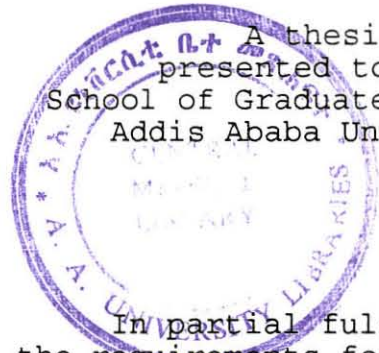


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A community based study of
health-related problems among adolescents
in Awassa Zuria Woreda, Southern Ethiopia



A thesis
presented to the
School of Graduate Studies of
Addis Ababa University

In partial fulfilment
of the requirements for the degree of
Master of Public Health

By

Solomon Mengiste, MD

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ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

Health Related Problems Among Adolescents

By

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Approved by the Examining Board

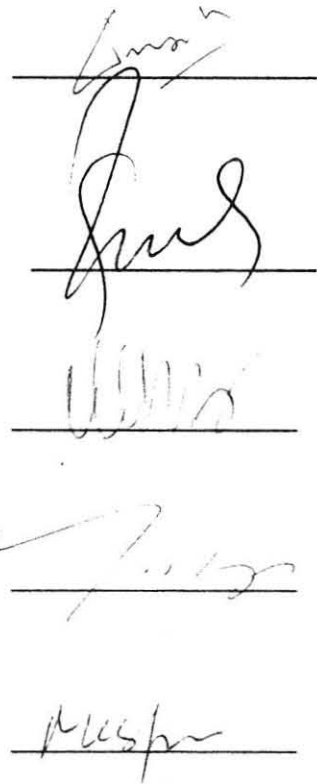
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Abstract

The prevalence and determinants of substance use (alcohol, khat, cigarette), mental illness, suicidal attempt, STDs and teenage pregnancy among adolescents aged 10-24 years have not been well documented in the country. A community based cross-sectional study was conducted in Awassa Zuria Woreda, southern Ethiopia from November to December 1994 G.C. A total of 1953 adolescents were included in the study. Data were collected using questionnaire by trained interviewers.

The likelihood of substance (alcohol, Khat, Cigarette) use on average was at least two times higher ($p < 0.05$) among adolescents who reported history of run away from their family and police arrest. Mental illness, suicidal attempt, STDs and teenage pregnancy were found to be more likely to occur among adolescents who use one or more of the substances than others. The older adolescents in general were found to be more likely to be exposed to all of the health related problems studied.

Risk factors identified for substance use and association of substance use with the health related problems among adolescents were observed in this study. The levels and the interactions observed between the adolescent risk behaviours and health related problems indicate the need to set an immediate intervention programmes.

Introduction

Adolescence is the period of transition from childhood to adulthood, and it is characterized by efforts to achieve goals related to the expectations of the main stream culture and by spurts of physical, mental, emotional, and social development. While the onset of adolescence is usually associated with the commencement of puberty and the appearance of secondary sex characteristics, the end of adolescence is less clearly defined. It varies greatly from culture to culture as far as the attainment of adult independence is concerned (1).

While it is true that adolescents tend to have intense emotional interactions with their peers and a great need for their approval, this does not necessarily mean that they turn away from their parents. In general, the evidence seems to indicate that adolescents still tend to turn to their parents for guidance on major questions of values, but look more to their peers in matters concerning fashions in clothes, leisure activities and other interests of youth (2).

Both individual and societal factors affect the extent of development during adolescence and youth. While the sequence of development stages appears to have biological origins, the timing and extent of development are affected in varying degrees by environmental factors.

As technology grows more complex, more education and training are needed to achieve economic independence. The young person is often trapped between a growing sense of individual maturity and a lengthening of economic dependence. In traditional rural societies, the transition from childhood to adulthood is fairly short, with predetermined roles waiting to be assumed. In modern affluent societies, more support is available for young people over the longer periods of training and education required if they are to fit into technologically sophisticated economic systems. In transitional societies that are perhaps most common in developing countries, economic necessity has weakened the authority of the transitional support system in rural areas and, at the same time, attracted young people to urban industrial areas where skills are at a premium, but support for training is in short supply. For a young person who is experiencing the natural stresses of the transition from childhood to adulthood anyway, the tension is heightened, the frustration compounded, and the likelihood of problems increased (1).

The health needs of young people must be studied in widely differing circumstances, taking in to account the various factors as well as the inter-relationship between the biological, psychological, and social aspects of health. According to the World Health Organisations

(1), the following categories have been chosen: a) Life-style and risk taking behaviour, b) Emotional and related problems, c) Sexual and reproductive health, and, d) Biological and medical problems.

Information about adolescents' health related problems in Ethiopia is scanty and are not country representative. Understanding of the magnitude of these potentially increasing health related risk behaviours and problems through a well designed community based study is crucial. These information are essential to justify and plan an intervention programme.

The study area, Awassa Zuria Woreda, is located in the southern part of the country, Sidama one is 270 km south of Addis Ababa. It has a total population of 286,000 with population density of 164/sq km. About 30% of the population are in the age groups of 10 to 24 years. 96.6% of the people are Christians, predominantly orthodox. There are 14 urban dwellers associations and 67 peasants' associations. About 74% of the total population live in rural areas. There are 31 elementary, 5 junior, 2 senior secondary, and 1 technical school with a total enrollment of 30, 136 students. There are 2 health centres and 8 health stations in the Woreda. According to the national census of 1984, the total fertility of the Sidama Zone was estimated to be 7.7.

Literature review

The developed countries have recognized the special health problems and risk taking behaviours of adolescents as early as the late 1960's and early 1970's. Teenage pregnancy, abortion and STDs, smoking, drug and alcohol abuse, violence and accidents, suicide and other mental health problems have received strong emphasis (3).

The World Health Organization (WHO) has been involved in adolescent issues since the early 1970's and the year 1985 had been designated, by WHO, as an international youth year, whose theme was " peace, participation, and development ".

The developing world's view of adolescent based problems has lagged behind despite the huge number of adolescents living in the region. Demographers estimated that over one billion adolescents aged 10-19 years to exist world wide in 1985. More than 80% of this number reside in developing countries, where they make up nearly one quarter of the total population(4).

Adolescent issues in Africa are new ones. Some would dismiss this segment of the population as either poorly defined or relatively healthy. Numbers alone, however, dictate that a closer view is warranted: over 100 million individual between the ages of 15 and 24 years currently live in Africa (5). A number of African countries have

attempted to address issues of youth at a ministerial level, but not usually involving health. Concern has been more frequently directed towards vocational education, employment and culture (6).

Adolescents health-related problems are products of the complex interaction of individual biology, personality, cultural preference, political expediency, and social dysfunction (7,8). There have been a number of important shifts in the patterns of substance use and abuse, sexual behaviour, violence, suicide and other mental illnesses by adolescents and young adults since the early 1960's as a result of the complex interaction (1,6-12).

Experimentation with drug and alcohol use as a symbol of adult behaviour is common in adolescence.

Risk of exposure to sexually transmitted diseases, including Human Immuno-Deficiency Virus(HIV) infection, is largely a result of adolescents' engagement in sexual, contraceptive, and drug use behaviours(14-15). Now teen age sexuality, pregnancy and parenthood have become topics of intense national debate in many countries (16).

Until recently Khat (*catha edulis forsk*) was not considered as a drug by the scientists in the west as it had not appeared on the drug scene in Europe and North America. Peoples in East Africa have chewed khat for centuries for its mild amphetamine like stimulating

effects, and the habit and its consequence largely remained limited to the same geographical area. In this century when a traveller may cross half the globe in a day, none of the drug problems can remain restricted to small areas of the world any longer. Khat, which has cathinone as the major psycho-active component met the WHO criteria for control under the convention on psychotropic substances (17,18).

Drinking alcohol is something that sets adults apart from children, so experimentation with it is part of trying an adult role, and becoming a drinker is part of adolescent development as a whole. The age at which adolescents have their first proper alcoholic drink reflects this, it varies a little from one country to another but is generally about 13. No particular type of alcohol-related problem is exclusive to young people but there is a discernible pattern of alcohol-related problems experienced by younger drinkers such as accidents, violence, and crime. The principal immediate risk they face is not dependence but rather physical injury to themselves and others and disruption of their personal and family lives(15).

Smoking rates climb dramatically during adolescence, peak in middle age, and decline in old age(19). Although there are insufficient data and considerable variation among countries, it is reckoned that in developing

countries, about 50% of the males use tobacco in one form or another. In women the prevalence is much lower, perhaps in the order of 5% (20). The health hazards of tobacco use are well known and include: high morbidity and mortality associated with peripheral vascular disease and lung cancer.

A number of studies have been conducted to determine the prevalence and associated risk factors, especially in developed countries, of adolescents health related problems. High school surveys in the USA (12) have shown that the prevalence rates of smoking, alcohol, and drug use among adolescents to be 20%, 90%, and 54% respectively. 40% of the United Kingdom youth aged 10 to 24 years were observed to be smokers while 19.6% of the representative sample of young people aged 13 to 20 years in Switzerland had experienced with drug once (1). In Kenya, 67% of the boys and 48% of the girls admitted ever taking alcohol, while 35% of the students in Zimbabwe are regular drinkers, where 25 to 35% of psychiatric admissions are due to alcohol abuse (21).

In the USA, sexually transmitted diseases are the commonest in the age group 10 to 24 years (12). Although adolescents 13 to 19 years of age account to less than 1% AIDS cases in the United States, it is predicted that many of the young adults 20 to 29 years of age (20% of AIDS cases) were infected during their adolescence (14).

Data from adhoc surveys in developing countries indicate infection rates as high as those observed in developed countries (1). The prevalence of STDs in Ethiopia is not known, owing to lack of laboratory facilities, improper reporting, and high rate of self-treatment. A survey of sexual behaviour and knowledge about STDs among high school students in Addis Ababa found that 38% of the students, 53% of the males and 24% of the females, were reportedly sexually active; 60% of them had had sexual inter course with 2 to 5 partners; and the majority of the boys (76.7%) and girls (92.9%) never used condoms for prevention of STDs, including AIDS (23).

Societal concern with adolescent pregnancy in the United States increased 20 to 30 years ago as studies began to document a rise in teenage sexual activity. After liberalized abortion laws it was observed that one-third of all abortions were being performed on teens, nearly half a million per year in 1983 (3). The problem of adolescent sexuality is of special interest to the African nations because adolescent females (aged 15-24 years) are expected to account for 43.6% of all females in the reproductive age group (15-49 years) by the end of this century. This group of women contribute about 25 to 40% of the over all fertility in Africa. This, of course, has serious demographic implications (5).

In Kenya, adolescent girls contribute up to 30% of the total pregnancies (24). Although very little is known of the patterns of early sexual behaviours in Ethiopia, recent reports have shown induced abortion is most frequent among students, especially those of higher economic status(25). In another prospective study of abortion in Satek regional hospital, 64 of 185 abortions were induced. 61% of the induced abortions had been performed in the age group 20 to 24, 65% in women who were single, 70% unemployed, and 48% nulliparous. Pregnancy was unwanted in all cases of induced abortions but fewer than 10% used any type of contraception (26).

Suicide is currently recognized as one of the leading cause of death among adolescents, particularly in developed countries. It is the second leading cause of death in the USA (12, 27). A recent school survey in Addis Ababa has shown a life-long suicidal attempt rate of 14.3% (28).

An association between adolescents health related problems and mental health status has been established by many studies (10,11). Although the prevalence of mental illness among adolescents in Ethiopia is not known, community based studies using the WHO self-reporting questionnaire have shown prevalence rate of 12 to 17% (29,30).

A number of determinant factors are implicated in

the initiation of adolescents health-related problems . Perceived adult use, peer use, poor grades in school, poor relationship with parents, low self-esteem, depression and psychological distress, unconventionality and tolerance for deviance, sensation seeking and the desire for novel and unusual experience, low sense of responsibility, a lack of religion commitment, a lack of purpose in life, disruptive life events (1,7,12-13,19,31) are implicated in the initiation of alcohol, smoking, and drug abuse behaviour. However, many studies report findings that are inconsistent and difficult to integrate conceptually in to a unified understanding of the adolescents health-related problems.

Several reasons have been given in an attempt to explain the sexual behaviour among the adolescents. The majority of them hinge on the changing socio-economic situation in the developing countries. With increase urbanization, travel to work, and family and cultural ethnic dislocation, there have been a progressive undermining of the traditional customs in developing countries (6,24). Population explosion, the need for the mother to go out to work, and schooling in shifts to deal with the problem of " too few schools for too many students ", results in lack of parental or teacher supervision. Increasing western influence promotes the sexual revolution. Most adolescents who indulge in

sexual activity do so with out any form of contraception or protection against pregnancy and other complications such as sexually transmitted diseases (6,23,24).

Inter personal dispute, like domestic problems and love affairs, are the commonest cause of suicidal attempt both in the developing and developed countries. Psychiatric illnesses are also the precipitating causes of suicidal attempt (12,27,28,32) .

The evidence for covariations is strongest for those risk behaviours that are also problem behaviours. Smokers are more likely to report current alcohol consumption. Smokers also report greater depressive symptomatology than non smokers (18). The number of risk factors are associated with ever using a substance, frequency of using a substance, and heavy use of a substance (31).

The use of alcohol and other psycho- active drugs has long been linked with sexual behaviour and disinhibition. The spectrum of un- wanted pregnancy resulting from sexual encounters under the influence of alcohol has been only partially banished by the wider availability of contraception, because methods that require fore sight and skill are likely to be forgotten or mis- used in these circumstances (15). A recent study of young people in Scotland showed that about half of both males and females had consumed alcohol before their

first experience of sexual intercourse, and those who had taken a drink were much less likely to have used condoms or any other form of contraception than those who had not (15). Adolescents who have reported that they use condom less often after drinking and drug use than not(33).

The clinically observed association of alcohol or drug abuse and depression is well known, but its temporal sequence is difficult to determine (34). Eva Y.Deykin etal have shown strong association between Major Depressive Disorder (MDD) and alcohol and, drug abuse. They have also found that drug abuse is markedly associated with other psychiatric disorder as well (11). Increased drug or alcohol use, or early on set of use, or both are associated with a greater tendency to think about or actually committed suicide (27).

The evidence for covariations for those risk behaviours raises a serious question about whether intervention efforts should remain focused on specific behaviour or rather on influencing an adolescents life-style as a whole (8) Several recent experiments suggest that combined interventions in community wide strategies are more successful- for example, a social influence curriculum in school linked with parent involvement and training enlistment of community leaders and health professionals, enforcement of policies regarding alcohol,

cigarette, and drug availability, and use of mass media to reinforce message. Increasingly, in recognition of the inter relatedness of problem behaviours, adolescent health issues are being addressed more comprehensively through school based health clinics and social service centres and community based youth development programs

(35)

Objective

General objective:

To determine health related problems in adolescents in a rural and semi-urban communities.

Specific objectives:

To measure the prevalence of substance use, suicidal attempt, mental illness, STDs and teenage pregnancy among adolescents.

To identify the risk factors for the health related problems (substance use, suicidal attempt, mental illness, STDs and teenage pregnancy) among adolescents.

Methods

The study utilized a cross-sectional design with comparison to investigate health related problems among adolescents in Awassa Zuria woreda, southern region in December 1994.

All adolescents, aged 10-24 years, living in Awassa Zuria woreda were the source population. After excluding the most inaccessible areas of the woreda 30 clusters were selected from the remaining areas proportionate to their population size. From each cluster 78 study units were selected. The list of urban and rural kebeles and their respective population estimates were collected from the Municipality and the woreda Department of Agriculture. The 1984 census data was used to estimate the number of adolescents in each rural and urban kebeles.

The population estimate of each kebele was utilized to determine the sampling interval in each case. Once the sampling interval was determined, random selection of the first household was done followed by a systematic sampling, n^{th} (vary according to the population size) house as determined by the sampling interval were included in the survey. All eligible adolescents in selected households were included in the study.

A sample size of 2346 was determined based on prevalence estimates of other developing countries with

the aim of achieving 95% certainty and 80% power.

Data were collected using a standard, closed-ended and pretested questionnaire. The questionnaire was first prepared in English and then translated into Amharic. Amharic is the national language and is widely spoken in the study area. Back translation into English was also done to check on consistency of the translated questionnaire. The pretest was done on communities which was not included in the study and appropriate adjustment was done after it. Students, equal number of males and females, who completed 12th grade were recruited both from the urban and rural kebeles. They received 5 days of theoretical and practical training before they were actually assigned as interviewers and supervisors. Enumerators were assigned in such a way that they interview adolescents whose sex were similar with them. Data quality was controlled at the field level by the supervisors and the principal investigator. Every questionnaire was checked for completeness and consistency by the principal investigator before entry. Informed verbal consent was obtained from all participants and from parents in the case of the younger adolescents. The interview was conducted privately and confidentiality of the information was maintained throughout.

Measurements/variables

Dependent: Substance use (alcohol, khat, cigarette), sexually transmitted diseases, teenage pregnancy, neuro-psychosis, and suicidal attempt were the out come variables.

Independent: Selected socio-demographic characteristics and other health related risk behaviours of the adolescents and their parents.

Operational definition

Alcohol user: adolescent who admitted drink of alcohol outside home and other than holidays at the time of the survey.

Khat chewer: adolescent who admitted khat chewing at the time of the survey.

Smoker: adolescent who admitted smoking cigarette at the time of the survey.

Mentally ill: adolescent who score 8 neurotic symptoms of the 20 SRQ neurotic symptoms and/or 1 psychotic symptoms of the 4 SRQ psychotic symptoms.

Suicidal attempt: any history of suicidal attempt as reported by the respondents.

STDs: history of urethral discharge and/or genital ulcer in males and genital ulcer in females as

reported by the respondents.

Teenage pregnancy: history of first pregnancy at the age <20 years as reported by the respondents.

Prevalence rates, associations between socio-demographic, and other determinants with mental illness, suicidal attempt, substance use, sexually transmitted diseases, and teenage pregnancy were examined. cross-tabulation, chi-square tests and odds ratio with their 95% confidence interval (95% CI) were calculated using EPI-INFO version 5 and Statistical Analysis System (SAS) version 6.03.

Results

A total of 1953 adolescents participated in the study. Among them 877 (44.9%) were males and 1076 (55.1%) were females. 669 (34.3%), 808 (41.4%) and 476 (24.4%) were in the age groups 10-14, 15-19, and 20-24 years respectively. As to their educational status, 364 (18.6%) were not able to read and write, 711 (36.4%) completed 1-6th grade, and 878 (45.0%) completed 7-12th grade. The majority of the participants were students: 1120 (57.3%), unemployed: 313 (16.0%), and house-wives: 237 (12.1%).

The majority of the respondents were from Sidama: 908 (46.5%), Amhara: 383 (19.6%) and Wolyita: 270 (13.8%) ethnic groups. Almost all (94.4%) of the participants were Christians; 1205 (61.7%) Orthodox, 508 (26.0%) Protestant, and 131 (6.7%) Catholic. More than half 1143 (58.5%) of the respondents' family earn 101-300 Birr per month, 494 (25.3%) earned less than 100 Birr and 316 (16.2%) earn more than 300 Birr. On the other hand 1719 (88.0%) of the adolescents did not have any source of pocket money. The majority of the adolescents : 1401 (71.7%) lived with parents; 1226 (62.8%) with both parents and 175 (8.9%) with single parent. 552 (28.3%) were either married or lived with other than parents.

The majority claimed to have neither history of run away: 1827 (93.5%) nor history of contact with police: 1882 (96.4%) for reasons other than politics or national

military service. Regarding the average number of peer friends, 611(31.3%) had 0-1 friends, while 895(45.6%) and 451(23.1%) had 2-5 and >5 friends respectively.

The prevalence of alcohol intake, khat chewing, and cigarette smoking among adolescents aged 10-24yrs were 22%, 6.76%, and 2.25% respectively. Mean ages of initiation and standard deviation for substances uses were 15.3(sd=1.89), 16.2(sd=1.91), and 17.3(sd=1.89) for alcohol, khat, and cigarette, respectively.

As to their behaviour on multiple substance use: 1500(76.8%) used no substance, 337(17.26%) used one substance, 81(4.15%) used two substances, and 35(1.80%) used all the three substances.

Table 1. Alcohol use among adolescents in Awassa, southern Ethiopia, 1994/95.

		N	Alcohol User no(%)	crude	OR 95%CI*	adjusted
Sex						
	Female	1076	205 (19.1)	1.00**	1.00	
	Male	877	223 (25.4)	1.45 (1.16, 1.81)	1.31 (0.98, 1.64)	
Age (years)						
	10-14	669	26 (3.9)	1.00	1.00	
	15-19	808	136 (24.3)	7.92 (5.10-12.39)	5.89 (5.43, 6.38)	
	20-24	476	206 (43.3)	18.87 (12.03-29.79)	13.64 (10.08, 18.20)	
Education						
	Illiterate	364	111 (30.5)	1.00	1.00	
	Elementary	711	82 (11.5)	0.34 (0.31, 0.37)	1.29 (0.82, 1.75)	
	Secondary	878	235 (26.8)	0.83 (0.56, 1.11)	1.06 (0.61, 1.51)	
Occupation						
	Employee	283	111 (39.2)	1.00	1.00	
	Student	1120	121 (10.8)	0.38 (0.34, 0.41)	0.27 (0.22, 0.32)	
	Un-employed	313	100 (11.5)	0.54 (0.28, 0.87)	1.06 (0.51, 1.61)	
	House-wives	237	96 (40.5)	1.05 (0.70, 1.40)	2.07 (1.46, 2.68)	
Religion						
	Orthodox	1205	396 (32.9)	1.00	1.00	
	Catholic	131	16 (12.2)	0.28 (0.16, 0.50)	0.48 (0.42, 0.59)	
	Protestant	508	5 (1.0)	0.02 (0.01, 0.05)	0.01 (0.01, 0.01)	
	Muslim	78	8 (11.5)	0.27 (0.12, 0.58)	1.03 (0.28, 3.10)	
	Others	31	2 (6.5)	0.55 (0.34, 0.89)	1.12 (0.10, 11.04)	
Income (Birr)						
	<100	494	82 (18.6)	1.00	1.00	
	101-300	1143	260 (22.7)	1.14 (0.81, 1.47)	1.48 (1.04, 1.92)	
	>300	316	76 (24.1)	1.20 (0.70, 1.70)	1.09 (0.41, 1.77)	
Pocket money						
	No	1719	315 (18.3)	1.00	1.00	
	Yes	234	113 (48.3)	4.16 (3.09, 5.60)	1.76 (1.24, 2.28)	
History run away						
	Never	1827	360 (19.7)	1.00	1.00	
	≥ 1	126	68 (54.0)	4.78 (3.24, 7.05)	2.52 (2.09, 2.95)	
Police arrest						
	Never	1882	375 (19.9)	1.00	1.00	
	≥ 1	71	53 (74.6)	11.83 (6.62, 21.34)	3.49 (2.78, 4.20)	
Peer friends number						
	0-1	611	108 (17.7)	1.00	1.00	
	2-5	891	173 (19.4)	1.12 (0.85, 1.48)	1.08 (0.74, 1.42)	
	>5	451	147 (32.6)	2.25 (1.67, 3.03)	2.00 (1.61, 2.39)	

* Odds ratio and 95% confidence interval

** Referent group

Table 2 Khat chewing among adolescents in Awassa, southern Ethiopia, 1994/95.

	N	Khat chewer no %	OR crude	95%CI adjusted
Sex				
Female	1076	37 (3.4)	1.00	1.00
Male	877	95 (10.8)	3.41 (3.02, 3.80)	2.65 (2.14, 3.12)
Age (years)				
10-14	889	3 (0.3)	1.00	1.00
15-19	808	56 (6.9)	16.53 (5.36, 17.70)	7.04 (5.84, 8.24)
20-24	476	73 (26.4)	40.21 (19.05, 41.37)	13.42 (12.18-14.66)
Education				
Illiterate	364	17 (4.7)	1.00	1.00
Elementary	711	15 (2.1)	0.34 (0.27, 0.41)	1.16 (0.99, 1.93)
Secondary	878	100 (11.4)	2.62 (2.03, 3.15)	3.30 (2.68, 3.92)
Occupation				
Employee	283	39 (13.8)	1.00	1.00
Student	1120	95 (3.1)	0.20 (0.45, 0.55)	1.11 (0.42, 1.80)
Un-employed	313	47 (15.0)	1.12 (0.65, 1.57)	1.63 (0.98, 2.28)
House-wives	237	11 (4.6)	0.30 (0.26, 0.40)	1.05 (0.13, 1.97)
Income (Birr)				
<100	494	30 (6.1)	1.00	1.00
101-300	1143	63 (5.5)	0.63 (0.18, 1.08)	1.07 (0.53, 1.61)
>300	316	39 (12.34)	2.34 (1.67, 3.01)	2.18 (1.40, 2.96)
Pocket money				
No	1719	90 (5.2)	1.00	1.00
Yes	234	42 (17.9)	3.96 (2.60, 6.01)	1.12 (0.52, 1.72)
History run away				
Never	1827	96 (5.3)	1.00	1.00
≥ 1	126	36 (28.6)	4.09 (3.75, 4.43)	2.62 (2.19, 3.05)
Police arrest				
Never	1882	103 (5.5)	1.00	1.00
≥ 1	71	29 (40.8)	7.42 (6.95, 7.89)	2.26 (1.20, 3.32)
Peer friends number				
0-1	611	29 (4.7)	1.00	1.00
2-5	891	59 (6.6)	1.42 (0.88, 2.31)	1.12 (0.61, 1.63)
>5	451	44 (9.8)	2.17 (1.30, 3.63)	1.57 (1.01, 2.13)

Table 3 Cigarette smoking among adolescents in Awassa, southern Ethiopia, 1994/95.

Variable	N	smokers no(%)	OR & 95%CI crude	adjusted
Sex				
Female	1076	1 (0.10)	1.00	1.00
Male	877	43 (4.9)	55.42 (53.44-57.40)	34.63 (32.60-36.64)
Age				
15-14yrs	662	1 (0.10)	1.00	1.00
15-19yrs	808	15 (1.9)	12.64 (8.61-14.67)	4.91 (2.80-7.32)
20-24yrs	476	28 (5.9)	41.75 (39.75-43.75)	17.63 (16.53-18.73)
Education				
Illiterate	364	5 (1.37)	1.00	1.00
Elementary	711	5 (0.7)	0.51 (0.13-2.03)	1.20 (0.17-2.57)
Secondary	878	34 (3.87)	2.89 (1.07-8.48)	3.18 (2.12-4.24)
Income				
<100birr	494	12 (2.4)	1.00	1.00
101-300birr	1143	23 (2.01)	0.38 (0.18-2.38)	1.95 (0.24-3.94)
>300birr	316	9 (2.8)	1.67 (0.89-2.45)	1.68 (0.78-2.59)
Pocket Money				
No	1719	25 (1.5)	1.00	1.00
Yes	234	19 (8.1)	5.99 (5.38-6.60)	2.31 (1.59-3.03)
Runaway				
Never	1927	29 (1.6)	1.00	1.00
≥ Once	126	15 (11.9)	4.51 (4.06-4.96)	2.03 (1.42-2.64)
Contact				
With Police Never	1982	24 (1.3)	1.00	1.00
Once Or More	71	20 (28.2)	8.51 (8.97-10.05)	2.41 (1.76-3.06)
#of Peer Friends				
0-1	611	9 (1.4)	1.00	1.00
2-5	891	13 (1.5)	1.99 (1.39-2.53)	1.75 (0.83-2.67)
>5	451	22 (4.9)	3.43 (2.64-4.22)	4.25 (3.37-5.13)

Multi variate analysis on substance use showed that males and adolescents aged 15 years or over were more likely to drink alcohol, chew khat and smoke cigarette but there was no significant association between sex and alcohol use.

Adolescents who completed or dropped out of secondary school were more likely to chew khat and smoke cigarette but there was no statistically significant difference between alcohol use and educational status.

Regular students were observed to be less likely to drink alcohol (OR=0.27), on the other hand, house wives were more likely to drink alcohol (OR=2.07). There was no statistically significant difference between khat chewing and adolescents' occupational status.

Adolescents whose family earned 101-300Birr were at higher risk for alcohol consumption, while, those with family income >300Birr were at higher risk for khat chewing. Those who had source of pocket money were observed to be at higher risk of alcohol consumption and cigarette smoking: OR=1.76; 5.99; but there was no significant association with khat chewing.

Adolescents who had > 5 peer friends, history of run away from the family and contact with police were more likely to use any of the substances.

All religious groups, except orthodox Christians, were less likely to drink alcohol. Homogeneity of the

group did not allow comparison with khat chewing and cigarette smoking.

The prevalence of suspected neuro-psychosis among adolescents aged 10-24yrs was estimated to be 7.83% ; neurosis 6.8% and psychosis 2.4%. The prevalence for males was 7.18% and for females was 8.36% and it was highest in the age group 20-24 years.

Multivariate analysis with selected socio-demographic and other indices showed that there was statistically significant association with: sex, age, occupation, income, living with other than parents, and substance use. There was no significant association with education, marital status, pocket money, religion, and ethnicity.

Females and adolescents in the age group 15-19years were found to be at higher risk to develop mental illness. Unemployed adolescents were more likely to had mental illness, while, those whose family earned more than 100Birr per month were less likely to had mental illness. Adolescents who were living with other than their parents were at least two times more likely to develop mental illness than those who live with parents. Those who admitted to drink alcohol or use multiple substance were observed to be at least seven times more likely to develop mental illness. There was no significant association with khat chewing.

Over all life long prevalence rate of suicidal attempt among adolescents was 3.43%. Mean age of attempt for both sexes was 17 (sd=2.12). Suicidal attempt was high among females and older adolescents (Table 5). The commonest means of suicidal attempt were self poisoning 38 (56.7%) and hanging 17 (25.4%).

Multivariate analysis showed that the chance of suicidal attempt was approximately two times higher among females although the difference was not statistically significant. Only three adolescents aged 10-14years reported suicidal attempt. Adolescents in the age groups 15-19 years and 20-24 years were more likely to attempt suicide, the chance being two and five times higher than those in the age group 10-14years, respectively, a statistically significant finding. Adolescents who were living with people other than their parents were at higher risk of suicidal attempt, statistically significant finding. Alcohol intake, khat chewing and multiple substance use were found to be associated with suicidal attempt. The likelihood of attempting suicide was 10 times higher among potentially mentally ill adolescents as compared to those who were mentally healthy. There was no significant association with education, family income, marital status, pocket money, religion, and ethnicity.

Table 4 Mental illness among adolescents in Awassa, southern Ethiopia, 1994/95

variables	potential cases		OR & 95% CI	
	N	no (%)	crude	adjusted
Sex				
Male	877	63 (7.2)	1.00	1.00
Female	1076	90 (8.4)	1.18 (.84-1.65)	1.53 (1.12-1.94)
Age (Years)				
10-14	669	26 (4.9)	1.00	1.00
15-19	808	77 (9.5)	2.61 (1.62-4.22)	2.05 (1.51-2.59)
20-24	476	50 (11.5)	2.90 (1.74-4.88)	1.51 (0.83-2.19)
Income				
<100birr	494	66 (13.36)	1.00	1.00
101-300birr	1143	74 (6.50)	0.26 (0.19-0.33)	0.34 (0.26-0.42)
>300birr	316	13 (4.10)	0.16 (0.07-0.25)	0.24 (0.14-0.34)
Pocket Money				
No	1719	125 (7.27)	1.00	1.00
Yes	234	28 (11.97)	1.73 (1.29-2.16)	1.27 (0.64-1.90)
Living with				
Parents	1401	84 (6.0)	1.00	1.00
Others	552	69 (12.5)	2.23 (1.58-3.17)	2.39 (1.94-2.84)
Alcohol				
No	1525	92 (6.0)	1.00	1.00
Yes	428	61 (14.3)	2.56 (1.84-3.64)	7.21 (5.56-8.86)
Khat				
No	1821	130 (7.1)	1.00	1.00
Yes	132	23 (17.0)	2.75 (1.69-4.45)	2.68 (0.84-4.52)
Multiple Substance				
0	1500	91 (6.0)	1.00	1.00
1	337	38 (11.3)	1.97 (1.29-2.98)	4.09 (2.42-5.76)
2	81	13 (16.1)	2.96 (1.50-5.76)	3.30 (1.92-4.68)
3	35	11 (31.4)	7.10 (3.15-15.73)	-----

Table 5 Reported Suicidal attempt among adolescents in Awassa, southern Ethiopia, 1994/95

variables	attempters N	no(%)	OR & 95%CI crude	adjusted
Sex				
Male	877	22(2.5)	1.00	1.00
Female	1076	45(4.2)	1.70(.98-2.94)	2.14(1.50-2.78)
Age (Years)				
10-14	669	3(0.6)	1.00	1.00
15-19	808	33(4.1)	9.45(8.26-10.63)	6.20(4.95-7.45)
20-24	476	31(6.5)	15.47(14.28-16.66)	10.10(8.77-11.45)
Education				
Illiterate	364	11(3.02)	1.00	1.00
Elementary	711	12(1.69)	0.49(0.33-1.32)	0.62(0.24-1.62)
Secondary	878	44(5.01)	1.61(0.94-2.28)	1.29(0.51-2.01)
Income				
<100birr	494	24(4.86)	1.00	1.00
101-300birr	1143	31(2.71)	0.70(0.05-1.45)	0.64(0.22-1.50)
> 300birr	316	12(3.80)	0.55(0.10-1.59)	0.58(0.46-1.72)
Pocket Money				
No	1719	56(3.26)	1.00	1.00
Yes	234	11(4.70)	1.46(0.80-2.12)	1.06(0.28-1.83)
Living with				
Parents	1401	40(2.86)	1.00	1.00
Others	552	27(4.90)	1.75(1.25-2.25)	1.35(1.10-1.96)
Alcohol				
No	1525	35(2.3)	1.00	1.00
Yes	428	32(7.5)	3.44(2.94-3.93)	2.14(1.74-3.08)
Khat				
No	1821	52(2.9)	1.00	1.00
Yes	132	15(11.4)	4.36(2.38-7.98)	5.11(3.89-6.78)
Multiple Substance				
0	1500	35(2.3)	1.00	1.00
1	337	16(4.7)	2.09(1.09-3.95)	1.20(0.53-1.87)
2	81	11(13.7)	6.58(3.00-14.14)	3.46(2.62-4.30)
3	35	5(14.3)	6.98(2.23-20.36)	3.14(1.91-4.37)
Mental Illness				
No	1800	35(1.9)	1.00	1.00
Yes	153	32(20.9)	13.4(7.98-22.29)	9.92(9.36-10.48)

Among all the adolescents 745 (38.15%) reported that they have stated playing sex. Of these 328 (37.4%) were males and 417 (38.76%) were females. The mean age at first sexual intercourse was 16.5 (sd=1.89) years. Of those admitted to having started sexual intercourse 194 (26.0%) reported to have had more than one sexual partners, while only 88 (11.80%) used condom in the last one year. The majority of alcohol drinkers (81.5%), khat chewers (86.4%) and cigarette smokers (97.7%) reported that they have had sex at least once.

The prevalence of suspected STDs among all the adolescents was found to be 6.35% but when we consider only those who started sexual intercourse the prevalence raised to 16.64%. The prevalence was 7.4% in females and 26.5% in males. Adolescents who were unmarried, student, unemployed, who use substance, and reported to have had more than one sexual partner were found to be more likely to report STDs symptoms than not. House wives were observed to be less likely to report STDs symptoms. All were statistically significant findings (table 6). On the other hand, there was no statistically significant association with religion, ethnicity, family income, pocket money, and number of friends.

The life long prevalence of teenage pregnancy among adolescents was estimated to be 37.23% but when only those started sex were considered as risk group, the

prevalence raised to 61.87%. The mean age for their first pregnancy was 17.67 (sd=1.64). Out of the total teenage pregnancy (n=258), 77 (29.80%) were extra-marital, 74 (28.9%) ended up with abortion and 30 (11.6%) were induced.

Adolescents who were: married, unemployed, whose family earn less than 300 Birr and use substance were more likely to be pregnant at teenage (Table 7). Those who were enrolled in school, and whose family earn more than 300 Birr were at less risk.

Table 6 Reported STDs Among adolescents in Awassa,
southern Ethiopia, 1994/95

Variable	N	suspected STDs no (%)	OR & 95%CI Crude	Adjusted
Sex				
Females	417	37 (7.4)	1.00	1.00
Males	327	87 (26.5)	3.71 (2.40-5.75)	3.85 (3.42-4.28)
Age (Years)				
10-14	9	1 (11.11)	1.00	1.00
15-19	327	48 (14.7)	1.37 (0.44-3.75)	1.16 (0.85-2.64)
20-24	409	75 (18.3)	1.80 (1.40-2.52)	1.67 (1.25-3.43)
Marital				
Married	411	46 (11.2)	1.00	1.00
Un-married	334	78 (23.4)	2.42 (1.59-3.67)	1.87 (1.34-2.56)
Occupation				
Employee	195	32 (16.4)	1.00	1.0
Student	164	33 (20.0)	1.27 (1.02-1.52)	1.84 (1.45-2.63)
Unemployed	149	35 (23.5)	1.56 (1.24-1.88)	2.17 (1.48-3.07)
House-wives	237	24 (10.2)	0.58 (0.23-0.93)	0.40 (0.33-0.47)
# of Partner				
1	551	60 (10.9)	1.00	1.00
>1	194	64 (23.0)	4.03 (2.64-6.14)	3.02 (2.21-4.33)
Alcohol				
No	396	47 (11.9)	1.00	1.00
Yes	349	77 (22.1)	2.10 (1.39-3.18)	1.87 (1.25-3.20)
Khat				
No	396	98 (15.5)	1.0	1.0
Yes	114	26 (21.0)	1.61 (.96-2.68)	2.54 (1.75-3.24)
Multiple Substance				
0	381	46 (12.1)	1.0	1.0
1	257	51 (19.8)	1.80 (1.14-2.85)	3.16 (2.21-4.07)
2	73	21 (28.8)	2.94 (1.56-5.53)	4.16 (2.94-5.38)
3	34	6 (17.6)	1.56 (.55-4.23)	-----

Table 7 Teenage pregnancy among adolescents in Awassa, southern Ethiopia, 1994/95

population variable	pregnant N(%)	OR & 95%CI crude	adjusted
Age (Years)			
15-19	441 122 (27.7)	1.0	1.0
20-24	252 136 (54.0)	3.07 (2.19-4.30)	2.98 (2.01-3.24)
Marital			
Un-married	397 48 (12.1)	1.0	1.0
Married	296 210 (70.9)	17.75 (12.65-19.47)	6.65 (5.30-8.01)
Education			
Illiterate	199 111 (55.8)	1.0	1.0
Elementary	269 55 (20.4)	0.20 (0.12-0.35)	0.54 (0.50-0.58)
Secondary	225 92 (40.9)	0.67 (0.42-0.95)	0.87 (0.38-1.4)
Occupation			
Employee	87 13 (14.9)	1.0	1.0
Student	258 33 (12.8)	0.83 (0.40-1.77)	0.61 (0.37-1.11)
Un-employed	115 35 (30.4)	2.49 (1.16-5.40)	1.76 (1.23-2.56)
House-wives	233 177 (76.0)	9.60 (7.25-11.40)	6.23 (5.12-7.45)
Income			
<100birr	177 59 (33.3)	1.0	1.0
101-300birr	395 173 (43.80)	1.73 (1.25-2.21)	1.31 (1.02-1.89)
>300birr	121 26 (21.48)	0.64 (0.29-0.93)	0.23 (0.14-0.31)
Alcohol			
No	488 139 (28.5)	1.0	1.0
Yes	205 119 (58.0)	3.47 (2.44-4.95)	1.76 (1.12-2.31)
Khat			
No	656 241 (36.8)	1.0	1.0
Yes	37 17 (45.9)	1.46 (.72-2.98)	1.22 (0.74-187)
Multiple Substance			
0	481 137 (28.5)	1.0	1.0
1	182 106 (58.2)	3.50 (2.42-5.08)	2.31 (1.66-2.98)
2	29 15 (51.7)	2.69 (1.19-6.08)	4.33 (2.35-5.41)
3	1.00 0 (0.0)	-----	-----

Discussion

The prevalence for substance use (alcohol, Khat and cigarette smoking) were not far from the findings of similar studies done in developing countries (13,15,17,20). This study did not target any high risk group within the community, hence it is most likely that the prevalence estimates in this study might be to the lower side. On the other hand the cultural ties in the study community seems to be still intact and adolescents might not be free to speak of their substance use, however, they were told that the information will be anonymous and confidential.

Consistent with previous studies number of peer friends, history of run away from the family, and contact with police had strong independent association with substance use (1,8,9,13). Also the observation of higher chances of using the substances among the more educated adolescents indicate the high level of cultural and parental influences over the adolescent population in general. Females in particular seem to be under heavier pressure than males. The hidden/concealed use of substances and the degree of parental influence on adolescent behaviour were not addressed in great detail in this study but deserve to be investigated since they are crucial in the understanding of the problem and designing an effective intervention strategies.

The 7.8% prevalence of mental illnesses was considered low to this population compared to the prevalence documented for higher age groups, considering that the study used a lower cut-off point and that this age group is under relatively higher stress due to the fact that they are in the state of transition from childhood to adulthood. Adolescents have to adapt to the rapidly changing and hostile external environment in addition to the hormonal and other physiological changes which bring about the development of secondary sexual characteristics. It is also possible that this study might have over estimated the prevalence since the cut-off point was low which means the likelihood of getting false positives could be high. There was no community based prevalence study in this age group to compare with.

Those who had been considered as potentially mental ill were not validated by psychiatrist and the likelihood of false positivity might be high, in which case there could be an over estimation of mental illness. Substance use was positively associated with mental illness consistent with other studies (11, 34).

The life long prevalence of 3.4% suicidal attempt as compared to the rate found in Addis Ababa high schools which was 14.3% is very low (28). But direct comparison of the prevalence is difficult due to the major difference in the study populations. On the other hand

consistent with the other studies this study also has shown a statistically significant higher chances of attempting suicide among females, older age groups, substance users and among potentially mentally ill adolescents. These factors are believed to influence suicidal attempt through their biologic and emotional/psychological effects (32).

The observed prevalence (6.35%) of sexually transmitted diseases though comparable with the rates reported both in developed and developing countries (38, 39) is quite alarming. The low sensitivity of the diagnostic criteria used particularly among females could have caused underestimation of the prevalence and could be accounted for the wide difference in the prevalence of STD between males and females. This study also documented the already revealed fact that STDs were more among males, older age group, those reported more than one sexual partner and among substance users (14, 33). The increasing urbanization together with a steadily declining standard of living, which are known to loosen family bonds and to undermine traditional customs (6,24), which are happening in this country at a faster rate than ever may put more adolescents into a high risk category for sexually transmitted diseases. As other STDs are known to increase the risk of acquiring the HIV infection which is spreading fast among all population groups and

the youth being the most sexual active segment of the population the situation is frightening unless timely action is taken.

As in other developing countries the prevalence of teenage pregnancy of 37.2% was high (1,6,24). This high teenage pregnancy rate could be attributed to one or more of the several realities existing in the developing countries: lack of knowledge on contraceptive use, poor access to health services, early age at marriage, and secrecy of sexual affairs due to cultural taboos which hinders the utilization of the meagre counselling services. Adolescents who were: illiterate, unemployed and from low income family were observed to be at higher risk for teenage pregnancy, this was in line with the findings of other studies (6,16). The association observed between alcohol and multiple substance use and high chances of teenage pregnancy might be due to abnormal and un-safe sexual practices which could happen when a person is under the influence of substances which undermines the super ego values.

The findings of this study are assumed to be valid since appropriate methods were utilized during the design and the implementation of the study to minimize the introduction of bias and to control potential confounding factors. Selection bias was kept to the minimum possible by utilizing probability sampling technique and by

achieving high participation rate. Information bias was minimized by using a standard, closed-ended and pretested questionnaire administered by trained interviewers. A logistic regression model was also exploited to control for potential confounding variables. The role of chance as a possible explanation of the major findings of the study was excluded by achieving a level of statistical significance desirable in the medical literature; i.e., p-value less than 0.05.

Although this study is believed to contribute a lot in the understanding of the problems of adolescents in this country there are certain limitations to its use. Some of the limitations are:

1. Inclusion of only the physically accessible population into the study has limited the generalizeability of the study findings to the population who are living in the remote areas of the country. Though the prevalence of most of the conditions considered in this study are believed to be lower in those remote areas.
2. Data collection through interviewers, especially on socially, psychologically and culturally sensitive issues such as substance use and sexual behaviour might have under estimated the magnitude of the problem.

Conclusions

- 1 The prevalence of substance use, mental illness and suicidal attempt, STDs and teenage pregnancy were high among adolescents.
- 2 Males, elder adolescents, those who reported history of run away from the family and arrest by police and those who had larger number of friends were found to be exposed to the health problems more than the others.
- 3 The effect of liberalized cultural values with out fulfilling what it demands was also reflected in the findings of the study.

Recommendations

1. Adolescent problems can no longer be considered as low priority area in the health and social sector and require the immediate attention of the policy makers and professionals.
2. Effective strategies to educate the adolescent population must be explored and implemented without delay.
3. Community institutions including religious organizations should be aware of the problems and actively participate in designing and implementation of intervention programs.
4. Explore strategies to maintain and re-establish family and cultural values.
5. Further in depth community based studies should be conducted on specific problems to set effective intervention programs.

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Appendix 1

QUESTIONNAIRE

1= Date----- Month----- Year----- Code#-----

Signature of the advisor----- I.D#-----

= Name-----Address Woreda----- Kebele-----

House#----- Family#-----

3= Sex 1= Male 2= Female

4= Age (in years)-----

5= Marital status 1= Unmarried 2= Married

3= Divorced 4= Separated 5= Widow

6= Last grade completed (in number)-----

7= Occupation 1= STUDENT 2=Unemployed

3= Daily labourer 4= Professional

5= Self employed 6= House wife 7= Other (specify)

8= Ethnicity 1= Sidama 2= Wolyita 3= Kembata

4= Amhara 5= Oromo 6=Tigray 4=Others

9= Religion 1= Orthodox 2= Catholic 3= Protestant

4= Muslim 5= Other (specify)

10= Family income 1= <100 Birr 2= 101--300 Birr
3= >300

11= Source of pocket money 1= No 2= Yes

12= Live with 1 = both parents 2 = mother 3 = father
4 = others

13= History of run away from the family 1= Yes 2= No

14. History of arrest with police 1= Yes 2 = No

15 = Average number of peer friends

1= 0-1 2= 2-5 3= >5

Part one : SUBSTANCE USE

16= Do you drink alcohol out side home or other than
holiday ? 1= No 2= Yes

17= Do you chew khat ? 1= No 2= Yes

18= Do you smoke cigarette ? 1= No 2= Yes

19= How old were you when you had your first drink of
alcohol

(other than with your family on holidays) ?-----

20= How many cigarettes do you smoke daily?

1= <5 2= 6-10 3= >10

21= How old were you when you had your first
cigarette? -----

22= During the past 1 week on how many occasions did you chew khat? 1= Never 2= Occasionally 3= Frequently

23= How many drinks do you take per week _____

24= How old were you when you chewed khat for the first time? _____

Part two : SRQ

25= Family history of mental problem 1= Yes 2= No

26= Do you often have headaches ? 1= Yes 2= No

27= Is your appetite poor ? 1= Yes 2= No

28= Do you sleep badly ? 1= Yes 2= No

29= Are you easily frightened ? 1= Yes 2= No

30= Do your hands shake ? 1= Yes 2= No

31= Do you feel nervous, tense, or worried ?

1= Yes 2= No

32= Is your digestion poor ? 1= Yes 2= No

33= Do you have trouble thinking clearly ?

1= Yes 2= No

34= Do you feel unhappy ? 1= Yes 2= No

35= Do you cry more than usual ? 1= Yes 2= No

36= Do you find it difficult to enjoy your daily activities ? 1= No 2= Yes

37= Do you find it difficult in making decision?

1= No 2= Yes

38= Do you have difficulty in your daily work?

1= No 2= Yes

39= Difficulty in playing role? 1= No 2= Yes

40= Lose of interest in many things ? 1= No 2= Yes

41= Feeling hopeless ? 1= No 2= Yes

42= Suicidal ideation ? 1= No 2= Yes

43= Do you always feel tired ? 1= No 2= Yes

44= Do you have stomach disturbance? 1= No 2= Yes

45= Do you easily tired ? 1= No 2= Yes

46= Do you feel that some one is trying to harm you?

1= No 2= Yes

47= Do you have intrusition in your thinking?

1= No 2= Yes

58= Do you think that you are much more important person than others? 1= No 2= Yes

59= Do you hear voices which are not heard by other people ? 1= No 2= Yes

60= Have you ever attempted suicide ? 1= No 2= Yes

61= Age of suicidal attempt _____

62= Ways of suicidal attempt 1= self poisoning

2= hanging 3= stubbing 4= gun shoot 5= others

Part three : STDs

63= Have you started sex ? 1= No 2= Yes

64= Age at which sex started _____

In the past 12 months did you have :-

65= Burning during urination? 1= No 2= Yes

66= Urgency during urination ? 1= No 2= Yes

67= Change of the urine colour? 1= No 2= Yes

68= Urethral or vaginal discharge? 1= No 2= Yes

69= Genital ulcer? 1= No 2= Yes

70= Unilateral or bilateral inguinal swelling

1= No 2= Yes

71= Number of sexual partners

1= 1 2= >1

72= Use of condom?

1= No 2= Yes

Part four (for females): TEENAGE PREGNANCY

73= Have you ever been pregnant?

1= No 2= Yes

74= Age at first pregnancy _____

75= Was the first pregnancy wanted? 1 No 2= Yes

76= Was the first pregnancy extra marital?

1= No 2= Yes

77= The outcome of the first pregnancy 1= abortion

2= live birth

3= still birth

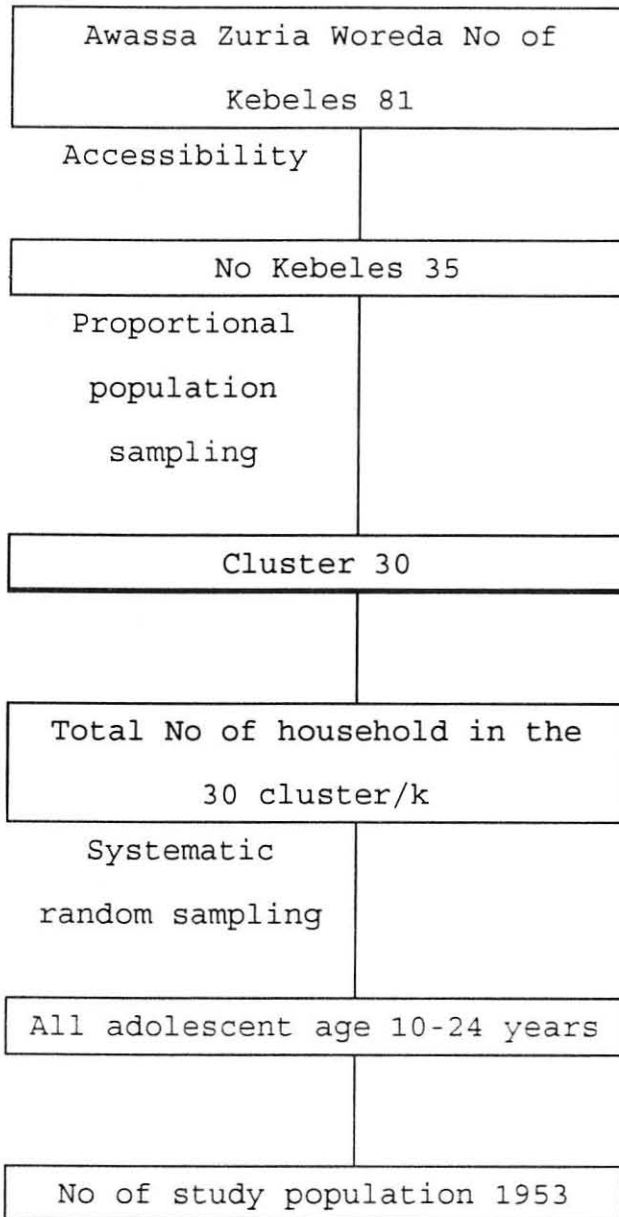
78= Means of abortion for the first pregnancy

1= self medication 2= village abortionist

3= health institution 4= others _____

APPENDIX 2

Scheme of sampling



DECLARATION

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

Name: SOLOMON MENGISTE

Signature: Solomon

Place: Addis Ababa, Ethiopia

Date of submission: May 1995