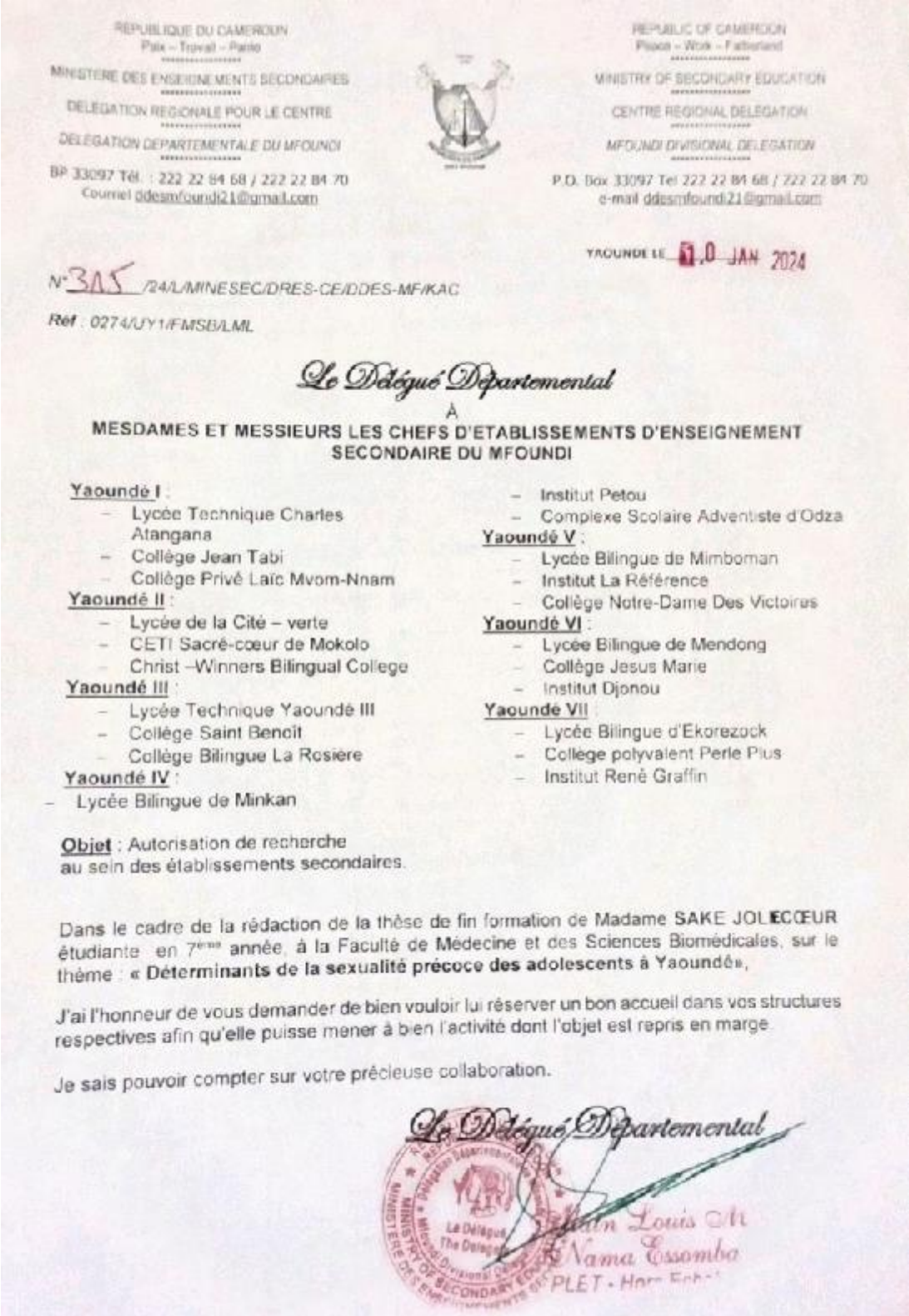
S3Q1	**Avez-vous déjà eu un rapport sexuel ?**	Oui = 1 Non = 2		
S3Q2	**À quel âge avez-vous eu votre premier rapport sexuel ?**	Âge en années_____		
S3Q3	**Quel était le sexe de la première personne avec qui vous avez eu ce premier rapport sexuel ?**	Sexe opposé = 1 Même sexe = 2 Autres (à préciser)_____=3		

S3Q4	**Qui était la première personne avec qui vous avez eu ce premier rapport sexuel ?**	Petit ami = 1 Petite amie = 2 Personne plus âgée = 3 Autres (a préciser)_____ = 4			
S3Q5	**Le premier rapport sexuel était-il planifié, inattendu ou forcé ?**	**Circonstance** Prévu = 1 Inattendu = 2 Forcé = 3	**Accord** Consenti = 1 Non consentant = 2		**Par exemple : 1 et 2**
S3Q6	**Aviez-vous bu ou étiez-vous drogué pendant le premier acte sexuel ?**	Oui = 1 Non = 2 Je ne me souviens pas=3			
S3Q7	**Pendant quelle période avez-vous eu votre premier acte sexuel ?** **(RÉPONSE MULTIPLE AUTORISÉ)**	Période de Noël = 1 Période de la Saint-Valentin = 2 Période des Fêtes = 3 Anniversaire (le vôtre/partenaire) = 4 Après avoir réussi à un examen = 5 Pendant la période de classes =6 Autres (a préciser) _____=7			
S3Q8	**Avez-vous avec votre partenaire utilisé un contraceptif ?**	Oui = 1 Non = 2 Je ne me souviens pas = 3			**Si « NON », passer à S3Q10**
S3Q9	**Quelle méthode contraceptive avez-vous utilisé ?** **(RÉPONSE MULTIPLE AUTORISÉ)**	Préservatif masculin = 1 Préservatif féminin = 2 Pilule = 3 Injection = 4 Retrait = 5 Autres (à préciser) _____= 6 Ne sait pas = 7			
S3Q10	**Qu'est-ce qui a influencé votre décision de vous engager dans une activité sexuelle pour la toute première fois ?** **(RÉPONSE MULTIPLE AUTORISÉ)**	Amour pour mon partenaire=1 Pression des amis=2 Pression de mon partenaire=3 Films pornographiques (curiosité) = 4 Contenu sexuel des médias sociaux = 5 J'étais ivre = 6 J'étais drogué = 7 J'ai été forcé=8 Autre (a préciser)_____= 9			
S3Q11	**Vous étiez dans quelle classe lors de votre premier acte sexuel ?**	_____			
S3Q12	**Quelle était votre moyenne scolaire avant votre premier acte sexuel ?**	Moyenne : _____/20.			
S3Q13	**Avez-vous des amis qui sont sexuellement actifs?**	Oui = 1 Non = 2			

S3Q14	**À quelle fréquence utilisez-vous du contenu médiatique (télévision, films, médias sociaux) qui dépeint une activité sexuelle (comme la pornographie)?**	Fréquemment = 1 Occasionnellement = 2 Rarement = 3		

Merci d'avoir répondu.

APPENDIX VII: RESEARCH AUTORISATION FROM THE MFOUNDI DIVISIONAL DELEGATION



REPUBLIQUE DU CAMEROUN
Paix – Travail – Patrie
MINISTERE DES ENSEIGNEMENTS SECONDAIRES
DELEGATION REGIONALE POUR LE CENTRE
DELEGATION DEPARTEMENTALE DU MFOUNDI
BP 33097 Tél. : 222 22 84 68 / 222 22 84 70
Courriel ddesmfoundi21@gmail.com

REPUBLIC OF CAMEROON
Peace – Work – Fatherland
MINISTRY OF SECONDARY EDUCATION
CENTRE REGIONAL DELEGATION
MFOUNDI DIVISIONAL DELEGATION
P.O. Box 33097 Tel 222 22 84 68 / 222 22 84 70
e-mail ddesmfoundi21@gmail.com

YAOUNDE LE 10 JAN 2024

N°345 /24/L/MINESEC/DRES-CE/DDES-MF/KAC

Réf : 0274/UY1/FMSB/LML

Le Délégué Départemental

A

MESDAMES ET MESSIEURS LES CHEFS D'ETABLISSEMENTS D'ENSEIGNEMENT SECONDAIRE DU MFOUNDI

Yaoundé I :
- Lycée Technique Charles Atangana
- Collège Jean Tabi
- Collège Privé Laïc Mvom-Nnam

Yaoundé II :
- Lycée de la Cité – verte
- CETI Sacré-cœur de Mokolo
- Christ –Winners Bilingual College

Yaoundé III :
- Lycée Technique Yaoundé III
- Collège Saint Benoît
- Collège Bilingue La Rosière

Yaoundé IV :
- Lycée Bilingue de Minkan
- Institut Petou
- Complexe Scolaire Adventiste d'Odza

Yaoundé V :
- Lycée Bilingue de Mimboman
- Institut La Référence
- Collège Notre-Dame Des Victoires

Yaoundé VI :
- Lycée Bilingue de Mendong
- Collège Jesus Marie
- Institut Djonou

Yaoundé VII :
- Lycée Bilingue d'Ekorezock
- College polyvalent Perle Plus
- Institut René Graffin

Objet : Autorisation de recherche au sein des établissements secondaires.

Dans le cadre de la rédaction de la thèse de fin formation de Madame SAKE JOLIE COEUR étudiante en 7ème année, à la Faculté de Médecine et des Sciences Biomédicales, sur le thème : « **Déterminants de la sexualité précoce des adolescents à Yaoundé** »,

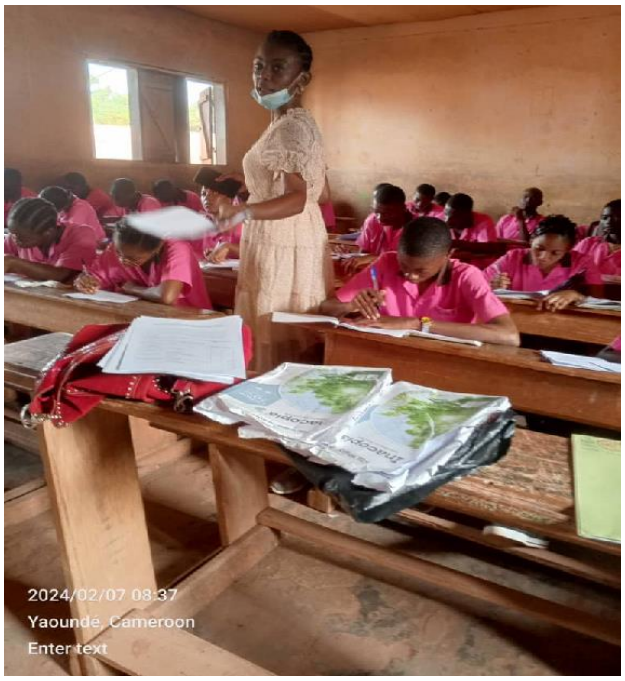
J'ai l'honneur de vous demander de bien vouloir lui réserver un bon accueil dans vos structures respectives afin qu'elle puisse mener à bien l'activité dont l'objet est repris en marge.

Je sais pouvoir compter sur votre précieuse collaboration.

Le Délégué Départemental

Jean Louis M
Nama Essomba
PLET - Hon

APPENDIX VIII: PICTORIAL GALLERY OF DESCENTS IN SOME SCHOOLS



APPENDIX IX: ETHICAL CLEARANCE

UNIVERSITE DE YAOUNDE I
FACULTÉ DE MÉDECINE ET DES SCIENCES BIOMÉDICALES
COMITÉ INSTITUTIONNEL D'ÉTHIQUE DE LA RECHERCHE
Tel/ fax : 22 31-05-86 22 311224
Email: decanatfmsb@hotmail.com

THE UNIVERSITY OF YAOUNDE I
FACULTY OF MEDICINE AND BIOMEDICAL SCIENCES
INSTITUTIONAL ETHICAL REVIEW BOARD

Ref : N°[illegible]/UY1/FMSB/VDRC/DASR/CIED

CLAIRANCE ÉTHIQUE

10 JUIN 2024

Le COMITÉ INSTITUTIONNEL D'ÉTHIQUE DE LA RECHERCHE (CIER) de la FMSB a examiné

La demande de la clairance éthique soumise par :

M.Mme : SAKE JOLIE COEUR **Matricule: 17M108**

Travaillant sous la direction de :

- Pr KOKI NDOMBO Paul
- Pr NSEME ETOUCKEY Éric
- Dr MEGUEZE Claude-Audrey

Concernant le projet de recherche intitulé : The determinants of early sexual activity among adolescents in schools in Yaoundé

Les principales observations sont les suivantes

Evaluation scientifique	
Evaluation de la convenance institutionnelle/valeur sociale	
Equilibre des risques et des bénéfices	
Respect du consentement libre et éclairé	
Respect de la vie privée et des renseignements personnels (confidentialité) :	
Respect de la justice dans le choix des sujets	
Respect des personnes vulnérables :	
Réduction des inconvénients/optimalisation des avantages	
Gestion des compensations financières des sujets	
Gestion des conflits d'intérêt impliquant le chercheur	

Pour toutes ces raisons, le CIER émet un avis favorable sous réserve des modifications recommandées dans la grille d'évaluation scientifique.

L'équipe de recherche est responsable du respect du protocole approuvé et ne devra pas y apporter d'amendement sans avis favorable du CIER. Elle devra collaborer avec le CIER lorsque nécessaire, pour le suivi de la mise en œuvre dudit protocole.
La clairance éthique peut être retirée en cas de non - respect de la réglementation ou des recommandations sus évoquées.
En foi de quoi la présente clairance éthique est délivrée pour servir et valoir ce que de droit

LE PRESIDENT DU COMITE ETHIQUE