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MENOPAUSAL SYMPTOMS AND ASSOCIATED FACTORS AMONG HOSPITAL STAFF, JIMMA UNIVERSITY, SOUTHWEST ETHIOPIA, 2017

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ABSTRACT

Background: *Reproductive aging in women is a dynamic process happening over a period of time ending in menopause. Menopause is a normal, natural event, defined as the final menstrual period (FMP), representing the permanent cessation of menses resulting from loss of ovarian follicular function, usually due to aging, but can be induced through a medical intervention & lifestyles such as using substances. Studies concerning menopause & its prevalence as well as severity were conducted in different parts of the world but most of them didn't use MRS along with associated factors to investigate the occurrence of menopause symptoms.*

Objective: *The main aim of this study was to determine prevalence, severity and associated factors of menopausal symptoms among staff of Jimma University Specialized Hospital Health professionals & administrative staff using MRS.*

Methods: *Institution based cross sectional study was conducted from May to June 2017 on Jimma University Specialized Hospital health professionals and administrative staff. A total of 297 participants were selected by using computer generated simple random sampling after having sampling frame. Data were collected using Menopausal Rating Scale by interviewer administered structured questionnaire which was developed and released by WHO & adopted from it with some modifications considering the sociocultural aspect of the locality. A week before the time of data collection, the questionnaire was pretested. The collected data were entered into Epi Data Version 3.1 and exported to SPSS Version 21 for analysis. Bivariate analysis was performed followed by multivariate logistic regression so as to detect the association between variables.*

Results: *Two hundred nighty seven subjects were included in the study. Of these, 294 were participated with the response rate of 98.9%. The mean age of participants was 27.74(SD=7.78) and the range falls between 18-58 years. One hundred fifty-seven (53.4 %) were married and 123 (41.8 %) were single. Majority of the respondents 112(38.1 %) had Bachelor degree and above followed by diploma 82 (27.9 %). More than one fourth of respondents 81(27.6%) earned a monthly income of 2501-4500 EthBirr and 73(24.8%) of the study participants had monthly income of 500-1000 EthBirr. From the total 115 (39.1%), 102(34.7%), and 43(14.6%) of the study participants were health care provider hospital staff, administrative hospital staff, and administrative university staff respectively. The current study revealed the overall prevalence of menopausal symptoms was 13.3%. The age range at which more menopausal symptoms observed was 27-30 years. Menstrual history (AOR=2.79, 95% CI= (1.155-6.743)) fetal loss experience (AOR=4.060, 95% CI=(1.053-15.652)) and chronic disease (AOR=3.422, 95% CI=(1.176 -9.961)) were significantly associated with menopausal symptoms.*

Conclusion: *The present study revealed that menopausal symptoms in developing nations started at early age. Irregular menstrual history, history of chronic disease and fetal loss experience were independent peridictors of menopausal symptoms. Taking this finding as a baseline data, large scale study is recommended.*

Key words: *Menopause, Menopausal Rating Scale, Substance Use, Jimma, Ethiopia.*

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Acronyms and Abbreviations

A.D	=	Anno Domini, the year of our lord
B.C	=	Before Christ
CAMS	=	Council of Affiliated Menopausal Societies
FMP	=	Final Menstrual Period
GM-CSF	=	Granulocyte Monocyte Colony Stimutating Factor
HRM	=	Human Resource Management
H. Sapiens	=	Homo sapiens
HRT	=	Hormonal Replacement Therapy
HT	=	Hormone Therapy
IJSR	=	International Journal of Science and Research
IL -1	=	Interleukine 1
IL-6	=	Interleukine 6
IMS	=	International Menopausal Societies
MT	=	Menopausal Transition
QOL	=	Quality of Life
RCH	=	Reproductive and Child Health
SLE	=	Systemic Lupus Erythematus
USA/US	=	United States of America
WHI	=	Womenôs Health Initiative
WHO	=	World Health Organization

CHAPTER 1: INTRODUCTION

1.1 Background

Human females produce all the oocytes they will ever have by the fifth month of gestation. Semelgametogenesis, the character of producing all of oneôs gametes at one time, is a trait common to female birds and mammals (1).

In humans the maximum of approximately 7 million oocytes is reduced to 2 million by birth, 400,000 at puberty, and 1,000 at menopause (2). Oocytes, which are surrounded by follicles in the ovaries, are lost mostly through a programmed process of cell death induced by hormone withdrawal, known as atresia (3). Atresia is the sole cause of follicular death before puberty and remains the predominant cause thereafter, because the number of follicles lost to ovulation is relatively small (4). About 400 oocytes are ovulated over the menstruating lifespan (1). Oocytes remain inactive in their follicles in an arrested phase of meiosis from the fifth month of gestation until they either succumb to atresia or become part of an ovulatory cohort (5). Normally, only one oocyte in a cohort is singled out to complete meiosis; the rest provide hormonal support for the development of the primary follicle or oocyte, after which they too become atretic. As the follicle pool shrinks, it becomes more and more difficult to recruit a large enough cohort of follicles to produce ovulation. In addition, as human females age the chosen oocytes become increasingly susceptible to malfunction during completion of the meiotic process, producing chromosomally abnormal ova. Physiological sources of variation in the age of menopause include the original number of oocytes and the rates of atresia (6).

At present, histological investigation of ovaries removed from females of all ages, including embryos, suggests that human females experience at least three different rates of atresia, from birth to puberty, from puberty to about age 40, and from age 40 to menopause. The change in rate of atresia of greatest interest is the acceleration that occurs around age 40, because it is believed to be functionally related to menopause (7). Without this apparent acceleration, which is thought to begin when some threshold number of oocytes remain (for example, 25,000), women would have enough oocytes to last 70 years (8). It is unclear why the rate of

atresia increases. However, it is likely that individual variation in the age at which the acceleration occurs is a major determinant of variation in the age of menopause.

Not surprisinglyô, given the high heritability in the age at which menopause occurs, women with a family history of clinically premature mostly around 40 years ovarian failure have earlier menopause (2). Physiologically women of reproductive age have menstruation every month.

Reproductive aging in women is a dynamic process happening over a period of time ending in menopause, i.e. a normal physiological event that occurs universally to all women who reach midlife. Menopause is the permanent cessation of menstruation occurs after twelve consecutive months of amenorrhea not due to pathological or other physiological causes (9). Menopause is a normal, natural event, defined as the final menstrual period (FMP), representing the permanent cessation of menses resulting from loss of ovarian follicular function, usually due to aging. Naturally menopause can occur spontaneously on average around age 51or be induced through a medical intervention (surgery, chemotherapy, or pelvic radiation therapy) (10). The final menstrual period is a single event that is preceded by a serious of clinical changes occurring over a period of time that follows recognizable stages although not all women progress through the stages in a linear fashion and some skip a stage altogether (11).

Menopause is a feminine milestone that signals the end of women's reproductive life and the start of a new phase. Literatures from different parts of the world show that an event of menopause is highly variable in timing and pattern. The global information concerning menopause reveals that experience of menopause is influenced by sociocultural, psychological and environmental factors. The nature, severity and frequency of symptoms vary not only among the individuals of different countries, but also in the same population with different cultures and ethnicities. For example, in the Mayan women lived in the southeastern part of Yucatan, Mexico, menopause occurred earlier than in Greece or North America, at an average age of 42 (12). The concept of local biologies, reproductive characteristics and sociocultural aspects in relation to menopausal symptoms has been discussed in various studies (13).

During menopause, many changes are taking place because of falling estrogen levels. The vasocongestive response is often slower in menopausal women. Vasomotor symptoms consist of hot flushes, night sweats and possibly palpitations, although their endocrine basis is not clearly understood. No one hormone has been identified as the culprit, but it has been suggested that a change in the body thermostat (hypothalamic thermoregulatory Centre) promotes heat loss (flushes and sweats). Estrogens in sufficient doses abolish menopausal flushes in nearly all women. The associated insomnia and fatigue that women get with night sweats also rises (14).

In a controlled study, exercise, cut flushes by 50%, and cognitive behavioral therapy and deep breathing are other effective non-HRT treatments of flushes (8).

Menopause is defined as the permanent cessation of menses. The age at which natural menopause occurs is between the ages of 45 and 55 years for women worldwide (15)**.** Menopause is a physiological event in the womenôs life. Natural menopause is recognized after 12 months of amenorrhea that is not associated with a pathologic cause (15). It is caused by aging of ovaries which leads to decline in the production of ovarian Gonadotropins, Estrogen and Progesterone that occurs naturally or is induced by surgery chemotherapy, or radiation. The deficiency of these hormones elicits various somatic, vasomotor, sexual and psychological symptoms that impair the overall quality of life of women (16). Menopausal age considers the end of the fertile phase of a womanôs age (17)

Menopause can be officially declared (in an adult woman who is not pregnant, is not lactating, and who has an intact uterus) when there has been amenorrhea (absence of any menstruation) for one complete year. However, there are many signs and effects that lead up to this point, many of which may extend well beyond it too. These include: irregular menses, vasomotor instability (hot flashes and night sweats), atrophy of genitourinary tissue, increased stress, breast tenderness, vaginal dryness, forgetfulness, mood changes, and in certain cases osteoporosis and/or heart disease (18). Even if many scholars have speculated that menopause is a very old trait (19). We are not sure whether menopause has been around since the hominoid-hominid split, Homo erectus, anatomically modern H. sapiens, or simply since maximum life spans exceeded 50 years. The life span predicted from body and brain size in early Homo suggests that a female post reproductive life span predates H. Sapiens (20).

Despite there is significant difference in the age of menopause both within and between populations, there is a strong central tendency in the age of menopause in developed countries, with medians clustering around 50 years. In American women as a sample the age of menopause ranged from 40 to 59 years (7) also any age within this range is assumed to be normal. Medians range from 43years to 51.4years in central Africa & among Caucasian Americans populations across populations respectively. There is plenty of genetic variation to increase or decrease the mean age of menopause with heritability estimates of 40% to 60 % in the age of menopause, if such changes brought increased fitness. Yet research suggests that there has been no secular trend of any kind in the age of menopause over the last 150 years. More importantly, Greek and Roman writings suggest that there probably has been little or no secular movement for the last 2,500 years. Aristotle (fourth century B.C.) and Pliny (first century A.D.) give 50 years as the maximum age of menopause. Texts from the Middle Ages give 50 years as the average age, with a range of 35 to 60 years (21,22).

Various environmental and life-history factors to variation in the age of menopause has been considered by numerous studies. Though, the large-scale multivariate studies that have attempted to control for confounding variables such as socioeconomic status, ethnicity, marital status and parity have failed to show a nutritional effect, nutritional status has been a major environmental suspect for menarche to occur. Additional suspected risk factors are body weight, weight loss, alcohol consumption, and stress. Long-term cigarette smoking is the only well-established environmental risk factor that lowers the median age of menopause by approximately 1.5 years (23).

Globally, misuse of terminologies related to the field of menopause has caused a great deal of confusion and misinformation such as among healthcare providers, those in research, the media, and the public. To avoid such confusions, the International Menopause Society [IMS] commissioned a project through its sub-organ, the Council of Affiliated Menopause Societies [CAMS] has coined ensure a standardized definition of key words (24ï 26).

The term climacteric is the phase in the aging of women marking the transition from the reproductive phase to the non-reproductive state & it incorporates the Perimenopause by extending for a longer variable period before and after the Perimenopause. It sometimes, but

not necessarily always associated with symptomatology when this occurs it may be termed as climacteric syndrome (26).

On the other hand, natural menopause is defined as the permanent cessation of menstruation resulting from the loss of ovarian follicular activity. It is recognized to have occurred after 12 consecutive months of amenorrhea, for which there is no other obvious pathological or physiological cause. Menopause occurs with the final menstrual period which is known with certainty only in retrospect a year or more after the event so that an adequate biological marker for the event does not exist whereas the term perimenopause should include the period immediate prior to the menopause when the endocrinological, biological, and clinical features of approaching menopause commences and the first year after menopause (27).

Another term menopausal transition should be reserved for that period of time before the Final Menstrual Period/FMF when variability in the menstrual cycle is usually increased. This term can be used synonymously with premenopause although this latter term can be confusing and preferably should be abandoned (28).

Premenopause on the other hand is the term often used ambiguously to refer to the one or two years immediately before menopause or to refer to the whole of the reproductive period prior to the menopause. The group recommended that the term be used consistently in the latter sense to encompass the entire reproductive period up to the FMP. Conceptually postmenopause is also defined as dating from the final menstrual period, regardless of whether the menopause was induced or spontaneous (28). Ideally premature menopause defined as menopause that occurs at age less than two standard deviations below the mean established for the reference population. Practically in the absence of reliable estimates of the distribution of age at natural menopause in populations in developing countries, the age of 40 years is frequently used as an arbitrary cut-off point, below which menopause is said to be premature (23). Eventually induced menopause is defined as the cessation of menstruation following either surgical removal of both ovaries with or without hysterectomy or iatrogenic ablation of ovarian function (e.g. by chemotherapy or radiation) (26).

The menopausal transition (MT) period refers to the time from the commencement of variations in menstrual cycle length and a monotropic rise in follicle-stimulating hormone to

the final menstrual period. Different symptoms appear during the MT period. Hot flashes are the most frequent symptom and the prevalence of flashes can be as high as 79% at the completion of menopause (29,30). Other symptoms include night sweats, sleep disturbances, vaginal dryness, urinary incontinence, weight gain, fatigue, irritability, and anxiety. Studies find that most women experience at least one or more of these symptoms as they transit through the postmenopausal stage of life (30).

Perimenopause syndrome, referred also as climacteric syndrome, results from the changing of relationship among the hypothalamus, pituitary and ovary during womenôs ageing process. Those changes take place first in the ovary, then in the hypothalamus and pituitary, which are reflected as the functional changes in the endocrinological and central nervous system, accompanied with a series of psychological symptoms (31).

Menopause must to come to have several meanings related with it though it is a normal physiological process that all women realizing a certain age will undergo. Clinically it is defined as the permanent cessation of menstruation due to loss of ovarian follicular function. In most developed countries, this event occurs around the age of 50 & associated with a normal estrogen levels. In common literatures and womenôs magazines, ómenopauseô is applied to the entire climacteric, including the peri- and post-menopausal phase. Sociologically menopause is natural transition process encompassing not only the biological changes but also the social and cultural changes associated with the natural ageing process, including how a woman views herself and how she is viewed by society. One biological fact remains i.e. Symptoms will occur because of the sudden drop in hormone levels in spite of the variability often complicated interpretations of menopause. Symptoms can be divided into three major categories: Vasomotor, Atrophic, and Psychological/Sexual. Vasomotor symptoms include hot flushes and night sweats. These symptoms can be severe enough to cause distress, fatigue and insomnia. Atrophic symptoms include uro-genital complaints, changes in skin appearance, and aching joints and muscles. Evidence indicates that these disorders begin to increase in close time association with menopause. Psychological/sexual symptoms include Vaginal dryness, breast tenderness, dyspareunia, and depressive mood swings (32).

The prevalence and proportion of menopausal symptoms may vary according to racial and ethnic groups. Population-based surveys among Caucasian populations have reported a higher prevalence (40 -70%) (33)

1.2 Statement of the problem

The number of postmenopausal women in the world in 1990 was estimated at 467 million, 60% in the developing countries and is expected to reach 1.2 billion by 2030 (34). In metaanalysis of Ghazanfarpour that an estimated one billion women have experienced menopause worldwide (35). Each year, 25 million women are predicted to enter the menopausal period worldwide. Additionally, the number of women aged 50 years would increase globally from 500 million to more than 1 billion in 2030. Based on WHO, in Asia, in 2025, the number of advanced aged women would increase from 107 million to 373 million, due to the increased life expectancy and more active post-menopausal life style (36).

Menopause and the age of its onset are associated with an increased incidence of cardiovascular disease and some cancers (5). In Benin, as the case for many Sub-Saharan Africa countries, the number of post-menopausal women is increasing. This lifecycle period is quiet for some women tumultuous for others. Unlike European countries, North American and Asian, few studies are devoted to menopause in Africa, Benin in particular. The problematic of menopause often being relegated to second place the concerns of health authorities. Three decades after the first studies on menopause in Cotonou, and facing the increasingly important demand for care of menopausal women, it seemed necessary to realize this study which the objective was to describe the profile, clinical symptoms of menopausal women as well as management of postmenopausal symptoms in Cotonou, Benin other than menopause (35). Based on the above study the most frequent menopausal clinical complaints were hot flashes (58.7%), libido disorders (67%), and joints pain (38.8%). The most frequent associated pathology was hypertension in 37.7% of cases. Factors that limit access to hormonal treatment of menopause in Cotonou include lack of information (66.17%) and financial barriers (19.65%) (35).

Many studies conducted concerning problems of commonly reported menopausal symptoms using menopausal rating scale as a tool worldwide but in Ethiopia researches concerning this issue are limited. The goal of this study is to determine prevalence, severity and associated factors of menopausal symptoms using modified menopausal rating scale as a tool.

1.3 **Significance of the Study**

Currently, with increasing life expectancy and life span, women spend one-third of their lifetime after menopause worldwide. This process is accompanied by many biological and psychosocial changes. During this period woman can experience many symptoms including hot flashes, night sweats, sleep and mood disorders, impaired memory, lack of concentration, nervousness, depression, insomnia, bone and joint complaints and also reduction of muscle mass. The duration, severity and impact of these symptoms vary extremely from person to person and population to population. Some women have severe symptoms that greatly affect their personal and social functioning as well as quality of life. In Ethiopia there are no researches conducted on Menopausal symptoms and associated factors using menopausal rating scale although there are researches conducted on attitudes of middle adult women towards menopause, knowledge attitude & associated factors of women aged 30-49 years towards menopause & determinants of menopausal symptoms and attitude among middle aged women. After completion, this study will help health development planners to give special considerations for commonly reported menopausal symptoms in case of diagnosis & act accordingly. The study will also be important for the future researchers as a baseline for further study on this area. Eventually, the top beneficiaries of this study will be population of women complaining commonly reported menopausal symptoms at large to seek medical advice, service, self-management and menopausal related health burden to their quality of life.

CHAPTER 2: LITERATURE REVIEW

Even though menopause is a universal phenomenon, there is a considerable variation among women regarding the age of attaining menopause and the manifestation of menopausal signs and symptoms. Worldwide, the estimates for the mean age of menopause range from 45 to 55 years (37).

Menopause currently affects the lives of millions of women globally and will be an issue of increasing concern as the population ages over the next few decades. (2).The International Journal of Science and Research (IJSR) reported that among a total of 100 menopausal women attendants enrolled in the study in tertiary care hospital in India, majority of menopausal women experienced joint and muscular discomfort (86%) and physical and mental exhaustion (81%). More than half of the respondents experienced heart discomfort (68%), irritability (66%), depressive mood (61%) and hot flushes and profuse sweating (58%). (43%) menopausal women experienced sleep problems, (35%) had dryness of vagina and (31%) sexual problems. Only (25%) respondents had bladder problems and (18%) had anxiety (37).

According to Massachusetts Womenôs Health Study, cessation of menses is perceived by most women to have no negative impact on their subsequent physical and mental health (38). With the exception of women experiencing surgical menopause, majority of these women felt happy and healthy and did not seek contact with health care providers. Among Muslim women in Pakistan the added advantage of uninterrupted prayers and fasting in addition to fertility cessation leads to welcoming of this transition (39). Despite evidence of psychosocial distress, the level of development and evaluation of QOL is poor in the gynecology outpatient clinics (40). A study performed for Assessment of Climacteric Symptoms in Pakistani Women of 50 sample size resulted 70% of women were symptomatic with a minimum of 11 MRS score while 30% were symptom free. Hormone replacement therapy was ever taken by 8% of these women. The Menopause Rating Scale ranged from 9 to 21 with a mean of 12. The most commonly reported symptoms were hot flushes (90%) and sleep disturbances (89%) followed by palpitations (42%). Sexual problems (18%) and bladder symptoms (12%) were reported least frequently (41).

Menopausal period has an important role in the reproductive life of a woman and gives rise to many physical and mental problems. Life expectancy is increasing, age at menopause remains relatively unchanged, so women are spending more of their life in the post-menopause period. Changes in menopause experience for women in different parts of the world and in different ethnic groups provide evidence for specific cultural and ethnic impacts of menopause. As such, healthcare workers need significant information on menopause in order to be able to plan healthcare services (42ï 45).Menopause has also been looked on as a signal occurring at the right time of life when preventive health care is crucial. The primary aim of health promotion is improvement of quality of life (QOL). Assessment of QOL at menopause has been largely inadequate (39) A study conducted in rural Turkey having the total sample of 600 women, of which, 347 (57.8%) were going through natural menopause, and 47 (7.8%) were menopausal due to surgical intervention. While 152 women (35.5%) had been referred to a gynecologist at least once due to menopausal symptoms, only 28 women (6.5%) had received hormone replacement treatment for more than 6 months. A total of 399 women (66.5%) reported their self-rated general health status to be poor, while 201 (33.5%) described their health status as good. There were only 195 women (32.5%) with no physician-diagnosed (43).

Menopause is a transition point in a womanôs life from the reproductive to non-reproductive phase. Menopause has biological, emotional as well as socio-cultural importance for women (44). From a public health perspective, it is important to know the prevalence of menopause in a population with different socio-demographic characteristics in order to make appropriate policies and to provide better health services (46). In India, although there have been a number of studies on menopause (47), only a few studies have attempted to estimate the prevalence of menopause using a nationwide data (48), (34,35) and no study examined the change in prevalence of menopause over many years. Puberty prepares a girl to be able to conceive and bear children whereas menopause prepares a woman to cease conception. Both cause sudden changes in oneôs body, property by introducing hormones and menopause by withdrawing them. Menopause which is defined as complete cessation of menstruation for twelve months or more is a normal physiological change experienced by middle age women. Some of menopausal symptoms experienced by these women can be severe enough to affect their normal lifestyle. Unfortunately, majority of these women are not aware of the changes

brought about by menopause (45) . Based on the above information the Indian women aged 30ï 49 years, prevalence of menopause did not change significantly and remained around 18% for about 15 years. However, the prevalence of menopause significantly decreased in the 46ï 49years age group in both urban and rural areas. Among Indian women in 2005ï 06, the prevalence of menopause among illiterate women was 20.2% and only 9.3% (49) among women with higher secondary and above education status. Among different occupational groups women engaged in professional/sales and service had the lowest prevalence of menopause and the farmers had highest prevalence (50). Prevalence of menopause was lower in anemic women than women with no anemia (51).

Womenôs health has been a global concern for many decades. The focus of womenôs health researchers and health policy planners has also shifted towards postmenopausal women since recent trends suggest an increase in their number and life expectancy. A total of 130 million Indian women are expected to live beyond menopause by 2015. Under current demographic trends, menopausal and postmenopausal health has emerged as an important public health concern in India owing to improved economic conditions, rapid lifestyle changes, and increased longevity. Generally, women have more complex and stressful aging process as men do, as a consequence of hormonal changes that occur during menopausal transition. The onset of this physiological development not only marks the end of womenô reproductive function but makes them more vulnerable to a new set of health problems including cardiovascular diseases, osteoporosis and so on (52).

After the Cairo conference on Population and Development, greater awareness has been generated among the policy makers to address the health needs of women in a more holistic perspective covering all stages of life, from conception to old age. With this view, the current Reproductive and Child Health (RCH) program attempts to provide services to women at all stages. However, certain sections of the population such as women approaching menopause have still not received the required attention. Further, the decline in fertility and mortality, together with the increase in life expectancy has generated an increase in the proportion of population in the late reproductive years and in women above 60 years. With this, the quantum of women at the menopausal stage has been on the rise in India. Therefore, the study of menopause becomes highly important in the context of the current demographic scenario and the policy environment of India (53). Analysis has been carried out using data on

menopause for currently married women aged 30-49 for the whole country and for its states. For the country as a whole, about 18 per cent of the women in the age group 30-49 are in menopause. The proportion of women in menopause is lower in urban (16%) than in rural areas (18 per cent). The age-wise data exhibit variability in the proportion of women who are in menopause at each age. In India, three per cent of the women are already in menopause by the age of 30-34 and the proportion rises to eight per cent for the age group 35-39. The incidence of menopause is quite rapid after the age of 40-41. By the age of 48-49, two-thirds of women have reported having reached menopause. At each age, the incidence of menopause is slightly later for urban areas than for rural areas (53).

In recent years, an increased emphasis has been placed on educating the public on the effects of long-term estrogen deficiency, the resulting increased risk of osteoporosis and cardiovascular disease and the benefits of HRT as a preventive measure against the development of such diseases. The onset of acute menopausal symptoms, such as hot flushes, sweating, insomnia and a lack of energy, is a major indication for the prescription of HRT in Taiwan. However, in the decades to come, educating asymptomatic menopausal women on the benefits of receiving HRT will be an issue of primary emphasis (48, 51). Few studies have examined menopause symptomatology in different ethnic groups, especially in primary care settings. To optimize the health care for middle-aged women, we need to understand the process by which women describe, explain, and experience menopause and also to understand the factors that may shape their experiences (54).

Progressive decrease in estrogenic secretion, characteristic of the climacteric phase, leads to changes from a bioï psycho and social point of view which in turn impairs female quality of life. These changes and involved risk factors have been described in Ecuador among climacteric and postmenopausal women. Perception, attitudes and knowledge regarding the menopause and its transitional period, the climacteric, may differ from one female population to another. These differences have been related to female age, parity and hormonal status as well as to social, economic, cultural, educational and geographical factors. Moreover, the changing evidence and recommendations for hormone therapy (HT) associated to the publication of the results of the WHI study, have also impacted on womenôs attitude toward the menopause and the use of hormonal therapy (55).

Sexual dysfunction is highly prevalent among American women, especially in middle age. Between 43 and 63 percent of U.S. women report problems with sexual functioning. Understanding the causes of sexual dysfunction during menopause is important, given the advancing age of the American population and the negative effect of sexual dysfunction on health-related quality of life. Furthermore, determining the causes of sexual dysfunction during menopause and their relative contribution can help define treatments for it, which is particularly important if they are treatable with methods other than hormone replacement therapy. Multiple studies have shown that women report more sexual problems with increasing age. However, less clear are the causes of this decrease in function. Researchers have attempted to disentangle the contribution of factors such as increasing age, menopausal status, fluctuations in hormone levels, psychosocial factors, and more. Evidence thus far has been mixed and has reinforced what we already suspected: the causes of the decline in female sexual function throughout middle age are many, varied, complex, and interrelated (56). In 2002, the National Osteoporosis Foundation estimated that 30 million women aged 50 years or older in the United States have low bone mass and, of these, 8 million have osteoporosis. Half of all postmenopausal women will have an osteoporosis-related fracture during their lives, including one quarter who will develop a vertebral deformity. The lifetime risk of hip fracture alone for a 50-year-old woman is 17.5%. There is significant disability, morbidity and mortality associated with vertebral and hip fractures. The overall mortality within 1 year following a hip fracture is estimated to be 20%. The annual public health costs of osteoporosis in general in the U.S. are over $10 billion. Approximately $13.8 billion dollars were spent in 1995 for the management of fractures in the U.S. The size of the older population is expected to increase remarkably during the next decades, and the costs related to postmenopausal osteoporotic fractures are expected to increase correspondingly, both in the U.S. and worldwide (57).

The transition from premenopausal to perimenopausal and postmenopausal has been associated with decreasing sexual function independent of age in the vast majority of studies. Yet menopausal status alone does not tell the whole story, and age is consistently a stronger predictor. Several researchers have emphasized the important contribution of relationship status such as attitudes toward partner, lack of partner, or partner sexual dysfunction and psychosocial factors i.e. mental health, education level, socioeconomic status which trumped

the effect of menopausal status on sexual function in one study. The decrease in circulating estradiol, characteristic of menopause, is associated with vaginal dryness and atrophy. Between 17 and 55 percent of middle-aged women complain of vaginal dryness, and reports of vaginal dryness increase five-fold as women advance through menopause. Unlike vasomotor symptoms, which eventually resolve, vaginal dryness and dyspareunia become more prominent with both advancing age and menopausal status and rarely improves (58).

Numerous factors including menopausal status, social background, and education, physical and emotional health may influence womenôs knowledge and beliefs about menopause. Women in Western countries tend to be better informed about implication of menopause (59). Approximately 30 percent of American women are older than age 50, the average age of menopause (60).

Epidemiological studies suggest that approximately 50 percent of women in this age group consume at least moderate quantities of alcohol according to National Institute on Alcohol Abuse and Alcoholism (61). Therefore, any adverse effects of alcohol among this population could have a significant effect on public health (12). The epidemiological studies described address only the overall association between alcohol consumption and hormone levels. Little information is available on specific factors that might modify or contribute to alcoholôs effects. Those factors might include drinking patterns, including timing, frequency and quantity of consumption; the time that has elapsed between a subjectôs last drink and the determination of her hormone levels; and alcoholôs ultimate effects on the tissue responses induced by specific hormones (12). Among women, consumption of at least one standard drink per day is (although definitions of moderate drinking vary widely, an upper limit of one standard drink is often employed. A standard drink is equivalent to 12 ounces of beer, 5 ounces of wine, or 1.5 ounces of 80-proof spirits (12,60) associated with approximately a 20-percent reduction in risk of cardiovascular disease compared with nondrinkers (12).

Most new mothers and mothers-to-be realized that drugs, including tobacco and alcohol, can be passed on to their babies both while in the womb and via mothers' milk and cause them harm (12). Cancer of the breast is among the most common fatal cancers among women in the United States. Annually, approximately 180,000 women are diagnosed with breast cancer, and 44,000 women die of the disease (62). Evidence suggests that alcohol consumption may be associated with increased risk for this cancer, although whether this association is causal

remains unresolved (63). The lack of strong evidence for alcohol-induced changes in estrogen levels either before or after menopause suggests that effects of alcohol in breast cancer may involve no hormonal mechanisms (64). This conclusion is supported by evidence suggesting that alcohol consumption is not a risk factor for cancer of the glandular internal lining of the uterus (i.e., endometrial cancer), which is known to be hormone related (34). In postmenopausal women, an alcohol dose-related increase in risk of breast cancer is well documented. The Nursesô Health Study found that even low alcohol consumption (equivalent to 3-6 glasses of wine/week) was modestly associated with breast cancer risk. Women who drank at least two drinks per day had a greater risk of breast cancer compared with women who did not consume alcohol (65). In postmenopausal women, an alcohol dose-related increase in risk of breast cancer is well documented. The Nursesô Health Study found that even low alcohol consumption (equivalent to 3-6 glasses of wine/week) was modestly associated with breast cancer risk Women who drank at least two drinks per day had a greater risk of breast cancer (RR, 1.51; 413 cases/100,000 person-years) compared with women who did not consume alcohol (65).

In the mammary glands of rats, alcohol caused tissue changes thought to be associated with increased risk for cancer without affecting estrogen levels (63,12).

Another substance caffeine whether it comes in coffee, tea, or colas, caffeine is a weak diuretic that causes calcium loss via the kidneys (67). Caffeine intakes of >300 mg per day have been shown to accelerate bone loss in elderly postmenopausal women (68).Tobacco on the other hand in case of long-term smokers have 10 percent weaker bones and a 40 percent higher risk of fracture (69). Even secondhand smoke in the home can negatively affect bone density (70). On a study conducted in menopause clinics in Italy, current smoke status was associated with lower age at menopause which was 51.2 in nonsmokers versus 51.0 in smokers, $p < 0.05$. In this study a total of 31,834 women with spontaneous menopause entered the study. 25.2% of women had menopause at age less than 50 years, 40.9 at age 50ï 52 years and 33.9 at age 53 years or more. The age at menopause did not markedly changed with cohort of birth. Higher education was associated with higher age at menopause i.e.51.1 in women with low education versus 51.3 for women with high school or university degree, $p < 0.05$. Increasing BMI was associated with later age at menopause (71).

Another study conducted in Britain on Body mass index and age at menopause showed that mean BMI increased with increasing age. Thirty-four percent of women increased by at least one BMI category between ages 20 and 36 years but only 7% showed a decrease over this period. The strongest overall association was observed with BMI at age 36 years ($p = 0.2$) where the underweight women did have a significantly higher rate of menopause than the normal weight group, or equivalently, an earlier age at menopause. When grouping underweight at 36 years versus the rest a significant association was observed ($p = 0.03$) (72)**.**

Conceptual framework

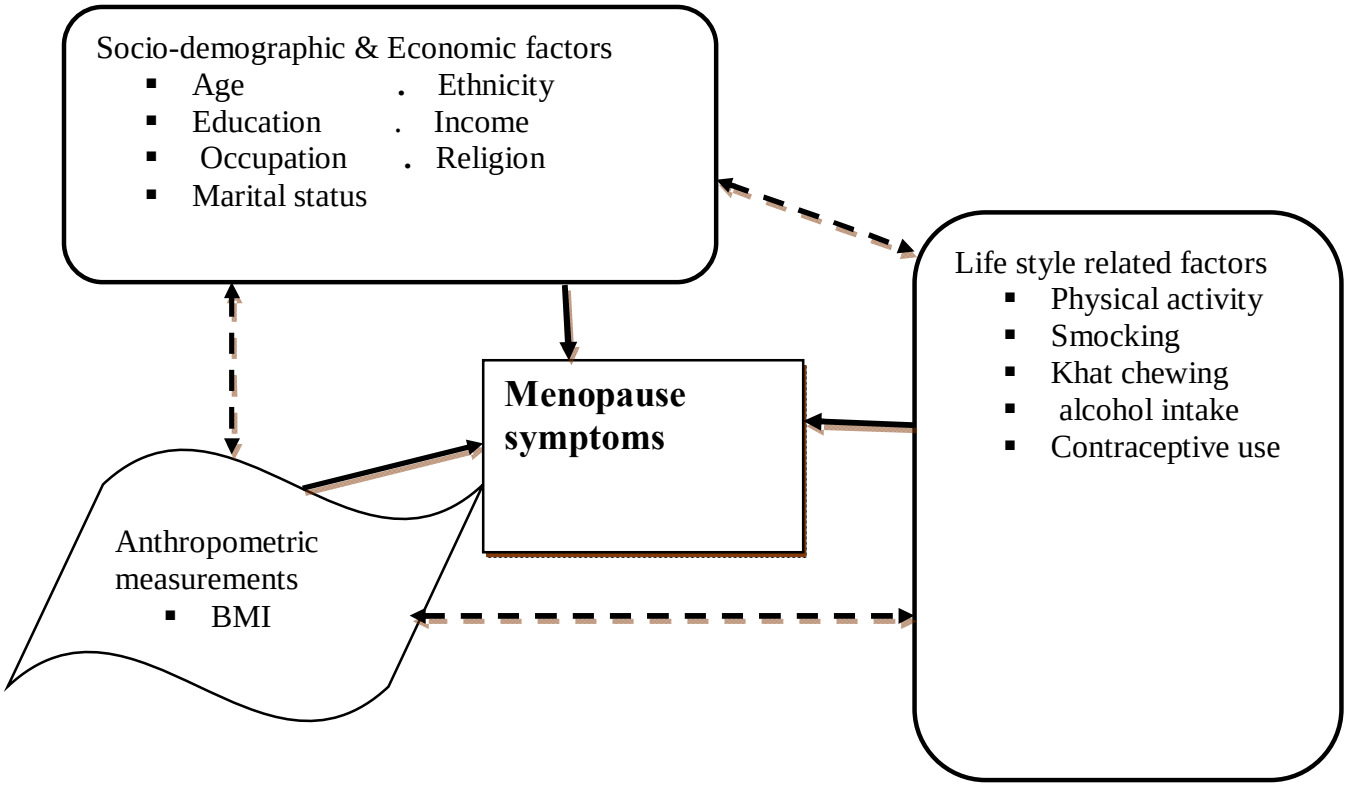

Figure 1: Conceptual framework showing factors of menopause symptoms, 2017

CHAPTER 3: OBJECTIVES

3.1 General Objective

The main aim of the present study was to determine prevalence, severity and associated factors of menopausal symptoms among women of Jimma University Specialized Hospital health professionals & administrative staff using MRS, 2017

3.2 Specific Objectives

1. To determine the prevalence of menopausal symptoms
2. To identify the severity of menopausal symptoms
3. To determine association between socio-demographic factors & menopausal symptoms
4. To describe the association between body mass index and menopausal symptoms
5. To identify the association between substance use and menopausal symptoms

CHAPTER 4: METHODS AND MATERIALS

4.1 Study Area and Period

The study was conducted at Jimma University, a public higher educational institution established in December 1999 by the amalgamation of Jimma College of Agriculture (founded in 1952), and Jimma Institute of Health Sciences (established in 1983). The two campuses are located in Jimma city, Oromia Regional State, 335 km southwest of Addis Ababa with an area of 167 hectares (73). According to the information obtained from Jimma University Specialized Hospital Human Resource Management, the hospital currently has a total of 746 and 645 health personnel and administrative staff respectively. Among the health personnel & the administrative staff, the total numbers of females are 348 & 310 respectively. Besides, the information obtained from Jimma University, Institute of Health indicated that the institute has a total of 627 & 161 academic & administrative staff respectively. Among the academic & administrative staff the total numbers of females are 109 & 133 respectively. The study was conducted from May to June 2017.

4.2 **Study Design**

Institution based Cross sectional study design was employed.

4.3 Population

4.3.1 Source Population

All female academic and administrative staff of JUSH and Institute of Health

4.3.2 Study Population

All female academic and administrative staff of JUSH and Institute of Health who were present at the time of data collection period

4.3.3 Study Unit- Individuals

4.3.4 Inclusion Criteria

- All female academic and administrative staff of Institute of Health and JUSH staff who have been working at least six months in the study area were included.

4.3.5 Exclusion Criteria

- Staff with severe illness who had hearing and speaking difficulty at the time of data collection period were excluded.
- Staff who were on annual leave, maternity leave, medical leave and study leave at the time of data collection were excluded at the time of data collection period.

4.4 **Sample Size Determination & Sampling Technique**

The sample size was calculated using a single population proportion formula and prevalence of 50% because no study was conducted before in similar setting on prevalence of menopausal symptoms using menopausal rating scale. So that sample size can be calculated as

$$n = \frac{(Z\alpha/2)^2 pq}{d^2} = \frac{(1.96)^2 (0.5)(1-0.5)}{(0.05)^2} = 384$$

Where, n=sample size

$Z\alpha/2$= Critical value at 95% confidence interval of certainty (1.96)

d=marginal sampling error tolerated

p= prevalence of estimating menopausal symptoms (50%)

q= (1-p) failure to estimate prevalence of menopausal symptoms

However, my study population was less than 10,000 so the final estimated sample size (n*f*) with 95% confidence interval & 5% marginal error was computed with the formula

n*final* = n/1+n/N. Where, N= source population the sample was drawn. I have taken p= 0.5, q=0.5 due to no research done with menopause symptoms and associated factors using MRS, so. (1.96^2) (0.5x0.5)/$0.05^{2=}$ 3.8416x0.5x0.5/0.0025=384

n = 384

n_f = n/1+n/N

nf=384/1+384/ 900= 270

n*f*= 270, the final sample size with the addition of 10% for non-respondent (i.e. 27) was **297**. Simple random sampling (computer generated random number) was used for selection of individuals after collecting the sampling frame.

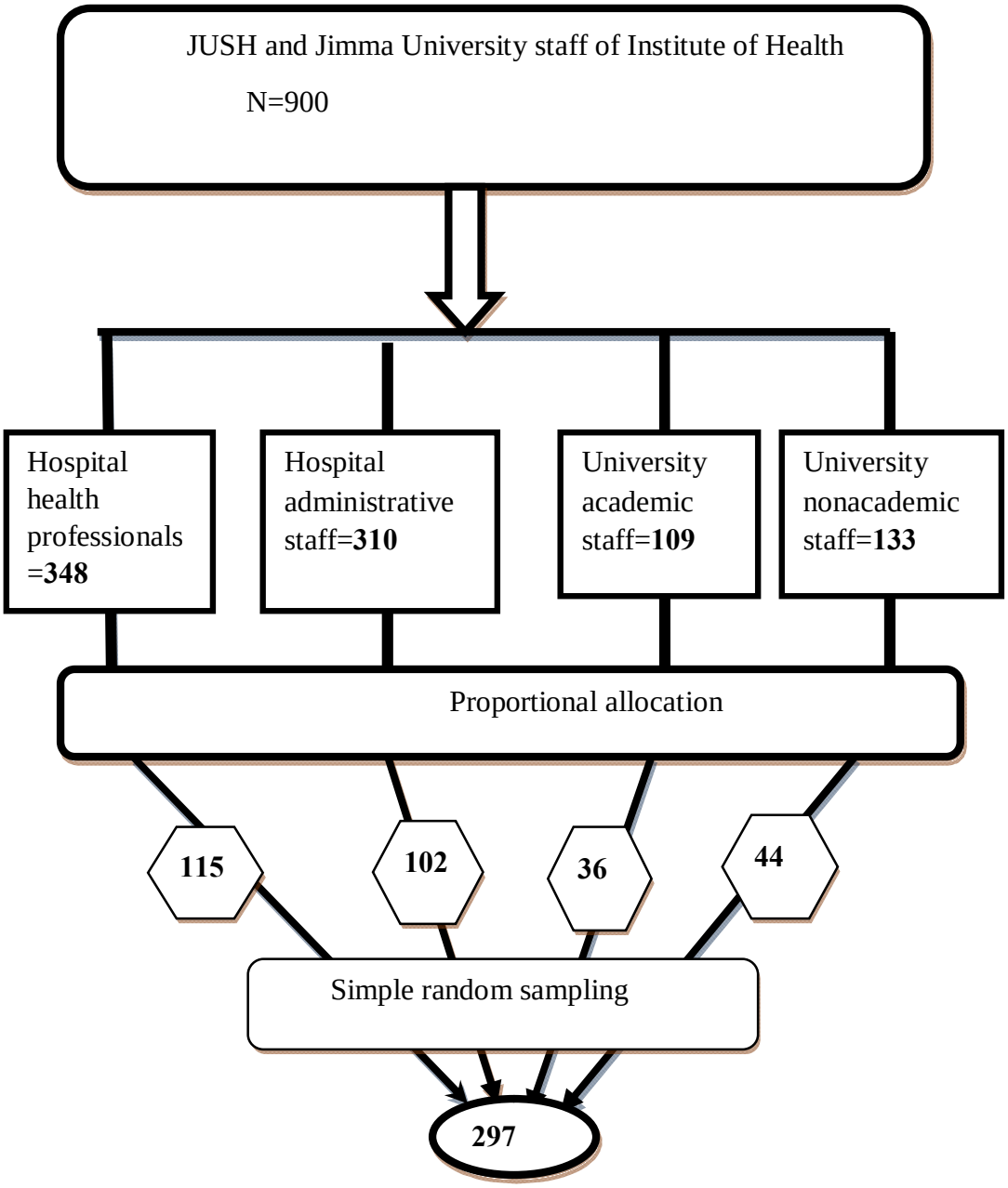

Figure 2: Schematic presentation of sampling procedure conducted to assess prevalence of menopausal symptoms among Jimma University Institute of health and JUSH staff, Southwest Ethiopia, 2017

4.5 Study Variables

Dependent Variable: Menopausal symptoms

Independent Variables:

- Socio-demographic & economic related factors: age, education, marital status, Occupation, Income, Religion Ethnicity
- Lifestyle related factors: - Physical activity, smoking, khat chewing, alcohol intake Contraceptive use, anthropometric variables: - BMI, height, weight

4.6 Operational Definition

WHO standard for degree of Severity of Symptoms

The individual degree of severity of an item is defined as follows:

Table 1: WHO standard for degree of Severity of Symptoms

No symptom	None, absent, negligible	0
Mild	Slight, low	0.1-0.3
Moderate	Medium, fair	0.4-0.5
Severe	High, extreme	0.6-0.7
Very severe	Very high, very extreme	0.8-1.0

The Menopause Rating Scale (MRS) comprises 11 items with symptom intensities ranging from 0 = 0 (no symptom/s) to 1.0 (very severe symptoms).

0 = No, symptom does not occur

1 =Yes, minor or mild symptoms, rarely occurs (monthly):- Duration: last less than 3 minutes.

2 = Moderate symptom, occurs occasionally (weekly):- Duration: may last up to 5 minutes.

3 = Severe symptom, occurs frequently (daily):- Duration: last up to 10 minutes.

4 = Very severe symptom, occurs more frequently: Duration last more than 10 minutes (74).

Substance Use: Use of either of at least the substances such as alcohol, cigarette or chat in the individualõs life time to manage her mood.

- **Current user:** woman who consumes any substances at least once in the last 30days.
- Substance use history in this context is to mean use of any of either of alcohol, cigarette or chat in the womanôs life time.

  Severely ill: Those women who canôt speak or not fully conscious at the time of data collection period due to illness.
- Marital status of separated in this study is to mean those women having husband but they are living in different sites (kebele, towns e.t.c) due to social reasons such as employment.

4.7 **Data Collection Process**

Data were collected using Menopausal Rating Scale tools by interviewer administered structured questionnaire which was developed and released by WHO & adopted from it with some modifications considering the sociocultural aspect of the locality. The tool consists of socio-demographic, economic, lifestyle, anthropometric, reproductive history and substance use related domains of the study subjects. Four Data collectors & two supervisors were selected by the principal investigator and research advisors among BSc midwifery nurses from gynecology & obstetric department of JUSH.

Menopausal Rating Scale to Diagnose Menopause Symptoms: - The evaluation of the completed questionnaire follows a simple scheme: the score increases point by point with increasing severity of subjectively perceived complaints in each of the 11items (severity expressed in 0 to 4 points in each item). By checking these 5 possible boxes of ñdegree of severityò, for each of the items the respondent provides her personal perception. This can be seen in the questionnaire. The total score of the MRS ranges between 0(asymptomatic) & 44 (higher degree of complaints). The minimum/maximum scores vary between the three dimensions depending on the number of complaints allocated to the respective dimension of symptoms:

- Psychological symptoms 0-16 scoring points (4 symptoms: depressed, anxious, irritable, exhausted)
- Somato-vegetative symptoms 0-16 points (sweating/flush, cardiac complaints, sleeping disorders, joint & muscle complaints)

- Urogenital symptoms 0-12 points (3 symptoms: sexual problems, urinary complaints vaginal dryness)

The composite scores for each of the dimensions (sub scales) is based on adding up the scores of the items of the representative dimensions. The composite score (total score) is the sum of the dimension scores (75)**.**

4.7.1 Pretest: -A week before the time of data collection, the questionnaire was pretested on subjects of similar sociocultural characteristics with the study subjects at Jimma University Technology campus to sort out language barriers as well as contextual variations on tools.

4.8 Data Quality Control

Training for data collectors as well as supervisors was given by the principal investigator & research advisors for two consecutive days concerning study objectives, interviewing techniques, the future outcome of the study topic, and also ethical issues during data collection process. Questionnaires were checked daily for its accuracy, consistency as well as completeness by supervisors and principal investigator so that necessary corrective measures in the form of feedback were forwarded to the data collectors.

4.9 Data Analysis and Processing

The collected data were entered into Epi data version 3.1 and then exported to SPSS version 21 for analysis. Data were analyzed by using means and standard deviation, quartile clustering was used to catagorize the age and income of study subjects as recommended by scholars (115), bivariate linear regression followed by multivariate logistic regression for detection of associations. P value < 0.05 was taken as a significant association.

4.10 Ethical Consideration

Ethical clearance was obtained from IRB of JU & other respective bodies before the start of actual data collection. Informed written consent was obtained from each study participant to begin data collection.

4.11 Dissemination Plan

The results of the study will be communicated with stakeholders through presentations on meetings, workshops and scientific panels. Results of a document will be submitted to Jimma University Postgraduate School. Eventually attempts will be made to publish in scientific journals & publishers.

CHAPTER 5: RESULT

5.1. Sociodemographic Characteristics of Respondents

Two hundred nighty seven subjects were included in the study. Complete response was obtained from 294 participants with the response rate of 98.9%. The mean age of study subjects was 27.74years (SD±7.78) and the range falls between 18-58 years. Most, 165 (56.1%) of the respondents were Orthodox Christians in believe followed by Protestant 68 (23.1%). Majority of study respondents 127(43.2 %) were Oromos followed by Amhara 74(25.2 %). One hundred sixty-one (54.8 %) were married and 123 (41.8 %) were single. Among married 4(2.5%) of them were separated. Most of the respondents, 112 (38.1 %) had Bachelor degree and above followed by diploma 82 (27.9 %). More than one fourth of respondents 81(27.6%) who are in the third quartile had earned a monthly income of 2501-4500 birr and 73(24.8%) of the study participants who are in the first quartile had monthly income of 500-1000 birr (Table1). Among study subjects, 115 (39.1%) were health care providers, 102(34.7%) administrative hospital staff, 43(14.6%) administrative University staff & 34(11.6%) academic University staff [Table 1]

Table 2: Sociodemographic characteristics of respondents, Jimma, Ethiopia, 2017 (n=294)

Variable		Frequency	Percent (%)
Age in years	18-23	11	13.1
	24-26	10	11.2
	27-30	10	16.4
	ÓB1	8	13.3
Religion	Orthodox	165	56.1
	Muslim	58	19.7
	Protestant	68	23.1
	Others*	3	1.0
Ethnicity	Oromo	127	43.2
	Amhara	74	25.2
	Tigrie	12	4.1
	Guragea	12	4.1
	Dawro	26	8.8
	Yem	23	7.8
	Others**	20	6.8
Marital status	Single	123	41.8
	Married	161	54.8
	Divorced	4	1.4
	Widowed	6	2.0
Level of Education	Primary	30	10.2
	Secondary	70	23.8
	Diploma	82	27.9
	Degree & above	112	38.1
Income in ETH. birr	500-1000	73	24.8
	1001-2500	70	23.8
	2501-4500	81	27.6
	>4501	70	23.8
Job	HCPHS	115	39.1
	AHS	102	34.7
	AUS	43	14.6
	AS	34	11.6

*Others: Keffa, siltie, wolayta

**Other:Catholic,Adventist

*HCPHS= Health Care Provider Hospital Staff,

**AHS= Admnistrative Hospital Staff,

***AUS=Admnistrative University Staff,

****AS= Academic Staf

5.2. Reproductive & Chronic Disease History of the Study Subjects

Regarding chronic diseases status, 20(6.8%) of study subjects had history of chronic disease. Among this 8(40%) of them had hypertension (HTN). Cardiac and renal diseases cover 2(10%) each. Two hundred thirty-two (78.9%) of study subjects had no history of oral contraceptive use. Only 11(3.7%) of study participants had history of fetal loss experience**.** One hundred thirty-three (70.7%) of the study subjects had history of breast feeding to their recent child. Thirty-six (12.2%) of study subjects had history of irregular menstrual cycle and 28(9.5%) of them had menstrual bleeding for the duration of more than five days. Only 4(1.4%) of respondents had history of using oral contraceptive pills to correct their irregular menses while 3(1%) of the study respondents had history of ovarectomy [Table 3]

Table 3: Reproductive & chronic disease history of participants, Jimma, Ethiopia, 2017

Variable		(n=294) Frequency	Percent (%)
Chronic disease status	Yes	20	6.8
	No	274	93.2
Type of chronic disease	Diabetes mellitus	4	20
	Hypertension	8	40
	Cardiac disease	2	10
	Renal disease	2	10
	Others*	4	20
Oral contraceptive use	Yes	62	21.1
	No	232	78.9
Fetal loss experience	Yes	11	3.7
	No	283	96.3
Breast feed history	Yes	133	45.2
	No	161	54.8
Menstrual history	Regular	258	88.1
	Irregular	36	12.2
Men. Bleeding length	Ò5days	266	90.8
	>5days	28	9.5
History of OCP use to correct their irregular menses	Yes	4	1.4
	No	290	98.6
Hysterectomy/ovarectomy history	Yes	3	1
	No	291	99

Others-arthritis, bronchitis, asthma*

5.3. Substance Use Status of Respondents

The overall prevalence of drinking alcohol and chewing khat was 60 (20.4%) and 4(1.4%) respectively. None of the respondents had history of smoking cigarette (Table 4).

Table 4: Substance use status of respondents, Jimma, Ethiopia, 2017 (n=294)

Variable		Frequency	Percent (%)
Tobacco use history	Yes	0	0
	No	294	100
Khat use history	Yes	4	1.4
	No	290	98.6
Alcohol use history	Yes	60	20.4
	No	234	79.6

5.4. Prevalence of Menopausal Symptoms

5.4.1. Overall Prevalence of Menopausal Symptoms

The overall prevalence of menopausal symptoms among the study participants was 39(13.3%) given in Figure 3.(n=294)

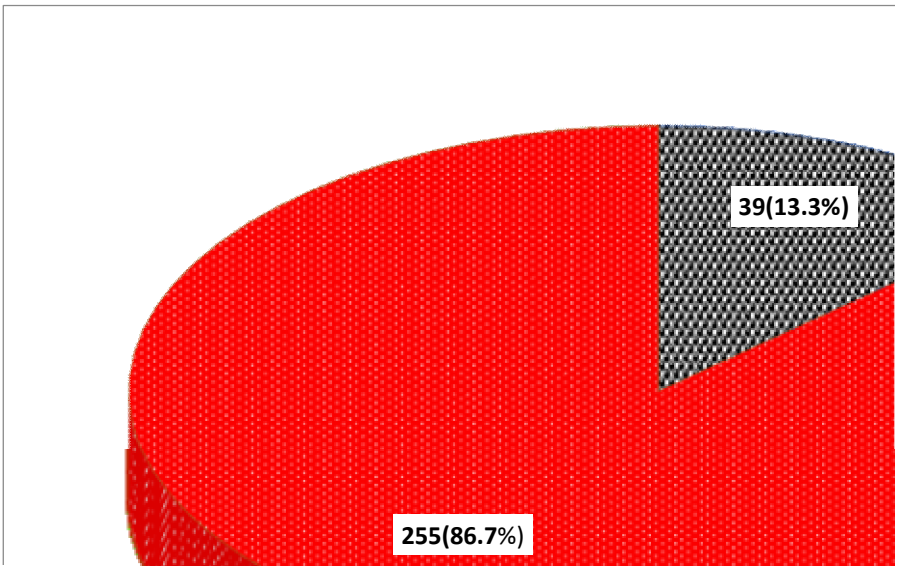

Figure 3: Prevalence of Menopausal Symptoms, Jimma University, Southwest Ethiopia 2017

5.4.2. Severity of Menopausal Symptoms

Of the study participants who had menopausal symptoms; 36(92.3%) had mild menopausal symptoms and 3(7.7%) had moderate menopausal symptoms. None of them had severe or very severe symptoms.

Table 5: Degree of severity of menopausal symptoms among study participants, Jimma, Ethiopia, 2017(n=294)

Severity of menopausal symptoms		Frequency	Percent (%)
	Mild symptom	36	92.3
	Moderate	3	7.7
	Severe	0	0
	Very severe	0	0
	Total	39	100.0

5.4.3 Prevalence of Menopausal Symptoms among Study Groups

Specifically, the prevalence of menopausal symptoms was 18(46.2%) in hospital health professional staff, 14(35.9) among administrative hospital staff, 4(10.3%) in administrative university staff and 3(7.7%) in academic university staff.

Table 6A: Proportion of menopausal symptoms among study groups (category), Jimma, Ethiopia, 2017(n=294)

Variable		Menopausal symptoms (n=294)	
		Yes N (%)	No N (%)
Age in years	18-23	11(13.1)	73(86.6%)
	24-26	10(11.2)	79(88.8%)
	27-30	10(16.4)	51(83.6%)
	Ó31	8(13.3%)	52(86.7%)
Marital status	Single	18(14.6%)	105(85.4%)
	Married	19(11.8%)	142(88.2%)
	Divorced	2(50%)	2(50%)
	Widowed	0(0.0%)	6(100%)
Education level	Primary	5(16.7)	25(83.3)
	Secondary	10(14.3%)	60(85.7%)
	Diploma	8(9.8%)	74(90.2%)
	Degree and above	16(14.3%)	96(85.7%)
Income in ETB	500-1000	11(15.1)	62(84.9)
	1001-2500	6(8.6%)	64(91.4%)
	2501-4500	11(13.6%)	70(86.4%)
	>4500	11(13.6%)	59(84.3%)
Job	HCP*	18(15.7)	97(84.3)
	AHS**	14(13.3%)	88(86.3%)
	UAS***	4(9.1%)	40(90.9%)
	AS***	3(9.1%)	30(90.9%)
History of chronic Disease	Yes	6(30)	14(70%)
	No	33(12)	241(88)
Chronic disease type	Diabetes mellitus	0(0)	4(100)
	Hypertension	2(25)	6(75)
	Cardiac disease	2(100)	0(0)
	Renal disease	0(0)	2(100)
	Other	2(50)	2(50)
Contraceptive use	Yes	10(16.1)	52(83.9)
	No	29(12.5)	203(87.5)

HCP*=Health Care Provider,

AHS**= Admnistrative Hospital Staff,

AUS*** = Admnistrative University Staff

AS****= Academic Staff

Table 6B…

Contraceptive use duration	< 6 months	0(0)	12(100)
	6 month to 1 year	3(30)	7(70)
	1 to2 years	2(18.2)	9(81.8)
	>2 years	5(17.2)	24(82.8)
Fetal loss experience	Yes	4(36.4)	7(63.6)
	No	35(12.4)	248(87.6)
Breast feeding	Yes	18(13.5)	115(86.5)
	No	21(20)	140(80)
Breast feed duration	< one year	0(0)	31(100)
	> one year	18(17.6)	84(82.4)
Gravidity	Non- gravida	21(14.4)	125(85.6)
	Primigravida	6(9.2)	59(59)
	Multigravida	12(14.5)	71(85.5)
Parity	Nullipara	22(14.8)	127(85.2)
	Primipara	5(7.8)	59(92.2)
	Multipara	12(14.8)	69(85.2)
Menstrual history	Regular	30(11.2)	229(88.8)
	Irregular	9(25.7)	26(74.3)
Bleeding length	Ò5days	34(12.4)	233(87.6)
	>5days	5(18.4)	22(81.5)
History of hormonal replacement therapy	Yes	1(25)	3(75)
	No	38(13.1)	252(86.9)
History of hysterectomy/ovarectomy.	Yes	0(0)	3(100)
	No	39(13.4)	252(86.6)
BMI	Under weight	3(11.5)	23(88.5)
	Normal	23(13.2)	151(86.8)
	Overweight	11(14.1)	67(85.9)
	Obesity	2(12.5)	14(87.5)
History of Khat use	Yes	1(25)	3(75)
	No	38(13.1)	252(86.9)
Lifetime alcohol use	Yes	12(20)	48(80)
	No	27(11.5)	207(88.5)
Alcohol use frequency	Daily	1(100)	0(0)
	Ó5days per week	2(15.4)	11(84.6)
	1-4days per week	2(9.5)	19(90.5)
	1-3days per week	7(28.0)	18(72)
Type of alcohol used	Tella	6(15.6)	27(84.4)
	Tej	1(33.3)	2(66.7)
	Beer	2(16.7)	10(83.3)
	Wine	4(33.3)	8(66.7)
Current alcohol use status	Yes	7(18.9)	30(81.1)
	No	5(21.7)	18(78.3)
Time length of drinking alcohol	< 2 years	5(55.6)	4(44.4)
	> 2 years	8(15.4)	43(84.6)
Attitude & belief regarding menopause	Positive	23(12.6)	159(87.4)
	Negative	16(14.3)	96(85.7)

5.4.4. Prevalence of Each Individual Menopausal Symptoms

The most prevalent menopausal symptoms were irritability 72(24.48%), depressive mood 57(19.39%), hotflushe symptoms 46(15.65%) and the prevalence of heart discomfort was 45(15.31%). The least prevalent menopausal symptoms were sexual problems and dryness of vagina which are 12(4.1%), 8(2.7%) respectively [Table 7].

Table 7: Prevalence of individual menopausal symptoms among study participants, Jimma, Ethiopia, 2017 (n=294)

Symptoms	Total	None	Mild	Moderate	Severe	Very severe	Overall symptoms
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Hot flushes, sweating	294(100)	248(84.4)	27(9.2)	13(4.4)	5(1.7)	1(0.3)	46(15.7)
Heart discomfort	294(100)	249(84.7)	33(11.2)	10(3.4)	2(0.7)	0(0)	45(15.3)
Sleep problems	294(100)	266(90.5)	16(5.6)	9(3.1)	2(0.7)	1(0.3)	28(9.5)
Depressive mood	294(100)	237(80.6)	42(14.3)	11(3.7)	3(1)	1(0.3)	57(19.4)
Irritability	294(100)	222(75.5)	40(13.6)	26(8.8)	2(0.7)	4(1.4)	72(24.5)
Anxiety	294(100)	258(87.8)	24(8.2)	10(3.4)	2(0.7)	0(0)	36(12.5)
Physical and mental exertion	294(100)	265(90.1)	18(6.1)	10(3.4)	1(0.3)	0(0)	29(9.9)
Sexual problems	294(100)	282(95.91)	6(2.0)	5(1.7)	0(0)	1(0.3)	12(4.1)
Bladder problems	294(100)	256(87.1)	20(6.8)	13(4.4)	4(1.4)	1(0.3)	38(12.9)
Dryness of vagina	294(100)	286(97.3)	6(2.0)	1(0.3)	1(0.3)	0(0)	8(2.7)
Joint and muscular discomfort	294(100)	264(89.8)	16(5.4)	10(3.4)	2(0.7)	2(0.7)	30(10.2)

5.5. Associated Factors of Menopausal Symptoms

On bivariate logistic regression analysis menopausal symptoms were found to be associated with marital status, income, history of chronic disease, life time alcohol use, menstrual history, fetal loss experience and parity, but only menstrual history, history of chronic disease and fetal loss experience were significantly associated with menopausal symptoms at the final model ($p < 0.05$).

Those participants who had chronic disease were 3.42 times more likely to have menopausal symptoms than those without the disease [AOR=3.42, 95%CI (1.18-9.96)]. Those participants who had history of menstrual irregular were 2.79 times more likely to develop menopausal symptoms than those whose menstrual history is regular [AOR=2.79, 95%CI (1.155-6.743)]. Study participants having fetal loss experience were 4.06 times more likely to have menopausal symptoms than those who have no fetal loss experience [AOR= 4.06, 95%CI (1.053-15.652)] (Table 8)

Table 8: Associated factors of menopausal symptoms with binary and multiple logistic regression analysis among Jimma university staff, Jimma, Ethiopia, 2017(n=294)

Variables		Menopausal symptoms		COR(CI)	P-Value	AOR(CI)	P-value
		Yes N (%)	No N (%)				
Marital status	Single	18(14.6)	105(85.4)				
	Married	18(11.5)	139(88.5)	0.755(0.375-1.522)	0.433	0.8(0.29-2.17)	0.662
	Divorced	2(50)	2(50)	5.833(0.772-44.094)		2.69(0.2-33.71)	0.443
	Separated	1(25)	3(75)	1.944(0.192-19.741)		2.1(0.18-24.55)	0.554
	Widowed	0	6(100)	0.000(0.000)		-	-
Income in ETB	500-1000	11(15.1)	62(84.9)	0.952(0.384-2.361)	0.915	0.94(0.34-2.63)	0.908
	1001-2500	6(8.6)	64(91.4)	0.503(0.175-1.445)	0.202	0.39(0.12-1.23)	0.124
	2501-4500	11(13.6)	70(86.4)	0.843(0.341-2.083)	0.711	0.93(0.34-2.59)	0.896
	>4500	11(13.6)	59(84.3)	1		1	
HCD*	Yes	6(30)	14(70)	3.130(1.125-8.708)	0.029	3.4 (1.18-9.96)	0.024
	No	33(12)	241(88)	1		1	
FLE **	Yes	4(36.4)	7(63.6)	4.049(1.128-14.54)	0.032	4.06(1.1- 15.7)	0.042
	No	35(12.5)	248(87.6)	1		1	
Parity	Nullipara	22(14.8)	127(85.2)	1	-	1	
	Primipara	5(7.8)	59(92.2)	0.489(0.177-1.355)	0.169	0.42(0.15-1.2)	0.102
	Primipara	12(14.8)	69(85.2)	1.004(0.469-2.151)		0.64(0.28-1.5))	0.303
Menstrual history	Regular	30(11.6)	229(88.4)	1		1	
	Irregular	9(25.7)	26(74.3)	2.733(1.167-6.4)	0.021	2.79(1.16-6.74)	0.023
Lifetime alcohol use	Yes	12(20)	48(80)	0.522(0.247-1.103)	0.089	1.73(0.79-3.77)	0.170
	No	27(11.5)	207(88.5)	1	-	1	

HCD*=History of Chronic Disease

FLE**=Fetal Loss Experience

CHAPTER 6: DISCUSSION

The cross-sectional study was conducted among the staff of Jimma University Specialized Hospital, health professionals & administrative staff including Institute of health academic & administrative staff, aiming at determining prevalence, severity anThemed associated factors of menopausal symptoms among women staff.

The mean age of the study participants in this study was 27.76 years and the overall current prevalence of menopausal symptoms in this study was 13.3% [CI at 95%: 9.3-17.1%]. Specifically, the prevalence of menopausal symptoms was 18(46.2%) in hospital health professional staff, 14(35.9) among administrative hospital staff, 4(10.3%) in administrative University staff and 3(7.7%) in academic University staff. Duma *et al.* (47) enrolled a total of 780 post-menopausal women where the mean age of the study participants was 50.2 years. The mean age at menopause was 44.49 years and the overall prevalence of any one symptom during the post-menopausal period among the study participants was 88.1% (95%CI: 85.8-90.3). Mean age at menopause was 44.82 years in urban India, the prevalence of menopausal symptoms among the respondents of the above study shows that more than 60% of women were suffering with common symptoms of menopause (76). The overall prevalence of menopausal symptoms in present study was less than these two studies that are discussed above.

The prevalence of menopausal symptoms in the present study were irritability (24%), menopausal depressive mood (19.39%), hotflushe symptoms (15.7%), sleep problems (9.5%), anxiety (12.9%), physical and mental exhaustion (9.9%), urinary & bladder problems (12.9%), joint and muscular discomfort (10.2%) and heart discomfort was (15.3%). The least prevalent menopausal symptoms were sexual problems and dryness of vagina which are (4.1%), (2.7%) respectively. A study in India among the post-menopausal symptoms, the most frequently reported ones were vasomotor symptoms (60.9%), followed by sleep related symptoms (40.1%) and anxiety (35.4%)(47). Quazi R (77) interviewed 800 women aged 45-59 years, who had reached a natural menopause, the mean age at menopause of subjects was 47.16 years. There were marked climactric symtoms, duration ranged from 2-36 months in majority of cases. The marked climacteric symptoms were low backache (75%), headache (70.25%), tiredness (67.75%), limb pain (59.25%), sleep disturbance (53.75%), lack of concentration (49.5%), hot flushes (55.5%) and night sweats (45%). Other associated problems were hypertension (31.5%), ischaemic heart

disease (22.25%), diabetes mellitus (15.75%), postmenopausal bleeding (10.5%) and vaginitis (4.2%), respectively. On the other hand Nusrat N *et al*.(78) reported age at menopause was 46.2±6.4 years, the prevalence of menopausal symptoms ranges from 26 % to 83%. Frequency of somatic, psychological and urogenital symptoms was high; No significant association was found between parity, socioeconomic status and age at natural menopause.

Monika S (76) reported physical and psychological problems in menopause including hot flashes (77%), joint pain (60%), sleep disturbance (40%), headache (43%), dryness of vagina (30%), difficulty in sexual intercourse reported (17%) and very less respondents were show interest in sex (7%). Psychological symptoms include irritability (42%), anxiety (42%), and confusion (46%) were loosing control over emotions.

In the present study the prevalence of hot flushes was 15.7% which is very less than the study conducted in Assam, a state in Northeastern India which showed 52.5% (79). This difference might be due to difference in age of the study participants, study area & life style difference, besides to this another study conducted in India showed the prevalence of hot flushes was 40.1%, which is higher than the finding obtained from this study (80).

In the present study the prevalence of heart discomfort symptoms was 15.3%, which is far less than a study conducted in India that showed 68% (37). This difference could be due to the difference in sample size and study area. In the current study the prevalence of bladder problems was 12.9%. This finding is less from the study reported in the International Journal of Science and Research (IJSR) that was done also in India. This difference might be because of the difference in study area & age of study subjects. The prevalence of anxiety (12.5%), muscle and joint problems (10.2%) as well as physical and mental exertion (9.9%) which is much less than the study done in Maharashtra, India & found to be 23.3%, 76.6% & 86.6% (81) respectively. The possible reason for this difference could be due to difference in study area, sample size and Sociodemographic characters. The prevalence of the other remaining findings of this study were sleeping problems (9.5%), sexual problems (4.1%) & dryness of vagina (2.7%). This finding is far less than the study done in India except sexual problems which showed (0%), sleeping problems (56.6%) & dryness of vagina (53.3%). The possible reasons for these differences might be due to the study population difference, difference in the age of study subjects and differences in the study area (81).

Menopausal symptoms had crude association with marital status, income, history of chronic disease, life time alcohol use, menstrual history, fetal loss experience and parity after performing binary logistic regression. When these variables were analyzed with multiple logistic regression, only menstrual history, history of chronic disease and fetal loss experience were significantly associated with menopausal symptoms. Association of menopausal symptoms with menstrual history could be due to menstrual irregularities that can be the expression of a disturbed ovarian function which in turn results in hormonal imbalance that ultimately results in occurrence of menopausal symptoms (82). History of chronic disease could be due to climacteric or gradual decrease in ovarian function that would finally result in metabolic changes leading to chronic diseases (83) and fetal loss experience were significantly associated with menopausal symptoms at the final model ($p < 0.05$). Menopausal symptoms had no any association with any of the variables such as BMI, level of education and job during the analysis of either using binary logistic regression or multiple logistic regressions.

It has been observed in several reports that menopause is highly variable in timing and pattern. The age at occurrence of natural menopausal syptoms, the nature, frequency, and severity of symptoms is affected by several sociocultural, psychological and environmental factors.(84,85). The age at natural menopause and the experience of menopausal symptoms vary not only among the individuals of the different countries but also in the same population with different cultures. The frequency and severity of menopausal symptoms, increased as age increases (86). The study by Sylwia *et al.* demonstrated significant relationships between variables such as: age, education, employment status, quality of life and menopausal symptoms (87).

The concepts of local biologies, reproductive parameters and socio-cultural aspects in relation to age at menopause and menopausal symptoms have been discussed in studies (88). The decline in ovarian oestrogen production at menopause can cause physical symptoms that may be debilitating, including hot flushes and night sweats, urogenital atrophy, sexual dysfunction, mood changes, bone loss, and metabolic changes. The individual experience of the menopause transition varies widely. Important influential factors include the age at which menopause occurs, personal health and wellbeing, and each womanôs environment and culture (89).

Menopause may have profound implications for subsequent morbidity and mortality (90) Studies show that women who attain menopause at an early age are at a greater risk of being affected by cardiovascular disease (91), osteoporosis (92), and rheumatoid arthritis (93), while late menopause carries a higher risk of breast cancer (94) and endometrial (95) cancer. The estrogen deficient menopausal problems lead to an increase in the progression of cytokines such as GM-CSF, IL-1, and IL-6, and that could potentially induce autoimmune responses in systemic autoimmune diseases such as SLE and rheumatoid arthritis (96,97). Aging is also associated with progressive decline in T-cell functions, including decreased response to various antigens, and production of IL-2, and defect in signalling pathway resulting in the increase in frequency of cancer (98) . Studies stated the relationship between hot þashes and certain reproductive history variables, such as age at menarche, age at first and last pregnancy, and parity; however it revealed the inconsistent result (99,100). Early onset of menarche might be associated with early exhaustion of ova (100) and early age at last pregnancy might be related with faster rate of atresia (101). The ovarian shortage of oocytes for both reproductive events could formulate the þuctuation of oestrogen level during menopausal transition and occurrence of hot þush (102).

A study on women from USA reported that the incidence of some menopausal symptoms were positively associated with caffeine ingestion, and a high level of intake increased the risk urinary tract problems (103). Present study wasnôt corroborated with that finding since there is association between menopausal symptoms and substance use. Furthermore, earlier study stated that both the current and the former use of oral hormone therapy increased the risks of urinary problems among postmenopausal participants (104,105). Estrogen is a dominant regulator of vaginal physiology. It has been found that oestrogen-receptor density is highest in the vagina (106ï 108). Several features of the vaginal microenvironment change have been noticed with increasing age, mostly in response to alterations of oestrogen levels (109). During menopause, the vaginal mucosa becomes weakened, loses its ruggae, and appears pale and almost transparent because of decreased vascularity (110). History of scanty menstrual discharge and less number of live births, increases the chance of these types of problems. In this regard it has been said that short duration of breastfeeding and lower number of live births lead to the fast depletion of ovarian follicles (111).

As follicular decline results in lowered levels of oestrogen, faster exhaustion of ovarian follicle might be a reason of þuctuation of oestrogen that might be associated with occurrence of vaginal problems. Moreover, oestrogen deficiency was one of the reasons for heavy or scanty menstrual discharge (112). So women who had the history of scanty menstrual discharge were more likely to suffer from vaginal symptoms during menopause (113). Menopausal health of women is determined by their menstrual and reproductive histories, sociodemographic variable, and types of diet. They are susceptible to health problems by reason of either their genetics or their lifestyles and, finally, their access to adequate health care (114).

This cross-sectional study was conducted in Jimma with the aim of investigating menopausal symptoms prevalence, severity and their association with Sociodemographic and reproductive characteristics. The prevalence of menopausal symptoms was lower than what has been reported in the above litratures. The occurrence of most of the symptoms was low, but the worth mentioning aspect about the prevalence of symptoms is that most of the study participants were at early age, instruments used may also account for different results.

6.2. Limitation of the Study

Most researches concerning menopausal issues are mostly conducted in higher age group women (Ó40 years), this paper doesnôt take perimenopuasal women preferably.i.e unlike that of other researches this paper includes women of lower age groups specifically below 25years.

CHAPTER 7: CONCLUSION AND RECOMMENDATION

7.1. Conclusion

This study had showed that menopausal symptoms among JUSH **&** JUIH staff were more common in those whose menstrual history was irregular i.e. those females who had history of menstrual irregularity were 2.79 times more imposed to develop menstrual symptoms than those with regular menses. Those females having history of chronic disease were 3.42 times more prone to show menstrual symptoms than those without chronic disease. Lastly females having history of fetal loss experience were 4.06 times have greater chance to develop menstrual symptoms than females without fetal loss experience.

Therefore, the present study revealed that menopausal symptoms in the study set up started at early age, showing that premature menopause observed. Irregular menstrual history, history of chronic disease and fetal loss experience were independent peridictors of menopausal symptoms.

7.2. Recommendation

Ministry of health

- To integrate screening strategies for menopausal symptoms among women particularly for those employed.

Jimma University

- To screen and give attention for women staff regarding menopausal symptoms & act accordingly.

For researchers

- To conduct further study concerning the issue with different study designs having higher strength like cohort and longitudinal study designs.

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ANNEX: I VERBAL CONSENT FORM

Dear respondent my name is _____, I am here as a data collector on behalf of Adugnaw Ambelu who is a 2nd year post graduate medical physiology student of Jimma University Institute of Health Sciences, Department of Biomedical Sciences Physiology Unit. Your honestly participation in the interview to fill in the questionnaires will provide valid result and show us the status of menopausal symptoms and factors contributing to the severity of the symptoms. Your genuine response helps us to make appropriate interventions as well; hence we request you to participate honestly. Your volunteer participation in filling the prepared questionnaires and every aspect of the study are completely voluntary. You may skip any question that you prefer not to answer, we would appreciate your cooperation. You may also ask me to clarify questions if you donôt understand them or can stop the interview at any time. Finally, all the information that you provide for the study is kept completely confidential. Your responses to our questions are identified only by number, never by name.

Do you agree to participate in this study? If your answer is yes proceed, if no stop here.

Thank for your kindly cooperation.

1. Yes 2. No stop

If you proceed in the study of data collection process,

Signature of the study participant _____ Date----------

Name of Data Collector_____sign_____Date_____

ANNEX: II QUESTIONNAIRE OF ENGLISH VERSION

Part I: Socio-demographic characteristics of study participants

Socio-demographic characteristics of study participants

S/N	Variables	Responses
101	Age	0. _____years
102	Religion	0.Orthodox 1.Muslim 2.Protestant 3.Catholic 4.Other(Specify)
103	Ethnicity	0. Oromo 1. Amhara 2. Tigre 3. Gurage 4. Kefficho 5. Dawro 6. Yem 7. Other (Specify)
104	Marital status	0. Single 1. Married 2.Divorced 3.Separated 4.Widowed
105	Level of Education	0. Illitrate 1. Primary (1-8) 2. Secondary (9-12) 3. Certificate 4.Diploma 5.First Degree 6.medical Doctor 7.Masters 8.Ph.D and above
106	Estimated income in ETH.Birr	0.Monthly_____
107	Job	0.Health care provider hospital staff 1.Administrative hospital staff 2.Administrative University staff 3.Academic staff
108	Do you have any discussion with your partner or family members about your menopausal symptoms? (postmenopause only)	0.Yes 1.No

Part II: Chronic Disease Status

201	Do you have history of chronic diseases?	0.Yes 1.No
202	If your answer is yes for Q201what type of chronic disease do you have?	0. DM 1. Hypertension 2. Epilepsy 3. Cardiac 4. Renal 5. Genital 6. Psychiatric 7.Other(specify)---------

Part III: Reproductive History of study Participants

S/N	Type of Questions		Responses	Remark
301	1	Age at menarche	0._____	
	2	Age at marriage	0. _____	
	3	Age at menopause	0. _____	
	4	Use of oral contraceptive Pills	0. Yes 1. No	
	5	If yes for Q_4, for how long have you used it?	0.<6months 1.Six months to year 2. one to 2 year 3.Above 2 years	
	6	Experience of fetal loss	0.Yes 1.No	
	7	Did you breast feed for your last child	0. Yes 1. No	
	8	If yes to Q7, for how long?	0.<1Year 1.>1Year	
	9	Gravidity	0. none 1.one 2.two 3.three 4.four & above	
	10	Parity	_____(in no.)	
	11	Menstrual history	0.Regular 1.Irregular	
	12	Bleeding length	0.Ò5days_____ 1.>5days_____	
	13	Experience of hormonal replacement therapy	0. Yes 1. No	
	14	Have you been undergone a hysterectomy/ovaryectomy	0.Yes 1.No	

Part IV: Anthropometric variables of study participants

S/N	Variables	
401	Height	(in meter) _____
402	Weight	(in Kg) _____
403	BMI	(in Kg/m^2) _____

Part V: Modified International version of Menopause Rating Scale (MRS)

Which of the following symptoms apply to you at this time? Please, mark the appropriate box for each symptom. For symptoms that do not apply to you, please mark ónoneô.

Key to fill the following table: please use these references while filling the points in the table

0= No, symptom does not occur

1= Yes, minor or mild symptoms, rarely occurs (monthly):-Duration: last less than 3 minutes.

2 = Moderate symptom, occurs occasionally (weekly):-Duration: may last up to 5 minutes.

3 = Severe symptom, occurs frequently (daily):-Duration: last up to 10 minutes.

4= Very severe symptom, occurs more frequently:-Duration last more than 10 minutes.

S/N	Items	None	Mild	Moderate	Severe	Very Severe
		0	1	2	3	4
501	Hot flushes, sweating (episodes of sweating)					
502	Heart discomfort (unusual awareness of heart beat, heart skipping, heart racing, tightness)					
503	Sleep problems (difficulty in falling asleep, difficulty in sleeping through, waking up early)					
504	Depressive mood (feeling down, sad, on the verge of tears, lack of drive, mood swings)					
505	Irritability (feeling nervous, inner tension, feeling aggressive)					
506	Anxiety (inner restlessness, feeling panicky)					
507	Physical and mental exhaustion (general decrease in performance, impaired memory, decrease in concentration, forgetfulness)					
508	Sexual problems (change in sexual desire, in sexual activity and satisfaction)					
509	Bladder problems (difficulty in urinating, increased need to urinate, bladder incontinence)					
510	Dryness of vagina (sensation of dryness or burning in the vagina, difficulty with sexual intercourse)					
511	Joint and muscular discomfort (pain in the joints, rheumatoid complaints)					

Part VI: History of Substance use of study participants

S/N	Variables	Possible responses	Remark
	A. SMOKING CIGARETTES		
601	Have you ever used tobacco products such as cigarette in your life?	0. Yes 1. No	
602	If yes to Q601, for how many times per week do you smoke cigarettes?	0. Once 1. 2-3 times 2. Always 3. Occasionally	
603	If yes for Q601, How many cigarettes do you smoke at a time?	pieces _____ _	
604	How many cigarettes do you smoke daily?	Piecesé é é é	
605	For how long have you been smoking cigarettes in your life?	0. <2 years 1. >2 years	
	B. KHAT CHEWING In this section we shall ask you questions about chewing khat.		
606	Have you ever used khat in your life?	0.yes 1.no	If no skip to Q611
607	If yes to Q606, for how long do you chew khat?	0. < 6 months 1.6 months to 1 Year 2. 1 to 2 Years 3. > 2 Years	
608	Do you have the habit of chewing khat currently?	0. Yes 1. No	
609	If yes Q608, Amount of khat the participant takes at a time? (In gms)	_____	
610	How often did you chew khat in the last one month?	0. Daily 1. 2-3 times per week 2. Once per week 3. Occasionally	

	C. ALCOHOL CONSUMPTION In this section we shall ask you Questions about alcohol consumption.		
611	Have you ever used alcohol drinks in your lifetime such asõTejô, óArekieô, õTellaô beer, wine, etc.?	0.yes 1.no	
612	If yes for Q_{511}, how frequently have you had at least one drink?	0. Every day 1. 5 or more days per week 2. 1 ï 4 days/week 3. 1-3 days/ week	
613	If yes to Q 611, what type of alcohol do you drink frequently?	0. õTellaô 1.óArekieô 2.õTejô 3. Beer 4.Wine 5.other (specify)é é	
614	Do you currently drink alcohols in the last one month?	0. Yes 1. No	
615	For how long did you drink alcohol in your life?	0. <2 years 1. >2 years	
616	Attitudes and beliefs regarding menopause (postmenopausal women only)		

ጅማ ዩኒቨርሲቲ

ጤና ሳይንስ ኢንስቲትዩት

ባዮሜዲካል ትምህርት ክፍል(ፊዚዮሎጅ)

Annex III: Amharic version questionnaire

1.የአማርኛ መጠይቅ ቅፅ

እኔ---------- እባላለሁ፡፡ በጅማ ዩኒቨርሲቲ ጤና ሳይንስ ኢንስቲትዩት የፊዚዮሎጅ ድህረ ምረቃ ተማሪ በሆነዉ ተማሪ አዱኛዉ አምበሉ ለሚሰራዉ ጥናት መረጃ ሰብሳቢ ነኝ፡፡ጥናቱም በጅማ ዩኒቨርሲቲ ሆስፒታል እና ጤና ሳይንስ ኢንስቲትዩት ሴት ሰራተኞች ላይ ሊታዩ የሚችሉትን የማረጥ ምልክቶች መጠን፡ጥንካሬ እንዲሁም ጉዳዩን ሊያባብሱ የሚችሉ እና ተያያዥነት ያላቸዉን ሁኔታዎች የሚያጠና ነዉ፡፡እርስዎም በጥናቱ ለመካተት ተመርጠዋል፡፡የሚሰጡትም ምላሽ በሚስጥር የሚያዝ ይሆናል፡፡ስምዎትም በመጠይቁ ዉስጥ አይጠቀስም፡፡ፈቃደኛ ካልሆኑ በጥናቱ እንዲሳተፉ አይገደዱም፡፡ በማንኛዉም ጊዜ መጠይቁን ማቋረጥ ይችላሉ፡፡ነገር ግን በጥናቱ በመሳተፍ የሚሰጡት መረጃ ለዩኒቨርሲቲዉ ማህበረሰብ ሴቶችና እናቶች ጤና መሻሻል ወሳኝ ከመሆኑም በላይ የችግሩን ጥንካሬ እና መጠን አዉቆ አፋጣኝ መፍትሄ ለመስጠትና እንዲሁም የተሻለ ፖሊሲ እና ስትራቴጅ በመቅረጽ የሀገራችንን እናቶች ጤና አሁን ካለበት፡ የተሻለ ለማድረግ ይረዳል

፡፡በመሆኑም እባክዎትን ትክክለኛ መረጃ መስጠትዎን ይቀጥሉ፡፡መጠይቁን ለመሙላት የሚወሥደዉ ጊዜ ጥቂት ደቂቃዎችን ብቻ ነዉ፡፡በማንኛዉም ጊዜ ማብራሪያ ካስፈለገዎ መጠየቅ ይችላሉ ፡፡

በጥናቱ ለመሳተፍ ይስማማሉ? ሀ/ እስማማለሁ ለ/ አልስማማም ፤መልስዎ እስማማለሁ ከሆነ፡ ይቀጥሉ ፡ አልስማማም ከሆነ ግን እዚህ ላይ ያቁሙ ፡፡

ለተሳትፎ ፈቃደኝነትዎት እጅግ በጣም ከልብ እናመሰግናለን፡፡

<u>የተሳታፊዋ ስምምነት መግለጫ</u>

የዚህ ጥናት ዓላማ፡ ሂደት እንዲሁም ጥቅም ግልጽ ስለሆነልኝ በተጨማሪም የእኔን መብት እና ክብር ሙሉ በሙሉ የጠበቀ ስለሆነና ለሀገርም ጠቃሚ ሆኖ ስላገኘሁት በጥናቱ ላይ ለመሳተፍ ፈቃደኛ መሆኔን በፊርማየ አረጋግጣለሁ፡፡

የተሳታፊዋ ፊርማ----------ቀን----------

የመረጃ ሰብሳቢዉ/ዋ ስም----------ፊርማ----------ቀን----------

ክፍል 1. ማህበራዊና ስነ ህዝባዊ ሁኔታን የሚመለከቱ ጥያቄዎች፤ዉድ የጥናታችን ተሳታፊ እባክዎትን የእርስዎ ትክክለኛ መልስ ላይ ብቻ ምልክት ያድርጉ ወይም ያክቡት፡፡

ተ.ቁ	ጥያቄዎች	ምላሾች
101	እድሜ	_____ዓመት
102	ሃይማኖት	0.ኦርቶዶክስ 1.ሙስሊም 2.ፕሮቴስታንት 3.ካቶሊክ 4.ሌላ ካለ ይጠቀስ ፡፡
103	ብሄር	0. ኦሮሞ 1. አማራ 2. ትግሬ 3. ጉራጌ 4.ከፊኦ/ከፋ 5. ዳዉሮ 6.የም 7. ሌላ ካለ (ይገለፅ)----------
104	የጋብቻዎ ሁኔታ	0.ያላገባች 1.ያገባች 2.አግብታ የፈታች 3.ከትዳር አጋሯ የተለየች
105	የትምህርት ደረጃ	ዐ.ማንበብና መፃፍ የማትችል ፩.የመጀመሪያ ደረጃ (1- 8) 2.ሁለተኛ ደረጃ (9-12) 3.ሰርትፊኬት 4. ዲፕሎማ. 5.የመጀመሪያ ድግሪ 6.ሃኪም 7.ማስተርስ 8. ፒ.ኤች.ዲ እና ከዚያ በላይ
106	ወርሃዊ ደመወዝ?	_____ ብር
107	የስራ አይነት	0.የሆስፒታል ጤና ባለሙያ 1.የሆስፒታል አስተዳደር ሰራተኛ 2.የዩኒቨርሲቲ አስተዳደር ሰራተኛ 3. የዩኒቨርሲቲ መምህር
108	ከትዳር አጋርዎ ወይም ከሌላ የቤተሰብ አባል ጋር ስለ እርጣት ምልክቶች ማንኛዉንም ዓይነት ዉይይት አድርገዉ ያዉቃሉ?(ለድህረ እርጣት ሴቶች ብቻ የሚሞላ)	0. እወያያለሁ ፩. አልወያይም

ክፍል **2:** ለረጅም ጊዜ የቆየ የህመም ሁኔታን የሚመለከቱ ጥያቄዎች

201	በሐኪም የተረጋገጠ ለረጅም ጊዜ የቆየ ህመም አለብዎት?	0.አዎ 1.የለም
202	ለጥያቄ ቁ201 መልስዎ አዎ ከሆነ ፡ ህመሙ ምንድን ነው?	0.የስኳር ህመም 1.የደም ግፊት 2.የሚጥል ህመም 3.የልብ ህመም 4.የኩላሊት ህመም 5.የመራቢያ አካል ህመም 6. የስነ አእምሮ ህመም 7.ሌላ ካለ (ይጠቀስ) ----------

ክፍል **3:** የጥናቱ ተሳታፊዎች ስነ-ተዋልዶ ታሪክን የሚመለከቱ ጥያቄዎች

ተ.ቁ	ጥያቄዎች		ምላሾች	ምርመራ
301	1	ለመጀመሪያ ጊዜ የወር አበባ ያዩበት ዕድሜዎት ስንት ነበር?	----------ዓመት	
	2	ለመጀመሪያ ጊዜ ጋብቻ የፈጸሙበት ዕድሜዎ ስንት ነበር ?	----------ዓመት	
	3	የማረጥ ምልክቶች እርስዎ ላይ መታየት የጀመሩበት ዕድሜዎት ስንት ነበር?	_____ዓመት	ካልታዩ ወደ ጥያቄ4 ይቀጥሉ
	4	የሚዋጥ የወሊድ መቆጣጠሪያ ኪኒን የመጠቀም ሁኔታ	0. አዎ :ዕጠቀማለሁ/ዕጠቀም ነበር 1. አይ፡ አልጠቀምም	
	5	ለጥያቄ ቁ4 መልስዎ አዎ ከሆነ፡ለምን ያህል ጊዜ ተጠቀሙ?	0.ከስድስት ወራት በታች 1.ከስድስት ወር እስከ አንድ ዓመት 2. ከ1 እስከ 2 ዓመት 3. ከ2 ዓመት በላይ	
	6	ዉርጃ/የፅንስ ማቋረጥ ኢጋጥሞዎት ያዉቃል?	0.አዎ 1.የለም	
	7	ለመጨረሻ ልጅዎ ጡትዎን ያጠቡት/ ያጠቧት ነበር?	0.አዎ 1.የለም	

	8	ለጥያቄ ቁ7 መልስዎ አዎ ከሆነ፤ ለምን ያህል ጊዜ አጠቡት/አጠቧት?	0.ከ1 ዓመት በታች	
	9	ስንት ጊዜ ነፍሰ ጡር/እርጉዝ ሆነዋል?	0.ምንም ጊዜ 1.አንድ ጊዜ 2.ሁለት ጊዜ 3.ሶስት ጊዜ 4. አራትና ከዚያ በላይ	
	10	ስንት ልጆች ወልደዋል?	----------(በቁጥር)	
	11	የወር አበባ አመጣጥ ታሪክዎት ምን ይመስላል?	0.በቋሚነት በየወሩ ይመጣል 1.በቋሚነት በየወሩ ሳይሆን ጊዜ ያፋልሳል	
	12	የወር አበባዎት እየፈሰሰ የሚቆይበት የጊዜ ርዝመት ስንት ቀን ነዉ?	0.አምስት ቀንና ከዚያ በታች 1.ከአምስት ቀን በላይ	
	13	በሆርሞን(እድገ ንጥር) ታክመዉ ያዉቃሉ?	0. አዎ 1. የለም	
	14	ማህጸንዎት/ የሴት የዘር ፍሬ ማምረቻ አካልዎት በቀዶ ጥገና ተወግዷል?	0. አዎ ተወግዷል 1. የለም አልተወገደም	

ክፍል **4:** የጥናቱ ተሳታፊዎች ክብደት ቁመት እና ቦዲ ማስ ኢንዴክስ ስነ ልኬት (በመረጃ ሰብሳቢዉ/ዋ የሚሞላ)

ተ.ቁ	መጠይቆች	ልኬት
401	ቁመት	በሜትር (----------)
402	ክብደት	በኪሎ ግራም (----------)
403	በዲ. ማስ .ኢንዴክስ	ኪሎ ግራም / በሜትር^2 (----------)

ክፍል **5:** የተሻሻለዉ ዓለማቀፋዊ የእርጣት ስነ ልኬት *መመዘኛ* መስፈርት

በአሁኑ ሰዓት በእርስዎ ላይ ከሚከተሉት ምልክቶች የትኞቹ ተከስተዋል? እባክዎት በእርስዎ ላይ ለሚታዩት እያንዳንዳቸዉ ምልክቶች ትክክለኛ ነጥብ የሚያሳየዉን ምልክት ያድርጉበት ፡፡ በእርስዎ ላይ ለማይታዩ ወይም ላልተከሰቱ ማንኛዉም ምልክቶች ምንም ምልክት ሳያደርጉ ይለፏቸዉ፡፡

ለሚከተለዉ ሰንጠረዥ ነጥቦች አሰጣጥ መግለጫ፡-ሰንጠረዡን ሲሞሉ ይህን መግለጫ ይጠቀሙ

0=ስሜቱ በእኔ ላይ አይታይም ወይም አልተከሰተም ማለት ነዉ፡፡

1=ስሜቱ አለ ግን ቀላል ነዉ በወር አንዴ ተከስቶ ከሶስት ደቂቃ ላነሰ ጊዜ አካባቢ ይቆይብኛል፡፡

2=መካከለኛ ስሜት አልፎ አልፎ ይሰማኛል (በየሳምንቱ ተከስቶ ከአምስት ደቂቃ ላነሰ ጊዜ አካባቢ ይቆይብኛል፡፡

3= በአብዛኛዉ በየቀኑ ከፍተኛ ስሜት ይሰማኛል (ስሜቱ ከተከሰተ እስከ አስር ደቂቃ አካባቢ ይቆይብኛል) ፡፡

4=በጣም አዘዉትሮ ከፍተኛ ስሜት ይሰማኛል (ስሜቱ ከተከሰተ ከአስር ደቂቃ በላይ ይቆይብኛል) ፡፡

ተ.ቁ	የምልክቶች ዝርዝር	የምልክቶች ክብደት በጥንካሬ ደረጃ				
		ምንም ምልክት የለም	ቀላል ምልክት	መካከለኛ ምልክት	ከባድ ምልክት	በጣም ከባድ ምልክት
		0	1	2	3	4
501	ያልተለመደ ሙቀት መሰማት፤ ላብ ማላብ(አልፉ አልፎ የላብ ስሜት መኖር)					
502	የልብ መጨናነቅ፤(ያልተለመደ የልብ ትርታ ስሜት መኖር፤የልብ መዝለል ፤የልብ መንደፍደፍ ስሜት፤ የዉጥረት ስሜት መኖር)					
503	የእንቅልፍ ችግሮች(እንቅልፍ አለመምጣት፤የእንቅልፍ መቆራረጥ፡ከእንቅልፍ ቀድሞ መንቃት)					
504	የመጨናነቅ ስሜት(የዝቅተኝነት ስሜት፤የመከፋት ስሜት)፡እምባ መተናነቅ፤ ዉስጣዊ ግፊት ማነስ፤ የስሜት መለዋወጥ)					
505	ብስጩነት(በቀላሉ የመደንገጥ ሥሜት፡ ዉስጣዊ ዉጥረት፡የሀይለኝነት ስሜት)					
506	ጭንቀት(ዉስጣዊ መቅበጥበጥ፤ የሽብርተኝነት ስሜት)					
507	የአካልና የአእምሮ መዛል(አጠቃላይ ብቃት መቀነስ፤ የማስታዎስ ችሎታ መድከም፡የትኩረት መቀነስ፡ዝንጉ መሆን ወይም ነገሮችን በቀላሉ መርሳት)					
508	ጾታዊ ችግሮች(በወሲባዊ እንቅስቃሴ እና እርካታ ላይ ጾታዊ ፍላጎት መለወጥ)					
509	የፊኛ ችግሮች(ሽንት የመሽናት ችግር ፤ የመሽናት ፍላጎት መጨመር፤ፊኛን አለመቆጣጠር)					
510	የጾታዊ ብልት ድርቀት(የሴቷ ፆታዊ ብልት ዉስጥ የድርቀት ወይም የማቃጠል ስሜት መኖር፡አስቸጋሪ					

	የሆነ ጾታዊ ግንኙነት)					
5ዘ	የመገጣጠሚያና የጡንቻ ጥሩ ስሜት አለመኖር (የመገጣጠሚያዎች ህመም፡የሪማቶድ ህመም ስሜቶች ማለትም መገጣጠሚያዎች መቅላት፤ መጉረብረብ፤ ማበጥ ወዘተ...)					

ክፍል **6:** በዚህ ንዑስ ክፍል ስር ያሉ ጥያቄዎች ስለአልኮል አጠቃቀም፡ሲጋራ ማጨስ፤ ጫት መቃም ላይ ያተኮሩ ሲሆን፤

አጠር ያሉ በግል የሚሞሉ ጥያቄዎችን አካተዋል፡፡ ስለሆነም እባክዎትን መልስዎትን ይክበቡ ወይም በተሰጠዉ ባዶ ቦታ ላይ ይጻፉ፡፡

ተ.ቁ	መጠይቆች	ምላሾች	ምርመራ
	ሲጋራ ማጨስን የሚመለከቱ ጥያቄዎች		
601	በህይወትዎ ሲጋራ አጭሰዉ ያዉቃሉ?	0.አዎ ነ. አላዉቅም	መልስዎ አላዉቅም ከሆነ ወደ ቁ.606 ይቀጥሉ
602	ለጥያቄ ቁ$_{601}$ መልስዎ አዎ ከሆነ፡በሳምንት ለምን ያህል ጊዜ ሲጋራ ያጨሳሉ?	0.አንድ ጊዜ ነ. ከ2-3 ጊዜ 2.ሁል ጊዜ 3.አልፎ አልፎ	
603	ለጥያቄ ቁ60ነ መልስዎ አዎ ከሆነ፡ በአንድ ጊዜ ስንት ሲጋራ ያጨሳሉ?	በፍሬ ይጥቀሱ----------	
604	በቀን ስንት ሲጋራዎችን ያጨሳሉ?	በፍሬ ይጥቀሱ----------	
605	በህይዎትዎ ለምን ያህል ጊዜ ሲጋራ አጭሰዋል?	0.ከሁለት ዓመት በታች ለሆነ ጊዜ ነ. ከሁለት ዓመት በላይ ለሆነ ጊዜ	
	ጫት መቃምን የሚመለከቱ ጥያቄዎች		
606	በህይዎትዎ ጫት ቅመዉ ያዉቃሉ?	0.አዎ ነ.የለም	መልስዎ የለም ከሆነ ወደ ቁ.6ዘ ይቀጥሉ
607	ለጥያቄ ቁ.606 መልስዎ አዎ ከሆነ፡ ለምን ያህል ጊዜ ጫት ቃሙ?	0.ከ6 ወር በታች ነ.ከ6 ወር እስከ ነዓመት 2.ከነ ዓመት እስከ 2 ዓመት	

		3.ከ2 ዓመት በላይ	
608	በአሁኑ ጊዜ ጫት የመቃም ልምድ አለዎት?	0.አዎ 1. የለኝም	
609	ለጥያቄ ቁ 608 መልስዎ አዎ ከሆነ፡በአንድ ጊዜ ስንት ግራም ጫት ይቅማሉ?	----------	
610	ባለፈዉ 1 ወር ዉስጥ ለምን ያህል ጊዜ ጫት ቅመዋል?	0.በየቀኑ 1.በሳምንት ከ 2-3 ቀናት ብቻ 2.በሳምንት 1 ጊዜ ብቻ 3. አልፎ አልፎ	
	አልኮል መጠጣትን የሚመለከቱ ጥያቄዎች		
611	በህይዎትዎ የአልኮሆል መጠጦችን ለምሳሌ ጠጅ፡ አረቄ፡ጠላ፡ ቢራ፡ ወይን ወዘተ... ጠጥተዉ ያዉቃሉ?	0.አዎ 1. አላዉቅም	
612	ለጥያቄ ቁ611 መልስዎ አዎ ከሆነ፡ቢያንስ አንዴ ሚጠቀሙት በምን ያህል ጊዜ ልዩነት ዉስጥ ነዉ?	0. በየቀኑ 1. በሳምንት 5 ወይም ከዚያ በላይ ቀናት ዉስጥ 2.በሳምንት ከ1 እስከ 4 ባሉት ቀናት ዉስጥ 3.በሳምንት ከ1 እስከ 3 ባሉት ቀናት ዉስጥ	
613	ለጥያቄ ቁ611 መልስዎ አዎ ከሆነ፡በአብዛኛዉ የትኛዉን የአልኮሆል መጠጥ በብዛት ይጠቀማሉ?	0.ጠላ 1.አረቄ 2. ጠጅ 3. ቢራ 4. ወይን	
614	ባለፈዉ አንድ ወር ዉስጥ አልኮል ጠጥተዋል?	0.አዎ 1.የለም	
615	በህይዎትዎ ለምን ያህል ጊዜ አልኮል ጠጥተዋል?	0.ሁለት ዓመት ላልሞላ ጊዜ 1. ከሁለት ዓመት በላይ	
616	ስለ እርጣት ያለዎት አመለካከት እና እምነት ምን ይመስላል? እርጣት/ማረጥ ለእርስዎ ምን ማለት ነዉ ?	----------	

DECLARATION

I, the undersigned, declare that this thesis is my original work, has not been presented for a degree in this or any other university and that all sources of materials used for the thesis have been fully acknowledged.

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This thesis has been submitted for examination with my approval as University advisor

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