

Conceptualisation of Adolescent Sexual and Reproductive Health Promotion for Human Capital Development

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Abstract

The objective of this paper is to set out the conceptual linkage between sexual and reproduction health promotion for human capital development. It provides a two-stage conceptual framework which shows the linkage between adolescent sexual and reproductive health promotion and human capital development. The paper is a critical review of the concepts of adolescent sexual and reproductive health and its implication for human capital development. It reviews the conceptual framework of Pan American Health Organization (PAHO) on factors that promote adolescent sexual and reproductive health; and constructs a framework that presents mechanisms through which socioeconomic development is achieved through improved human capital development. The analysis in this paper apparently indicates that sexual and reproductive health promotion is fundamental to the development of human capital. The inextricable link between sexual and reproductive health promotion and development of human capital is shown in the conceptual frameworks. First, individual, social and environmental factors lead to the promotion of sexual and reproductive health. Second, investments that promote adolescent sexual and reproductive health improve human capital by contributing to knowledge, skills, health, self-esteem and moral values. The paper advocates that sustainable investments that promote sexual and reproductive health improve human capital development in the long run.

Keywords: Adolescents, sexual and reproductive health, human capital development

1. Introduction

Over the last two decades, the world's development process has been geared towards eradicating poverty and hunger, developing human capital, promoting gender equality and women empowerment. It also includes reducing maternal and child mortality, combating HIV/AIDS, malaria and other diseases as well as ensuring environmental sustainability, and developing global partnership for general development (UN, 1994; UNFPA, 2002). The realization of these social and economic development goals can be achieved through the availability of financial, physical and human resources. However, human resources constitute the ultimate basis of the wealth of nations, while capital and physical resources are the passive factors of production (Harbinson, 1973). Thus, a wide array of human skills is essential in fueling the dynamics of development (Schultz, 1981). Therefore, investment in formal education, human skill or on-the-job training, work experience, health care, physical fitness, social services, nutrition and general well-being as a way of building and improving upon human capital is most significant in achieving equitable and sustainable development (Blaug, 1970; Schultz, 1981).

Similarly, the economic value of human capital is enhanced when its useful life is extended. Hence, the life expectancy of a population is a factor in determining the incentives to invest in various forms of human capital and the value of the stock of such capital (Schultz, 1981). Adolescents are important category of the human resource of a nation whose human capital potentials need to be developed. Therefore, building and improving on their productive skills, health and technological knowledge is of utmost importance. However, the snag is that sexual and reproductive health status of adolescents all over the world is being threatened by the rising incidence of early but unprotected sexual activity. This leads to the inevitable consequence of unwanted pregnancies, and to early childbearing. It may also result in preventable unsafe abortions and sexually transmitted infections (STIs), including the deadly pandemic of human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS) that is fast consuming the worlds' human resources, especially the youth and indeed adolescents (Awusabo-Asare, Biddlecom, Kumi-Kyereme, & Patterson, 2006; Kumi-Kyereme, Awusabo-Asare, & Biddlecom, 2007).

Some studies have demonstrated that the consequence of rising incidence of early but unprotected sexual activity of adolescence such as unwanted pregnancies, early childbearing, unsafe abortions and STIs including HIV/AIDS can be curbed through sexual and reproduction health promotion at the social and individual level (Seligman, Kress, Winfred, Feranil, & Agarwal, 1997; PAHO, 1998; Schutt-Aine & Maddaleno, 2003). Adolescent sexual and reproductive health promotion involves equipping young people with the relevant knowledge, motivation, and behavioural skills to enhance sexual health and avoid sexual health related problems (Fisher & Fisher, 1998; Health Canada, 2003; SIECCAN, 2004). It follows that sexual and reproductive health conditions and decisions made by young people have immediate and long-term consequences for human capital development in terms of their participation in the labour market, productive efficiency, learning capacity, coping

skills and creativity among others. However, the extent to which adolescent sexual and reproductive health promotion are linked to human capital development is limited or neglected. This conceptual paper seeks to provide an insight into the linkage between adolescent sexual and reproductive health promotion and human capital development. The argument advanced in this paper is that the promotion of adolescent sexual and reproductive health through an interaction between social and individual factors can ultimately result in the development of their human capital potentials. This can be realized by employing sectoral interventions for adolescent sexual and reproductive health and proximate determinants of human capital development. The paper is organized into four sections, namely; the concept of human capital, adolescent sexual and reproductive health, sexual and reproductive health: implications for human capital development among adolescents, and the sexual and reproductive health and human capital development: a conceptual framework as well as the conclusion.

2. The concept of human capital

The concept of capital often depicts assets available for use in the production of further assets. In other words, capital is referred to as stocks of input that have the capacity to produce flows of economically desirable outputs. Capital can take different forms and these include: economic (financial, natural, produced), cultural, social and human (Becker, 1964; Bourdieu, 1986; Goodwin, 2003). However, the concept of interest to this paper is human capital. The genesis of human capital as a concept may be traced to attempts in the mid 18th century to understand the basis of economic growth. During this period, production function was used as the principal framework for understanding economic growth. Generally, the description of the function of production has been linked to the process by which inputs (machines, capital, labour, and natural resources) were combined with technology to produce output. Consequently, it became obvious that an increase in the amount of inputs especially capital and/or labour used in the production process was responsible for economic development. On the contrary, as the theory of development was tested over time by comparing the growth rate of inputs used in production to the rate of increase of output produced given the level of technology, certain discrepancies became apparent. In fact, a large residual element of output growth remained after controlling for the growth in inputs and the level of technology, suggesting that some other factor was significantly contributing to the growth in output. One of the explanations advanced to account for this residual was human capital (Seligman et al., 1997). Generally, the concept of human capital is considered as the stock of productive skills and technical knowledge embodied in labour which serves as means of production, into which additional investment yields additional output. In specific terms Seligman et al. (1997, p3) view human capital as “any quality specific to and undetachable from a person that allows her (or him) to perform economic tasks more efficiently, vigorously, or consistently-or allows her (or him) to lead a happier life”. According to the OECD (1998, p 9) human capital is “the knowledge, skills and competencies, and other attributes embodied in individuals that are relevant to economic activity”. On the part of Ehrlich and Murphy (2007) human capital has been defined as

an intangible asset, best thought of as a stock of embodied and disembodied knowledge, comprising education, information, health, entrepreneurship, and productive and innovative skills, that is formed through investments in schooling, job training, and health, as well as through research and development projects and informal knowledge transfers (p. 2).

Similarly, human capital is the stock of productive capacities of an individual, both inherited and acquired through education, training and health, which yields a flow of services (Becker, 1964). Unequivocally, these productive capabilities depend not only on one’s knowledge, education, training and productive skills but include useful behavioural habits and level of energy, physical and mental health.

The theory of human capital operates on the assumption that formal education is highly instrumental and necessary in improving the production capacity of a population. Similarly, education improves on the sexual and reproductive capacity of a population. Hence, human capital theory accentuates on how education increases the productivity and efficiency of workers by increasing the level of cognitive stock of economically productive human capability which is a product of innate abilities and investment in human beings (Sakamoto & Powers, 1995; Psacharopoulos & Woodhall, 1997). The human capital theorists argue that an educated and trained population is a productive population. Therefore, investment in education, training and health of a country could increase its human capital resource base and potential productivity.

Human capital development (HCD) is the process of facilitating improvement in the quality of technical knowledge, productive and innovative skills, competencies, values, attitudes and abilities of people necessary for the world of work. HCD is the process of capacity building and strategic mobilization of human capital which unlocks the door of modernisation, increases productivity and greater global trade as well as integrates them with the world economies (Kazmi, 2007). It involves the process of improving on the knowledge, skills and competencies, and other attributes embodied in individuals that are relevant to economic activity. In addition, it emphasises on the process of improving on the embodied and disembodied knowledge, comprising education, information, health, entrepreneurship, and productive and innovative skills that is formed

through investments in schooling, job training, and health, as well as through research and development projects and informal knowledge transfers (OECD, 1998; OECD, 2001; Ehrlich & Murphy, 2007).

3. The concept of adolescence

Adolescence comes from the Latin word ‘adolescere’ meaning “to grow up” or “to grow to maturity” (Muss, 1996). Generally, adolescence is considered as the transitional period between childhood and adulthood, during which young people experience changes following puberty, but do not immediately assume the roles, privileges and responsibilities of adulthood. Like the World Health Organisation, the United Nations Population Fund (UNFPA) defines adolescents as young people within the second decade of life, that is, persons between 10 and 19 years of age (WHO, 1998; UNICEF, 2005). Furthermore, the World Bank and the International Labour Organisation, like the World Programme of Action for youth refers to adolescents as “youth” who are between 15 and 24 years of age (UN Department of Economic and Social Affairs [UNDESA], 2003). Adolescence is viewed as a transitional stage between childhood and adulthood, from dependence on family to autonomy and could terminate in one’s late twenties or even early thirties in some regions. The stages of adolescence can be divided into three stages namely; early adolescents (10-13 years), middle adolescents (14-16), and late adolescents (17-19) (UN DESA, 2003; UNICEF, 2005).

As a concept, adolescence is a time of transition involving multi-dimensional changes with regard to their biological, psychological, physical, cognitive, emotional, social and behavioural characteristics of the adolescents (National Research Council [NRC], 2002; UNICEF, 2005). Biologically, adolescents experience pubertal changes, changes in brain structure and heightened sexual interest. Psychologically, the capacities of adolescents start maturing (NRC, 2002). These changes occur simultaneously and at different rate for each adolescent within each gender, with structural and environmental factors that often impact the development of adolescents (UNICEF, 2005). In early adolescence, physical changes include physical and sexual maturation commences. These changes continue through middle adolescence into the late adolescents. Over time, adolescents are thought to be less concerned with their body image than they are during early adolescence. Cognitively, adolescents in the early stage develop concrete thinking abilities, while in middle and late adolescence, the young person moves to thinking abstractly and can develop reasoning skills. Emotionally, adolescents in the early stage are beginning to explore decision-making opportunities, while in the middle adolescence; they begin to develop a sense of identity, and then established more fully in late adolescence. Socially, during this stage, peers become very influential and sexual interest usually begins. Social changes also occur through school, family and community roles and responsibilities. During the middle stage of adolescence, peers continue to hold influence, and sexual interest develops further. Finally, in late adolescence, adolescents transit into work and further schooling. Behaviourally, early adolescents begin to experiment with new ways of behaving, while middle adolescence is considered a time of risk-taking, ending in late stage adolescence, during which assessment of one’s own risk taking occurs (NRC, 2002; Resource Center for Adolescent Pregnancy Prevention [ReCAPP], 2003).

Adolescents are a large and growing segment of the world’s population. Estimates of the number of adolescents worldwide vary due to the inconsistency with how international agencies and individual countries define the composition of adolescence. For instance, adolescents number more than one billion, comprising nearly one-fifth of the world population (UN, 1994). Similarly, the World Programme of Action for Youth’s World Youth Report 2003 estimates that there are more than 1 billion youth ages 15 to 24, with 85percent inhabiting developing countries. Sixty percent of these young people live in Asia, 15percent in Africa, 10percent in Latin America and the Caribbean, and the remaining 15percent in developed countries and regions (UN DESA, 2003).

4. Adolescent sexual and reproductive health

Sexuality encompasses the physical capacity for sexual arousal and pleasure as well as the personalized and shared social meanings attached to both sexual behaviour and the formation of sexual and gender identity (Ceres, 1981). Adolescent sexuality is therefore the state of the human sexual life at puberty which is characterized by fantasy, feeling and attitudes that have as their own one or any combination of physical characteristics and physiological drives (Ellis & Abarbanel, 1961). On the whole, the experience of an individual’s sexuality as adolescents is mediated by biology, gender role, and power relation as well as by factors such as age and socio-economic conditions such as education, training, moral values, self-esteem and assertiveness (Dixon-Mueller, 1993; Zeidenstein & Moore, 1996). However, the extent of adolescents’ sexuality has implications for their reproductive health.

Hence, adolescent reproductive health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the adolescent’s reproductive system and to its functions and processes (UN, 1994). The implication is that adolescents are able to have the capacity to reproduce, and the freedom to decide if, when and how often to do so. The nature of adolescence differs

tremendously according to age, sex, marital status, level of education, skills, region and cultural context. However, the general improvement in adolescent sexual and reproductive health and other forms of human capital tend to increase the productivity of adolescents as students in school or under training or workers.

5. Sexual and reproductive health: Implications for human capital development among adolescents

It has become obvious that, the early indulgence of adolescents in sexual activity is motivated by inherent and acquired factors. This phenomenon of early sexual activity put adolescents at special risk of STIs including HIV/AIDS, health risk of early pregnancy, unintended pregnancy and complications of unsafe abortion and socio-economic consequences of early childbearing. In the long run their human capital potentials are not wholly and comprehensively developed.

STIs including HIV/AIDS infection among adolescents are not uncommon. Apart from HIV/AIDS, other STIs include gonorrhea, syphilis, chlamydia, genital herpes, chancroid, human papilloma virus and hepatitis among others. Generally, the incidence of STIs including HIV/AIDS among young people occurs in both developed and developing countries. For instance, among all age groups in the US, girls age 15-19 have had the highest incidence of gonorrhea among females, boys age 15-19 have had the second highest incidence among males (United States, CDC, 1995). In many developing countries, data indicated that up to 60 percent of all new HIV infections were among 15 to 24-year-olds. Again, Sub-Saharan Africa, contained almost two-thirds of all young people living with HIV-approximately 6.2 million people, 75 percent of whom were females (UNAIDS & WHO, 2000; UNAIDS, 2003).

Contracting an STI particularly HIV can affect a young person's prospects for education, on-the-job training, health, employability and improving upon his productive capacities in the future. The implication is that in countries where HIV rates are very high the potential labour force would be decimated on account of AIDS related deaths. Again, AIDS imposes both direct and indirect costs on national economies. The ILO notes that the cost of treating individuals infected with HIV/AIDS exceeds per capita GDP in a number of countries. Indirectly, resources allocated to combat AIDS may mean lower investments in education and health care, with consequences for the labour market and long-term economic growth (UN, 1994).

Another implication of early sexual activity is the health risk of early pregnancy of adolescents. Many adolescents are sexually active and more are likely to become pregnant and subsequently give birth. It is worth noting that when a woman is too young, pregnancy-wanted and unwanted-can be dangerous for both mother and infant. Complications of childbirth and unsafe abortion are among the major causes of death for women under age 20 (PRB & CPO, 1994). In addition, socioeconomic factors such as poverty, malnutrition, lack of education, and lack of access to prenatal care or emergency obstetrical care can increase a young woman's risk of pregnancy-related complications (Satin et al., 1994) and subsequently affect their human capital development or lead to death.

In situations where young girls and their babies survive, not only do they face enormous health risks but risk losing the benefits of investing in human capital development. For instance, adolescent parents, especially girls, are often compelled to leave school, resulting in limited economic opportunities that may adversely affect their well-being and that of their children. As the world economy changes, wage-paying jobs requiring formal education are displacing traditional occupations. Young parents whose education is interrupted have fewer opportunities to earn money for their families. Indeed, additional education and training pays off in the form of higher life-time incomes (Blaug, 1970; Gaiha, 1993).

One of the consequences of unprotected sexual activity among adolescents is unwanted pregnancy. In developing countries, approximately 60 percent of pregnancies and births to married and unmarried adolescents were unintended (ICRW, 1996). Increasingly, when young adults are confronted with unwanted pregnancy, they tend to abortion with little regard to its health, socioeconomic and legal consequences. Indeed, pregnant students in developing countries often seek abortion to avoid being expelled from school (Zabin & Kiragu, 1998).

In addition to the reduction of health risks, young women who delay childbearing until after adolescence have greater opportunities to develop their human capital by acquiring the needed knowledge and skills necessary for raising a family and competing successfully in the job market by improving on their productive capacities. Increased education is strongly associated with young women's postponement of marriage and childbearing until after her adolescent years (AGI, 1998; UN, 1994). Moreover, reducing illiteracy and improving the quality of education for young men and women are essential to raising their productivity and improving their employability in a highly competitive labour market. The quality and appropriateness of education and training have an impact on the employability of young people. Again, preparing young men and women for future employment, social participation, entrepreneurship and lifelong adaptation to changing socioeconomic circumstances increasingly requires good health, higher levels of education, supportive mentors and appropriate curricula (Schultz, 1981; UN, 1994). It is therefore important to encourage adolescents to delay sexual activity in order to avoid unintended pregnancy and the risk of abortion, which has the tendency of

impeding the development of human capital. Unintended pregnancy can be prevented by increased knowledge of sexuality and consistent use of contraceptives.

One of the possible ways of preventing, spacing, delaying pregnancy and hence early childbearing is through contraception. Adolescents have the right to precise information about contraceptive methods, including correct use, side effects, and how to reach a health care provider with their concerns (UN, 1994). Contraceptive choices for sexually active young adults include: abstinence, barrier methods (male and female condoms, spermicides, diaphragm, cervical cap), hormonal methods (combined oral contraceptives, oral contraceptives for emergency contraception, progestin-only oral contraceptives, injectables and implant), intrauterine devices and traditional methods (periodic abstinence, often called rhythm or “safe period,” and withdrawal) (McCauley & Salter, 1995; PAI, 1994).

Most studies in Ghana indicate that awareness of contraceptives among adolescents is high but its use is relatively low. These studies show that both male and female adolescents (married and unmarried) were aware of at least one modern family planning method (Agyei et al., 2000; Tweedie & Witte, 2000; Nunfam, 2011). However, contraceptive use was relatively low. Apart from the little or incorrect information about fertility and contraception, lack of access to contraceptives as a result of the difficulty of young adults in obtaining contraceptives than for older or married couples, adolescents’ contraceptive practices are affected by many contextual factors such as the extent of communication between partners, attitudes about social and sexual roles, and taboo influenced young adult’s sexual decision-making (Ajayi et al., 1991; Morris, 1995).

It follows that sexual and reproductive health conditions and decisions made by young people have immediate and long-term consequences for human capital development in terms of their participation in the labour market. For instance, low and inconsistent use of contraceptive which often results in unintended pregnancy or acquisition of STIs particularly HIV can irrevocably disrupt an adolescent’s life by standing in the way of further schooling, good health and employment. In terms of health it can affect their productive efficiency, learning capacity, coping skills and creativity. For instance, healthier individuals are more productive for a variety of reasons-increased vigour, strength, attentiveness, stamina, and creativity (Gaiha, 1993; Schultz, 1981). This means that when health improves the country can produce more output with any given combination of skills, physical capital and technological knowledge. Indeed, one way of maintaining a healthy young population is to encourage the use of contraceptives and to treat health as another component of human capital, analogous to the knowledge and skill component.

For an adolescent who is just beginning life, the risks of childbearing do not end with delivery. The adolescent is more likely to obtain less education, have fewer job possibility and lower income, be divorced or separated from her partner (Rahim & Ram, 1993). Most adolescents who start childbearing early complete less school than those who delay childbearing until their 20s. In developing countries students who become pregnant rarely return to school whether married or not (Gorgen et al., 1993). In Kenya and other countries schools routinely expel adolescents who become pregnant, while action is rarely taken against male students who cause pregnancy. Many of such girls risk unsafe abortion to avoid leaving school. As a result of the social and economic changes going on throughout the developing world, the economic consequences of early parenthood often are more extreme and long lasting than in the past. Therefore, adolescents who need higher life-time income/wage-paying jobs need additional/more education to get those jobs (Blaug, 1970; Schultz, 1981).

However, considering that women’s opportunities for economic advancement are scarce, early childbearing may worsen their already poor economic prospects, the ability to acquire higher education and good health for themselves and their children. In the extreme cases unmarried adolescent mothers may be forced to leave school and sell sex to support themselves and their infants (Weis & Muller, 1990). This behaviour inadvertently increases their vulnerability to disease and inability to further their education and/or improve upon their general health status. This may thwart efforts at improving upon their knowledge, productive skills and income potentials in future.

6. Sexual and reproductive health and human capital development: A conceptual framework

This paper relies on a two stage conceptual approach built to gain a clear and comprehensive understanding of how socioeconomic development is achieved through improvements in human capital development, which is inextricably linked to the promotion of sexual and reproductive health. The first stage is a conceptual framework developed by Pan American Health Organization (PAHO) on various factors at both individual and social or environmental level that promote adolescent sexual and reproductive health. The second stage comprehensively presents the mechanisms through which socioeconomic development is achieved through improved human capital development, which is also linked to the promotion of sexual and reproductive health.

The conceptual framework for adolescent sexual and reproductive health development constructed by PAHO addresses the sexual and reproductive health issues of adolescents that fall within the broader health promotion approach in human development. The framework operates on the assumption that when society does not fulfill and protect adolescent sexual rights, and fails to help youth achieve a healthy development, problems

of adolescent sexual and reproductive health arise. Therefore, youth problem-prevention, youth development and community development must not be seen and considered as separable goals (Pittman, 1996). In this regard, the PAHO conceptual framework considers the sexual and reproductive health issues of adolescents in the context of development.

Thus, the PAHO conceptual framework for sexual health includes a development-centered approach within the context of the family, culture and the environment. It describes the various factors that influence sexual health and reproductive health development outcomes. These include biological, psychosocial, and cognitive development as well as moral, ethical and spiritual development, self-esteem and emotional well being, and sexual identity at the *individual level* as shown in the second circle. At the *social and environmental level*, factors such as family care, peers, education level, society, gender roles, poverty, equity, rights and empowerment influence an adolescent's sexual and reproductive health development. Other important social factors include the mass media, health services, religious disposition, cultural forces and government policy as shown by the outer circle (Figure 1). All the factors at both levels are interwoven and interdependent in influencing the sexual and reproductive health of adolescents as indicated by the double-headed arrows. The environmental factors at one level indirectly influence the promotion of adolescent sexual and reproductive health through the individual factors. At the other level it influences the promotion of adolescent sexual and reproductive health directly.

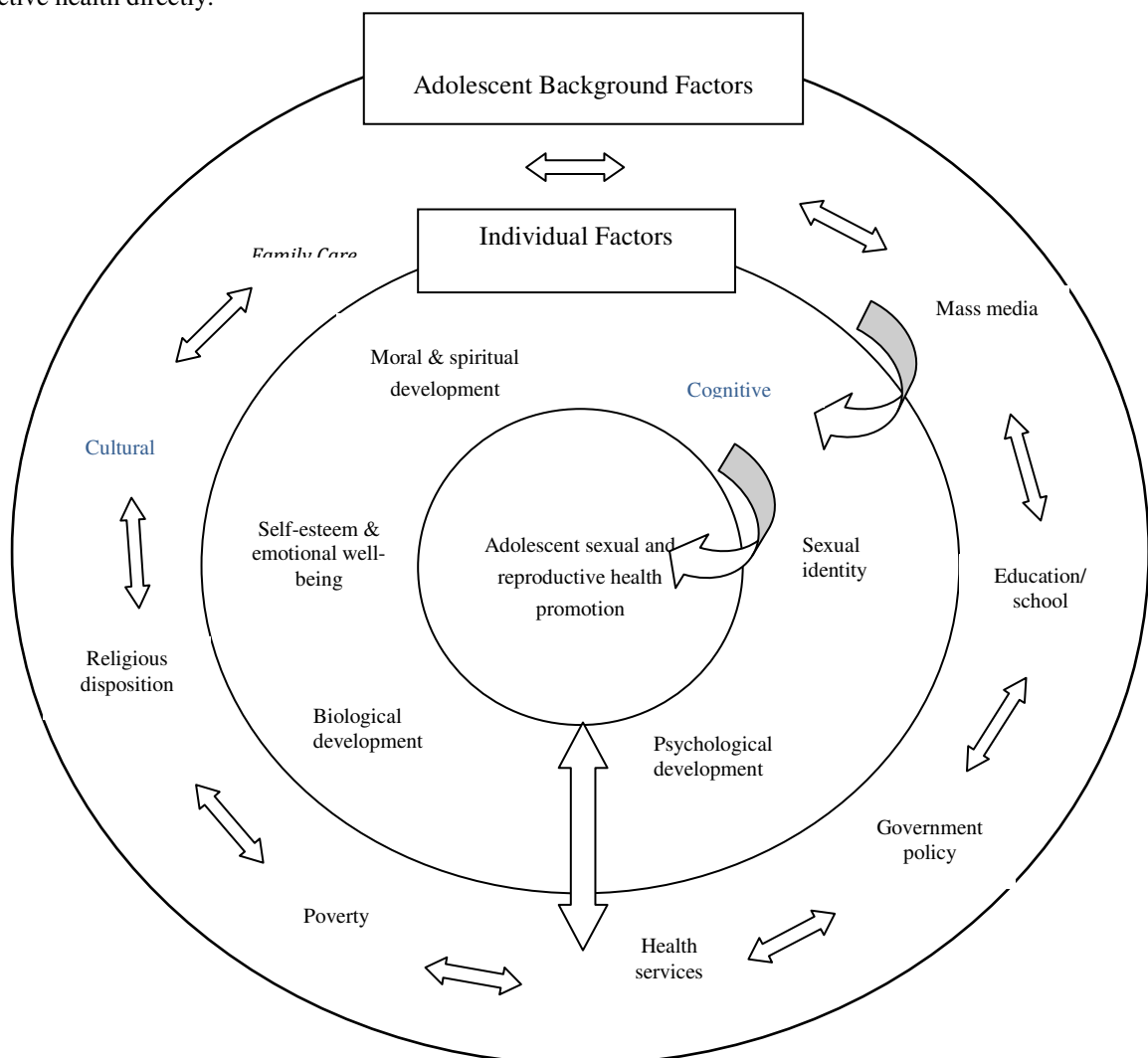


Figure 1: Conceptual framework for adolescent sexual and reproductive health promotion/development
 Source: PAHO (1998)

Notably however, sexuality, including adolescent sexual and reproductive health is promoted through the interaction between the individual and social structures. The implications of the interwoven and interdependent factors at the social/environmental and individual levels that influence the promotion of the sexual and reproductive health of adolescents could be positive or negative. In the positive sense, it can result in the

prevention of STIs including HIV/AIDS thereby preventing infertility, risk of injury, illness, and infant and maternal mortality, prevention of unintended pregnancy leading to childbearing, lost education, low earnings, unsafe abortion and its complications, protection from sexual violence and coercion (sexual abuse, rape, selling sex & multiple sex partners).

On the other hand, adolescent sexual and reproductive health could be influenced leading to the contraction of STIs including HIV/AIDS thereby putting the adolescent at risk of infertility, injury, illness, and infant and maternal mortality, the risk of unwanted pregnancy leading to early childbearing, lost education, low earnings and/or unsafe abortion and its complications, the risk of sexual violence and coercion (sexual abuse, rape, selling sex and multiple sex partners). The outcome of such poor adolescent sexual and reproductive health would result in poor human capital development and hence poor socioeconomic development. However, the outcome of good sexual and reproductive health promotion would result in human capital development, and hence contribute significantly to socioeconomic development.

Indeed, the conceptual framework constructed by PAHO for adolescent sexual and reproductive health is unique, comprehensive and exhaustive. It is adolescent specific and emphasizes the need for adolescent programmes to move beyond a problem-oriented approach to a development approach that promotes protective factors and resilience in youth; from individualized interventions to family and community interventions; from youth as recipients to youth as active participants and, from vertical approaches to coordinated, integrated efforts in health promotion and prevention. Also, the orientation of the framework for adolescent sexual health is a development-centered approach within the context of family, culture and environment. It is centered on healthy development, with sexual health and development as an integral component of overall health. Another unique feature of the framework is that, it comprehensively outlines the various factors that influence adolescent sexual health and development outcome.

However, it is significant to note that the promotion/development of adolescent sexual and reproductive health does not directly result in the development of human capital. Indeed, the framework as a development centred-approach falls short of linking the promotion of adolescent sexual and reproductive health to the development of adolescent human capital. There is, therefore, the need for the application of some sought of mechanism known as sectoral intervention through an intermediate proximate determinant for the development of adolescent human capital. This approach is the focus of the second stage of the conceptual framework for this thesis, human capital development for adolescent sexual and reproductive health.

Like the conceptual framework for adolescent sexual and reproductive health promotion developed by PAHO, the conceptual framework on human capital development for adolescent sexual and reproductive health is also development-centered. It operates on the assumption that investments that promote adolescent sexual and reproductive health improve human capital by contributing to knowledge, skills, health, self esteem and moral values. Unequivocally, the conceptual framework is derived from the essential elements discussed in the literature reviewed which fundamentally implies that, investments geared toward promoting adolescents sexual and reproductive health has the effect of improving on their human capital potentials. This translates into the general improvements in population quality and hence socio-economic development of people. Furthermore, gross investment in human capital entails both inherent and acquired knowledge and skills through education/training, contraceptive use through family planning services, improvement in health through the provision of health services and empowerment through the creation of employment opportunities.

Consequently, Figure 2 illustrates the link between adolescent sexual and reproductive health and improvement in population quality through human capital development. Accordingly, the outer circle in the figure shows categories of sectoral interventions for adolescent sexual and reproductive health. They include education and training, knowledge of family planning (contraception), reproductive health services and expansion of economic opportunities. The sectoral interventions are interwoven and interdependent and therefore operate in a supplementary and complementary manner as indicated by the double-headed arrows. In fact each element represents a sector-specific intervention with an outcome or intermediary to the human capital development.

First of all, family planning as an intervention is seen as a means of fertility regulation and improving on child and maternal health. It impacts directly on family size and child development which has implication for human capital development. Education and training as another intervention for human capital development is a means of directly acquiring knowledge and skills through formal education/schooling or on-the-job training. This has the tendency of increasing adolescent enrolment in schools or on-the-job training, and preventing the common phenomenon of totally expelling students/trainees from school or training especially pregnant adolescent girls. This helps in ensuring manageable future family size and child development, whilst increasing the utilization of maternal and child health, which intend reduces the risk of unwanted pregnancies, early childbearing and unsafe abortions. It also increases the opportunity for labour force participation and higher educational attainment and improves on the quality of the population through human capital development.

Secondly, the reproductive health services as an intervention include services that aim at preventing unwanted pregnancy, reducing reproductive tract infections including HIV/AIDS. It also aims at reducing child and maternal morbidity and mortality, reproductive cancers, female genital cutting as well as reducing or managing infertility and preventing gender based sexual violence and coercion. Also, the development of adolescent human capital through their empowerment can be realized by expanding their economic opportunities. Adolescents can be empowered by ensuring their rights in general and in particular their sexual and reproductive health rights, increasing their access to knowledge and employable skills as well as credit. This enhances their ability to negotiate, make wise decisions, boost their self-esteem and reduce adolescents' risk or vulnerability especially from social factors. Any measure or programme linked to sectoral interventions should have an impact on the specific factors that directly influence human capital formation. The proximate or intermediate determinants of human capital include knowledge, contraceptive, health status and empowerment as indicated in the second circle in Figure 2. Consequently, improvements in these outcomes should be expected to influence the development of human asset as illustrated in Figure 2

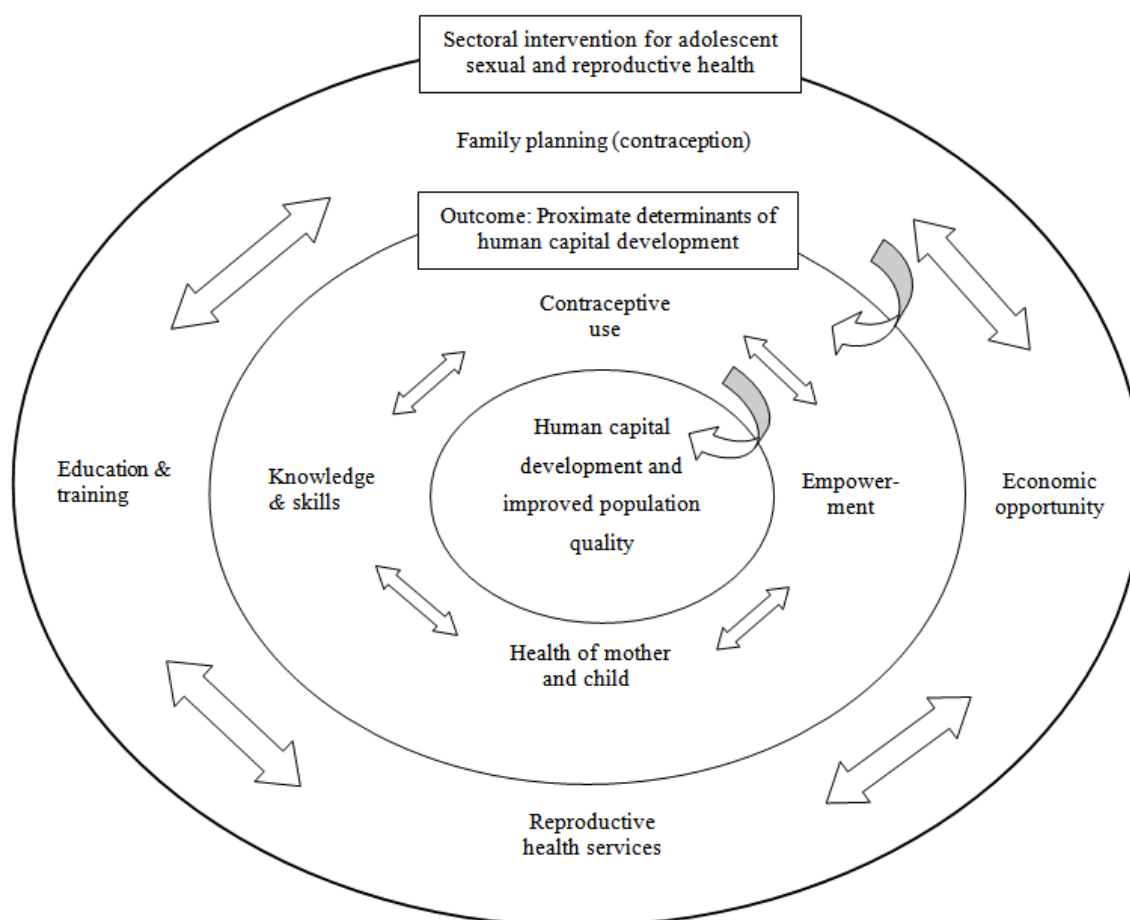


Figure 2: Human capital development for adolescent sexual and reproductive health: a conceptual framework

Source: Nunfam (2011)

Knowledge and skills as an outcome of education and training, directly improve on one's value. They are fundamental to the theory of human capital. The acquisition of more knowledge and skills raises the value of an individual's human resources, thereby increasing his/her employability, income potential and productivity. Knowledge increases an individual's awareness and general outlook about things around him and makes him better at performing task more vigorously, consistently and more efficiently.

In addition, the use of contraceptives as an element of family planning especially the use of condoms and abstinence among other measures allow individuals and women in particular to prevent early pregnancy and childbearing, and the contraction of STIs including HIV/AIDS thereby promoting good sexual and reproductive health and hence improving on their human capital. Similarly, access to family planning services contributes to a reduction in fertility, which frees up household resources and allows women to make more investments in education (Joshi, 2012). Eventually, reduced family size allows a woman to spend more time on activities that

either directly improve her productive capacities (for example, by using time which hitherto would have been spent on childbearing to work or acquire more knowledge and skills) or that help her children to develop mentally, socially, spiritually and emotionally. Moreover, the need for children has long term physical, social, and mental consequence on the health of the woman and hence stifling human capital improvement or development.

Also, the health status of both mother and child as a result of better and efficient health care or services often leads to good health, and hence improvement in human capital. Indeed better health status of a woman allows her the opportunity to undertake her roles more effectively and confidently. Thus, in most low-income Third World households, women have a triple role (Beneria, 1979). Women's work or roles include not only reproductive work but also productive work and community managing work. The reproductive role comprises childbearing, rearing responsibilities and domestic tasks. This role undertaken by women is required to guarantee the care, maintenance and reproduction of the workforce (husband and working children) and the future workforce (infants and school-going children) (Moser, 1993). Productive role according to Moser comprises work done by both women and men for payment in cash or kind. These include both market production with an exchange value, and subsistence/home production with an actual use-value, but also a potential exchange value. Community managing role consist of activities undertaken primarily by women at the community level, as an extension of their reproductive role. This is to ensure the provision and maintenance of scarce resources of collective consumption, which include water, health care and education. It is voluntary unpaid work, undertaken in 'free time' (Moser, 1993). Developments in maternal and child health also contribute to longer life expectancy, thereby creating a stronger rationale for women to invest in their children's education as well as their own (Joshi, 2012). Such activities directly or indirectly relate to improving her children's human capital development.

Furthermore, empowerment is the fourth element of the proximate determinants of human capital development. It is an outcome of enhancing economic opportunities for women and indeed adolescents, which improves on their human capital. By enhancing the economic opportunities of women or adolescents through empowerment, the choices available to them is expanded thereby enhancing their ability to benefit from other social investments notably education, health services and family planning. Therefore, given expanded choices and the chance to participate in decision-making at all levels, adolescents may be empowered to direct their skills and energies to activities in which they are most productive or rewarding. In sum, improved population quality as a result of improved human capital development in the third and last circles of Figure 2 respectively, is the resultant impact of the operations of the sectoral interventions leading to the proximate determinants.

7. Conclusion and implication

The review and analysis in this paper focused on the conceptual linkage between sexual and reproduction health promotion and human capital development. It is imperative to note that sexual and reproductive health promotion is fundamental to human capital development. It is obvious that the conceptual framework of PAHO illustrates that factors such as biological, psychosocial, and cognitive development; moral, ethical and spiritual development; self-esteem, and emotional well being; and sexual identity at the individual level influence an adolescent's sexual and reproductive health promotion. In addition, factors such as family care, peers, education, gender roles, poverty, equity, rights and empowerment, the mass media, health services, religious disposition, cultural forces and government policy at the social and environmental levels influence an adolescent's sexual and reproductive health promotion. Consequently, sectoral interventions for adolescents such as education and training, knowledge of family planning (contraception), reproductive health services and expansion of economic opportunities as well as proximate determinants such as knowledge and skills, conceptive use, health of mother and child, and empowerment influences human capital development. Accordingly, increased investments in adolescent sexual and reproductive health promotion have the capacity and potential of extending life expectancy for mothers and children, increasing incentives to invest in education and training as well as other forms of human capital. It also creates economic opportunities for economic empowerment by raising adolescents' capacities to be productive in labour markets and lead to higher incomes and asset build-up. Hence, sustainable investment that promotes sexual and reproductive health of adolescents facilitates human capital development in the long run.

References

- Agyei, W. K. A., Biritwum, R.B., Ashitey, A.G., & Hill, R.B.(2000). Sexual behaviour and contraception among unmarried adolescents and young adults in Greater Accra and Eastern Regions of Ghana. *Journal of Biosocial Science*, 32(4), 495 -512.
- Ajayi, A. A., Marangu, L. T., Miller, J., & Paxman, J. M. (1991). Adolescent sexuality and fertility in Kenya: A survey of knowledge, perceptions and practice. *Studies in Family Planning*, 22(4), 205-216.
- Alan Guttmacher Institute (AGI) (1998). *Into a new world: Young women's sexual and reproductive lives*. New

- York: The Alan Guttmacher Institute.
- Awusabo-Asare, K., Biddlecom, A., Kumi-Kyereme, A. & Patterson, K. (2006). *Adolescent sexual and reproductive health in Ghana: Results from the 2004 national survey of adolescents*. Occasional report, New York: The Alan Guttmacher Institute. No. 22
- Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis with special reference to education*. New York: Columbia University Press.
- Beneria, L. (1979). Reproductive and sexual division of labour. *Cambridge Journal of Economics*, No. 31, pp. 203-225
- Blaug, M. (1970). *An introduction to the economics of education*. Britain: Allen Lane. The Penguin Press.
- Bourdieu, P. (1986). The forms of capital. In J. Richardson (Ed.), *Handbook of Theory and Research for the Sociology of Education* (pp. 241-258). New York: Greenwood Press. Retrieved on June 12, 2007 from <http://www.oise.utoronto/>
- Ceres, G. (1981). *Espellode venus: Identidade social da mulher*. Sao Paulo: Editora Brasiliense.
- Dixon Mueller, R. (1993). The sexuality connection in reproductive health. *Studies in Family Planning*, 24(5), 269-282.
- Ehrlich, I. & Murphy, K. M. (2007). Why does human capital need a journal? *Journal of Human Capital*, 1(1), 1-7.
- Ellis, A. & Abarbanel, A. (Eds.) (1961). *The encyclopaedia of sexual behaviour*. New York: Hawthorn Books Inc. publishers. 1.
- Fisher, W.A., & Fisher, J.D. (1998). Understanding and promoting sexual and reproductive health behavior: Theory and method. *Annual Review of Sex Research*, 9, 39-76.
- Gaiha, R. (1993). *Design of poverty alleviation strategy in rural areas*. Rome: Food and Agricultural Organisation of the United Nations
- Goodwin, N. R. (2003). *Five kinds of capital: Useful concepts for sustainable development*. Global Development and Environment Institute, Working Paper No. 03-07. Retrieved on March 1, 2005 from <http://www.ase.tufts.edu/gdae>
- Gorgen, R., Maier, B., & Diesfeld, H.J. (1993). Problems related to school-girl pregnancies in Burkina Faso. *Studies in Family Planning*, 24(1), 283-294.
- Harbinson, F. (1973). *Human resource and health of nation*. New York: Oxford University Press.
- Health Canada. (2003). *Canadian guidelines for sexual health education*. Ottawa, ON: Population and Public Health Branch, Health Canada.
- ICRW (1996). *Vulnerability and opportunity: Adolescents and HIV/AIDS in adolescent reproductive health: The developing world*. Washington, DC: ICRW
- Joshi, S. (2012). Reproductive health and economic development: What connections should we focus on? Washington, US: Population Reference Bureau
- Kazmi, S. W. (2007). *Vocational Education and Skills Development: A Case of Pakistan*. Retrieved on March 13, 2013 from www.shrhc.org/doc/.../8.%20Syeda%20Wadiat%20Kazmi.pdfShar
- Kumi-Kyereme, A., Awusabo-Asare, K., & Biddlecom, A. (2007). *Adolescents' sexual and reproductive health: Qualitative evidence from Ghana*, Occasional report, New York: Guttmacher Institute. No. 30
- McCauley, A. P. & Salter, C. (Eds.). (1995). Meeting the needs of young adults. *Population Reports*, Series J, No. 41. Baltimore: Johns Hopkins School of Public Information Programme.
- Morris, L. (1995). *Sexual behaviour and contraceptives use among young adults in Central America*. Presented at the Symposium on Population in Central America, San Jose, Costa Rica, p. 25.
- Moser, C. O. N. (1993). *Gender planning and development: Theory, practice and training*. London and New York: Routledge. pp. 27-36.
- Muus, R. E. (1996). *Theories of adolescence*. (6th ed.). McGraw-Hill.
- National Research Council [NRC] (2002). *Community programs to promote youth development*. Washington: National Academies Press
- Nunfam, V. F. (2011). *Adolescent sexual and reproductive health awareness: The experience of Ajumako-Enyan-Essiam District*. Germany: Lambert Academic Publishing, ISBN: 978-3-8465-3112-9
- OECD (1998). *Human capital investment: An international comparison*. Paris: Organisation for Economic Cooperation and Development.
- OECD (2001). *The well-being of Nations. The role of human and social capital*, Paris: OECD
- Pan American Health Organisation (PAHO) (1998). *Plan of action on health and development of adolescents and youth in the Americas: 1998-2001*. Division of Health Promotion and Protection. Family Health and Population Program.
- Pittman, K. J. (1996). *Excerpts taken from presentation entitled: Prevention problem or promoting development - Competing priorities or inseparable goals*. International Youth Foundation.
- Population Action International (PAI) (1994). *Choosing a contraceptive: considerations for youth*. [Chart]

- Washington D.C.
- Psacharopoulos, G. & Woodhall, M. (1997). *Education for development: An analysis of investment choices*. New York: Oxford University Press
- Rahim, A. & Ram, B. (1993). *The impact of adolescent childbearing on the risk of marital dissolution in Canada*. Presented at the International Population Conference. Montreal Canada. p. 13.
- Resource Center for Adolescent Pregnancy Prevention [ReCAPP] (2003). *An overview of adolescent development. Education, training and research associates*. Retrieved on January 6, 2014 at www.etr.org/recapp/theories/adolescentdevelopment/overview.htm.
- Sakamota, A. & Powers, P. A. (1995). Education and the dual labour market for Japanese men in America. *Social Review*, 60(2), 222-246.
- Satin, A., Leveno, K. J., Sherman, M. L., Reedy, M.Y., Lowe, T.W. & Montire, D. D., & McIntire, D.D. (1994). Maternal youth and pregnancy outcomes: Middle school versus high school age groups compared with women beyond the teen years. *American Journal of Obstetrics and Gynecology*, 171(1), 184-187.
- Schultz, T. W. (1963). *The economic value of education*. New York and London: Columbia University Press.
- Schultz, T. W. (1981). *Investing in people: The economics of population quality*. Berkeley: University of California Press.
- Schutt-Aine, J. & Maddaleno, M. (2003). *Sexual health and development of adolescents and youth in the Americas: Programme and policy implications*. Washington, D.C.: PAHO
- Seligman, B., Kress, D., Winfred, W., Feranil, I. & Agarwal, K. (1997). *Reproductive health and human capital: A framework for expanding policy dialogue*. The Policy Project. Futures Group International. RTI and CEDPA. Retrieved on March 20, 2006 from <http://www.tfgi.com>
- SIECCAN (2004). Adolescent sexual and reproductive health in Canada: A report card in 2004. *The Canadian Journal of Human Sexuality*, 13 (2).
- Tweedie, I. & Witte, K. (2000). *Ghana youth and reproductive health survey report*. Accra, Ghana: Ghana Social Marketing Foundation.
- UNAIDS (2003). *Progress report on the global response to HIV/AIDS, 2003*. Geneva. Retrieved on April 16, 2006 from <http://www.unaids.org/>
- UN Department of Economic and Social Affairs [UN DESA](2003). *World youth report 2003: The global situation of young people*. UN: New York, NY.
- UNAIDS & WHO (2000). *Report on the global HIV/AIDS epidemic: December 1998*. Retrieved on April 16, 2006 from <http://www.unaids.org/publications/>
- UNFPA (2002). *Prevention of HIV transmission to pregnant women, mothers and their children (PMTCT)*. Inputs for the Bangkok Report. Geneva: WHO
- UNICEF (2005). *Adolescent development: Perspectives and frameworks*. New York: Adolescent Development and Participation Unit, UNICEF.
- United Nations (1994). *Programme of action adopted at the International Conference on Population and Development, Cairo*. New York: United Nations. Retrieved on April 20, 2006 from www.iisd.ca/linkages/Cairo
- United States, Centre for Disease Control (CDC) (1995). *Division of STD/HIV prevention: 1994 annual report*. Atlanta, Georgia. p.138.
- Weis, P. & Muller, U. (1990). Unwanted pregnancies in unmarried young women in Rwanda. In: M. Bouzidi, & R. Korte, ed. *Family planning for life: Experiences and challenges for the 1990s. Paper presented at the Conference on Management of Family Planning Programmes*, Harare, Zimbabwe, 1-7 Oct. 1989. London: International Planned Parenthood Federation, p. 111-114.
- WHO (1998). *The second decade: Improving adolescent health and development goal*. Geneva: World Health Organisation. Retrieved on July 25, 2014 from <http://www.who.int/reproductive.Health/docs/adolescenthealth.html>
- Zabin, L. & Kiragu, K. (1998). Health consequences of adolescent sexuality and fertility behaviour in Sub-Saharan Africa. *Studies in Family Planning*, 29(2), 210-232.
- Zeidenstein, S. & Moore, K. (Eds.). (1996). *Learning about sexuality: A practical beginning*. New York: Population Council.

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