

Transition Gone Bad? Teenage Pregnancy and Suggested Remedies In A Rural Community In Eastern Uganda

Nandyose Erone¹, Nanteza Dorothy¹, Nantale Ritah¹, Ndyamuba Benjamin¹, Magumba George¹, Ntegeka Slyvia², Nteziyaremye Julius³, Rebecca Nekaka¹ and Wandawa Julius³

¹Department of community and Public Health, Faculty of Health Sciences, Busitema University, Uganda

²Bududa Hospital, Bududa local government, Uganda

³Department of Obstetrics and Gynaecology, Faculty of Health Sciences, Busitema University, Uganda

Corresponding Author*

Julius N

Department of Obstetrics and Gynaecology,
Faculty of Health Sciences, Busitema University,
Uganda

Tel: +256706614213

Email: jntezi@gmail.com

Copyright: 2020 Julius N, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Received 08 May, 2020; **Accepted** 17 Jul, 2020; **Published** 24 July, 2020

Abstract

Introduction

The transition from childhood to teenage stage is a critical moment in one's life cycle and presents with complex psychological challenges, opportunities and risks such as teenage pregnancy (TP). It predisposes to increased risk of adverse maternal and perinatal outcomes. Uganda has a high teenage pregnancy rate averaging 25%. Quite often solutions directed against it fail to deliver desired results. This study reports effects of, risk factors, and remedies from the teenagers' perspective in Bududa district.

Methods: A community-based cross-sectional study was employed. Using interviewer administered questionnaires; quantitative data amongst 150 randomly sampled teenagers was collected. Data were entered into Microsoft Excel and imported to SPSS version 16 for analysis. Simple proportions were used to describe categorical and numerical data.

Results: Mean age of participants was 16.9yrs (IQR16- 18yrs).The majority, 59.3 % were below 18 years with 4.7% being 13yr olds. The majority, 69.4% were lowly educated, none was formally employed while 64% were married. Knowledge of sexual and reproductive health (SRH) was low. Possible risk factors to teenage pregnancy included cultural events, poverty and fertility testing. The majority associated TP with various negative social and health outcomes. Suggested remedies against TP included early age and school based SRH programs and provision of long term contraception.

Conclusion: Teenage pregnancy is a public health problem in Bududa and victims suffer various adverse effects. Provision of SRH services, incorporating comprehensive sex education in the school curriculum and improved supervision during social-cultural gatherings is critical in fighting TP.

Keywords: Teenage pregnancy • Kadodi • Comprehensive sexual education • Eastern Uganda

Introduction

World Health Organization (WHO) defines the age group 13-19 as teenagers [1]. The transition from childhood to teenage stage may cause unstable emotions to some teenagers and may bring with it complex psychological challenges. If a teenager is affected at this stage, one may reap a sorrowful life. The World Health Organization (WHO) defines teenage pregnancy as pregnancy in which the mother is under the age of 20 at the time the pregnancy ends [2]. As put by several researchers, pregnancy in very young women is generally considered to be a very high risk event, because teenage girls are physically and psychologically immature for reproduction[3-5] and

those in the rural areas are most affected[6]. Approximately 21 million girls aged 15-19 years become pregnant in the developing World and about 12 million give birth with approximately 777,000 births occurring to girls below 15 years of age in the developing World [7-9]. Teenage pregnancy and childbirth complications are the leading cause of death among girls aged 15-19 years globally, with low- and middle-income countries (LMIC) accounting for 99% of global maternal deaths of women in the reproductive age group[10]. Therefore teenage pregnancy remains one of the threats to attainment of sustainable development goals 3.1[11].

Teenage pregnancy is common in Africa especially Sub-Saharan Africa. In a systematic review and meta-analysis of published and unpublished studies in Africa by Getachew et al, the overall prevalence of teenage pregnancy in Africa was 18.8% with a peak of 19.3% in Sub-Saharan African (SSA). Among the African regions, East African region registered the highest prevalence of 21.5% compared to the lowest one of 9.2% in the North Africa region[12]. Moreover a multi-level analysis of risk and protective factors of Pregnancy and early motherhood among teenagers in five East African countries based on weighted subsample of teenager's age group of 15-19 years, teenage pregnancy and early motherhood was common in the five countries, ranging from 18% in Kenya (2014) to 29% in Malawi (2016) and Zambia (2014)[13]. Specifically in the Eastern region of Africa, teenage pregnancy rates are as high as 28.6% in Ethiopia [14]. The average teenage prevalence in Uganda is as high as 25%, with 27% in rural areas and 19% in urban areas [15] but in-country variations such as the 35.8% prevalence in Kibuku have been noted[16]

Teenage pregnancy continues to be a public health problem with increased odds of adverse birth outcomes such as pre-term delivery, low birth weight, birth asphyxia and neonatal mortality[17-19], preeclampsia[6], eclampsia, puerperal endometritis, systemic infections[19]. The 2016 Uganda Demographic and Health Survey reported one of the highest Maternal mortality ratios of the World at 336 per 100,000 live births and 17.1% of these were contributed by adolescents/teenagers aged 15-19year[15]. Notwithstanding, 3.9 million unsafe abortions among girls aged 15-19 years contribute to significant maternal mortality and morbidity each year[7]. Moreover teenage mothers are likely to have poor social support in terms of both availability and adequacy and therefore unless they cope, they are more at risk of mental health problems[3, 19]. Furthermore, their children are likely to experience delayed cognitive development, lower levels of language skills, academic failure, poor social outcomes, and risk of becoming the next generation teen mothers and the high possibility of ending up in foster care. (People, 2008). Teenager pregnancy is thus a source of poverty more often than not. Several factors are associated with teenage pregnancy. These include but are not limited to poverty, low level of education, none use of contraception, peer pressure, lack of sexual education [12, 20-25].

Several strategies have been suggested to tackle teenage pregnancies especially in those more at risk. In the United Kingdom, provision of mentors to the looked after children(LAC) proved helpful but also recognized the fact that these mentors needed an opportunity to pass on knowledge on sex and relationships[26]. The objective of this study was to determine the factors contributing to higher teenage pregnancies, its effect on the teenagers and suggested solutions to curtail the problem.

Methods

Study Design and Study Area.

A Cross-sectional study design was used. The study was carried out in Bududa District town located in the Eastern Uganda, bordered by the Republic of Kenya in the East; Sironko district in the North, Mbale in the West, Kween in the Northeast, and Manafwa in the South.

Bududa has a population of 106,519 males and 103,654 females (total=210,173 people) with 93% in rural areas while 7% are urban[27]. Adolescents constitute 29% of the general population (30,781 males and 30,183 females)[28]. The Bamasaba dominate the indigenous population and

constitute 98% of the total population. By multistage sampling, 2 parishes (Buloli south and Buloli north) out of the 5 parishes in the district were randomly selected from Bududa town council. There is a total of 6 cells in these 2 parishes which are; Mayenze cell, Masina cell, Buloli A cell, Soweto cell, Bududa township cell and Bududa hospital quarters cell.

Study Population, sampling and sample size

By simple sampling technique teenagers (13-19years) residing in Buloli south and north parishes who were either pregnant or had had a baby at most 1 year prior to the study period were recruited. Since the Village health teams records had 300 teenagers that fulfilled the criteria (N=300), we aimed to recruit at least 25 teenagers from each of the 6 cells. In total 150 teenagers from the 6 cells were recruited with the help of village health teams.

The sample Size was calculated using Leslie and Kish (1965), $n_0 = Z^2pd/e^2$ Where; n_0 is the derived sample size, Z= the value that corresponds to the 95% confidence level= 1.96, p= the proportion of the variable of interest (teenagers having a child), d= 1-p, e= acceptable error to be committed (+/- 4.6%)

Thus, $n_0 = (1.96^2 \times 0.25 \times 0.75) / 0.05^2 = 288$, Taking into consideration the 10% non response rate, we arrived at 291. We modified the Cochran formula, $n = n_0 / (1 + (n_0 - 1) / N) =$

$$291 / (1 + (291 - 1) / 291) = 291 / (1 + 290 / 291) = 291 / (1 + 0.97) = 291 / 1.967 = 148$$

Data Collection and management

Quantitative data were collected with the aid of face-to-face interviewer administered pretested questionnaires. The questionnaire was pretested on 10 teenagers from Namatala cell, Mbale municipality. Variables of interest were social, economic, cultural, and sexual and reproductive health related

knowledge, effects of teenage pregnancy, and ways to prevent it. Data was cleaned and double entered into a password-protected Microsoft excel database. To ensure anonymity of the participants, data related to the personal identifiers were removed and coded. Hard copies of the data, including survey questionnaires were kept in locked boxes and/or file cabinets. The data was analyzed with SPSS (Statistical Package for Social Sciences) software program version 16. Simple proportions were used to describe categorical and numerical data.

Research clearance, approval and ethical considerations

Results

The mean age of participants was 16.9yrs (IQR 16- 18yrs).The majority, 59.3 % (83/150) were below 18 years with 4.7% being 13yr olds. Significantly the majority were christians with protestants constituting 45.3 % (68/150), catholics 22.7% and muslims 19.3%.Over half of them,60.7%(91/150) either had no formal education or had stopped at primary level while 10%(15/120) had gone beyond secondary level of education. Furthermore, only 2.7 % (4/150) were formally employed. Whereas 64% were married, with the rest 2% were widowed,4% divorced and 30% single (Table 1).

The majority, 69.3% said that onset of menarche was between 10-15 years of age whereas 16% were not sure. Significantly slightly fewer than 50%, that is 44.7% did not know that one could conceive before menarche. Moreover 98% had ever heard about contraception with pills and injectables being the most pronounced at 43.5% and 33.2% respectively. The most quoted sources of information regarding contraception were the health workers at 43%, school authorities 23% and parents 8%. The major point of access for contraceptives was the health centre at 69.8% followed by drug shops at 14.7%.The major hindrance to access was the poor perception of the elders at 23.2%. All the mothers went for a health check during the pregnancy and 92.9% did so at a health facility (Table 2).

Table 1: Sociodemographic characteristics of the study participants.

Variable	Number (%)
Age	
13	7 (4.7)
14	13(8.7)
15	17(11.3)
16	18 (12)
17	28 (18.7)
18	32(21.3).
19	35(23.3)
Religion	
Roman Catholic	37 (22.7)
Anglican	68(45.3)
Muslims	29 (19.3)
Others(born again, orthodox, seventh day, none believer)	16 (10.7)
Residence	
Buloli North	75(50)
Buloli South	75(50)
Marital status	
Married	96 (64)
Single	45(30)
Divorced	6(4)
Widowed	3(2)
Education level	
None /lower than primary	91(60.7)
Primary	13 (8.7)
Secondary	31(20.7)
Tertiary/University	15 (10)
Occupation	
Peasants	65 (44.5)
Housewife	32 (21.9)
businesswoman	19 (13.0)
Formal	0 (0)
Others	30 (20.5)

The mean age of participants was 16.9yrs (IQR 16- 18yrs).The majority, 59.3 % (83/150) were below 18 years with 4.7% being 13yr olds. Significantly the majority were christians with protestants constituting 45.3 % (68/150), catholics 22.7% and muslims 19.3%.Over half of them,60.7%(91/150) either had no formal education or had stopped at primary level while 10%(15/120) had gone beyond secondary level of education. Furthermore, only 2.7 % (4/150) were formally employed. Whereas 64% were married, with the rest 2% were widowed,4% divorced and 30% single (Table 1).

Regarding socio-cultural factors that predispose to teenage pregnancy, several social and cultural aspects were shared. The majority believed that teenagers gather most during the male circumcision rituals (Kadodi) of the Bamasaba (a tribal grouping in Eastern Uganda; also called Bagishu) people

,64.1% (141/220 responses) while only 1.8% (4/220 responses) gathered during health talks. Consequently 69%(100/145) believed that kadodi gathering could have put them at risk of pregnancy followed by the Inemba (the cultural dancing following the year of circumcision of the Bamasaba).

Table 2: Sexual and reproductive health Knowledge among the Teenagers

Variable	Number (%)
Age of menarche	
8- 10 years	9 (6)
10- 15 years	104(69.3)
15- 20 years	13 (8.7)
Did not know	24 (16)
Can one get pregnant before menses	
Yes	82(54.7)
No	67 (44.7)
I do not know	1(0.7)
Possibility of conceiving at sexual debut	
Yes	89 (59.3)
No	60 (40)
I don't know	1(0.7)
Ever heard about contraception	
Yes	138 (92)
No	12 (8)
Known methods of contraception	
Pills	80 (32.1)
Injectables	61 (24.5)
Implants	25 (10)
Intrauterine devices	12 (4.8)
Breastfeeding	6 (2.4)
Others (condoms, piriton(chlorpheniramine) before sex, aspirin before sex and traditional herbs)	65(26)
Total	249(100)
Source of information on methods that prevent pregnancy	
Health worker	59 (43)
School	32 (23)
Friends	23 (17)
Parents	11 (8)
Community leaders	10(7)
Others	3(2)
Do Teenagers access methods of preventing pregnancy	
Yes	124 (82.7)
No	26 (17.3)
Point of access for methods of preventing pregnancy	
Health center	90 (69.8)
Village Health Team	2 (1.6)
Drug shop	19 (14.7)
Friend	5 (3.9)
Others	13 (10.1)
Reasons for not accessing contraception	
Poor perception by elders	35 (23.2)
Insufficient supplies at the health facility	12 (7.9)
Religion forbids	11 (7.3)
Lack of knowledge on these methods of preventing pregnancy	6 (4)
Cultural hindrances	6 (4)
Others	81(53.6)
Total responses	254 (100)
Medical checkup during pregnancy	
Yes	150(100)
No	0 (0)
Source of medical checkup services during pregnancy	
Traditional birth attendant (TBA)	1(0.6)
Health center	144 (92.9)
Aunties	5 (3.2)
Others	5(3.2)
Total responses	155 (100)

Reasons for medical check up

Did it because everyone does it	9 (5)
To take necessary medication	73 (40.6)
For Antenatal	82 (45.6)
Others	16 (8.9)
Total responses	180 (100)

The majority, 69.3% said that onset of menarche was between 10–15 years of age whereas 16% were not sure. Significantly slightly fewer than 50%, that is 44.7% did not know that one could conceive before menarche. Moreover 98% had ever heard about contraception with pills and injectables being the most pronounced at 43.5% and 33.2% respectively. The most quoted sources of information regarding contraception were the health workers at 43%, school authorities 23% and parents 8%. The major point of access for contraceptives was the health centre at 69.8% followed by drug shops at 14.7%. The major hindrance to access was the poor perception of the elders at 23.2%. All the mothers went for a health check during the pregnancy and 92.9% did so at a health facility (Table 2).

Table 3: Socio-cultural factors related to teenage pregnancy in Bududa.

Personal opinion on teenage pregnancy	
It is fine	38 (25.3)
Not right age(still young)	84 (56)
If parents allow no problem	20(13.3)
Depends on man's decision	2(1.3)
Others	6(4)
Responsibility if teenage girl gets pregnant	
Male who gets teenager pregnant	60 (40)
Both teenage girl and male partner	35 (23.3)
Teenage girl herself	8(5.3)
Parents of the girl	47(31.3)
Culture's opinion on teenage pregnancy	
Prestigious	12 (8)
Bad habit	112(74.7)
No one bothers	12 (8)
Parental responsibility	12 (8)
Others	2 (1.3)
Do social events contribute to teenage pregnancies	
Yes	145(96.7)
No	5(3.3)
Events where many teenagers gather in Bududa town council	
Kadodi	141(64.1)
church gathering	32 (14.5)
health talk sessions	4 (1.8)
Voting	12 (5.5)
Others (disco, Inemba, football clubs)	31 (14.1)
Total responses	220(100)
Impact on Events impact on prevalence of teenage pregnancy	
Kadodi	100(69)
Inemba	35(24.1)
Disco	8(5.5)
Crusade	2(1.4)
Predisposing factors to teenage pregnancy	
To get money	115 (45.3)
Testing fertility	41 (16.1)
Ignorance on contraception	29 (11.4)
Ignorance about teenage pregnancy	33 (13)
Cultural prestige	13 (5.1)
Others (peer influence, indiscipline, no use of family planning because it reduces sweetness)	23 (9.1)
Total responses	254 (100)

Regarding socio-cultural factors that predispose to teenage pregnancy, several social and cultural aspects were shared. The majority believed that teenagers gather most during the male circumcision rituals (Kadodi) of the Bamasaba (a tribal grouping in Eastern Uganda; also called Bagishu) people, 64.1% (141/220 responses) while only 1.8% (4/220 responses) gathered during health talks. Consequently 69%(100/145) believed that kadodi gathering could have put them at risk of pregnancy followed by the Inemba (the cultural dancing following the year of circumcision of the Bamasaba). Furthermore, 45.3% believed they got pregnant because they were ruded into sex for money, 16% were testing fertility, while 13% confessed to have been ignorant of contraception. (Table 3)

Furthermore, 45.3% believed they got pregnant because they were ruded into sex for money, 16% were testing fertility, while 13% confessed to have been ignorant of contraception. (Table 3)

Of the 150 participants, 87 % (130/150) regretted TP and 98.7%

acknowledged negative effects. The top three highlighted negative social effects were dropping out of school, 25.4%, being chased away from home, 22.7%, and forced marriages, 21.6%. The top four highlighted medical complications were maternal mortality at 24.2%, postpartum haemorrhage 20.8%, fresh still birth (FSB) 16.2% and uterine rupture at 15%. (Table 4).

Table 4: Effects of teenage pregnancy in Bududa

VARIABLE	NUMBER (%)
Do you regret teenagers pregnancy	
Yes	130(87)
No	20(13)
Ever experienced or heard of a colleague with complications during Antenatal, intrapartum and postpartum periods	
Uterine rupture	49 (15)
Fresh still birth	53 (16.2)
Still birth	12 (3.7)
Maternal mortality	76 (24.2)
Preterm birth	32 (9.8)
Postpartum haemorrhage	68 (20.8)
Others (underweight, caesarean section, excessive weight gain and abortion)	37 (11.3)
Total responses	327 (100)
Social effects of teenage pregnancy	
Negative	148 (98.7)
Positive	2 (1.3)
Currently attending School	
Yes	59 (39.3)
No	91 (60.7)
Negative social effects of teenage pregnancies	
School dropout	88(25.4)
Being chased from home by parents	79 (22.7)
Forced marriage	75 (21.6)
Lack of support from partner	60 (17.3)
Embarrassments	40 (11.5)
Disrespect from young girls	5 (1.4)
Total responses	347
Opinion about prevalence of teenage pregnancy	
Very high	78(52%)
High	58 (38.7 %)
Low	11 (7.3%)
Very low	3(2%)

Of the 150 participants, 87 % (130/150) regretted TP and 98.7% acknowledged negative effects. The top three highlighted negative social effects were dropping out of school, 25.4%, being chased away from home, 22.7%, and forced marriages, 21.6%. The top four highlighted medical complications were maternal mortality at 24.2%, postpartum haemorrhage 20.8%, fresh still birth (FSB) 16.2% and uterine rupture at 15%. (Table 4).

Table 5: Study participants' suggestions on way forward about teenage pregnancy in Bududa.

Suggestions	Number (%)
Start of family planning/contraception at an early age	70(17.5)
Abstinence	20(5)
Counseling and Guidance and in school on sexuality and sex matters	60 (15)
Starting small income generating businesses for teenagers	50 (12.5)
Health education about family planning to school children	65 (16.2)
Praying to God	5 (1.2)
Support organizations for the teenage mothers and children	20(5)
Involvement of parents in counseling children on sexuality	30 (7.5)
Parent involvement in guiding children to stop moving at night	15 (3.7)
Talking to elders in the community on effects of teenage pregnancy and its causes	15 (3.7)
Sensitization of community both male and female on dangers of teenage pregnancy	51 (12.7)
Total	401(100)

Furthermore, the majority, 17.5%, suggested starting family planning at an earlier age (could not clearly define what earlier age was), 16.2% intimated school-based health education about family planning, 15% suggested counseling and guidance on matters of sex and sexuality, while 12.5%, emphasized the need for initiating small scale income generating businesses for teenagers. Worth noting is that only 5%, thought that abstinence would work. (Table 5).

Furthermore, the majority, 17.5%, suggested starting family planning at an earlier age (could not clearly define what earlier age was), 16.2% intimated school-based health education about family planning, 15% suggested counseling and guidance on matters of sex and sexuality, while 12.5%, emphasized the need for initiating small scale income generating businesses for teenagers. Worth noting is that only 5%, thought that abstinence would work. (Table 5).

Discussion

Teenage pregnancy and risk factors

The majority 59.3% of the participants were less than 18yrs and about 24.3% were below or equal to 15 yrs, which is in agreement with the United Nations Family planning Association report that One third of all pregnancies

are amongst adolescents aged less than eighteen and almost 20% of the adolescent pregnancies are amongst girls aged under 15 years [29]. Several studies have intimated that early sexual debut is a risk factor for teenage pregnancy [30, 31]. The fact that 30.7% did not know the age of menarche (onset of menstrual periods), while 45.3% did not believe that conception could take place prior to menarche underpins lack of comprehensive sexual and reproductive health knowledge. This is further highlighted by the fact that 40.7% did not believe that one could conceive on their sexual debut. These findings emphasize the findings from earlier studies in Uganda that identified low levels of knowledge on Sexual and reproductive health (SRH) [32] in Wakiso, central Uganda and lack of awareness of Adolescent, sexual and reproductive Health (ASRH) increased odds of teenage pregnancy in northern Uganda [20]. This was in agreement to findings in Lao People's Democratic Republic (PDR) [21]. Moreover, in agreement with the findings of this study, a study done in Kibuku in Uganda found that only 57.4% of the respondents rightly knew that sexual intercourse prior to menarche may result into pregnancy while 10% did not know compared to 1% in our study [16]. The lack of adequate ASRH knowledge in eastern Uganda is further emphasized by the fact that in Kibuku (eastern Uganda), 46% of the respondents believed that a girl could not get pregnant if she had sexual intercourse while standing while 19% were not sure and 2% never responded [16]. This lack of knowledge could also be caused by poor parent to teen communication as parents find it difficult to discuss sexual and reproductive issues with teens as highlighted in a study in Lao [21] and the lack of establish points at health facilities that take care of such issues. Therefore, ignorance could have played a big role in the teenagers getting pregnant. This is supported by a study in Ghana which indicated that concealing sex education and sex-knowledge from the teenagers made them more inquisitive and susceptible to teenage pregnancies and there was need to have such education in school curriculums [33]. This must take into account the effect of globalization and its erosion of African values, including more acceptance of pornography [34]. No wonder Discos were highlighted by 5.5% of the respondents as one of the events contributing to teenage pregnancy in Bududa. In these events, it is rare to find parents with their children and pornographic videos that are erotic in nature may be played.

Whereas Contraceptive use is known to be protective against teenage pregnancy [31, 35]. However timely initiation is as well statistically significant as demonstrated by a study in Naguru teenage centre, Uganda. Initiation of contraception use before or at 9 years was very protective of teenage pregnancy and lost out if started after 13 years of age [23]. The fact that no more than 40% knew a particular contraceptive denotes low knowledge regarding contraceptive choices among our participants. Further still, the health facilities do not only serve as the major source of information but also the major access points. This reemphasizes the critical role of health workers as the critical in the fight against teenage pregnancy. Opportune time to have sexual education led by health workers in whom the teenagers have confidence should be explored such as during school and social gatherings. Moreover, the need for adolescent friendly health clinics cannot be overemphasized.

In this study, the major barriers to contraception access were poor perception of elders and insufficient supplies. In agreement with our findings, researcher elsewhere has found that contraception utilization is influenced by community and family attitudes [36]. Because premarital sex and later on marriage are largely a taboo [37, 38], it may be the reason that the community leaders, parents and or Village Health Team (VHT) members are neither prominent sources of information nor facilitators of access. Moreover accessibility and utilization of contraception in curtailing teenage pregnancy and its detrimental effects was emphasized during the 2017 London Family planning assembly. It was retaliated that the World has got the biggest cohort of adolescents and providing Contraception was a priority in order to avert maternal deaths and other adverse pregnancy outcomes. Health Extension programs like that in Ethiopia with use of extension workers was highly praised in improving access to contraception. Estonia, driven by high levels of unintended pregnancy and other related health complications succeeded through comprehensive sexuality education in schools and a network of youth friendly clinical services [39]. These two countries' success stories were grounded on strong policies and investments, a leaf that could be borrowed by Uganda. Therefore in order to improve use and access of contraceptives, important aspects need to be addressed by involving especially the parents, teachers and the community in sex education and supply of the contraceptives especially by the community-based and easily accessible VHT.

The type of contraception most aired by the respondents was pills. Pills carry a higher contraception failure rate compared to long acting reversible contraceptives (LARC) because of being so much user-dependant [40, 41]. Worryingly and rightly so, there was mention of use of aspirin (acetylsalicylic acid), piriton (chlorpheniramine) and traditional herbs as contraceptives. This is in agreement with findings by other researchers about the use of different medicinal plants traditional herbs as contraceptives [42]. Although some have

been shown to be efficacious [43, 44] and thus can be used as alternatives [45], we did not explore those that were being used in Bududa. We envisage that use of unconventional contraceptives would not only result into unplanned pregnancies but also endanger the lives of the consumers. However long acting reversible methods such as intrauterine devices and implants would be a better option for the adolescents as encouraged by the American Association of Obstetricians and Gynaecologists and endorsed by the American Academy of Paediatricians [46] since they are not user dependant and need not be taken daily. In agreement with our study findings, studies elsewhere that have proven that low knowledge levels on contraceptives [36, 47], especially the long-acting reversible contraceptive methods [48] and misconception that contraceptives are for married adults [47] exists and may explain why the majority of sexually active adolescents were non-users [47].

The teenagers in Bududa believed that social gatherings more especially Kadodi and Inemba (male circumcision and post male circumcision rituals respectively for the Bamasaba) were a predisposing factor to teenage pregnancy. This is because the teenagers are afforded more freedom during these times. These social gathering bring together teenagers from different places and family backgrounds and go long late into the nights within minimum or no responsible adult supervision. This breeds ground for different ill-manners exposures and sexual exploitation as the teen looks forward to continued provision of food and drinks during these events thus putting the teenager at risk of pregnancy. Sometimes the unsuspecting youth may be introduced to alcohol or other intoxicated drinks that may rational judgment. These findings corroborate with other studies that have shown that teenagers who come from very strict families in which there is less freedom are less likely to get pregnant [22, 24, 49, 50]. However studies have indicated that fathers supervision is more impacting than the mother's [22]. This highlights the need for engagement of parents in the fight against teenage pregnancy.

The majority outlined poverty as another risk factor for teenage pregnancy. Poverty has a well documented risk for teenage pregnancy [12, 14, 16, 20, 21, 51]. Poverty is a worse predictor for teenage pregnancy especially in the rural areas [6] as was the case in our study. This may be because of the parents' desire for dowry, failure by the parents to provide tuition, scholastic materials, and other basic needs. This further compounds the phenomenon of transactional sex especially in poor communities.

The influence of peer pressure was mentioned too as a risk factor for teen pregnancy. Peer pressure has been found to predispose to teenage pregnancy even in other studies [14, 16] which is in support of our findings. With the reduction of the age at menarche [52, 53], the issue of early maturing girls become prominent. Early maturing girls with conduct problems raised in families characterized by parental instability and maternal role models of young single motherhood are likely to engage in sexual risk taking and deviant peer involvement [54].

Although the need to test fertility was revealed as a risk factor for teenage pregnancy, to the best of our knowledge this is the first study in which teenagers have mentioned it.

Consequences of teenage pregnancy

Majority, 98.7% of the teens expressed that teenage pregnancy causes the negative consequences. The major negative social consequences of teenage pregnancy were school dropout (25.4%) being chased from home by parents (22.7%) forced marriage (21.6%) and lack of support from partner (17.3%). It is emphasized by the fact that 87% regretted the result of teenage pregnancy and 60.7% had dropped out of school as a result. These findings are agreement with other studies that have pointed out that the most common negative effect of teenage pregnancy as school dropout, such as 48% in Kibuku [16] and up to 60% in others [24]. Other negative social effects are also explained by the fact that teenage pregnancies are negatively perceived by African cultures [37, 38]. African communities largely regard a pregnant teenager as a spoilt girl and thus not worth interacting with especially by the nonpregnant age mates, one who wasted school fees, an outcast by parents and community and a source of shame to their families. These findings corroborate findings in a study in Ghana, South Africa and Sierra Leon [37, 38, 55]. Other negative social effects such as abandonment by partner and sometimes parents, low employability corroborate study findings elsewhere [55, 56]. Therefore by extrapolation financial challenges is likely to be one of their challenges. This was highlighted by a study in Sierra Leon [55].

When probed about whether they had suffered or heard a teenager suffer health consequences of teenage pregnancy. Top on their list was death (maternal mortality), 24.2%, postpartum haemorrhage, 20.8%, Fresh still birth, 16.2%, and uterine rupture, 15%. This is in agreement with findings in other studies that have mentioned negative consequences being much more in teen pregnancy than in the older populations [16-18]. Teens are less likely to receive adequate medical and other supportive care and thus more predisposed to

infections such as malaria [57, 58], anaemia [6], depression, tobacco, alcohol and other illicit drug use [59], cephalopelvic disproportion, postpartum haemorrhage and uterine revision [60] all that are likely to result into poor pregnancy outcomes. The teenagers are in most cases, not only physically, but also, socially, economically, and psychologically under developed to undergo the rigors of pregnancy, child birth, and later alone child care.

Measures to curtail teenage pregnancy

The participants raised pertinent issues regarding the measures they thought were appropriate in averting the vice. They suggested initiation of family planning/contraception at an early age, health education about family planning to school children and guidance and counseling in school. Moreover community mobilization and sensitization that targeted both male and female on dangers of teenage pregnancy was mentioned in addition to involvement of elders, parents' control of children especially against night time movements and abstinence. These findings are in agreement with studies elsewhere that emphasized the point of the need to provide contraception and health education, guidance and counseling with the schools being the major focus [33], male involvement and community involvement in sexual education [55]. This study shows that abstinence-only education, which was remotely mentioned by the teens, may not be an effective strategy. This has been demonstrated by studies elsewhere [61-63]. Comprehensive sexual education has been found effective [33, 62] which is in tandem with study's findings.

Conclusion

Teenage pregnancy is still a public health problem in Bududa and adversely affects teens as young as 13 yrs of age. There is general lack of sexual and reproductive health knowledge that is necessary to empower girls to make informed reproductive health choices. The factors associated with teenage pregnancy are poverty, testing fertility and ignorance about teen pregnancy and contraceptives. There is need to persuade the teens on the use of LARC and dissuade them from using untested herbs, aspirin and pariton as contraceptives. Comprehensive curriculum based sexual education needs to be implemented and so must parent, community and male involvement in the fight against teenage pregnancies.

List of Abbreviations

COBERS-Community Based Education and Research Services, LARC-Long Acting Reversible Contraceptives, TP-Teenage pregnancy,

Declarations

Ethics approval and consent to participate

The study and all the protocols were approved and cleared by the Busitema University Faculty of Health Sciences Higher Degrees and Research Committee as part of the Community Based Education and Research Services (COBERS) Program for the academic year 2018/2019 under the Course of Community Diagnosis and Communication Projects. Further approval was obtained from the Bududa District Local Government. However each participant signed a written informed consent/assent form.

Consent for publication: Not required

Availability of data and materials: Data is available on request from jntezi@gmail.com

Competing interests: The authors declare that there is no conflict of interest.

Funding: None. It was part of the students' community project during COBERS.

Authors' contributions

NE, ND, NR, NB, MG, NS, RN, WJ and NJ conceptualized the idea

WJ and RN supervised data collection.

WJ, RN and NJ carried out the analysis, interpreted the result, participated in drafting the manuscript, revised the manuscript, and approved the final manuscript for submission. However all authors have read and approved the final manuscript.

Acknowledgements

The authors extend their gratitude to the Department of Community and Public Health, Faculty of Health Sciences Busitema University, Community Based Education and Research Services (COBERS) and COBERS coordinator RN, the leadership of Bududa district and Bududa hospital and all the study

participants. We also thank the Directorate of Graduate Studies, Research and Innovations, Busitema University for supporting the writing of this manuscript.

Authors' information

Nandyose Erone¹, Nanteza Dorothy¹, Nantale Ritah¹, Ndyamuba Benjamin¹, Magumba George¹, Ntegeka Sylvia², Nteziyaremye Julius³, Rebecca Nekaka¹, Wandawa Julius³

Authors' affiliations and contacts

¹Department of community and Public Health, Faculty of Health Sciences, Busitema University-NE, ND, NR, NB, MG, RN Community Based Education Research and Services-RN

²Bududa Hospital, Bududa local government -NS

References

1. Adolescents, W.U.U.s.g.o.h.p.f., *Programming for Adolescent Health and Development*. WHO series No.886, (1999).
2. World Health Organization, h.w.w.i.m.f.f.e.
3. Judith Osok, P.K., Keng-Yen Huang, Nancy Grote & Manasi Kumar *Adversities and mental health needs of pregnant adolescents in Kenya: identifying interpersonal, practical, and cultural barriers to care*. *BMC Women's Health*, (2018). 18(96).
4. Kaye, D.K., *Negotiating the transition from adolescence to motherhood: Coping with prenatal and parenting stress in teenage mothers in Mulago hospital, Uganda*. *BMC Public Health*, (2008). 8(83).
5. Elizabeth Wall-Wieler, L.L.R.N.C.N., *Teenage pregnancy: the impact of maternal adolescent childbearing and older sister's teenage pregnancy on a younger sister*. *BMC Pregnancy and Childbirth*, 2016. 16(120).
6. Pranay Gandhi, S.S., Rahul Gite, *A Study of Teenage Pregnancies in Rural Area*. *Indian Journal of Applied Research*, 2014. 4 (5).
7. Darroch, J.E., V. Woog, A. Bankole, and L.S. Ashford, *Adding It Up: Costs and Benefits of Meeting Contraceptive Needs of Adolescents*. New York: Guttmacher Institute, 2017.
8. Kågesten, V.W.a.A., *The Sexual and Reproductive Health Needs of Very Young Adolescents Aged 10-14 in Developing Countries: What Does the Evidence Show?* GUTTMACHER INSTITUTE, 2017.
9. Fund, U.N.C.s., *Adolescents: overview*. In: *UNICEF data: monitoring the situation of children and women [website]*. New York (NY): United Nations Children's Fund. 2017.
10. Neal S, M.Z., Frost M, Fogstad H, Camacho AV, Laski L., *Childbearing in adolescents aged 12-15 years in low resource countries: a neglected issue. New estimates from demographic and household surveys in 42 countries*. *Acta Obstet Gynecol Scand.*, 2012 91(9): p. 1114-8.
11. United Nations, G.A., *Seventieth session, Agenda items 15 and 116: Resolution adopted by the General Assembly on 25 September 2015*. 2015.
12. Getachew Mullu Kassa, A.O.A., A. A. Odugogbe & Alemayehu Worku Yalew *Prevalence and determinants of adolescent pregnancy in Africa: a systematic review and Meta-analysis*. *BMC Reproductive Health*, 2018. 15,(195).
13. Yohannes Dibaba Wado, E.A.S.J.N.M., *Pregnancy and early motherhood among adolescents in five East African countries: a multi-level analysis of risk and protective factors*. *BMC Pregnancy and Childbirth*, 2019. 19(59).
14. Yohannes Ayanaw Habitu, A.Y., and Telake Azale Bisetegn, *Prevalence and Factors Associated with Teenage Pregnancy, Northeast Ethiopia, 2017: A Cross-Sectional Study*. *hindawi Journal of Pregnancy*, 2018 2018.
15. Uganda Bureau of Statistics Kampala, U.T.D.P.I.I.R., Maryland, USA, *Uganda Demographic and Health Survey 2016: Key Indicators Report*. 2017.
16. Fred Manzi, J.O., Allen Akankwatsa, Oliver Caroline Wokali, Francis Obba, Ahmed Bumba, Rebecca Nekaka and Yahaya Gavamukulya, *Factors Associated with Teenage Pregnancy and its Effects in Kibuku Town Council, Kibuku District, Eastern Uganda: A Cross Sectional Study*. *Prim Health Care* 2018. 8(2).
17. Chen XK, W.S., Fleming N, Demissie K, Rhoads GG, Walker M., *Teenage pregnancy and adverse birth outcomes: a large population based retrospective cohort study*. *Int J Epidemiol.*, 2007 36(2): p. 368-73.
18. Katie Marvin-Dowle, H., *A comparison of neonatal outcomes between adolescent and adult mothers in developed countries: A systematic review and meta-analysis*. *European Journal of Obstetrics & Gynecology and Reproductive Biology*: X, 2020. 6.

19. Saim, N.J., Ghazinour, M., Richter, J. , *Teenage Pregnancy in Malaysia: Understanding the Importance of Social Support in Relation to Coping, Resilience and Mental Health. International Journal of Recent Technology and Engineering (IJRTE)*, 2019. 8(2S10).
20. Anthony Mark Ochen, P.C.C.S.L., *Predictors of teenage pregnancy among girls aged 13-19 years in Uganda: a community based case-control study. BMC Pregnancy and Childbirth* 2019. 19(211).
21. Vanphanom Sychareun, V.V., Souphaphone Houaboun, Vassana Thamavongsa, Phouthong Phummavongsa, Kongmany Chaleunvong & Jo Durham *Determinants of adolescent pregnancy and access to reproductive and sexual health services for married and unmarried adolescents in rural Lao PDR: a qualitative study. BMC Pregnancy and Childbirth*, 2018. 18(219).
22. Joyce Wamoyi, A.F., Mark Urassa, Basia Zaba & William Stones *Parental control and monitoring of young people's sexual behaviour in rural North-Western Tanzania: Implications for sexual and reproductive health interventions. BMC Public Health*, 2011. 11(106).
23. Akanbi F, A.K.a.A.A., *Individual Risk Factors Contributing to the Prevalence of Teenage Pregnancy among Teenagers at Naguru Teenage Centre Kampala, Uganda. Primary Health Care* 6(249).
24. Achema G, E.A., Moses AO *Factors responsible for teenage pregnancy and its implication on adolescent health and education: Perception of secondary school students in Nigeria. International Journal of Medical and Health Research*, 2015. 1(2): p. 48-51.
25. Ngonidzashe Mutanana, G.M., *Factors Contributing to Teenage Pregnancies in a Rural Community of Zimbabwe. Journal of Biology, Agriculture and Healthcare*, 2015. 5(14).
26. Bonell, G.M.F.R.S.G.N.M.D.M.S.W.C., *Tackling the problem of teenage pregnancy in looked - after children: a peer mentoring approach. Child and Family Social Work* 2017. 22: p. 527-536.
27. Uganda, T.R.o., *Uganda Bureau of Statistics 2016 National Population and Housing Census 2014 Main Report, Kampala Uganda. 2016.*
28. Uganda, T.R.o., *Uganda Bureau of Statistics 2017, The National Population and Housing Census 2014 - Area Specific Profile Series, Kampala, Uganda. 2017.*
29. UNFPA, *ADOLESCENT PREGNANCY: A Review of the Evidence. 2013.*
30. Kabir Adekunle Durowade, O.A.B., Lukman Omotayo Omokanye, Olusegun Elijah Elegbede, Lawrence Majekodunmi Ayodele, Kayode Razaq Adewoye, Stella Adetokunbo, Charles O Olomofe, Adegboyega A Fawole, Oyebola Eytayo Adebola, and Temitope O Olaniyan, *Early sexual debut: prevalence and risk factors among secondary school students in Ido-ekiti, Ekiti state, South-West Nigeria. African Health Sciences*, 2017 17(3): p. 614-622.
31. Baumgartner JN, W.G.C., Tucker H, Wedderburn M., *The influence of early sexual debut and sexual violence on adolescent pregnancy: a matched case-control study in Jamaica. Int Perspect Sex Reprod Health*, 2009. 35(1): p. 21-8.
32. Lynn M Atuyambe, S.P.S.K., Justine Bukenya, Christine Muhumuza, Rebecca R Apolot & Edgar Mulogo *Understanding sexual and reproductive health needs of adolescents: evidence from a formative evaluation in Wakiso district, Uganda. bmc Reproductive Health*, 2015. 12(35).
33. Lariba, A.K.D.a.A.L., *The impact of sex education on teenage pregnancy in basic schools of Bawku municipal district in Ghana. Indonesian Journal of Biology Education*, 2017. 3(3): p. 214-221.
34. Fakeye, D.O., *Globalization and cultural erosion: Impact on sexuality in Nigeria. CONFERENCE PROCEEDINGS SlovakEdu*, 2014.
35. Rachel H. Scott, Kaye Wellings, L.L., *Adolescent Sexual Activity, Contraceptive Use, and Pregnancy in Britain and the U.S.: A Multidecade Comparison. Journal of Adolescent health*, 2020.
36. Mimmie C Ngum Chi Watts, P.L., Mary Carolan *Contraception knowledge and attitudes: truths and myths among African Australian teenage mothers in Greater Melbourne, Australia. Journal of Clinical Nursing*, 2013
37. Kaufman C, D.W.T., Stadler J. ; 2000. , *Adolescent Pregnancy and Parenthood in South Africa. . New York, NY: Population Council Inc*, 2001. 32(2).
38. Ankomah, N.Y.K.G.a.A., *Experiences of pregnancy and motherhood among teenage mothers in a suburb of Accra, Ghana: a qualitative study. Int J Womens Health*, 2013. 5: p. 773-780.
39. Howard, S., *Why adolescent contraceptive access and use is a global issue. BMC Blogs network*, 2017: p. 11 July.
40. Chelsea Polis, S.E.K.B., Akinrinola Bankole, Tsuyoshi Onda, Trevor N. Croft and Susheela Singh, *Contraceptive Failure Rates in the Developing World: An Analysis of Demographic and Health Survey Data in 43 Countries. GUTTMACHER INSTITUTE*, 2016.
41. C. Moreau, J.T., G. Rodriguez, N. Bajos, J. Bouyer, *Contraceptive failure rates in France: results from a population-based survey Human Reproduction Update*, 2007. 22(9): p. 2422-2427.
42. Dushmantha Kumar Pradhan, M.R.M., Ashutosh Mishra , Ashok Kumar Panda , Rajani Kanta Behera , Shivesh Jha and Sanjaya Choudhury, *A COMPREHENSIVE REVIEW OF PLANTS USED AS CONTRACEPTIVES. INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES AND RESEARCH*, 2013.
43. Maninder Kaur, A.C.R., Sarvan Kumar, *Estrogenic activity of hydroalcoholic extract of Clitoria ternatea Linn. leaves on rats. Asian Pacific Journal of Reproduction*, 2020.
44. Jhuma Samanta, S.B., Avtar Chand Rana, *Antifertility activity of Thevetia peruviana (Pers.) K. Schum leaf in female Sprague-Dawley rat. Indian Journal of Pharmacology*, 2016.
45. Amrendra Kumar Anand, V.P., Mansur Alam, *Herbal or modern methods of contraception! choice is yours. International Journal for Reproduction, contraception, Obstetrics and gynaecology*, 2015. 4(4).
46. Gynaecologists, A.C.o.O.a., *Adolescent Pregnancy, Contraception, and Sexual Activity. Committee Opinion*, 2017. 699.
47. John Elvis Hagan , C.B., *Contraceptive Knowledge, Perceptions and Use among Adolescents in Selected Senior High Schools in the Central Region of Ghana. Journal of Sociological Research*, 2012. 3(2).
48. Milena Bastos Brito, F.S.S.A., Marlene Quadro Souza, Samara Rezende Requião,, *Low Level of Knowledge of Contraceptive Methods among Pregnant Teens in Brazil. Journal of Paediatrics and Adolescent Gynaecology*, 2018. 31(3): p. 281-284.
49. Bright Opoku Ahinkorah, J.E.H.J., Abdul-Aziz Seidu, Joseph Kwame Mintah, Francis Sambah, Thomas Schack and Thomas Hormenu, *Examining Pregnancy Related Socio-Cultural Factors Among Adolescent Girls in the Komenda-Edina-Eguafo-Abrem Municipality in the Central Region of Ghana: A Case-Control Study. Frontiers in Public Health*, 2019.
50. Brent C. Miller, Brad Benson, K.A.G., *Family Relationships and Adolescent Pregnancy Risk: A Research Synthesis. Developmental Review*, 2001. 21(1): p. 1-38.
51. Lambani, M.N., *Poverty the Cause of Teenage Pregnancy in Thulamela Municipality. Journal of Sociology and Social Anthropology*, 2015. 6(2): p. 171-176.
52. Nancy Krieger, M.V.K., Anna Kosheleva, Pamela D. Waterman, Jarvis T. Chen, and Jason Beckfield, *Age at Menarche: 50-Year Socioeconomic Trends Among US-Born Black and White Women. Am J Public Health*, 2015. 105(2): p. 388-397.
53. M S Gottschalk, A.E., S Hofvind, J M Gran, E K Bjelland, *Temporal trends in age at menarche and age at menopause: a population study of 312 656 women in Norway Human Reproduction Update*, 2020. 35(2): p. 464-471
54. Horwood, L.W.D.M.F.L.J., *Risk Factors and Life Processes Associated with Teenage Pregnancy: Results of a Prospective Study From Birth to 20 Years. Journal of Marriage and Family*, 2004
55. Leone, G.F.S., *Teenage Pregnancy Pilot Project Research. 2010.*
56. E., M.C.R.M.C.R.G.A., *The Adolescent Girl :Teenage Pregnancy. Pediatric and Adolescent Gynecology Evidence-Based Clinical Practice*, 2012. 22: p. 302-331.
57. Jaffer Okiring, P.O., Abel Kakuru, Joseph Okou, Harriet Ochokoru, Tedy Andra Ochieng, Richard Kajubi, Moses R. Kanya, Grant Dorsey & Lucy S. Tusting *Household and maternal risk factors for malaria in pregnancy in a highly endemic area of Uganda: a prospective cohort study. BMC Malaria journal*, 2019. 18(144).
58. Organization, W.H., *World malaria report 2019. 2019.*
59. Stephanie P.W. Wong, J., Jason A. Gilliland, Jocelynn L. Cook, Jamie A. Seabrook, *Risk Factors and Birth Outcomes Associated with Teenage Pregnancy: A Canadian Sample. Journal of Pediatric and Adolescent Gynecology*, 2020. 33(2): p. 153-159.
60. Demetra-Gabriela Socolov, M.I., Alexandru Carauleanu, Ciprian Ilea, Iolanda Blidaru, Lucian Boiculese, and Razvan-Vladimir Socolov, *Pregnancy during Adolescence and Associated Risks: An 8-Year Hospital-Based Cohort Study (2007-2014) in Romania, the Country with the Highest Rate of Teenage Pregnancy in Europe. Hindawi Biomedical research International*, 2017. 2017.
61. Hall, K.F.S.-H.a.D.W., *Abstinence-Only Education and Teen Pregnancy Rates: Why We Need Comprehensive Sex Education in the U.S. PLoS One*, 2011. 6(10).

62. Pamela K.KohlerR.N., L.E.M., William E.Lafferty, *Abstinence-Only and Comprehensive Sex Education and the Initiation of Sexual Activity and Teen Pregnancy. Journal of Adolescent Health*, 2008. 42(4): p. 344-351.
63. Ashley M. Fox , G.H., Hina Khalid and Elizabeth A. Howell *Funding for Abstinence-Only Education and Adolescent Pregnancy Prevention: Does State Ideology Affect Outcomes? American Journal of Public Health (AJPH)*, 2019.