

短 報

Reduction of Maternal Mortality Rate in Tanzania Development of Reproductive Health Awareness Materials to Prevent Unwanted Pregnancy to Adolescent

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〔Abstract〕

Purpose:

The purpose of this study was to: identify factors contributing to adolescent pregnancy, which is a risk factor to maternal mortality; compare reproductive health issues between Tanzania and Japan and then to develop a reproductive health program for Tanzania adolescents.

Method

Twelve electronic databases were searched including Pub Med and Cochrane Library; The key words used were Tanzania, adolescent, pregnancy, maternal mortality, reproductive health. Only research studies on participant's between ages 13-18 years were used. Web sites of relevant organizations and reviews of Japan's and Tanzania's clinical information on reproductive health service were included. Excluded were non-English language publications and those published before 1999. Nine studies met the inclusion criteria.

Findings

The Tanzania population is young: 65% is under 24 years and 20% are between 15-24 years (National Bureau of Statistics Macro, 2005). Yet, these youth who hold the key to our future as a nation have identified issues of concern: lack of adequate knowledge, culture and traditional problems and poor accessibility to proper information for adolescents. The findings show that high rates of unprotected sex and lack of information would be the leading cause of unwanted pregnancy. Pregnant teenagers face relational problems with families, partners and community. There is therefore a need to sensitize the community and school personnel about adolescent reproductive health issues.

Conclusion

A picture drama can address the need for sex education to empower adolescent reproductive health knowledge that will contribute to reduction of unintended pregnancy as a result of maternal mortality

〔Key words〕 Tanzania, adolescents, pregnancy, maternal mortality, reproductive health.

Introduction

The United Nations millennium development goals (MDG) for 1990-2015 included a 75% reduction of maternal mortality (MDG 5) as a national target. (WHO2007). Despite national efforts, Tanzania has one of the highest maternal mortality ratios in sub-Saharan Africa.

The Sub-Saharan Africa region reports that a women's risk of dying from treatable or preventable complications of

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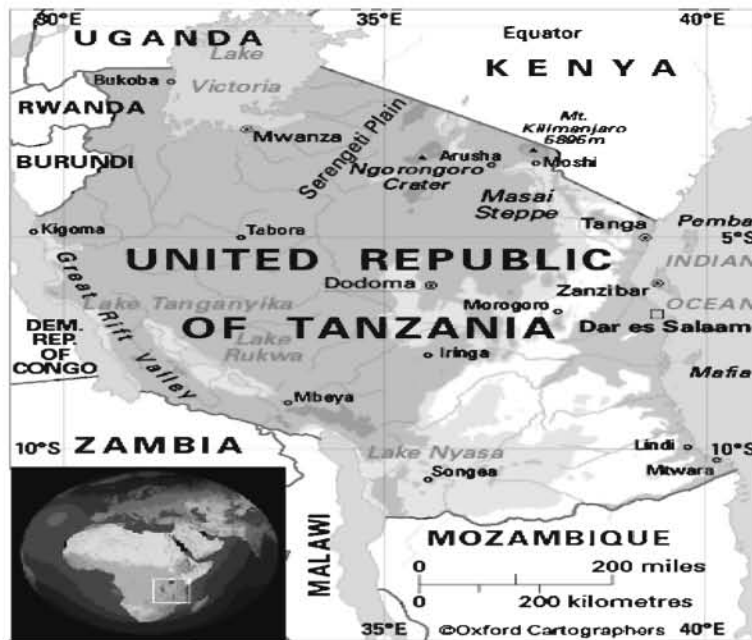


Figure1. Tanzania. Source -CIA 2002

pregnancy and childbirth over the course of her life time is 1 in 22, compared to 1 in 7,300 in developed regions (Millennium Development Goal Report, 2008). Greater attention to improving sexual and reproductive health care and universal access to all its aspects are required to prevent unintended pregnancies and unsafe abortions and to prevent morbidity and mortality.

Adolescence as defined by the World Health Organization, is the period of life between ages 10-19. UNICEF reports that girls ages 15-19 give birth to more than 15 million babies a year, accounting for more than 10% of all births worldwide. Worldwide, pregnancy related complications for are the leading cause of death for girls ages 15-19 (Moran et al., 1999). Although some of the risk can be attributed to factors other than young age for example, lack of access to care or socioeconomic status, still, the effect of young maternal age on pregnancy is a risk to mothers. Too-early childbearing also negatively impacts the survival of their newborns.

Teenage pregnancy is common in Tanzania. According to available data, the youngest age at which girls become sexually active in the country is 11 years (Mpangile, Leshabari & Kihwele, 1993). Another study conducted in Tanzania indicated that more than 40% of adolescents were reported to be sexually active (Kazaura et al., 2009). About 26% of women in the country begin childbearing during their teen years between 15 and 19 years of age (Bureau of Statistics & Macro International, 1997). Teenage pregnancy is more common among girls with no education (40%), as well as rural residents (27%), than among educated or urban residents (Bureau of Statistics & Macro International, 1997). According to a study conducted at Tanzania Muhimbili Hospital adolescents were among the high risk maternal age group (Kazaura et al., 2006).

In Tanzania, pregnancy interruption is allowed only if the pregnancy is a threat to the woman's life (Justesen et al., 1992). Most teenage pregnancies are unwanted; adolescents find themselves in greater difficulties in getting resources and access to facilities for abortion. The study of Mpangile which explained the abortion cases admitted in Dar es Salaam, the capital of Tanzania, showed that about 35% of the respondents interviewed admitted to intentionally terminating their pregnancies (Mpangile, et al., 1993). These estimates of abortion could be on the low side due to unreported data; many abortions are conducted secretly and never reported.

Purpose

The purpose of this study was to place Tanzania's adolescent pregnancies in a global context by comparing reproductive health issues between Tanzania and Japan then developing a reproductive health education program for Tanzania's adolescents to increase awareness of the dangers of unwanted pregnancy related complications that could likely end up in

Table 1. Comparison of Tanzania and Japan 2008 Vital Statistics

	Tanzania	Japan
Total population	39,459,000	127,953,000
Gross national income per capita (PPP international\$)	980	32,840
Life expectancy at birth. male/female (years)	50/51	79/81
Probability of dying under five (per 1000 live births)	118	4
Probability of dying between 15 and 60 years male/female (per 1000 population)	518/493	89/44
Total expenditure on health per capita (Int'l. \$2006)	45	2,514
As % of GDP (2006)	5.5	7.9

Source: WHO Statistics 2008

maternal mortality.

Method

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Analysis

1. Demographic characteristics

Tanzania, which is commonly referred as, The United Republic of Tanzania is the largest country in East Africa, covering 940,000 square kilometers, 60,000 of which are inland water. The inland waters include the famous lake Victoria, Tanganyika, Nyasa, Manyara, Natron, Rukwa and various swamps. It also includes great rivers like Ruvuma, Rufiji, Pangani, Ruvu, Wami and many other small ones. Tanzania lies between longitude 29° and 41° east and latitude 1° and 12° south of the equator. It shares borders with eight countries: Kenya and Uganda to the north; Rwanda, Burundi, Democratic Republic of Congo, and Zambia to the west and Malawi and Mozambique to the south. The population is about 39 million (2008 estimates) composed of 26 regions. Tanzania has more than 130 ethnic groups each with its own language. While Kiswahili is the national language, English is the primary language of commerce, administration and higher education.

2. Vital statistics

World Health Organization (2002-2005) estimated that about 51% of the United Republic of Tanzania population is living below the poverty line, and on less than one US dollar a day; 30% of them are considered to be in absolute poverty. In rural areas incomes are lower so that the health situation has not improved and poverty is more widespread and deeper than in urban centre's. Life expectancy is low in Tanzania. The number of children who die under age five is high. Poverty is Tanzania's major human development problem and consequently, the main impediment to the improvement of the people's health status. Tanzania population looks at much greater health and life difficulties compared to Japan. (Table 1)

3. Reproductive health (Table 2)

The major choices for family planning contraception in Tanzania are female hormones in pill and injectable form, both used only by females. After pills and injectables, condoms follows as the favored method of contraception in Tanzania.

Table 2. Reproductive Health — Comparison of Reproductive Health Statistics between Tanzania and Japan

	Tanzania	Japan
Family planning method favored choice.	Pills and injection	Condom
Legal age; average age for marriage (female)	15; avg. age 18-20	16; avg. age 28-30
Young mothers	Many	Very few
Health insurance	No health insurance	Health insurance
Total fertility rate	5.11*	1.4**
Infant mortality rate death/1000 live birth	68*	2.5**
Maternal mortality rate death/100,000 live birth	578*	4.8**
Literacy rate % male /female	77.5/62.2	99/99
Language	Swahili/English	Japanese
Religion	Mainland-Christian 30%, Muslim 35%. Zanzibar more than 99% Muslim.	Shinto/Buddhism 84%, other 16% Christian 0.7%

*Tanzania country health profile 2007, **Statistical abstracts on Health and Welfare in Japan 20008

Whereas, condoms are the first choice in Japan (Matsumoto, S. 2005). The major sources for family planning in Tanzania are the government hospitals and health centers which currently provide contraceptives to 68% percent of current users. Other private sources such as shops, hotels and guest houses supply the majority of male condom users (National Bureau of Statistics, 2005).

The number of adolescent mothers is higher in Tanzania than Japan. The main reason which led to this big difference is due to differences in adequate information about maternal health situation for adolescents (Mushi et al., 2007) and the limited number of children per family by the total fertility rate. Underlying factors are: harmful traditional practices which affect young women's health; free antenatal services in Tanzania and a large gap between male and female literacy rate, which contributes to an inequality of general knowledge especially reproductive health.

Maternal mortality

Table 2 displays Tanzania's high maternal mortality rate. According to Tanzania Demographic and Health Survey 2004/05 (National Bureau of Statistics, 2005), the current Tanzanian maternal mortality ratio is at 578 per 100,000 live births. This means that 9,000 women die annually due to pregnancy related causes, while a further 250,000 become disabled from the same causes. Early and frequent pregnancies have additional risk to maternal mortality and morbidity. The Tanzania Demographic Health Survey also shows that 29% of adolescent girls have their first birth by the age 18 years, which may have contributed to the high maternal mortality rate (Mukama, 2007). Poor maternal health suggests a greater need for improving reproductive health as well as general health interventions targeting women and men especially regarding youth sexual and family health.

Infant mortality

Infant mortality estimates show a decline from 100 during 1995-1999 to 68 during 2000-2004. Higher levels of educational attainment are generally associated with lower mortality rates, because education exposes mothers to information about better nutrition, use of contraceptives to space births, and knowledge about childhood illness and treatment.

4. Factors related to unwanted pregnancy in Tanzania

1) Lack of adequate knowledge

Although Tanzania Health Service Departments struggles to promote maternal health education and contraception, there are few young people who receive adequate preparation for their sexual lives. This leaves them potentially vulnerable to unintended pregnancy and sexually transmitted infections (STIs) including HIV. A survey conducted in 1997 found that teenage pregnancy was more common among girls with very little education as well as rural residents, than among educated or urban residents (Bureau of Statistics & Macro International, 1997). Another study conducted in a Tanzania primary

school suggested that there were a high number of adolescent girls who had early termination from school due to pregnancy (Todd et al., 2004). To lead healthy, safe and empowered lives, young people need appropriate education and to accomplish that, a strong agent for improving sex education programs is needed (Martiniuk et al., 2003) including information and services focusing on reproductive health before involvement in sexual activity.

2) Culture/social and traditional problems

Tanzania does not have a single culture due to the ethnological composition which comprises Bantu and 130 other ethnic groups. Although there are cultural variations among the groups which must be considered when proposing health education, common to all these cultures is that the discussion of sexual issues is generally considered a sensitive subject. Sexuality can only be discussed through a third party, who might be an aunt, an uncle or a grandparent. Those adolescents at home or attending school do not receive adequate and realistic information about sex because it is viewed as embarrassing. As a result children get too little or no meaningful information about sexuality and tend to experiment based on the little information they encounter from their peers, internet and television. The immediate result of this is either adolescent pregnancy or early marriage, leaving young women to fend for themselves with few skills. Most of them are left with very few options which lead to engaging in risky behavior (Mpalangile et al., 1993).

Even more controversial, is that some ethnic groups in Tanzania follow the old traditional marriage practice binding much younger people. This practice strongly contradicts the 1971 Tanzania Law of Marriage Act specifying 15 years as the minimum age for a girl to marry (National Laws, Tanzania Legislation of Interpol Member States on Sexual Offences against Children, 2006). The high proportion of married adolescent girls reflects the traditional practices at menarche; a girl is confined to a room where she may remain for a long time unless earlier her hand is sought in marriage. During this period of confinement, the girl is taught "the facts of life" and receives the instruction and guidance in preparation for marriage. Usually early marriage is followed by pregnancy (Kopoka, 1999).

Another example is that some ethnic groups kept adolescents in the bush for one month to prepare young people for entering adulthood. Boys and girls are taught about married life and responsibilities for parenthood. While this is a well intentioned practice, adolescents receive insufficient information about reproductive health and skills for sexuality, so that after their study they want to practice without knowing the dangers of unprotected sex. As a result, girls become pregnant leading to the high incidence of teenage childbearing (Mushi et al., 2007).

The relationships between adolescents and the gender imbalances often increase the risks faced by young females. Young males are widely perceived to need premarital sexual experiences and a variety of partners; females are not so perceived. The need to conform to these double standards may cause young females to fear disclosing their sexual activity, and may result in reluctance among them to report sexual experiences. This fear may also inhibit sexually active female adolescents from seeking contraceptive services (Adekanle et al., 2008).

In this respect the education of girls is the most important factor, because it empowers them to decide about their own lives; it enables them to develop planning behavior, for instance to find ways and methods of contraception (MacPhail et al., 2007). In the long run it may stimulate planning behavior, contraception and prevention of unwanted pregnancies. One of the important disadvantages of adolescent childbearing is that it often interrupts education, because pregnant girls are sent away from school. Young men usually deny their responsibility for a pregnancy and abandon the girl for a number of reasons including: the inability to take care of the expectant mother and the unborn child; fear to be taken to court (especially if the girl is still in school) and the boys' doubts about his actual fatherhood (Atuyambe et al., 2005). Unemployed and the general economic situation makes young men feel inadequately prepared to meet the demands and costs of supporting her pregnancy.

3) Poor accessibility of proper information

At the International Conference on Population and Development in Cairo in 1994, the provision of sexuality education and contraceptive services to adolescents, and induced abortions, were among the most controversial and most discussed issues (Speizer et al., 2000). Since then, the authorities in Tanzania have increasingly become aware of the problem of unwanted pregnancies and induced abortions among adolescent girls. In order to reach adolescents with family planning information and services, UMATI, the Family Planning Association of Tanzania, has attempted to set up youth-friendly

centers (Youth Friendly). The family planning policy and services standards Guidelines (1992) in recognition of adolescent being sexually active has made provisions for service delivery to adolescent (1st edition 1992). Section 1 (pp3-7) The guidelines now state that 'all males and females of reproductive age, including adolescents irrespective of their parity and marital status, shall have the right of access to family planning information, education and services' (Ministry of Health, 1994).

World Health Organization discussion papers on adolescent contraceptive service delivery found that most girls are not aware of their right to access contraceptive services; they regard the family planning policy and contraception as only available for married women and women who have been pregnant once. "Family-planning services can play an important role in helping girls to protect themselves from all the negative consequences of pregnancy" (WHO, 2004, p. 63). Furthermore there are other serious factors impeding their access to family planning: misconceptions about their own pregnancy risk; they are afraid of being considered promiscuous if they attend family planning services and they afraid to be seen by an adult, family member or neighbors, as they may fear that if they consult a doctor their parents may be informed.

Parents and teachers fear that giving contraceptives to adolescents will encourage sexual activity (WHO, 2004). Parents and teachers need to understand that sexual education for school-children or knowledge about contraceptive use does not increase their sexual activities; to the contrary, it helps them to make informed decision about their sexuality. In Tanzania, almost all health clinics and hospitals have family planning services but according to available data from a 2004 survey (WHO, 2008) only 16% of rural married women use contraceptive methods compared with 34% from urban areas. This usage pattern would also affect rural adolescents contraceptive use. .

Communication gaps exist between the various players (adolescents, parents, teachers, government, religious groups, etc.) and should be filled by developing an atmosphere of mutual understanding and willingness to provide genuine help to the adolescent population. Religious institutional and schools should also participate and take their responsibility to educates young people.

Proposing and planning program

1. Concept for the education

The Japanese Organization for International Cooperation in Family Planning September 2009 Adolescent Sexual and Reproductive Health Seminar, offered a useful model for adolescent sexual and reproductive health. They created the comprehensive tree model and defined comprehensive sexuality education "as a lifelong process of acquiring information and forming attitude, beliefs and values about identity, relationships and intimacy."(JOICFP) booklet, Comprehensive Sexuality Education pp3) The term comprehensive indicates that this form of sexuality education encompasses the full range of information, skills and values to enable young people to exercise their sexual and reproductive rights and to make decisions regarding health and sexuality. Adolescents need proper information about reproductive health.



The comprehensive sexuality education tree portrays sexuality as a natural phenomenon; it is a normal and healthy part of human life if it can be experienced and expressed in a proper way. This emphasizes that abstaining is one of the method

that can protect a female from pregnancy and sexual transmitted infections, a global problem for adolescents.

The assumption is, that if protected, sex and sufficient knowledge concerning reproductive health would be taught clearly and with sufficient access, this challenge may be reduced. This means that complementary actions are needed to promote healthy development in Tanzania young generation. These actions include: increasing educational opportunities for girls and encouraging girls to stay in school longer, educating youth about sexual and reproductive health and changing social norms related to age at marriage and first pregnancy.

There is a need for youth-friendly family-planning services and proper education on reproductive health, in order to reduce unwanted pregnancies and abortion-related complications and deaths among adolescent girls (Rasch et al., 2000). The educational tool, the comprehensive tree, will be an effective model for creating awareness among adolescents for wise choices for their body and to understand the outcome of unprotected sex. All children, before they reach the age at which they become sexually active, need to be taught the risks of unprotected sex and helped to develop the skills needed to protect themselves from sexual coercion.

Health awareness material to promote adolescent health

A tree, which is a symbol of both life and death, will be used to explain the danger adolescences may face in case they make a blind decision. It is a symbol of life if is used properly and a symbol of death if it is misused.

The primary goal of sexuality education by using the tree method is that children and young people will be equipped with the knowledge, skills and values to make responsible choices about their sexual and social relationships in a world affected by HIV/AIDS and other sexually transmitted diseases. Sexuality education programmers usually have several mutually reinforcing objectives such as: to increase knowledge and understanding, to explain and clarify feelings, values and attitudes, to develop or strengthen skills and to promote and sustain risk reducing behavior among adolescents.

Boys and girls undergoing puberty may look physically mature; however, they have not yet matured fully emotionally, so their ability to make wise decisions about sexual matters is still developing. During the initial stages of puberty, a girl's reproductive organs have not yet fully matured; her body is not strong enough because of the immaturity of the pelvic bones. This means that even if a girl becomes pregnant, she may experience severe difficulties when giving birth and thus, she may die during childbirth or continue to experience health problems for the rest of her life.

Using the comprehensive tree model as a picture drama will assist the adolescent to decide about their discussion of positive or negative behavior. The picture drama also helps adolescents remember that a pregnant girl has to drop out of school. This has long-term implications for them as individuals, their families and communities. It is not always possible for teenager mother to go back to school. This means an end to all her future plans for a career.

2. Targeting population

The most promising groups to focus upon for an educational program are all boys and girls in the community between the ages of 10 to 17 years because this targeted group spends almost all their time at school. The junior high school student group, is the most important one for correcting wrong information concerning reproductive health especially since they have already exchanged erroneous ideas to each other. Some adolescents will be trained to teach others about reproductive health, because peer to peer education will be more comfortable and effective for youth and is available all the time even at home where they can teach other adolescents

3. Materials and Tool (Fig2-1~3)

The story of Tatu and Mbili is based on Kiswahili counting numbers, two and three. Tatu is three and Mbili is two. Two and three are close numbers and each one plays a significant role in the process of counting forward. It is believed that this will create a great impact with the adolescents, especially if they know that it is the beginning which marks the end.

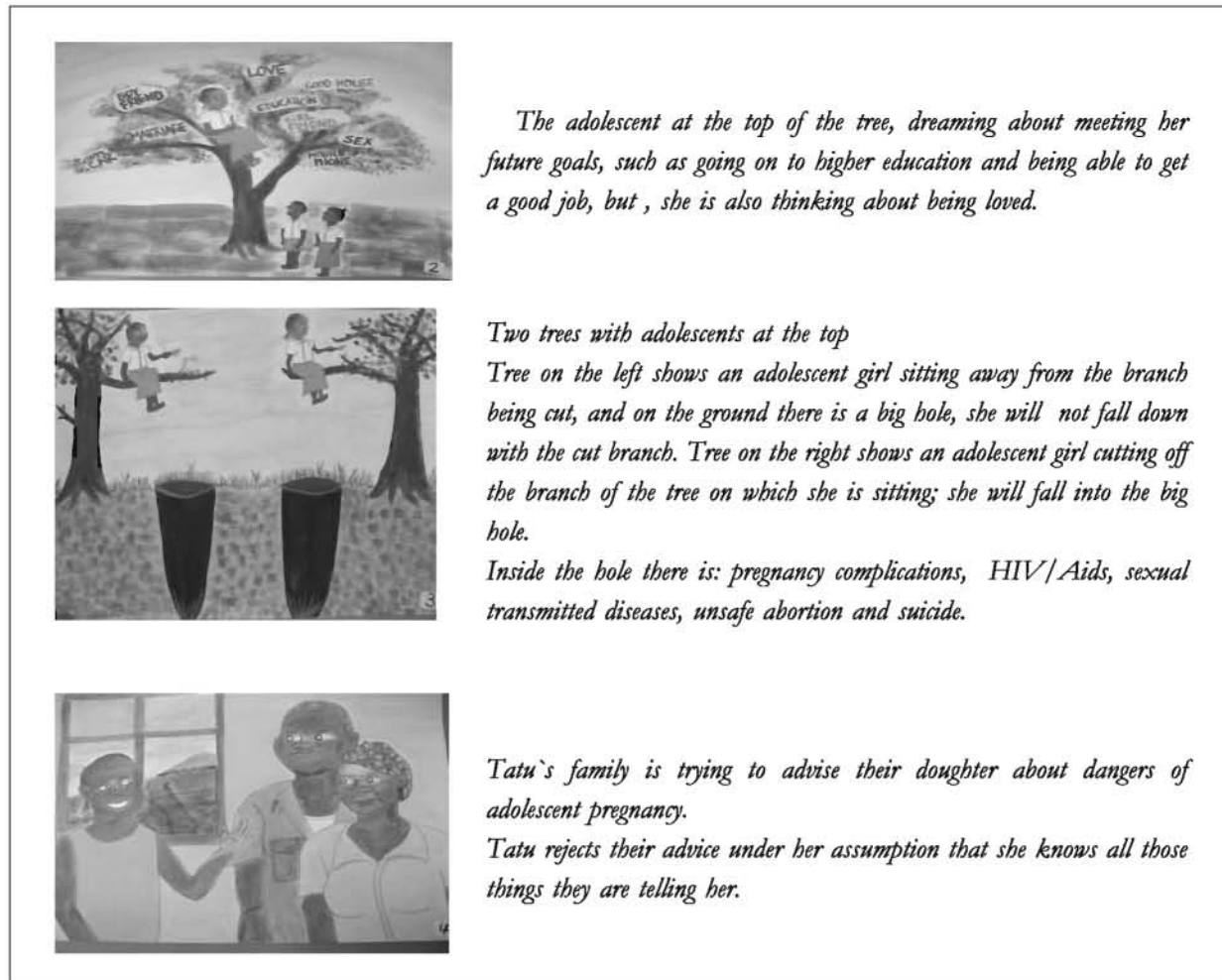


Fig 2-1. The story of Tatu and Mbili

Teaching materials

The teaching materials are designed to address the vulnerability of young people in decision-making about sexual behavior. Two trees with adolescents at the top explain the two different decisions for adolescent who engage in sexual activities.

Frida Madeni, author, and Mika Tohei, artist, created a picture drama that focuses on adolescents who engaged in sexual activities leading to unwanted pregnancy. It also explains that adolescents to be in good health is their right and they should become free from challenges that can shorten their life, spoil their plans and future. The picture drama includes 15 pieces of drama material measuring 30cm by 42 cm. The front part of the material contains the art work while the back has the written story. The author uses a tree to demonstrate the adolescent situation because the Tanzania environment is covered by trees, so that the adolescent will be frequently reminded of the story. Figure 2 explains the story.

This drama was introduced at the 2009 September conference of St Luke's College of Nursing Tokyo, Japan. The undergraduate students and different members including adolescents and adults attended the conference and it received positive responses and comments that the drama should be useful in Tanzania.

4. Evaluation

We have two types of evaluation:

A. Short term evaluation;

- 1) This will include primary school students. We will make a pretest and post test for adolescent decision making. A questionnaire will be used to test their knowledge, attitude and skills.
- 2) Focus group interview- How appropriate are the class goals for the subject, education place, time, effectiveness and understanding for the materials.

B. Long term evaluation;



The student picture shows the girls at school discussing their studies, but suddenly one of the student changes the topic and discusses about boyfriends and they give wrong information to each other about sex.



Boys at school are also discussing about sex and reproductive health but they don't have good information about contraception.



Tatu and Mbili are in a close relationship, standing at a separate place discussing their love appointment. They plan together for the next day; they will go visit Mbili friends.



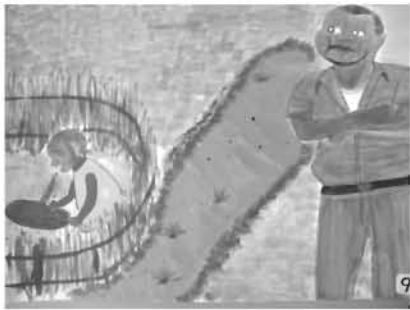
Tatu was asking Mbili about a good time to visit their friends, Mbili said, "At night time!", and Tatu accepted. Mbili asking Tatu to visit friends and also to have sex.

Fig 2-2. The story of Tatu and Mbili

- 1) After six months adolescents will think about their decision making.
- 2) After five years how many subjects became pregnant and what were the behavior changes for those who did not become pregnant?

Future Plans

We will revise and continue to develop education materials, target subjects, goals, promote the education and evaluation and then we will attempt to provide this kind of education to contribute to the decrease of unwanted pregnancies related to maternal mortality rate.



A few month later, Tatu develops morning sickness, Tatu's father hears someone vomiting and raises his voice to question Tatu. Tatu lies to him by saying that she is brushing her teeth.



Tatu decides to go to inform Mbili about her pregnancy but Mbili rejects her. "No! I can't take care of your pregnancy because I am also student, I don't want to see you again" Mbili said.

And sadly he abandon her. Tatu tries to hide her pregnancy but her school teacher discovers it and discontinue her studies.



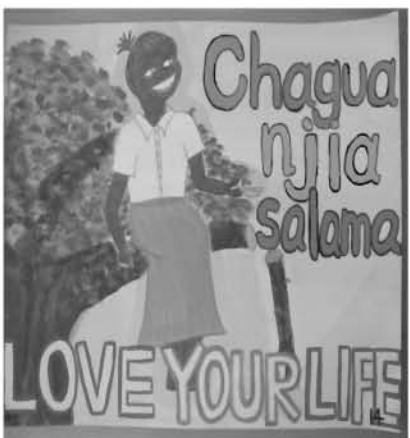
Tatu goes back home and to tell the truth about her pregnancy. She informs her father and mother but they rebuked her saying, "Go back to your boyfriend, he will take care of you and your baby."

"We can't take this shame", Tatu's father shouted.



Tatu is in troubl. Crying, Tatu leaves her family. She is expelled from school. She is thrown out of her home.

Ruined, are her chances of achieving many of her goals for the future such as getting a good education and being able to get a good job. All the community members look at Tatu while she is crying, She looks so sad! She doesn't know where she can go. There is no one to please her. She looks so sad and lonely.



This is a good tree which indicates the conclusion for adolescents that: They should know that it is not necessary for a boy and girl who are friends to have sex. They should know that the best way to avoid pregnancy, sexual transmission diseases, HIV/Aids is to not to have sex at all. Condoms can prevent all these problems if they are used correctly every time you have sex.

But they should remember to have the clear intention of saying no to sex. When you say no, both your voice and your body should be saying the same thing.

Fig 2-3. The story of Tatu and Mbili

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