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# PERCEPTIONS AND PRECURSORS OF APHRODISIAC USE AMONG UNIVERSITY STUDENTS IN TWO DISTRICTS IN GREATER ACCRA.

**BY**

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**(10937909)**

**THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON, IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF A MASTER OF PUBLIC HEALTH DEGREE**

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## DECLARATION

I, **NANA KWAME FREDUA-AGYEMAN**, hereby declare that this dissertation, "**PERCEPTIONS AND PRECURSORS OF APHRODISIAC USE AMONG UNIVERSITY STUDENTS IN TWO DISTRICTS IN GREATER ACCRA"** is a true reflection of my personal project. This research was undertaken under the supervision of Dr. Franklin Glozah, Department of Social and Behavioural Sciences, School of Public Health. References to already published work used in this dissertation has been duly cited and acknowledged, all other findings of this research is solely from my field work and has not been submitted for the award of any degree in this institution or in any other academic circles.

Signature..... .....

Nana Kwame Fredua-Agyeman

(Student)

Date: 18/08/2023

Signature……

Dr. Franklin N. Glozah

(Supervisor)

Date: 19/08/2023

## DEDICATION

This work is dedicated to my immediate boss, Dr. Akosua Sika Ayisi (Deputy Director Public Health, GAR), who's mentorship, inspiration and passion stirred up a desire to pursue a career in public health and preventive care medicine. Her daily support, motivation and selfless act of service towards the delivery and practice health of public health are worth emulating.

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## ABSTRACT

**Background**: Aphrodisiacs have become popular with the increased prevalence of sexual problems worldwide. The incidence of sexual problems is predicted to rise over 320 million in 2025 globally. In Ghana, aphrodisiac use is on the ascendancy with its negative health implications on the population. Furthermore, about half of the aphrodisiac users have no medically diagnosed sexual problem but often use these sexual enhancers. The aim of this study is to examine the perceptions and precursors influencing the use of aphrodisiacs among university students in Accra.

**Methods**: A cross-sectional study was carried out using self-administered questionnaires among university students in two districts in Greater Accra. Data was collected on participant's sociodemographic details, knowledge on aphrodisiac use, prevalence of aphrodisiac use, perception of university students regarding aphrodisiac use and consequences or side effects of aphrodisiac use. Data was then analysed using STATA version 17.

**Results**: Data from a total of 440 participants was used in the data analysis. In all, 10.7% of participants between the ages of 20-24 stated they had used aphrodisiacs with the most commonly used aphrodisiac being orthodox (45.2%) and spray/creams (38.1%). Among previous users of aphrodisiacs, 66.7% of them are currently using aphrodisiacs and they use it occasionally (92.2%). Overall, 35.9% had low knowledge, 14.8 had moderate knowledge and 49.3% had high knowledge on aphrodisiacs.

**Conclusion**: The prevalence of aphrodisiac use is 10.7% with 66.7% out of this currently using aphrodisiac; Orthodox variants and spray/creams are the main types of aphrodisiacs used and these are procured mainly from pharmacies without prescriptions, drinking bars/night clubs and sexual partners irrespective of its health implications. It is imperative for policies to be enacted

by the Food and Drugs Authority and enforced by the Medical and Pharmacy Councils respectively that the procurement of aphrodisiacs from pharmacies, requires prescription orders prior to dispensing them.

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## LIST OF ABBREVIATIONS

| Abbreviation | Full Meaning |
|---|---|
| FDA | Food and Drugs Authority |
| HIV | Human Immunodeficiency Virus |
| ICD | International Statistical Classification of Disease |
| STI | Sexually Transmitted Infections |
| UK | United Kingdom |
| WHO | World Health Organization |

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# CHAPTER ONE

# INTRODUCTION

## 1.1 Background

Reproductive health is an aspect of healthcare that explores an individual's reproductive system and sexual wellbeing throughout all stages of life (World Health Organization, 2022). It addresses the reproductive processes, functions, systems and illnesses at all stages of life. The world systems and culture places great importance on a man's virility (Mitchell et al., 2016). In a quest to boost and maintain sexual performance and drive, men tend to resort to artificial or natural remedies that might have adverse effects on their health (Amoah et al., 2022)

Sexual function has always played a vital part in human life. Throughout history, attempts have been made through a variety of methods to improve, preserve, and restore humans' sexual functions (Brunetti et al., 2020). Normal sexual function is dependent on the coordination of multiple human systems, including the neurological system, cardiovascular system, endocrine system, (Chen et al., 2019). Sexual functions are also viewed through social lens since sex may legitimize one's gender, boost ego and appeal between opposing genders for intimacy and companionships, as well as for continuation of lineage (Fiaveh et al., 2014; Fiaveh & Okyerefo, 2019). This suggests that a disruption in the multiple human systems and the psychosocial dimensions to sexual functions has effect on the quality of a person's sex life.

Sexual dysfunction is an important public health problem that occurs in both men and women. In Germany, the prevalence of one or more sexual dysfunctions was 33.4% in men (95% confidence interval [31.0; 35.9]) and 45.7% in women [43.0; 48.4] (Briken et al., 2020). In estimating the prevalence of sexual problems in the UK, 38.2% of the male respondents reported at least one sexual problem, only with 4.2% showing indications of disorder whiles 22.8% of the

women stated at least one sexual problem with 3.6% showing signs of sexual disorder (Mitchell et al., 2016).

Sexual dysfunctions commonly occur in males which can be attributed to a variety of physical and psychological conditions (Malviya et al., (2016). Sexual dysfunction in men encompasses disruptions to the entire process of sexual activity for men, including male sexual arousal, penile erection, penis insertion into vagina, ejaculation, and any impediment (Chen et al., 2019). Common types of sexual dysfunctions in women include desire disorder, sexual arousal, lubrication, orgasm, sexual satisfaction and pain (Camara et al., 2021). The 11th Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-11) of the World Health Organization (WHO) categorises sexual dysfunction into four main groups (World Health Organization, 2022). They include hypoactive sexual desire and arousal dysfunctions, orgasmic dysfunction, ejaculatory dysfunction and sexual pain-penetration disorder (Reed et al., 2016; World Health Organization, 2022) . The sexual problem must have been persistent or periodic for a long length of time (at least several months), occur often, and be accompanied with clinically substantial distress in order to be diagnosed. In addition, the ICD-11 classification system has a system of qualifiers that can be used across categories. For instance, the temporal qualifier shows whether the sexual dysfunction is lifelong, thus from the start of sexual activity, or if it began later (Briken et al., 2020; World Health Organization, 2022).

Sex is a complex activity that is not only meant for procreation but also for enjoyment and natural relaxation, hence people always look for ways to achieve sexual satisfaction. A common way of achieving enhancing and achieving sexual satisfaction is the use of aphrodisiacs (Manortey et al., 2018). An aphrodisiac is defined as a substance (food or drug) that arouses the

sexual instinct, induces venereal desire and increases sexual pleasure and performance (Manortey et al., 2018). By their mechanism of action, aphrodisiacs can be divided into three categories: libido boosters, sexual pleasure boosters, and potency boosters. (Kotta et al., 2013). Aphrodisiacs in recent years have become popular with the increased prevalence of sexual problems worldwide and the incidence of the problem is predicted to rise over 320 million in 2025 globally (Bhagavathula et al., 2016).

In Ghana, aphrodisiac use is on the ascendancy with its health implications to the population. Half of the aphrodisiac users in Ghana have no medically diagnosed sexual problem but they often use these sexual enhancers (Manortey et al., 2018). This suggests that the use of aphrodisiacs is among others being used for recreational purposes.

### 1.2 Problem Statement

Tertiary education is often patronised by young people and this is characterised by the desire to engage in romantic and sexual relationships (Lopez et al., 2015). In other words, many University students are within their youthful age and are sexually active (Mcharo et al., 2021). It is common to find university students in some form of sexual relationship with its underlying reasons such as love, economic benefits, recreational purposes among others (Fiaveh et al., 2014; Gbagbo & Gbagbo, 2021; Mcharo et al., 2021). Associated with these sexual relationships is the notion of sexual performance (Kidake et al., 2020; Yiana et al., 2018).

Within Ghanaian societies, sexual performance is associated with masculinity and portrays a sense of self-esteem and manhood especially among the youth. It is often construed as disgraceful for a man to be perceived as having sexual weakness or dysfunction, especially when the dysfunction occurs in his youthful years (Fiaveh et al., 2014). Many young men including those in tertiary institutions in maintaining their sexual prowess, patronize aphrodisiac products

from pharmacies, open market and herbalists (Manortey et al., 2018). In most cases, the usual focus of men in the choice of aphrodisiac is the potency of the sex enhancers rather than the adverse side effects (McCabe et al., 2016). The usage of sex enhancing products is more common in men compared to women (Amoah et al., 2022). Though not as common as men, women also use aphrodisiacs.

The prevalence of university students at risk of having female sexual dysfunction is high (42.0%) with 4 out of every 10 students showing a risk of having at least one form of female sexual dysfunction (Halle-Ekane et al., 2021). The commonest forms of dysfunction were problems of sexual pain (46.9%), orgasm (42.0%), desire (29.1%) and arousal (21.2%). The overall prevalence of sexual dysfunction among Ghanaian women was 72.8% (Amidu et al., 2010) The most prevalent areas of difficulty were anorgasmia (72.4%), sexual infrequency (71.4%), dissatisfaction (77.7%), vaginismus (68.1%), avoidance of sexual intercourse (62.5%), non-sensuality (61.5%) and non-communication (54.2%) (Amidu et al., 2010). Women often hold reservations with regards to aphrodisiacs due to perceived negative health implications for themselves and their partners (Amoah et al., 2022). However in most cases, men prioritise the efficacy of these sexual enhancers over health implications (Bhagavathula et al., 2016; McCabe et al., 2016).

Despite the safety concerns raised by Ghana's Food and Drugs Authority (FDA) on the abuse of unregistered sex enhancing products, the patronage remains high amidst debilitating side effects (Manortey et al., 2018). There have been studies conducted on the use of aphrodisiacs in Ghana. A study done in Ghana found that premature ejaculation was perceived as the major reason why some male university students (51.33%) use aphrodisiacs and a large portion (24.67%) of male

university students perceived aphrodisiacs as a necessity to improve one's sex life (Nyarko-Sampson et al.,2017). Community-level factors (social norms and expectations), interpersonal factors (expectations of partners and friends), public policy ( drug-related regulations), and organisational/institutional factors ( health system arrangements about access and use of drugs) are critical to the sale and use of aphrodisiacs among both men and women in Ghana (Amoah et al., 2022). The number of sexual partners a man has, the presence of sexual problems, advertisement, and knowledge of side effects were statistically associated with the use of aphrodisiacs in Ghana (Manortey et al., 2018). The desire to impress an intimate sexual partner was the main recreational reason that promote the use of sex enhancement drugs among men in Northern Ghana (Yiana et al., 2018).

Furthermore, this study seeks to add to the body of knowledge that exists on the factors influencing the use and prevalence of aphrodisiacs among university students (both men and women) in Ghana.

### 1.3 Research questions

The study will be underpinned by the following research questions

1. What is the prevalence and common type of aphrodisiac used among university students in Accra?
2. What is the association between knowledge about aphrodisiacs and aphrodisiac use among university students in Accra?
3. What sociodemographic factors are associated with aphrodisiac use among university students in Accra?

### 1.4 General objective of the study

The main objective of the study is to examine the perceptions and precursors influencing the use of aphrodisiacs among university students in Accra.

#### 1.4.1 Specific Objectives

Specifically, the study seeks to:

1. Determine the prevalence and common types of aphrodisiac use among university students in Accra
2. Assess the association between knowledge about aphrodisiacs and aphrodisiac use among university students in Accra
3. Identify sociodemographic factors associated with aphrodisiac use among university students in Accra.

### 1.5 Justification of the study

Sexual dysfunction is a common public health issue. Most studies, especially in the sub-Saharan region are typically carried out in the older general population, but the post-secondary education period is crucial for the development of the sexuality of both young men and women. The prevalence of students at risk of having sexual dysfunction was high with 4 out of every 10 students showing a risk of having at least one form (Halle-Ekane et al., 2021). Poor awareness and management of FSD may lead to adverse physical and psychosocial complications later on in the lives of these students.

There is limited scientific evidence supporting the efficacy of aphrodisiacs and more worrying is the fact that potential adverse health effects could result from the abuse of aphrodisiacs. A study

of such nature would help in assessing the knowledge of students regarding the risks of using aphrodisiacs, factors that would influence them to use it as well as help to determine the prevalence of the use of aphrodisiacs among tertiary students in Ghana.

Findings from the study would inform policy decisions and regulations by relevant stakeholders like the World Health Organization, Ministry of Health, Ghana Health Service, Food and Drugs Authority among others on the use of aphrodisiacs among tertiary students in Ghana. Findings would also serve as a baseline study for researchers interested in sexual and reproductive health.

### 1.6 Conceptual framework

Figure 1 illustrates some of the factors that may determine the use of aphrodisiacs in among university students. Empirical evidence suggests that, certain biological factors including ageing and diseases such as hypertension lead to the reduction of sex drive (Shigehara et al., 2021). This influences such people to use aphrodisiacs in order to improve their sex potency (Kotta et al., 2013; Shigehara et al., 2021). Also, social factors influence the purchase and use of aphrodisiacs. The influence of friends can contribute to aphrodisiac usage since both men and women exert influence on each other in the form of peer pressure (Yiana et al., 2018; Yidana et al., 2019). Through adverts on both print and electronic media like radio, television and newspapers, students get to know aphrodisiac and are influenced to use them (Amoah et al., 2022; Manortey et al., 2018). The youth and for that matter students would normally practice what they hear and see and as such they attempt the use of aphrodisiac (Yidana et al., 2019).

Knowledge on the perceived benefits of aphrodisiacs such as sexual satisfaction, performance, arousal and positive feedback from women contribute to the increase of aphrodisiac use (Amoah et al., 2022; Brunetti et al., 2020; Yidana et al., 2019).

Psychological factors including sexual satisfaction, punishment tool, positive feedback from women and maintaining multiple sexual partners contribute to the increase of aphrodisiac use (Amoah et al., 2022; Brunetti et al., 2020; Yidana et al., 2019). Young men feel they are "real men" when their female sexual partners appreciate their sexual performance in bed hence they are motivated to use aphrodisiacs (Manortey et al., 2018) Most men will always want to satisfy multiple sex partners to ensure fairness, especially where polygamy is practised (Amoah et al., 2022; Yidana et al., 2019). The framework shows that the interplay of biological, psychological and social factors contribute to the massive patronage of aphrodisiacs in the Ghanaian market. The use of aphrodisiac leads to health challenges including dizziness, headache, hypotension, restless to the unconsciousness, decrease in sex quality, priapism and in extreme case coma (Yidana et al., 2019).

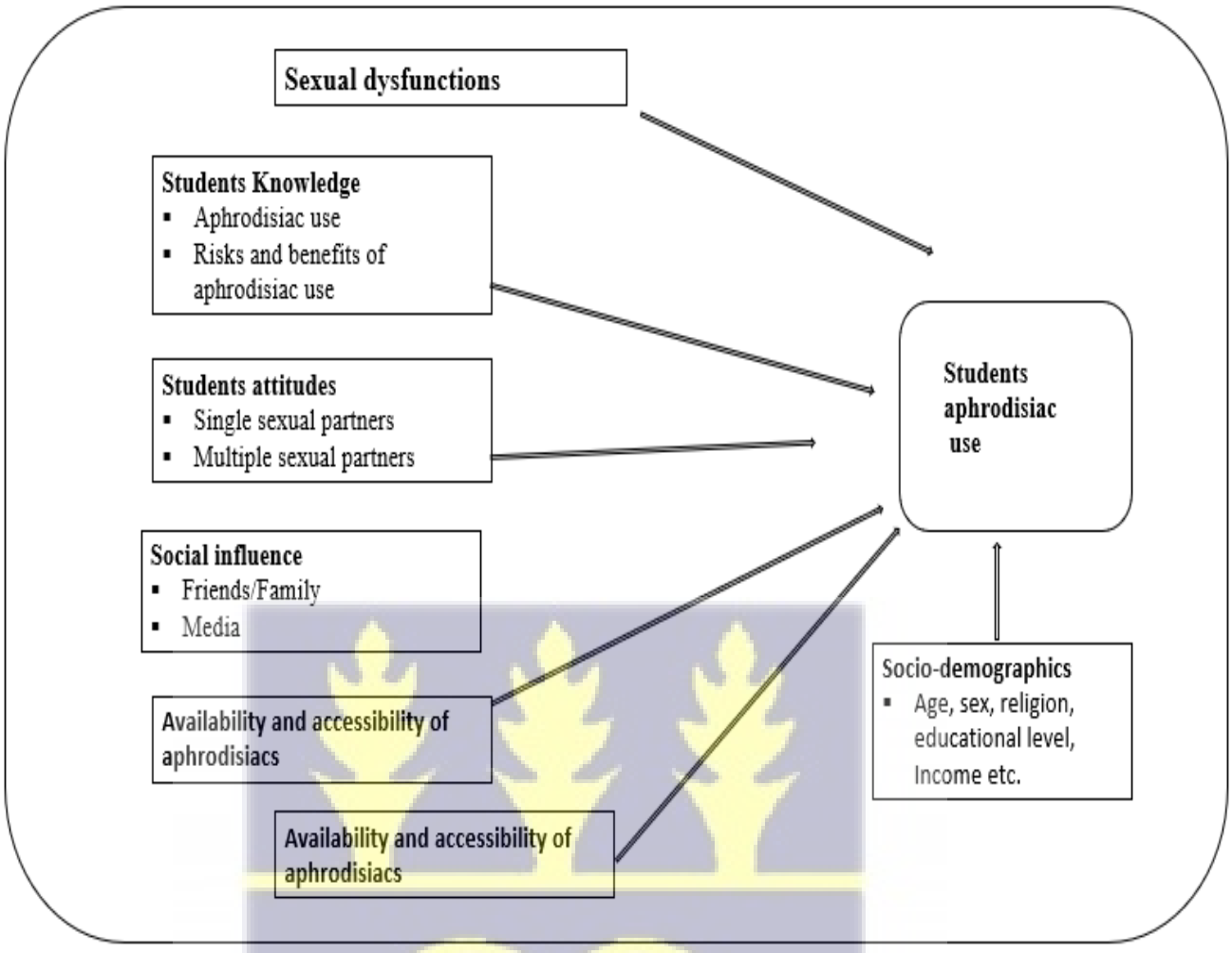


Figure 1: Conceptual framework for the usage of aphrodisiacs among university students.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.0 Introduction

This chapter presents literature review on aphrodisiacs use according to the specific objectives of this study. There are five main sub-sections which present studies on (i) prevalence and common types of aphrodisiacs; (ii) knowledge on aphrodisiacs; (iii) attitudes towards aphrodisiacs use; (iv) perceptions on aphrodisiac use; and (v) factors associated with aphrodisiac use.

## 2.1 Prevalence and Common Types of Aphrodisiacs

Sexual reproductive health is an essential aspect of life, and has been a pursuit of both males and females from time past (Manortey, Mensah, & Acheampong, 2018). For this cause, individuals have sought means to enhance their sexual function since time immemorial. An aphrodisiac has been defined as a substance (food or drug) that arouses the sexual instincts, induces venereal desire and increases sexual pleasure and performance (Manortey, Mensah, & Acheampong, 2018). Based on this definition of aphrodisiacs, the researchers proposed three categories of aphrodisiacs, namely, aphrodisiacs that increase libido (libido-increasing aphrodisiacs), those that enhance sexual pleasure (sexual pleasure-increasing aphrodisiacs), and those that increase potency (potency-increasing aphrodisiacs) (Manortey, Mensah, & Acheampong, 2018). Sexual dysfunction has been reported to affect about 52% of men and more than 63% of women across the globe (Manortey, Mensah, & Acheampong, 2018). Consequently, individuals resort to sex-enhancing drugs, also known as aphrodisiacs, to improve their sexual function. Patwardhan, Mutalik and Tillu (2015) in their study reported that, individuals predominantly utilize aphrodisiacs to experience sexual satisfaction, whether male or female. According to findings

from a study conducted by Ramlachan and Campbell (2014) in the United States, more than 31% of males suffer from sexual dysfunction throughout their lifetime. It is noteworthy that there is scarcity of scientific findings on the efficacy and effectiveness of these sex-enhancing drugs, implying their potential unknown side effects that they pose to users. As a result of this, the Food and Drugs Authority (FDA) placed bans on several herbal preparations classified as aphrodisiacs on the Ghanaian market. Because such medications and herbal preparations have no scientific evidence to support their efficacy, they are often unregistered with the FDA, and must eventually be taken off the markets (Atuobi-Bediako, 2019).This study seeks to improve on the scarcity of potential side effects of aphrodisiacs on end users by finding out the common side effects experienced by end users.

In a study conducted among male students attending the University of Cape Coast, Ghana, the researchers reported a high patronage of sex-enhancing drugs off the markets of Ghana, especially among students in second- and third-cycle institutions (Nyarko-Sampson, Dabone, & Brenya, 2017). Male students being the predominant population to seek aphrodisiacs in these institutions of higher learning can be attributed to the fact that the typical Ghanaian society attributes masculinity to sexual prowess. Thus, males tend to seek out ways and means of "improving their masculinity" (Atuobi-Bediako, 2019). In utilizing aphrodisiacs, both males and females seek to cure their sexual dysfunction. It is noteworthy that different individuals have varying opinions on the sexual and non-sexual abilities and inabilities that constitute sexual dysfunction. In a study to evaluate the factors that influence aphrodisiac use in a suburb in Ghana, the researcher reported that such factors as erectile difficulties, anxiety with sexual performance, ejaculating too quickly, lack of sexual desire, dissatisfaction with sexual

intercourse, inability to orgasm, difficulty with sexual arousal, among other factors constituted sexual dysfunction among the population (Atuobi-Bediako, 2019). In their study to evaluate sexual dysfunction among the youth, Moreau, Kagesten and Blum (2016) reported that the International Classification of Disease (ICD-10) outlines sexual dysfunction to comprise such symptoms as "lack of sexual desire, lack of sexual pleasure, failure of genital response, orgasmic dysfunction, premature ejaculation, and dyspareunia". Consequently, these symptoms, when experienced by males and females, prompts their desire to utilize aphrodisiacs.

In a study that was conducted in the Kumasi Metropolis of Ghana, the researchers reported that aphrodisiac use was higher among both males and females aged between 30-45 years, compared to those aged 18-30 years (Nyarko et al., 2021). This finding is contrary to findings from that of Atuobi-Bediako (2019), who reported that individuals in the younger age group of 19-35 years predominantly used aphrodisiacs, compared to those in the older age group. According to Nyarko et al. (2021), the expected norm is to observe aphrodisiac use predominantly among elderly individuals, not the younger ones. This is corroborated by Manortey, Mensah and Acheampong (2018), who reported from their study that sexual dysfunction is associated with increasing age. Consequently, high prevalence of aphrodisiac use among the younger population can be attributed to increased promiscuity in this population group. Further, Corazza et al. (2014) have reported that aphrodisiac use is relatively high among adolescents and young adults because of their exposure to several media outlets where these preparations and chemicals are advertised.

Aphrodisiacs are packaged as either chemical formulations, or locally prepared herbal mixtures. According to Atindanbila et al. (2014), herbal aphrodisiacs, also referred to as natural aphrodisiacs and chemical or orthodox aphrodisiacs are used across various demographics of the

Ghanaian population. Results from their study indicated, however, that males predominantly use aphrodisiacs in Ghana, and typically prefer to utilize the natural aphrodisiacs (Atindanbila et al., 2014). These herbal preparations have been noted to be harmful as they have no scientific evidences supporting them. Consequently, the Ghana FDA has issued several warnings and disclaimers pertaining to the use of unauthorized medications on the Ghanaian market (Atuobi-Bediako, 2019). Contrary to the findings by Atindanbila et al. (2014), Nyarko et al. (2021) reported that males preferred to use orthodox aphrodisiacs over herbal preparations. This was attributed to the fact that the orthodox medications had a quicker onset of action, hence was preferred among majority of the individuals who utilize aphrodisiacs (Nyarko et al., 2021). Ocloo (2015) reported the harmful side effects of utilizing herbal aphrodisiacs, including complications such as sustained erections, kidney failure, and cardiac arrest. Individuals are ceaselessly cautioned against the use of unauthorized medications, including aphrodisiacs, because they tend to be adulterated with unapproved drugs which are harmful to health (Ocloo, 2015).

### 2.2 Knowledge on Aphrodisiacs

Moreau, Kagesten and Blum (2016) argue that sexual dysfunction is a challenge that plagues many young people in these times. In their defence, they indicate that most studies conducted on the sexual and reproductive health of young adults have focused primarily on risk reduction, with emphases on unintended and unwanted pregnancies among young adolescents and women of reproductive age in general, sexually transmitted infections, including human immunodeficiency virus (HIV), among others. The researchers further argue that sexual health among young adults encompasses more than physical morbidities, and includes factors pertaining to physical,

psychosocial and emotional responses (Moreau, Kagesten, & Blum, 2016). Consequently, the World Health Organization (WHO) has defined sexual health as "a continuum of physical, psychological, and socio-cultural wellbeing associated with sexuality" (WHO, 2012). Hence, sexual health is a matter of concern. Nyarko et al. (2021) argue that most young adults, especially males, tend to believe that they have one sexual challenge or the other, because of the abundance of aphrodisiac advertisements on all manner of media platforms, including print, mass and social media. Consequently, the previous notion that the elderly were those who suffered sexual dysfunction is no longer valid, as more young people assess that they have sexual dysfunction from the numerous aphrodisiac advertisements to which they are exposed (Nyarko et al., 2021). Thus, although they may have no sexual dysfunction, young adults hold the impression of sexual dysfunction and are enticed to utilize aphrodisiacs to enhance their sexual performance. Contrary to this report, however, Bhagavathula, Elnour and Shehab (2016) reported that there is actually a rise in sexual dysfunction among the youth. The researchers predicted from their study, that sexual dysfunction would be a problem among more than 320 million individuals globally by 2025 (Bhagavathula, Elnour, & Shehab, 2016).

Manortey, Mensah and Acheampong (2018) in their study among adult male residents in the Ashaiman municipality of Ghana reported that almost all of the study participants had some knowledge of aphrodisiacs. Respondents had knowledge of both orthodox and herbal aphrodisiacs, with most indicating their preference for orthodox pills (Manortey, Mensah, & Acheampong, 2018). This finding is similar to a report indicated by Nyarko et al. (2021), who stated from their study that males typically preferred orthodox pills because their effect was almost immediate, enhancing sexual performance. It is noteworthy that individuals have various

sources of knowledge on aphrodisiac use. Manortey, Mensah, and Acheampong (2018) listed such sources as pharmacy shops, the open market, from drug peddlers, and drinking bars, usually as a recommendation from a friend or relative. Individuals barely purchased aphrodisiacs based on the recommendation of a health care professional. Consequently, based on the recommendation from friends and family members, and confirmation from adverts and the media, individuals gained knowledge on aphrodisiacs (Manortey, Mensah, & Acheampong, 2018). In corroborating the source of knowledge from drinking bars, Atuobi-Bediako (2019) reported from his study that most Ghanaians were fed with knowledge from friends they met at drinking bars and bar attendants that herbal preparations, locally known as "bitters," offered "sexually charged" experiences. There have also been instances when aphrodisiacs were used based on recommendations from sexual partners (Manortey, Mensah, & Acheampong, 2018). The challenge of unverified "bitters" on the Ghanaian market prompted immediate action from the Ghana FDA to issue warnings to the Ghanaian populace on the potential harmful side effects of using products that had not been approved by the Authority (Atuobi-Bediako, 2019). Among noted side effects of herbal aphrodisiacs are arrhythmias, hypotension, muscle paralyses, and difficulties breathing (Atuobi-Bediako, 2019). According to Ocloo (2015), most users of herbal aphrodisiacs do not have knowledge of required dosage for administering the drug, and tend to use them per their discretion. It is noteworthy, however, that such practice is harmful, as certain herbal aphrodisiacs, including heroin, have been reported to drug interactions with other medications, which could lead to unpleasant complications (Ocloo, 2015).

Knowledge of side effects of aphrodisiacs has been reported by several studies, with many reports of poor knowledge. According to Manortey, Mensah, & Acheampong (2018), most

Ghanaian men are only interested in utilizing sex-enhancing drugs to improve their sexual reputation, than they are about potential side effects that may result from their use. In their study to assess the purchase of aphrodisiacs in the Kumasi Metropolis of Ghana, Nyarko et al. (2021) reported that individuals who purchased orthodox aphrodisiacs from pharmacy shops were informed of possible side effects that may result from excessive use; however, patronage was not affected in any way. The researchers reported that the commonest side effects consumers often reported from using aphrodisiacs was headache, yet they continued purchasing them, indicating that they were efficacious (Nyarko et al., 2021). Contrary to these findings, however, Manorty, Mensah and Acheampong (2018) reported from their findings that knowledge of side effects from extended use and overdose of aphrodisiacs served as a preventive measure for procuring them. In Chinese culture, the use of the "Spanish Fly," which is an aphrodisiac produced from blister beetles, has predated centuries, although records indicate their toxicity (Kotta, Ansari, & Ali, 2013). According to Kotta, Ansari and Ali (2013), individuals tend to prefer naturally-occurring aphrodisiacs because of the perception of no side effects. Consequently, foods such as raw oysters and strawberries are utilized as aphrodisiacs.

### 2.3 Attitudes towards Aphrodisiacs Use

In a study to evaluate masculinity, male sexual virility and use of aphrodisiacs in Ghana, Fiaveh (2019) reported a positive attitude towards aphrodisiac use. According to responses from respondents of the study, men are able to determine whether or not women consider them "masculine enough" after any sexual encounter. In the words of a married man who was involved in the study, "you will know whether you have performed or not … some women will tell you and you can also detect it from her face and demeanor … the point is that once a woman

is satisfied with you, all other things do not matter; you have performed" (Fiaveh, 2019). Thus, providing sexual satisfaction to their partners is a measure of masculinity among males, in the Akan context of the Ghanaian culture. In a study conducted among men in the Greater Accra region of Ghana, Atuobi-Bediako (2019) reported that men typically hold an attitude of accepting to use an aphrodisiac drug so long as they assess "good performance" from previous use. Consequently, referral based on personal experience or recommendation from a friend or relative, or even one's sexual partner, increases the likelihood of using an aphrodisiac to enhance sexual pleasure.

In their study, Chowdury et al. (2018) reported that adolescents have an attitude towards aphrodisiacs to utilize them excessively and recreationally. The researchers argue that the excessive use of aphrodisiacs without prescription from a qualified health professional is as a result of widespread media publicity and advertisement given to these drugs, with inadequate policies to limit their use and distribution (Chowdury et al., 2018). Makwana et al. (2013) have reported that producers of aphrodisiacs generate millions in revenue as a result of uncontrolled and recreational use of the drugs. Thus, although the primary use for aphrodisiacs is to improve erectile dysfunction, individuals tend to utilize them for their personal pleasure, whether or not they suffer an erectile dysfunction, or experience challenges with sexual intercourse.

According to Atindanbila et al. (2014), male users of aphrodisiacs in Ghana typically prefer to use herbal preparations, popularly known as "bitters," to enhance their sexual experiences. These preparations are often procured from drinking bars, friends and relatives, and are advertised as being the most potent of aphrodisiacs. These drugs are alcohol-based, and consequently imply that men who utilize them could end up being drunken (Atindanbila et al., 2014). Consequently,

Fiaveh (2019) has reported that although Ghanaian men tend to consume alcohol-based aphrodisiacs to enhance their sexual performance as a measure of their masculinity, excessive alcohol intake which makes a man drunken is considered a shame to his masculinity. Thus, although Ghanaian men show a positive attitude towards alcohol-based aphrodisiacs for their sexual pleasure, they look down on excessive alcohol consumption, and consider it a shame to masculinity. Atuobi-Bediako (2019) has argued that these herbal preparations are often prepared under unhygienic conditions, with no empirical basis for their preparation, and should be considered harmful to health. In a study that explored scientifically proven herbal aphrodisiacs, the researchers indicated that Yohimbine, an indigenous plant in the African region, has been proven to possess aphrodisiac abilities (Kotta, Ansari, & Ali, 2013). A caution is given, however, on overdose and excessive usage of the plant, which has been documented to possess harmful side effects.

Makwana et al. (2013) reported that most users of both orthodox and herbal aphrodisiacs have multiple sexual partners. Consequently, males use these drugs in order to provide satisfaction to each of their partners. It is noteworthy, however, that multiple sexual partners predisposes individuals to contracting sexually transmitted infections (STIs), including HIV (Makwana et al., 2013). According to Atuobi-Bediako (2019), the attitudes of men towards the use of aphrodisiacs were dependent on whether or not they suffered some chronic condition. Kingsberg and Woodard (2015) have argued that men with hypertension and diabetes often suffer erectile dysfunction, usually as a result of nerve damage. Further, some antihypertensive medications, including beta blockers, diuretics and centrally-acting alpha agonists have been noted to impair sexual function (Atuobi-Bediako, 2019). Thus, hypertensive men are more likely to suffer

erectile dysfunction and resort to using aphrodisiacs, whether as a recommendation from a health care practitioner, or as a means of self-help. Consequently, individuals who suffer from a chronic condition and intend to improve their sexual performance would utilize aphrodisiacs.

Corazza et al. (2014) reported from their study that adolescents and young people have a positive attitude towards aphrodisiac use, because of the impact of media advertisements of these drugs. Consequently, this increases promiscuity among this age group, as they seek to explore their sexuality (Corazza et al., 2014). Makwana et al. (2013) reported from their study that most users of aphrodisiacs were also involved in using illicit drugs, and often experienced detrimental effects to their health. This was attributed to the fact that these medications were available on the streets without any prescription, and could be easily procured. Further, because vendors of over-the-counter aphrodisiacs also vended illicit drugs, their customers would usually end up procuring the illicit drugs as well (Makwana et al., 2013). Chowdury et al. (2018) indicated in their study that aphrodisiacs produced psychological effects, for which reason users often returned to their use. According to the researchers, a positive attitude is exhibited towards aphrodisiac use because of the hallucinogenic effect it produces, including hormonal changes and increase blood flow, which enhance sexual performance in males (Chowdury et al., 2018). According to Amoah, Adjei and Arthur-Holmes (2022), individual attitudes towards aphrodisiacs use is often predicated by cultural norms, values and expectations. Most African societies display expectations of children as a sign of successful marital relationship; both men and women are put under pressure to find ways and means to give birth to satisfy these demands of their communities (Amoah, Adjei, & Arthur-Holmes, 2022).

### 2.4 Perceived functions of Aphrodisiac Use

Makwana et al. (2013) have argued that although the primary use of aphrodisiacs is for treating erectile dysfunction, their use in recent years have been more recreational than medical. It is noteworthy, however, that different perceptions for use of aphrodisiacs have been propounded in several studies. In their study to evaluate the bio-psychosocial factors associated with the use of sexual enhancers among Ghanaian men, Atindanbila et al. (2014) reported that most men perceived aphrodisiacs as a blessing intended to maintain the masculinity of men. The perception of sexual prowess as a sign of masculinity is a theme that runs through most cultures and ethnic groups in the Ghanaian society. In his study to evaluate masculinity and male sexual virility among Ghanaian men, Fiaveh (2019) reported that some men are ridiculed due to the fact that they are unable to provide satisfaction to their wives and/or partners sexually. The study recorded one respondent as indicating that, "the adverts are all over the place, my woman keeps telling me to seek sexual help … what a pressure" (Fiaveh, 2019). Thus, perceptions on the potency of aphrodisiacs are borne out of advertisements, with further influence from sexual partners. According to Fiaveh (2019) advertisements of aphrodisiacs via electronic media such as television and radio, through billboards and the internet plays an important role in the perception of individuals on aphrodisiac use. Especially for the locally-manufactured herbal aphrodisiacs, their advertisements mostly hinge on declaring that they enhance sexual performance of males, whether or not they are alcoholic bitters, or medicinal preparations (Fiaveh, 2019). On the Ghanaian market, popular alcoholic beverages that have been noted to possess aphrodisiac properties include Alomo Bitters, Joy Dadi Bitters, Adonko Bitters, Soloku Bitters, Happy Man

Bitters, Agya Appiah Bitters, and Kakai Bitters, amongst others (Fiaveh, 2019). Locally-manufactured pills that have been approved by the Ghana FDA, which are advertised as possessing aphrodisiac capabilities include Angel Natural Capsule, Kingdom Ginseng Power Capsule and Rockman Capsule (Amoah, Adjei, & Arthuer-Holmes, 2022).

According to Hassali et al. (2012), locally-manufactured medications are cardinal in health care provision in developing countries, because these medications constitute the summation total of indigenous knowledge, skills, and practices based on theories, beliefs and experiences of natives. Hence, the locals prefer their use to orthodox medications. Consequently, indigenes prefer the use of local aphrodisiacs over orthodox aphrodisiacs. In their study to determine the general public perception towards traditional medicines used for aphrodisiac purposes in Malaysia, Hassali et al. (2012) reported that most individuals held the perception that herbal preparations had the capability to increase libido in both males and females. Although these preparations have no empirical proof to support the claims, this perception is held by majority of individuals primarily as a result of personal experiences of those who have used herbal aphrodisiacs (Hassali et al., 2012). Contrary to these findings, Akinloye and Yinusa (2012) in their study to assess complementary and alternative medicine usage to enhance male sexual performance in Nigeria reported that few individuals, either males or females, utilized natural or locally-manufactured aphrodisiacs. The researchers argued that the disparity in reports could be attributed to the fact that most people are shy to discuss their sexuality with others, for which reason they would likely provide answers that would "keep their integrity" (Akinloye & Yinusa, 2012). Hassali et al. (2012) further indicate that shyness with respect to discussing matters of sexuality borders on

the attitudes of health care providers towards individuals who seek help on their sexual and reproductive health, especially when they are teenagers.

Perceptions on aphrodisiac use have been noted to be impacted by several factors including marital status, gender, and age. According to Amoah, Adjei and Arthur-Holmes (2022), whereas some individuals would argue for the use of aphrodisiacs by their partners, others would argue against their use. A female participant in their study was reported as saying that, "if I see that a partner is using aphrodisiacs, I will leave him the same day". Another male was reported as saying that, "I won't take it, even if my partner requests aphrodisiacs. It will destroy my sex life in the future. She can leave. I came to this world alone" (Amoah, Adjei, & Arthur-Holmes (2022). These responses indicate the extent of dislike some individuals have towards aphrodisiac use. Such perception is likely to be from an educational point of view, where individuals who have some form of education are privy to knowledge that excessive use of aphrodisiacs could pose harmful effects to one's health.

The use of herbal aphrodisiacs is perceived to prolong sexual intercourse. While this may seem as a pleasurable experience for some individuals, others may dislike such a property. In his study, Fiaveh (2019) reported one respondent as quoting, that "some think that the local ones are the best. But I think that it is not good. It prolongs sex too much and you even get tired. It gets to a time you don't feel the thing again". However, individuals who seek prolonged sexual intercourse and hold such perception about herbal aphrodisiacs are more likely to use them than those who think otherwise. Atuobi-Bediako (2019) has reported that aphrodisiacs are perceived to be potent when individuals receive positive feedback from their friends and relatives. Thus, although aphrodisiacs may be advertised with disclaimers to excessive use, users tend to

overlook them because of their desire to achieve sexual pleasure. According to Fiaveh (2019), in the Ghanaian society, most people are convinced to use aphrodisiacs based on the gimmicks posed by the vendors. These vendors tend to influence consumers to purchase aphrodisiacs based on presumed benefits that are not scientifically proven or indicated on the packs of orthodox medications. In determining the potency of a locally-manufactured aphrodisiac, one respondent was reported as stating that, "when it enters your system you will know. I know my system. It makes my waist stronger" (Fiaveh, 2019).

## 2.5 Factors Associated with Aphrodisiac Use

### 2.5.1 Show of Masculinity

Manortey, Mensah, and Acheampong (2018) have argued that most Ghanaians who use aphrodisiacs to enhance their sexual performance do not actually need them. In their report, they indicate that although sex therapists have posited 3-7 minutes as the intravaginal ejaculatory latency period, most Ghanaians perceive an intravaginal ejaculatory latency period range of 7-25 minutes (Manorty, Mensah, Acheampong, 2018). Most Ghanaian men are therefore not justified in their use of aphrodisiacs. This finding indicates that one factor that influences the use of aphrodisiacs among Ghanaians is the poor perception of the normal intravaginal ejaculatory period. This wrong perception is held among many cultures in the Ghanaian society. To corroborate this, Atindanbila et al. (2014) reported from their study that most cultures expect men to be responsible for taking care of their nuclear families; not only in providing food, clothing and other basic amenities of the family, but by sexually satisfying his wife. In view of the above, sexual prowess is a subject matter discussed amongst peers, when they seek to determine a man's masculinity. Fiaveh (2019) indicates that men who are unable to "perform

longer" in bed are advised by their spouses, friends and family to seek help, for which reason they go in for aphrodisiacs. Atuobi-Bediako (2019) documented that "men openly discuss their sexual escapades with their peers and family, unlike women". Thus, to exhibit their masculine prowess among their peers, men tend to utilize aphrodisiacs to enhance their sexual performance.

### 2.5.2 Fear of ridicule

Atindanbila et al. (2014) reported that the fear of being ridiculed by their spouses is the reason why most men use aphrodisiacs. Some men are threatened with divorce when they are unable to sexually satisfy their wives (Atindanbila et al., 2014). This report is contrary to a report indicted by Fiaveh (2019), stating that some men and women would rather divorce their spouses for using aphrodisiacs. In their defence, such individuals elicited the negative implications of aphrodisiacs, and the false expectations aphrodisiacs produce, which are not lasting.

### 2.5.3 Fears and Anxieties

Further, men tend to utilize aphrodisiacs to enhance their sexual performance as a result of insecurities and anxieties they may be experiencing. Fiaveh (2019) argues that some men misinterpret women's sexuality, and reason their need for romance to mean their need for penetrative sex, hence utilizing aphrodisiacs. Because such men intend to make sexual intercourse memorable, they utilize aphrodisiacs. In their study, Amoah, Adjei and Arthur-Holmes (2022) recorded one female respondent as indicating that, "women want to try different men, so the men fear losing their women. Because of this, the men go for those drugs". This indicates the lack of appreciation for moral standards. Another respondent was recorded as saying that, "some men are wicked. They believe that if their ladies show pain during sex, then they are men" (Amoah, Adjei, Arthur-Holmes, 2022). This perception can be attributed to the

fact that men perceive their masculinity to be a measure of their sexual performance, for which reason they utilize aphrodisiacs. It is noteworthy; however, that excessive use of aphrodisiacs could lead to uncomfortable health conditions such as priapism. In his study, Fiaveh (2019) indicated that some women intentionally delay visiting their partners because they perceive their use of aphrodisiacs, which keeps them erected for prolonged periods. One male respondent in his study was quoted as indicating that, "I erected for 30 minutes and when the lady finally came, she said she was menstruating. I tried persuading her … I would have had blue balls" (Fiaveh, 2019).

### 2.5.4 Advertisements

According to Manortey, Mensah and Acheampong (2018), frequent advertisements of aphrodisiacs influence aphrodisiac use among both men and women. From the results of their study, the researchers reported that men who heard advertisements on aphrodisiacs on a daily basis were about ten times more likely to patronize them, compared to those who had never heard about them. Further, occasional hearing and/or seeing of aphrodisiac advertisements indicated the likelihood of using them, compared to having no means of hearing about them (Manortey, Mensah, & Acheampong, 2018). This finding is corroborated by the findings of Corazza et al. (2014), who reported that aphrodisiac use is on the rise among adolescents primarily because of their exposure to advertisements of aphrodisiacs across print, mass and social media.

### 2.5.5 Enhance Sexual Appeal

Amoah, Adjei and Arthur-Holmes (2022) reported that some women seek to "break free from the chains of domesticity," and to take control of their sexual and reproductive health, which is often hampered by culture, religion and law. The study posits that women who are chronic consumers of alcoholic beverages are likely to use aphrodisiacs to enhance their sexual appeal and performance. This can be attributed to the fact that most of these alcoholic beverages on the Ghanaian market are advertised as sex-enhancing medications, for which reason alcohol consuming coincidentally could be one of these sex-enhancing beverages (Amoah, Adjei, & Arthur-Holmes, 2022).

### 2.5.6 Sociodemographic Influence

The researchers further argue that the choice of using aphrodisiacs is influenced by tangible factors, like recommendation from friends and sexual partners, as well as intangible factors, including religious beliefs and culturally-acceptable norms. Consequently, whereas religious beliefs may deter men and women from using aphrodisiacs, cultural expectations on a couple may be the trigger to their using aphrodisiacs, to enhance their sexual affair. Addo et al. (2018) argued from their study that women who are unemployed are less likely to use aphrodisiacs to enhance their sexual performance, compared to those who are employed. This could be attributed to the fact that younger adults are less likely to be in long-standing relationships, reducing the need and desire for recreational sexual intercourse. Furthermore, women who are employed are more likely to be settled in families, and would be burdened with familial responsibilities, reducing their need to embark on sexual adventures as promised by manufacturers of aphrodisiacs (Amoah, Adjei, & Arthur-Holmes, 2022).

# CHAPTER THREE

# METHODS

## 3.1 Introduction

This section describes the methods and procedures that were employed in the conduct of this study. It includes the study design, location, population, sample size and sampling techniques. This chapter also highlights details on data collection techniques, analysis, and ethical considerations.

## 3.2 Study design

The study was a descriptive cross-sectional study design. A cross-sectional study was appropriate as it is a study design that has strength to measure both outcome [in this study aphrodisiac use among university students] and exposures [socio-demographic characteristics of students, knowledge on aphrodisiac use, attitude towards aphrodisiac use and perception of university students regarding aphrodisiac use] at the same time.

## 3.3 Study site.

The study was conducted in two municipalities: (1) the La Nkwantanang-Madina Municipality. The La Nkwantanang Madina Municipal is one of the 29 MMDAs in the Greater Accra Region and one of Ghana's 261 Metropolitan, Municipal and District Assemblies (MMDAs). The administrative capital is located in La Nkwantanang Madina Municipal. Madina was separated from Ga East Municipal and is now a component of the 2012 Municipalities and Districts that were simultaneously launched on June 28, 2012, in their various locations. Legislative Instrument (L.I.) 2131 created the La Nkwantanang Madina Municipality, which was launched in June 2012. It is situated in the northern portion of the Region and was separated from the Ga East Municipality. It encompasses a total area of 70.887 square kilometers of land. Its neighbors

include the Akwapim South District in the north, the Accra Metropolitan Assembly in the south, the Ga East Municipal in the west, and the Adentan Municipal in the east. According to the 2021 population and housing census, there are 123,830 females and 120,846 males living in the Municipality.

(2) The Ayawaso West Municipal is one of Ghana's 261 Metropolitan, Municipal and District Assemblies (MMDAs) and one of the 29 MMDAs that make up the Greater Accra Region. As one of the 38 newly established and upgraded district assemblies, the Ayawaso West Municipality was split off from the Ga West Municipal Assembly in 2018 with Dzorwulu as its capital. Approximately 3.0% of the Greater Accra Regional land area is taken up by the Ayawaso West Municipal, which has a total land area of 385 km2. Longitude 05°35'N and Latitude 00°06'W are the coordinates for its location. The Municipality is bordered in the north by the La Nkwantanang Madina Municipal, to the south-west with Accra Metropolitan, to the south with Ayawaso North Municipal, to the west west with Okaikwei North Municipal and in the north-west by Ga East Municipal, It is also bordered to the north-east by Adentan Municipal, east by Ledzokuku Municipal and south-east by La Dade Kotopon Municipal.According to the 2021 population and housing census, there are 75,303 people living in the Municipality, including 38,164 men and 36,689 women.

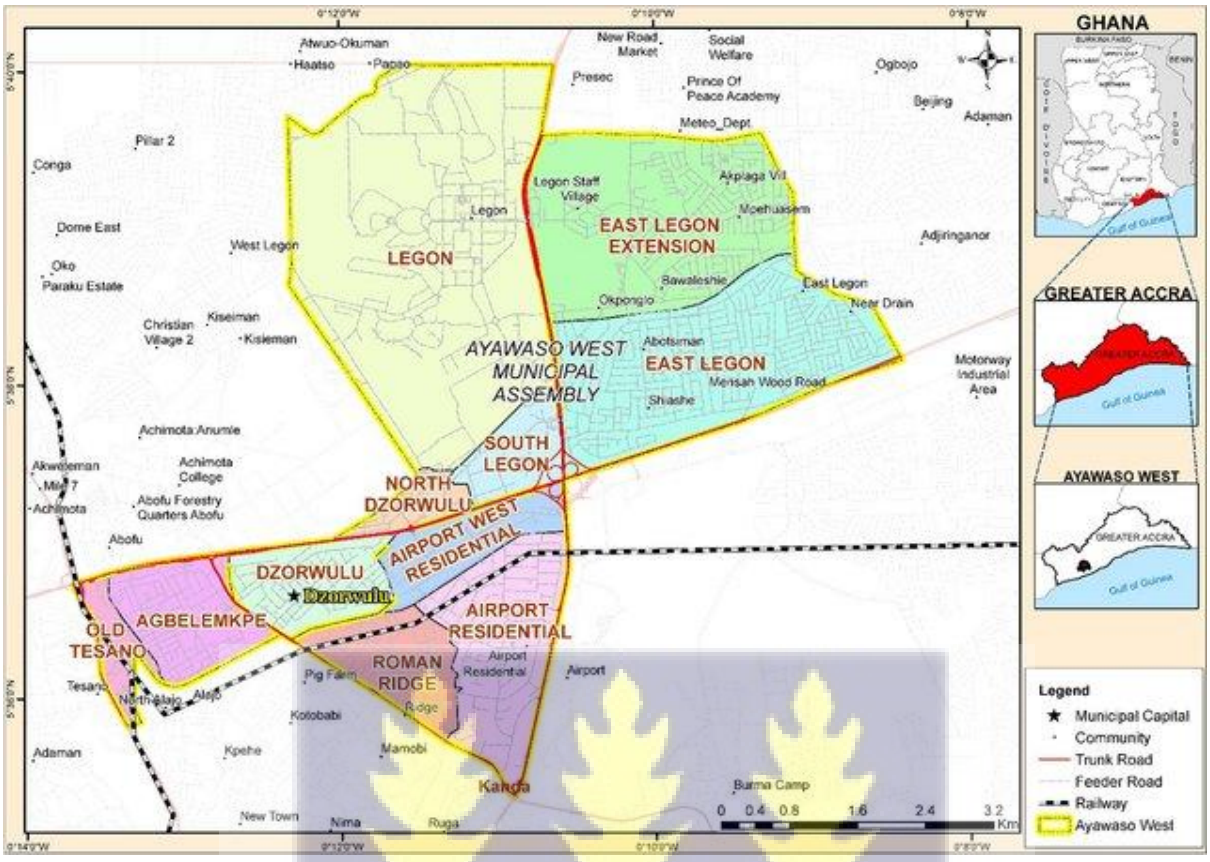


Figure 2 Map of Ayawaso West Municipality (Abrokwah et al., 2022)

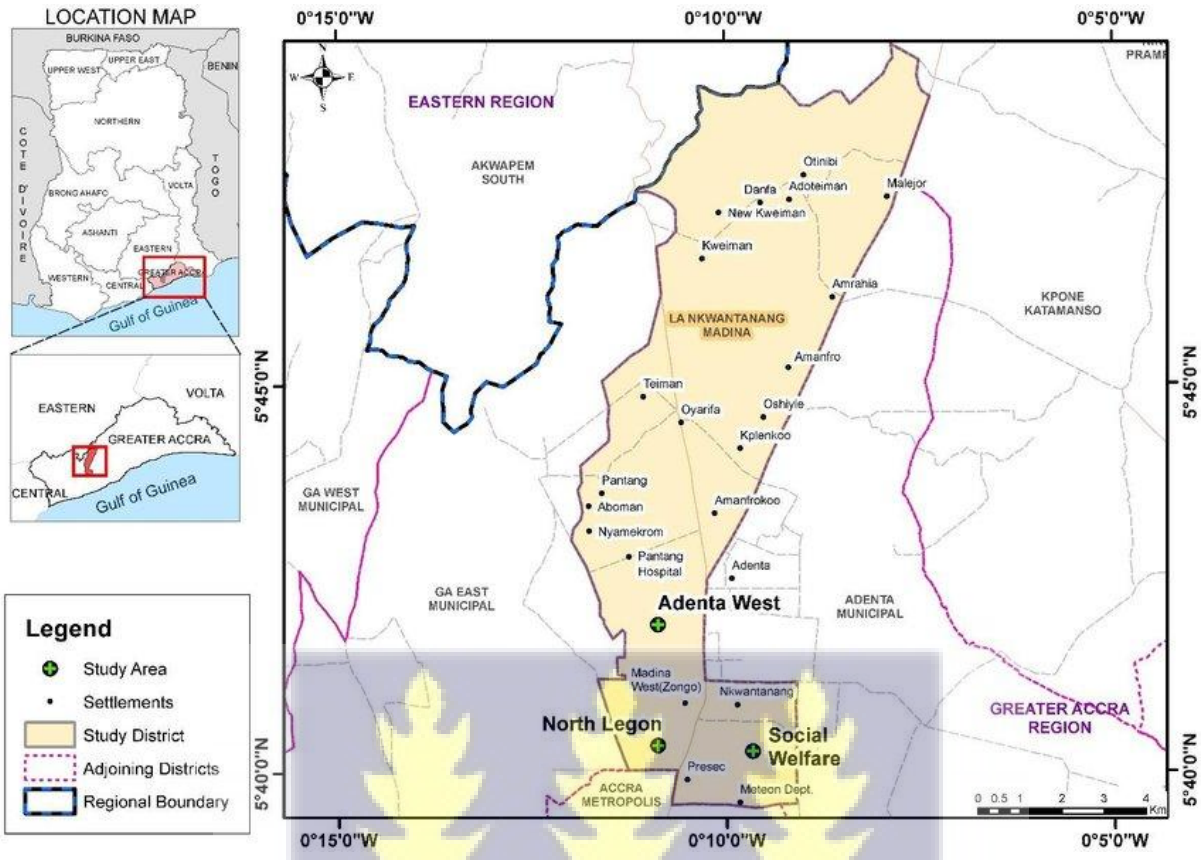


Figure 3 Map of La Nkwantanang Municipality. Source: (Adjabeng, 2020)

### 3.4 Study population

The study population comprised of university students in the La Nkwantanang-Madina and Ayawaso West Municipalities. There is an average of 53,030 tertiary students in the Ayawaso West municipality whiles the La Nkwantanang Municipality has about 22,839 tertiary students. In total, both municipalities host about 75,869 university students. The age range of students found in these institutions is 18-35 years with an average age of 26.5.

### 3.5 Inclusion and exclusion criteria

#### 3.5.1 Inclusion criteria

Eligible participants included undergraduate and postgraduate university students of all ages in the study area who had ever engaged in any form of sexual activity and consented to participate in the study.

#### 3.5.2 Exclusion criteria

University students in the inclusion criteria who did not consent to partake in the study were excluded. Students who have never engaged in any sexual activity were also excluded from this study.

### 3.6 Sample size calculation

The sample size for this study was determined using the Cochran formula (Cochran, 1977). The formula is given by: $n= \frac{z2 \times p \times q}{d \times d}$

where: z= 1.96, p= 50%=0.5 as there is no locally documented study on the subject matter among university students, q=1-p= 1-0.50=0.50 and d=5%=0.05.

Therefore, $n= \frac{1.96 \times 1.96 \times 0.50 \times 0.50}{0.05 \times 0.05} = \frac{0.9604}{0.0025}$= 384.2=385.

To cater for non-response, the sample size was adjusted upwardly by a 10%, yielding: 1.10 × 385= 432.5= 433. Thus, 433 participants were calculated to be sampled for this study, however a response rate of 440 respondents was attained which is as a result of data been collected concurrently at two field sites by two different research assistants.

### 3.7 Sampling procedure

A multistage sampling technique was used to select participants. A sampling frame was generated from a list of all universities in the La Nkwantanang Madina and Ayawaso West Municipalities in the Greater Accra Region. Simple random sampling using balloting without replacement was used to select two universities with to serve as the sampling sites for this study. In the selected universities, the total number of students was obtained. Proportionate sampling was then used to allocate the number of participants to select from each selected university. After this was done, simple random sampling was used to select eligible participants who gave their consent to be included in the study. This process was repeated throughout the data collection process until the desired sample size was obtained.

### 3.8 Data collection Tools and Procedure

Data collection was done via the use of a pre-tested questionnaire which was designed by the researcher. The questionnaire was pre-tested in other universities not found in the two districts under study in the month of October, 2022. This questionnaire was then administered in the selected universities in the entire month of November, 2022. It consisted of both open and closed-ended questions to ensure that all relevant information about the study was captured. The questionnaire was in various sections, including socio-demographic characteristics, common types of aphrodisiac use, knowledge on aphrodisiac,

perception of university students towards aphrodisiac use and consequences or side effects of aphrodisiac use. Cronbach alpha was employed to measure the internal consistency of questions that were used to measure knowledge and perception towards aphrodisiac use. The section on knowledge on aphrodisiac was created as a composite score of 6 variables with a score of 1 assigned to a "Yes" answer and 0 assigned to a No" or unanswered variable. Scores was then categorized into low, moderate and high knowledge. Prior to the actual data collection, participants were given an information sheet which summarized all information about the study in simplified language. The participants were then allowed to ask questions based on the purpose, procedures, risks and benefits related to the study to clarify doubts. Upon reading, they were asked if they agree to consent to be part of the study, those who will agreed to consent were given two copies of informed consent. The participants signed both informed consent forms. One copy of the signed informed consent form was given to the participant to be taken home, while the principal investigator kept the other signed copy. Data was then collected electronically with our designed questionnaire using KoBoToolbox. KoBoToolbox is a free and open source online platform with a suite of data collection tools used to carry out various surveys and data collection. Data collected was then extracted from the software.

### 3.9 Quality control

Two research assistants were recruited for the study. They were trained for a period of one week. The training emphasised the aims and purpose of the study as well as how to ask questions to minimise bias in the study. The questionnaire was pretested on a 5% sample size at another university which did not include the data collection sites. The pre-testing of the data collection tool helped identify gaps in both the questionnaire and mode of administration as necessary modifications were made before start of study. It also allowed research assistants to familiarise themselves with the data collection tools and instruments. The face validity (content validity) of the questionnaire was undertaken by peer researchers and supervisors to evaluate the relevance and usefulness of the questions in achieving the set study objectives. The principal investigator had sole access to the data been collected from the field sites.

### 3.10 Data management and analysis

After data collection, data was extracted using Microsoft Excel 2021 and then exported to Stata MP 17.0 for analysis. Descriptive statistics such as means, standard deviation, frequencies and proportions was used to summarize continuous and categorical variables in relation to objective 1. A univariate analysis of background characteristics was conducted and reported in numbers and percentages. For objective 2, knowledge on aphrodisiac was created as a composite score of 6 variables with a score of 1 assigned to a "Yes" answer and 0 assigned to a No" or unanswered variable. The Shapiro-wilk test was used to test for normality of knowledge scores. Scores was then categorized into low, moderate and high knowledge. Objective 3 was subjected to the Pearson's Chi-square test which was used to determine the association between the dependent variable (aphrodisiac usage in students) and independent variables (socio-demographic

characteristics, knowledge on aphrodisiacs and perception towards aphrodisiacs). Logistic regression models were applied subsequently to determine the strength and direction of association and identify the factors associated with aphrodisiac use. P-values less than 0.05 were considered as statistically significant.

### 3.11 Ethical considerations

This study protocol was submitted to Ghana Heath Service Ethics Review Committee for ethical clearance (approval reference number: **GHS-ERC: 028/10/22)**.Additionally, eligible participants gave written consent after receiving optimal explanation on the benefits and risks involved in participation. Also, participants were informed that participation was purely voluntary and they can opt out of the study at any point in time, if they so desire. They also understood that there was no compensation involved in participating in the study. Data collected was kept in high confidentiality, with only the principal investigator having access to it. To ensure anonymity, participants were only identified with codes and numbers instead of their actual names during and after data collection.

### 3.12 Informed consent

A written informed consent was obtained from each participant before enrolling in the study. One copy was given to the participant and the principal investigator kept the other copy under lock and key.

### 3.13 Anonymity and Confidentiality

Information obtained from study participants was kept confidential. Identification and personal information was anonymous during data entry, analysis and dissemination of findings from the study. Codes were used during data management to ensure anonymity and avoid exposing the details of study participants. Any data and information generated from participants is stored in an encrypted file which is only accessible to the principal investigator.

### 3.14 Risks and benefit

There were no anticipated risks associated with this study. However, some questionnaires were uncomfortable to some participants. However, all information gathered from this study is purely for academic purposes.

### 3.15 Compensation

There was no compensation for being a participant in this study. The study was for academic purposes and self-funded by the Principal Investigator and participant contributions were solely voluntary with minimal vulnerability of participants.

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# CHAPTER FOUR

# RESULTS

## 4.0 Introduction

This chapter presents the results of the study in the following sections: Section one presents the results related to the sociodemographic characteristics of respondents, section two presents the results related to the knowledge of university students on aphrodisiacs, section three presents the results related to Aphrodisiac use among university students, section four presents the results related to perceptions about aphrodisiac use and the section five presents results on factors associated with aphrodisiac use among university students.

## 4.1 Demographic characteristics of respondents.

The sociodemographic characteristics of the 440 respondents in this study are summarized in Table 4.1. Majority (65.0%) of the respondents were aged 18-24 years with mean age of 24.3 years (±3.07). More than half of the respondents were male (58.9%) and were from University of Ghana (94.6%). Respondents were predominantly in level 300 (49.3%). A greater proportion were resident on campus (91.1%) and were single (93.9%). Most of the respondents were Christian ( 84.1%).

**Table 4. 1 Demographic characteristics of respondents**

| Characteristic | Frequency | Percentage |
|---|---|---|
| **Age (years)** | **Mean (SD) 24.3(±3.07)** | |
| 18-24 | 286 | 65.0 |
| 25-29 | 136 | 30.9 |
| 30+ | 18 | 4.1 |
| **Sex** | | |
| Female | 181 | 41.4 |
| Male | 259 | 58.9 |
| **Institution** | | |
| University of Professional Studies, Accra | 24 | 5.4 |
| University of Ghana, Legon | 416 | 94.6 |

| | | |
|---|---|---|
| **Level of study** | | |
| 100 | 10 | 2.3 |
| 200 | 103 | 23.4 |
| 300 | 217 | 49.3 |
| 400 | 75 | 17.1 |
| 500 | 10 | 2.3 |
| 600 | 25 | 5.7 |
| **Residential status** | | |
| Non resident | 39 | 8.9 |
| Resident on campus | 401 | 91.1 |
| **Marital status** | | |
| Co-habiting | 7 | 1.6 |
| Married | 20 | 4.6 |
| Single | 413 | 93.9 |
| **Religion** | | |
| Christianity | 370 | 84.1 |
| Islam | 62 | 14.1 |
| Not religious | 8 | 1.8 |

### 4.2 Knowledge on Aphrodisiacs among university students

Findings on respondent's knowledge on aphrodisiacs are presented in Table 4.2. Most of them (89.1%) stated they have heard about aphrodisiacs from friends (72.5%), the media (54.9%) and market (23.2%) as the main sources of information about aphrodisiacs. Orthodox aphrodisiac was well known by a majority of respondents (42.9%). The respondents indicated various reasons why they think people use aphrodisiacs but many perceived achieving prolonged sexual intercourse (86.5%) as the main reason. Furthermore, 60.5% knew about the side effects of aphrodisiacs. Overall Knowledge on aphrodisiac was created as a composite score from 6 variables as outlined in table 4.2. Variables 1 and 6 was a dichotomous variable hence a score of 1 was assigned to a "Yes" answer and a score of 0 assigned to a "No" answer. Variable 5 had six reasons why people use aphrodisiac with a score of 1 (depicting high knowledge) assigned only

to respondents who answered 4 or more correctly. All other variables had a score of 1 or 0 if not answered. The Shapiro-Wilk test was used to test for normality of knowledge scores. The test yielded a p-value of 0.0000 which implied the scores were not normally distributed. The composite score was then categorized into low knowledge (score of 0-2), moderate knowledge (score of 3-4) and high knowledge (sore of 5-6). Overall, 35.9% had low knowledge, 14.8 had moderate knowledge and 49.3% had high knowledge on aphrodisiacs (Figure 4).

**Table 4.2 Knowledge on Aphrodisiacs**

| Variable | Frequency | Percentage |
|---|---|---|
| **Heard about aphrodisiacs** | | |
| No | 48 | 10.9 |
| Yes | 392 | 89.1 |
| **Source of information about aphrodisiacs** | | |
| Media | 215 | 54.9 |
| Market | 91 | 23.2 |
| Billboard | 44 | 11.2 |
| Friends | 284 | 72.5 |
| Family | 35 | 8.9 |
| Sexual partner | 21 | 5.4 |
| Medical personnel | 18 | 4.6 |
| **Type of aphrodisiac heard of** | | |
| Herbal | 19 | 4.8 |
| Orthodox | 168 | 42.9 |
| Both herbal and orthodox | 205 | 52.3 |
| **Frequency of hearing about aphrodisiac advertisements** | | |
| Everyday | 15 | 3.8 |
| Occasionally | 321 | 81.9 |
| Weekly | 56 | 14.3 |
| **Reasons people use aphrodisiacs** | | |
| To improve erection | 219 | 55.7 |
| For prolonged sexual intercourse | 339 | 86.5 |
| To increase libido | 177 | 45.2 |
| To gratify sexual partner | 123 | 31.4 |
| To reduce performance anxiety | 100 | 25.5 |
| For pleasure | 146 | 37.2 |
| **Know about side effects of aphrodisiacs** | | |
| No | 155 | 39.5 |
| Yes | 237 | 60.5 |

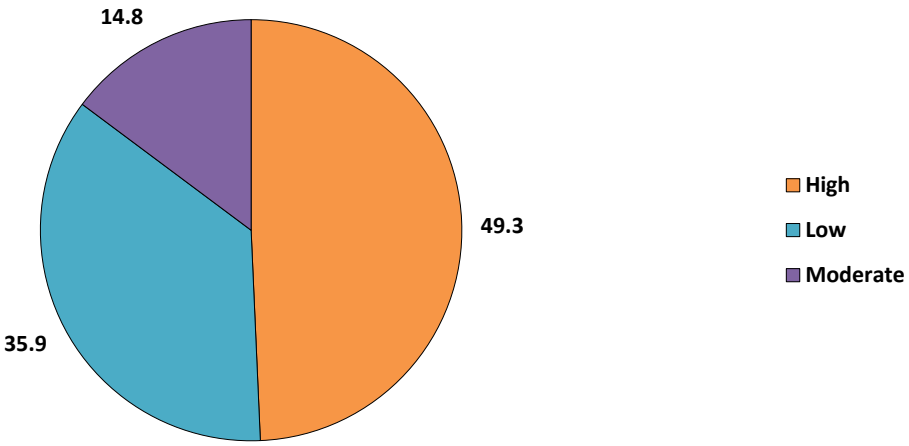


**Figure 4. Overall knowledge on Aphrodisiac**

### 4.3 Aphrodisiac Use among university students

Among those who stated they have heard about aphrodisiac, only 10.7% stated they had ever used an aphrodisiac with most stating they had used sex-enhancing drugs between the ages of 20-24 years. The most commonly used aphrodisiacs were orthodox (45.2%) and spray/creams (38.1%). Most aphrodisiacs used were acquired at a pharmacy (61.9%). Among previous users of aphrodisiacs, 66.7% of them are currently using aphrodisiacs and they use it occasionally (92.2%). Table 3 shows that orthodox (46.4%) and sprays are the aphrodisiac types patronized by current users with most of them being purchased at pharmacies (65.5%), from drinking bars/night clubs (10.3%) and from family/friends and sexual partners (17.2%).

**Table 4.3 Prevalence of Aphrodisiac Use**

| Variable | Frequency | Percentage |
|---|---|---|
| **Ever use aphrodisiac** | | |
| No | 350 | 89.3 |
| Yes | 42 | 10.7 |
| **Age at first use (years)** | **Mean (SD)** | 22.59 (±2.8) |
| <20 | 7 | 16.7 |
| 20-24 | 26 | 61.9 |
| 25+ | 9 | 21.4 |
| **Type of aphrodisiac used** | | |
| Herbal | 3 | 7.1 |
| Herbal with alcohol base | 3 | 7.1 |
| Orthodox | 19 | 45.2 |
| Spray/Cream | 16 | 38.1 |
| Others | 1 | 2.4 |
| **Introducer to aphrodisiac** | | |
| Family/friends | 28 | 66.6 |
| Sexual partner | 7 | 16.7 |
| TV/Radio/Internet | 7 | 16.7 |
| **Place aphrodisiac was acquired** | | |
| Drinking bar/Night club | 3 | 7.1 |
| Herbalist | 1 | 2.4 |
| Open market/drug peddler | 4 | 9.5 |
| Pharmacy | 26 | 61.9 |
| Others (Family, friends, partner) | 8 | 19.1 |
| **Currently use aphrodisiac** | | |
| No | 14 | 33.3 |
| Yes | 28 | 66.7 |
| **Frequency of use of aphrodisiac** | | |
| Every sexual encounter | 2 | 7.1 |
| Occasionally | 26 | 92.9 |
| **Aphrodisiac types currently being used** | | |
| Spray/Cream | 11 | 39.3 |
| Orthodox | 13 | 46.4 |
| Herbal with alcohol base | 3 | 10.7 |
| Combination of different types | 1 | 3.6 |
| **Place aphrodisiac is currently acquired** | | |
| Drinking bar/Night club | 3 | 10.3 |
| Online stores | 1 | 3.5 |
| Open market/drug peddler | 1 | 3.5 |
| Pharmacy | 19 | 65.5 |
| Others (Family, friends, partner) | 5 | 17.2 |

### 4.4 Perceived benefits of aphrodisiacs among university students

This current study also assessed the perceived benefits of using aphrodisiacs among users and non-users of aphrodisiacs. The same pattern of perceived benefits was observed among the two groups (Figure 5). The main perceived benefits of aphrodisiacs were prolonging sexual intercourse (32.8%), improvement in erection (18.5%), gratifying sexual partner (12.6%) and for pleasure (12.6%).

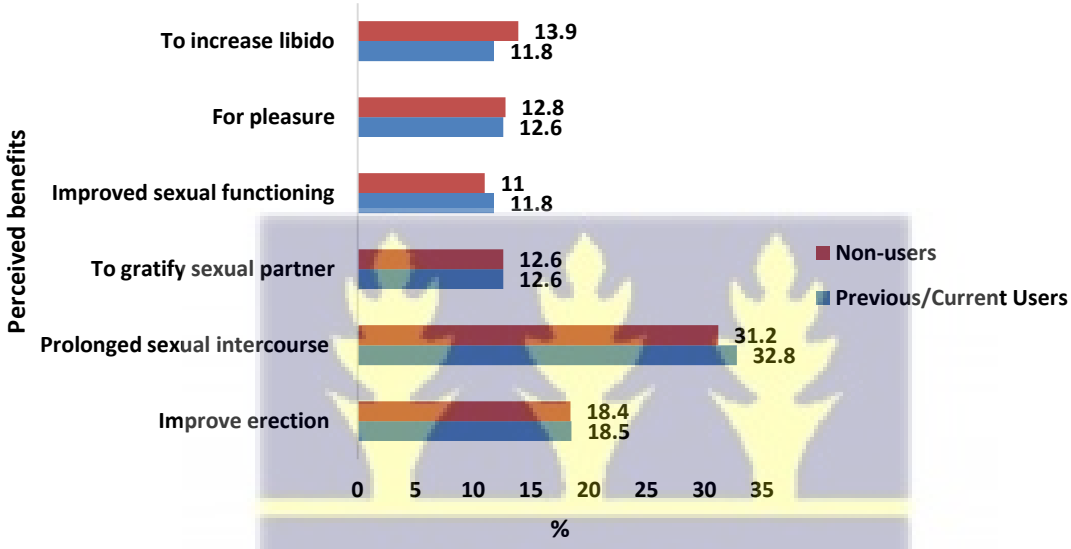


**Figure 5 Perceived benefits of aphrodisiacs among current/previous users and non-users**

### 4.5 Perceived side effects of using aphrodisiacs among university students

Respondents in this study were also assessed on their perception about side effects associated with the use of aphrodisiacs. Participants had some degree of knowledge on the side effects of aphrodisiacs in relation to their health. Various perceptions were recorded ranging from general weakness (21.8%), headache (21.7%) and heart attack (16.3%). Others include kidney failure (5.4%), impotence (5.0%) and overstimulation (4.1%) (Figure 6).

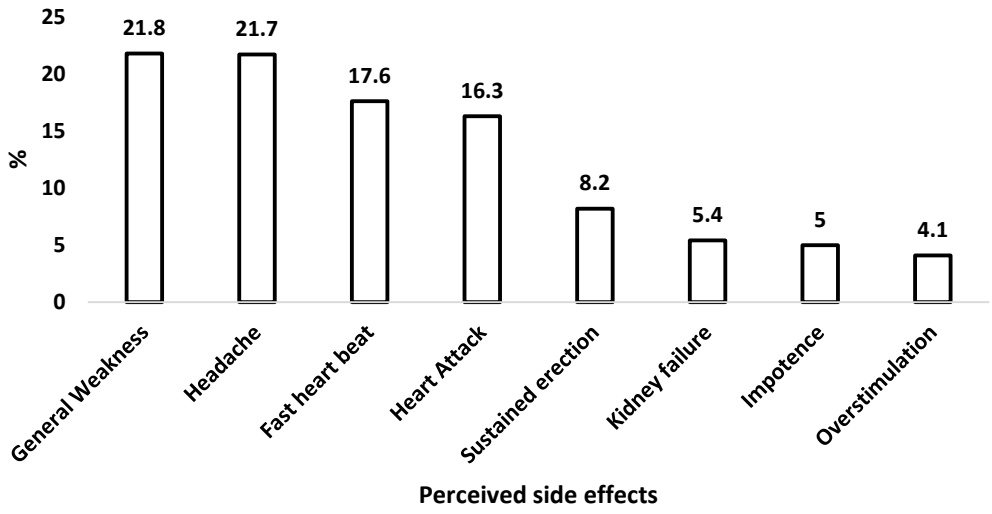


**Figure 6. Perceived side effects of using aphrodisiacs**

### 4.6 Consequences of aphrodisiac use

Previous and current users of aphrodisiac were assessed on the consequences of aphrodisiac use. Out of the 42 who indicated they have ever used aphrodisiacs, 73.8% stated they had never experienced side effects from the use of aphrodisiacs. However, headache (90.9%) was the most common side effect experienced by respondents (Table 4.6).

**Table 4.6 Consequences of aphrodisiac Use**

| Variable | Frequency | Percentage |
|---|---|---|
| **Noticed side effects from aphrodisiac use** | | |
| No | 31 | 73.8 |
| Yes | 11 | 26.2 |
| **Experienced side effects** | | |
| Headache | 10 | 90.9 |
| Weak erection | 1 | 9.1 |
| **Health seeking behaviour for consequences** | | |
| Talked to partner/friend/ family | 2 | 16.7 |
| Talked to a Doctor/Pharmacist | 1 | 8.3 |
| Took non-prescription drugs | 7 | 58.3 |
| Sought no help | 2 | 16.7 |

### 4.7 Factors associated with aphrodisiac use among university students

A chi-square test was used to determine the relationship between socio-demographic characteristics, knowledge and use of aphrodisiac. Univariate and multivariate logistic regression models were used to determine the strength and direction of associations. The values of crude and adjusted odds ratio greater than 1 from regression models was used to predict factors associated with aphrodisiac use among students. Issues relating to confounders were addressed with multilinear co-linearity using the command variance of inflation factor (VIF) in Stata. The factors associated with aphrodisiac use are summarized in Table 5. Students aged 25-29 years were almost five times more likely to use aphrodisiacs compared to those aged 18-24 years (AOR: 4.92, 95%CI: 2.15-11.27, p<0.0001). Similarly, students with high knowledge on aphrodisiacs were four times more likely to use aphrodisiacs compared to those with low or moderate knowledge (AOR: 4.00, 95%CI: 1.49-10.74, p<0.006). Being a male was associated with increased use of aphrodisiacs by four-fold compared to being female (AOR: 4.00, 95%CI: 1.49-10.47, p=0.006).However, students resident on campus were less likely to use aphrodisiacs

compared to non-resident students (AOR: 0.15, 95%CI: 0.05-0.47, p<0.001). Non-religious respondents are four times more likely to use aphrodisiacs as compared to religious respondents. Furthermore, the study showed that co-habiting students and students of University A (relatively smaller in student population than University B) are more likely to use aphrodisiacs.

**Table 4.7 Factors associated with aphrodisiac use among university students**

| Variable | Aphrodisiac Usage | | COR | AOR |
|---|---|---|---|---|
| | Previous/Current User, N(%) | χ2 (p-value) | OR (95% CI)p-value | OR (95% CI)p value |
| **Age (years)** | | | | |
| 18-24 | 10(23.8) | | 1 | 1 |
| 25-29 | 28(66.7) | 29.19(<0.0001)* | 7.16(3.36-15.23)<0.0001* | 4.92(2.15-11.27)<0.0001* |
| 30+ | 4(9.5) | | 7.89(2.19028.30) 0.002* | 1.41(0.27-7.52) 0.684 |
| **Sex** | | | | |
| Female | 6(14.3) | 11.67(0.001)* | 1 | 1 |
| Male | 36(85.7) | | 4.70(1.94-11.43) 0.001* | 4.00(1.49-10.74)0.006* |
| **Institution** | | | | |
| University A | 5(11.9) | 3.98(0.046)* | 1 | |
| University B | 37(88.1) | | 0.37(0.13-1.05) 0.062 | |
| **Level of study** | | | | |
| 100 | 2(4.8) | | 1 | |
| 200 | 4(9.5) | | 0.16(0.03-1.02) 0.053 | |
| 300 | 14(33.3) | | 0.27(0.05-1.42) 0.124 | |
| 400 | 9(21.4) | 42.37(<0.0001)* | 0.54(0.10-2.98) 0.484 | |
| 500 | 5(11.9) | | 4.00(0.55-29.10) 0.171 | |
| 600 | 8(19.0) | | 1.88(0.322-10.97) 0.482 | |
| **Residential status** | | | | |
| Non resident | 13(30.9) | 29.48(<0.0001)* | 1 | 1 |
| Resident on campus | 28(69.1) | | 0.16(0.08-0.34) <0.0001* | 0.15(0.05-0.47) 0.001* |
| **Marital status** | | | | |
| Co-habiting | 4(9.5) | | 1 | 1 |
| Married | 4(9.5) | 18.67(<0.0001)* | 0.19(0.03-1.20) 0.077 | 0.18(0.01-2.84)0.222 |
| Single | 34(81.0) | | 0.07(0.01-0.31) 0.001* | 0.21(0.02-2.34) 0.206 |
| **Religion** | | | | |
| Christianity | 33(78.6) | | 1 | 1 |
| Islam | 5(11.9) | 16.08(<0.0001)* | 0.89(0.33-2.239) 0.826 | 1.02(0.33-3.18) 0.968 |
| Not religious | 4(9.5) | | 10.21(2.44-42.73) 0.001* | 4.63(0.45-46.75) 0.194 |
| **Knowledge** | | | | |
| Low | 4(9.5) | 8.01(0.005)* | 1 | 1 |
| Moderate | 2(4.8) | | 1 | 1 |

| | | | |
|---|---|---|---|
| High | 36(85.7) | 4.70(1.94-11.43) 0.001* | 4.00(1.49-10.74)0.006* |

**Statistically significant at $\alpha$=5%*

# CHAPTER FIVE

# DISCUSSION

## 5.0 Introduction

This study was conducted among university students predominantly aged between 18-24 years, with majority being males from the University of Ghana. There were few student respondents from the University of Professional Studies, Accra. Most respondents were in level 300 of their programme of study, resident on campus and single. Majority identified as being Christians, with few indicating to be non-religious.

## 5.1 Prevalence and Common Types of Aphrodisiacs

Although majority of the respondents of this study indicated they had knowledge on aphrodisiacs, only few had ever used an aphrodisiac. The overall prevalence of aphrodisiac use was found to be 10.7%. This finding is consistent with the findings of a study conducted among teenagers and adolescents in a rural area in Malawi, which reported a high prevalence of aphrodisiac use (Lampiao, Miyango, & Simkoza, 2015). Further, in their study, Hafez, Mohammed and Mohamed (2022) indicated a 38.2% prevalence of aphrodisiac use among married men in Egypt. These findings can be attributed to the fact that men involved in these studies procured aphrodisiacs without medical prescriptions, but from such places as night clubs, and friends.

The common types of aphrodisiacs found among users were orthodox variants, spray/creams, and herbal variants, as well as herbal variants with alcohol bases, in order of preference. Consistent with these findings, Tabil (2016) reported that most Ghanaians consume alcoholic beverages that are mixed with aphrodisiacs. Inconsistent with these findings, however, Lampiao

et al. (2015) reported that herbal aphrodisiacs was the predominantly used among their study population. In addition, in a study conducted among men in the Sagnarigu Municipality of Ghana, respondents were reported as indicating that local and herbal variants of aphrodisiacs were more potent over orthodox ones (Yidana, Shamsu-Deen, & Manan, 2019). The differences in findings can be attributed to the differences in population groups among whom these studies were conducted. University students are more likely to be exposed to orthodox variants of aphrodisiacs, compared to individuals who are predominantly found in rural areas.

Users of aphrodisiacs in this study indicated that these aphrodisiacs were purchased from pharmacies, drinking bars or night clubs, from family or friends and sexual partners. This is because orthodox medications were predominantly used in this study. However, according to Hassali et al. (2012), aphrodisiacs are purchased from local sources, because they are cheaper. Furthermore, Yidana et al. (2019) corroborate that men prefer traditional aphrodisiacs to orthodox variants, and would likely prepare them themselves, or procure from a friend who has it.

Aphrodisiac use among respondents of this study was found to be occasional. This can be as a result of the fact that respondents of this study were university students. According to Yidana et al. (2019), however, most married men in northern Ghana utilize aphrodisiacs because they engage in frequent sex, both with their spouses and with other sexual partners.

### 5.2 Knowledge on Aphrodisiacs

The overall knowledge on aphrodisiacs among university students involved in this study was found to be high. The main sources of knowledge on aphrodisiacs among respondents of this study were friends, the media and market places. These findings are consistent with studies conducted by Manortey et al. (2018), who reported that almost all respondents involved in their

study had some knowledge on aphrodisiacs. The researchers indicated the main source of knowledge on aphrodisiacs was advertisements from media sources (Manortey et al., 2018).

The predominant aphrodisiac known among respondents of this study were orthodox variants. This is inconsistent with findings by Lampiao et al. (2012), Hassali et al. (2012) and Yidana et al. (2019), who reported high usage of herbal and traditional aphrodisiacs among men in Malawi, Malaysia and Northern Ghana, respectively. The choice of herbal aphrodisiacs over orthodox aphrodisiacs has been associated with cheaper cost (Hassali et al., 2012; Yidana et al., 2019), and availability (Hassali et al., 2012; Lampiao et al., 2012; Yidana et al., 2019).

According to the findings of this study, aphrodisiacs are used to achieve prolonged sexual intercourse, improve erection and to increase libido. Consistent with these findings, Hafez et al. (2022) indicated that most people use aphrodisiacs to increase their libido when they lose their sexual desire. Yidana et al. (2019) also stated that men predominantly utilize aphrodisiacs to achieve prolonged sexual intercourse. The researchers reported that because polygamy is encouraged among Muslims, men typically have multiple sexual partners, and utilize aphrodisiacs to prolong sexual intercourse, in their bid to satisfy all their sexual partners (Yidana et al., 2019).

Among the respondents of this study, majority knew about the side effects of aphrodisiacs. These findings are similar to findings from a study conducted to evaluate the factors that influence the aphrodisiac use among men, which stated that most men had knowledge of side effects of aphrodisiacs (Mensah, 2018). In a similar study, Manortey et al. (2018) indicated high level of knowledge of side effects associated with aphrodisiac use among men.

### 5.3 Perception on Aphrodisiacs

Students' perception on aphrodisiacs was assessed based on three themes: perceived benefits of using aphrodisiacs, perceived side effects, and consequences of aphrodisiac use. This was evaluated among non-users, as well as previous and current users of aphrodisiacs. The main perceived benefits of aphrodisiac use was reported as prolonging sexual intercourse, improving erection, gratifying sexual partner, and for pleasure. Similar to these findings, Hassali et al. (2012) cited several responses from men in their study who attested to using aphrodisiacs to improve erection and for prolonged sexual intercourse. Furthermore, Atuobi-Bediako (2019) reported in their study among men in the Greater Accra region of Ghana that aphrodisiac use was predominantly for recreational purposes.

Respondents' perceived side effects of aphrodisiac use ranged from general weakness, headaches, heart attacks, to kidney failure, impotence and overstimulation. In evaluating the consequences of aphrodisiac use among previous and current users, few indicated ever experiencing side effects, with the predominant side effect experienced being headache. Among those who experienced side effects, they resorted to taking non-prescription drugs. Consistent with these findings, some documented side effects of aphrodisiac use include hypotension, dizziness, headaches, restlessness and unconsciousness, decreased sex quality, and priapism (Yidana et al., 2019). Hafez et al. (2022) reported similar side effects of aphrodisiac use, including, headaches, flushing, dizziness, vision problems and nasal congestion.

### 5.4 Factors associated with Aphrodisiac Use

In evaluating the factors associated with aphrodisiac use among respondents of this study, a significant association was found between age and usage. Older students aged 25-29 years were found to be more likely to use aphrodisiacs, compared to those aged 18-24 years. Consistent with

these findings, Yidana et al. (2019) reported a significant association between age of respondents and aphrodisiac use. Similarly, individuals aged 18-25 years were found to be the predominant users of aphrodisiacs in a study conducted in the Ashaiman Municipality of Ghana (2018). These findings can be attributed to the fact that this age group is considered most sexually-active.

Again, students with high knowledge on aphrodisiacs were discovered to be about four times more likely to use aphrodisiacs, compared to those with low or moderate knowledge. This finding is consistent with findings from Mensah (2018) and Manortey et al. (2018). Realistically, individuals without knowledge or with limited knowledge on aphrodisiacs will stay away from their use.

In the context of gender comparison, males were found to be more likely to use aphrodisiacs compared to females. This finding is inconsistent with findings from a Malaysian study on the perception of traditional medicines used for aphrodisiac purposes, where usage was found to be higher among females (Hassali et al., 2012). The differences in findings can be attributed to the fact that whereas males were the higher proportion of respondents in this study, there were more females in the Malaysian study. Consequently, Yidana et al. (2019) and Limpiao et al. (2012) reported a high usage of aphrodisiacs among men since their study population was predominantly male.

The findings of this study also indicated that use of aphrodisiacs was high among non-resident students compared to resident students on campus. This can be attributed to the fact that aphrodisiacs were purchased from night clubs/bars, which are mainly accessible to non-resident students, compared to those on campus. Furthermore, this study showed that co-habiting students and students are more likely to use aphrodisiacs as compared to single or married students. This

can be attributed to the fact that co-habiting students have their sexual partners on living with them on campus whiles most married students have their spouse living elsewhere.

**LIMITATIONS OF STUDY**:

Though this study expands on the subject matter of aphrodisiac use amongst university students, some precautions must be observed in the general applications of the findings in this study. First and foremost, the study was carried out using a cross-sectional study design which measures only how respondents felt at the time of answering the questionnaire. This only gives a snapshot of the topic under discussion in these two districts in Greater Accra. Secondly, the study did not conduct any clinical screening to ascertain whether perceived side effects from aphrodisiac use by respondents has a direct cause and effect from the drug use or from any underlining illness in these respondents. A clinical screening conducted in an experimental study on this subject that follows a cohort of participants over a period will highlight the side effects experienced and establish it as either a direct cause and effect from aphrodisiac or not. It will also rule out any possible confounders that can give similar symptoms to the side effects of an aphrodisiac. This can be achieved in future studies.

# CHAPTER SIX

# CONCLUSION AND RECOMMENDATIONS

## 6.1 Conclusion

The prevalence of aphrodisiac use in this study is low, with the main types of aphrodisiacs used being orthodox, spray/creams, herbal, and herbal with alcoholic bases. Aphrodisiacs are procured from pharmacies, drinking bars/night clubs, relatives, and sexual partners. . Participants had some degree of knowledge on the side effects of aphrodisiacs in relation to their health. Knowledge on aphrodisiacs is high among respondents, including knowledge of side effects. Perceived benefits of Aphrodisiacs include prolonging sexual intercourse, gratifying sexual partners, improving erection, and for pleasure. Age, level of knowledge, gender and residential status are associated with aphrodisiac use. With the incidence of sexual problems predicted to rise over 320 million in 2025 globally, it is expedient that health education and promotion programs that highlight the scientifically proven benefits and negative health implications of aphrodisiacs be done frequently. Furthermore, the sale of aphrodisiacs without prescription in pharmacies should be discouraged through enactment of laws to deter individuals with no sexual problems from using it. Also, night clubs or bars should be prevented from selling aphrodisiacs in other to reiterate to the entire populace that aphrodisiacs are chemical compounds for treating ailments and not merely recreational drugs.

## 6.2 Recommendations

Though prevalence in this study is low, common types of aphrodisiac used are orthodox and spray/creams procured from pharmacies without prescription orders, which could lead to

undesirable side effects. Measures can therefore be put in place at different levels to address the issue on aphrodisiac use or abuse.

**Policy Level**: It is imperative for policies to be enacted by the Food and Drugs Authority and enforced by the Medical and Pharmacy Councils respectively that the procurement of aphrodisiacs from pharmacies, requires prescription orders prior to dispensing them.

**Education and promotion**: Due to the high level of knowledge on aphrodisiacs observed among respondents of this study, health promotion campaigns are likely to be easily accepted.

Health promotion campaigns should be conducted by the Ministry of Health and Ghana Health Service to encourage individuals with sexual health challenges and insecurities to visit health care facilities for appropriate diagnosis and counsel. Acquisition of knowledge on the rightful use of aphrodisiacs will reduce the use of aphrodisiacs mainly for recreational purposes without considering the possible negative health implications associated with its use.

**Media**: Furthermore, leveraging on media sources, which were found to be a source of knowledge on aphrodisiacs among respondents of this study can enhance health promotion efforts. The media space should therefore be employed as a means of health promotion to the youth.

Future research in this subject area can follow up individuals with high usage or abuse of aphrodisiacs to determine whether they develop side effects from its usage and what common side effects exist in abusers of aphrodisiac. Findings from this study would also serve as a baseline study for researchers interested in sexual and reproductive health to build upon in the near future.

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# APPENDICES

## APPENDIX 1

Participant Information Sheet - Survey

**Title of Study: PERCEPTIONS AND PRECURSORS OF APHRODISIAC USE AMONG UNIVERSITY STUDENTS IN TWO DISTRICTS IN GREATER ACCRA**

**Introduction**: My name is Dr. Nana Kwame Fredua-Agyeman, the Principal Investigator for this study. I am a Masters in Public Health student at the University of Ghana School of Public Health. You can contact me either by phone (0243256500) or email (nanafredua7@gmail.com).

**Background and Purpose of research**: Sexual function plays a vital part in human life so throughout history, attempts have been made through a variety of methods to improve, preserve, and restore humans' sexual functions. Aphrodisiacs in recent years have become popular with the increased prevalence of sexual problems worldwide and the incidence of the problem is predicted to

rise over 320 million in 2025 globally. In Ghana, aphrodisiac use is on the ascendancy with its negative health implications to the population. This study seeks to add to the body of knowledge that exists on the factors influencing the use and prevalence of aphrodisiacs among university students (both men and women) in Ghana and also assess the knowledge of students regarding the risks of using aphrodisiacs.

**Nature of research**: This will be a descriptive cross-sectional study among university students using an electronic data collection tool. The results from these will be interpreted, synthesized and would also serve as a baseline study for researchers interested in sexual and reproductive health.

**Participants' involvement/duration/what is involved**: The participants for the survey are mainly University students. A research assistant will administer the seek consent, explain study protocol and administer questionnaire. It would last about 10 -15 minutes to complete the survey.

**Potential Risks**: This is a minimal risk study. There is no physical risk to participation. There are no psychological risks (heightened emotions, stress, and discomfort). The topics to be discussed do not cover any traumatic information. The time it takes to speak to an interviewer however may be inconvenient. The main risk is that, on accident, identifiable private information about the participant is shared.

**Benefits**: There is no direct benefit of this research to the study participants. However, it is anticipated their participation would inform policy decisions and regulations by relevant stakeholders like the World Health Organization, Ministry of Health, Ghana Health Service, Food and Drugs Authority among others on the use of aphrodisiacs among tertiary students in Ghana. Findings would also serve as a baseline study for researchers interested in sexual and reproductive health.

**Costs**: No extra costs would be incurred by participants, since interviews would be conducted within universities, in the comfort of the participant.

**Compensation**: There will be no compensation for being a participant in this study. The study is purely for academic purposes, is self funded and participant contributions are solely voluntary with minimal vulnerability of participants

**Confidentiality**: Information you will share with us during the interviews will be confidential and used only for the purpose of the study.

**Voluntary participation/withdrawal**: Your participation in this research is completely voluntary. You have the right at any time to decline or withdraw from the study. If you choose to withdraw, the information you provided will not be used in this study. Your withdrawal will not result in any penalties or negative consequences. Participation in this survey is voluntary, you have the right to refuse to answer specific or all questions. However, I would be very grateful if you would provide me with as much information as possible and in all sincerity.

**Outcome and Feedback**: After the study, the information would also serve as a baseline study for researchers interested in sexual and reproductive health .It will also inform policy making

amongst regulatory bodies (Ghana Health Service, Food and Drugs Authority). Feedback would be shared with participants through mails (if desired).

**Appropriate alternative Procedures and Treatmen**t: NOT APPLICABLE

**Funding information**: This study would be self-funded by the Principal Investigator.

**Sharing of participants Information/Data**: Participant information would not be shared with a third party with the exception of my supervisor who would have access to my records.

Data access and storage : Hard copies of signed consent forms will be kept safely under lock and key in a safety cabinet whiles electronic data kept electronically on a device with a secured password. No one will therefore have access to the forms.

Storage of samples (Where applicable): NOT APPLICABLE

Provision of Information and Consent for participants: Copy of the information sheet and consent forms to be signed will be given to the participant to sign.

Contact for Further Clarification/Questions:

1. DR. NANA KWAME FREDUA-AGYEMAN, UNIVERSITY OF GHANA, SCHOOL OF PUBLIC HEALTH. (MASTERS IN PUBLIC HEALTH, DEPARTMENT OF SOCIAL AND BEHAVIOURAL SCIENCES)

   Phone: 0243256500 , Email: nanafredua7@gmail.com

2. DR. FRANKLIN GLOZAH ( SUPERVISOR) - Email : fglozah@ug.edu.gh

Your rights as a participant

This research has been reviewed and approved by the Ethical Review committee of Ghana Health Service. If you have any questions about your rights as a research participant kindly contact the GHS-ERC Administrator, Nana Abena Apatu between the hours of 8am-5pm on 0503539896 or ethics.research@ghsmail.org

**APPENDIX 2**

Consent Form for Survey

*TITLE: "PERCEPTIONS AND PRECURSORS OF APHRODISIAC USE AMONG UNIVERSITY STUDENTS IN TWO DISTRICTS IN GREATER ACCRA."*

INFORMED CONSENT FOR PARTICIPANTS

Participant ID: …….

*PARTICIPANTS' STATEMENT*

I ……..acknowledge that I have read or have had the purpose and contents of the Participants' Information Sheet read and all questions have been satisfactorily explained to me in a language I understand (□English □ Twi □ Ga). I fully understand the contents and any potential implications as well as my right to change my mind (i.e. withdraw from the research) even after I have signed this form.

I voluntarily agree to be part of this research.

Name of Participant/Respondent……..

Participants'/Respondents' Signature……..OR Thumb Print……

Date:……

*INTERPRETER'S STATEMENT*

I .....read and interpreted the consent form in (□English □ Twi □ Ga) to… ..... , who voluntarily agreed to participate in the study.

All questions or clarifications asked by the participant were duly answered or interpreted to his/her satisfaction.

Signature of Interpreter…… Date……

*STATEMENT OF WITNESS*

I .....was present when this study was explained to…… in a language he/she understood (□English □ Twi □ Ga) , I can attest that this interviewee voluntarily agreed to participate in the study.

I confirm that he/she was given the opportunity to ask questions or seek clarification and all questions were duly answered to his/her satisfaction before voluntarily agreeing to be part of the research.

Signature…… …… Date……

*INVESTIGATOR STATEMENT AND SIGNATURE*

I certify that the participant/respondent has been given ample time to read and learn about the study. All questions and clarifications raised by the participant have been addressed.

Researcher's name:

Signature ……
Date:

**APPENDIX 3**

**QUESTIONNAIRE ON PERCEPTIONS AND PRECURSORS OF APHRODISIAC USE AMONG UNIVERSITY STUDENTS IN ACCRA**

**Questionnaire ID:** **Date:**

***SECTION A- SOCIO-DEMOGRAPHIC INFORMATION***

1. Age (in completed years): ……
2. Sex: *1. Male [ ]. 2. Female [ ]*
3. University:……..
4. Level: 1. *100 [ ]. 2. 200 [ ]. 3. 300 [ ]. 4. 400 [ ]. 5. 500 [ ] 6. 600 [ ]*
   *Others :* ……
5. Program of study: ……
6. Student residency type: *1. Resident on campus [ ]. 2. Non-resident [ ]*
7. Marital status: *1. Single. 2. Married. 3. Cohabiting 4. Others……..*
8. Religion: 1. Christianity [ ]. *2. Islam [ ]. 3. African traditional [ ]. 4. Not religious [ ]*
   *5. Others* ……

***SECTION B- KNOWLEDGE ABOUT APHRODISIACS***

9. Have you heard of aphrodisiacs? *1. Yes [ ] 2. No*
10. Where did you hear about them? *1. Media (Television/Radio/Internet) [ ] 2. Market Places [ ] 3. Billboards [ ] 4. Friends [ ] 5. Family [ ] 6. Sexual Partner [ ] 7. Medical Personnel [ ]*
11. Which type of aphrodisiac have you heard of? *1. Herbal [ ] 2. Orthodox [ ]*
12. How often do you hear about advertisements of aphrodisiacs *1. Everyday [ ] 2. Weekly [ ]. 3.Occasionally [ ].*
13. Why do people use aphrodisiacs? *1. To improve erection [ ] 2. For prolonged sexual intercourse [ ] 3. To increase libido [ ] 4. To gratify sexual partner [ ] 5. Performance anxiety [ ] F. For pleasure [ ] G. Other ……. .(tick as many as apply)*
14. Do you know any dangerous side effects associated with use of aphrodisiacs? *1. Yes [ ] 2. No [ ]*

***C.PREVALENCE OF APHRODISIAC USE***

***Previous Use***

15. Have you ever used an aphrodisiac? *1. Yes [ ]. 2.No [ ] If no, Skip to next session*
16. If yes, at what age did you first use it?.....
17. What was the name of the aphrodisiac you used? …….
18. Which type did you use? *1.Orthodox[ ]. 2. Herbal [ ]. 3. Herbal with alcohol base [ ]. 4. Spray/Cream [ ] .5. Others ……*
19. Who introduced you to aphrodisiacs? *1. No one [ ]. 2. Friends/Family [ ]. 3. TV/Radio/Internet [ ]4. Sexual partner [ ].*
20. Where did you obtain it from? *1. Pharmacy [ ]. 2. Herbalist [ ]. 3. Open marker/drug peddlers [ ]4. Drinking bar/Night club [ ].*

***Current Use***

21. Do you currently use an aphrodisiac? *1. Yes [ ] 2. No [ ]*
22. How often do you use aphrodisiacs? *1.Every sexual encounter [ ] 2. Occasionally [ ]*
23. What is the name of the aphrodisiac you use now……
24. Which type do you use now? *1. Orthodox [ ] 2. Herbal [ ] 3. Herbal with alcohol base [ ] 4. Spray/Cream [ ] .5. Others ……*
25. Does it meet your expectation? *1. Yes [ ] 2. No [ ]*
26. Where do you usually obtain it from ? *1. Pharmacy/ Drug Store [ ] 2. Herbalist [ ] 3. Open Market/Drug peddlers [ ] 4. Drinking bars/ Nights Clubs [ ]*

**SECTION D. PERCEPTIONS TOWARDS APHRODISIAC USAGE**

| 27. | **Previous/Current Users** | **Non-users** |
|---|---|---|
| | What benefit do/did you derive from the use of aphrodisiacs?<br>1.Improve erection [ ]<br>2. Prolonged sexual intercourse [ ]<br>3. To gratify sexual partner (s) [ ]<br>4. Improved sexual functioning [ ]<br>5. For pleasure [ ]<br>6. To increase libido [ ]<br>7. Others…… | What benefit can be derived from the use of aphrodisiacs?<br>1.Improve erection [ ]<br>2. Prolonged sexual intercourse [ ]<br>3. To gratify sexual partner (s) [ ]<br>4. Improved sexual functioning [ ]<br>5. For pleasure [ ]<br>6. To increase libido [ ]<br>7. No benefit [ ]<br>8. Others |

28. Do you think the following can be side effects associated with the use of aphrodisiac? (Please tick)

| SIDE EFFECT | YES | NO | NO IDEA |
|---|---|---|---|
| General Weakness | | | |
| Headache | | | |
| Fast heart beat | | | |
| Sustained erection | | | |
| Impotence | | | |
| Heart Attack | | | |
| Kidney failure | | | |
| Overstimulation | | | |

**SECTION E. CONSEQUENCES OF APHRODISIAC USE [For Users Only]**

29. Have you noticed any side effect from your use of aphrodisiacs? *1. Yes [ ] 2. No [ ]*
30. If Yes, state the side effect(s) you experienced……
31. What help did you seek for the problem? [Tick all that apply] A. Talked to partner/friend/ family [ ] B. Talked to a Doctor/Pharmacist [ ] C. Took non-prescription drugs [ ] D Sought spiritual help [ ] E. Sought no help [ ]

*If participant did not seek medical care ask why*

32. Why didn't you go to the hospital?

A. Did not think it was serious/ Waiting to see if the problem goes away [ ]

B. Doctor cannot do much/ Do not think it is a medical problem [ ]

C. Not comfortable talking to a doctor/ Uneasy to talk with doctor about sex [ ]

D. Hospital is expensive [ ] E. Normal with ageing [ ]

**Thank you**