**Title:** The influence of perceptions of friends and peers contraceptive use on modern contraceptive use and method choice among male and female adolescents and youth in Kenya

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# Short Abstract (150 words)

Using recently collected population-based data, this paper explores the influence of perceptions of friends or peers use of contraceptives on modern contraceptive use and method choice among adolescent and youth males and females in Kenya. Our results show that males who perceive friends and peers use contraceptives are more likely to use condoms as compared to non-use. Female adolescents and youth who perceive that friends and peers use contraceptives are more likely to use short acting hormonal methods or condoms as compared to nonuse, though are less likely to use LARCs or short acting hormonal methods as compared to condoms. Perceived friend and peer use is associated with condom use over use of long-acting methods or short acting hormonal methods. The results of this study can be used to develop programs that address the influence of peers on youth contraceptive use.

# Long Abstract

# Introduction

Kenya has a large adolescent and youth population with more than 61% of its population under the age of 24<sup>1</sup>. Young people often experience transitions in school status, living arrangements, employment, marriage and childbearing between ages 15-24; this is a critical period to ensure that the reproductive needs of young people are met in order to enable them to achieve their full education, economic and social potential<sup>2,3</sup>.

In Kenya, modern contraceptive use and method choice varies by age, sexual activity, and sex. Of women age 15-24, about 47% of married women are current modern users whereas only 28% of unmarried, sexually active women are current modern users; modern use among all women ages 15-19 is significantly lower than that of women ages 20-24<sup>4</sup>. Among adolescents and youth, there are also significant differences in method choice. Among married 15-24 year olds who are using a modern method, contraceptive method choice is dominated by both short-acting and long acting hormonal methods: 60% injectables, 20% implants, 10% oral pills, 5% male condoms, and 5% other modern methods<sup>4</sup>. In comparison, modern contraceptive method mix is very different for unmarried, sexually active adolescents and youth with 52% using condoms, 31% using injectables, and only 8% using implants<sup>4</sup>. Conversely, young men in Kenya predominantly report use of condoms<sup>5</sup>. Ensuring that young men and women are knowledgeable about and have access to a range of contraceptive methods is critical for ensuring that young people are able to both plan and manage their fertility as well as achieve their goals.

It is well established that social interactions and networks play an important role in influencing behavior, including the use of contraceptives<sup>6,7,8</sup>. Montgomery and Casterline (1996) and Kohler, Behrman and Watkins (2001) describe two dynamics through which actors or environments influence decision making on contraceptive use: social learning and social influence<sup>6,9</sup>. Social learning occurs when an individual takes in a set of facts or experiences, either interpersonally or impersonally through means such as media consumption, that shape their final decision. Social influence decisions and behaviors<sup>6</sup>. Several studies have extended the early work by Montgomery, Kohler and others with a focus on social influence in African countries. Much of this literature explores social influence on contraceptive use, including factors such as norms on fertility, gender, and autonomy<sup>10,11</sup>, as well as the influence of social networks, spatial networks and kin<sup>12,13,14</sup>.

Evidence from Kenya has shown that within social networks, various individuals influence the decision to use contraceptive methods. Within a mixed-methods study of youth in Nairobi, communication with a partner was found to significantly influence contraceptive use behaviors<sup>15</sup>. Peers are also an important source of information on contraceptive methods and influence the decision to use a method or not<sup>16,17</sup>. An analysis of the Adolescent Safe Motherhood Survey in South Nyanza found that communication among female adolescents with friends was a protective factor against pregnancy among all adolescents, while communication with partners led to an onset of first sexual intercourse, marriage, pregnancy<sup>18</sup>.

While several studies have been undertaken in Kenya to examine impacts of social networks and influences of contraceptive use, many gaps exist. The literature regarding how these factors influence a woman's selection of a specific contraceptive method is sparse, and in addition, less is known about how these influences impact adolescent and youth method choice. Furthermore, literature on male adolescents and youth and what influences their choice of contraceptive methods in the African context is minimal, if not entirely absent.

This study aims to fill these gaps by utilizing population-based Shujaaz survey data from males and females ages 15-24 years in Kenya. Using a rich dataset collected in 2018 and 2019, this paper explores the influence of perceptions of friends or peers use of contraceptives on modern contraceptive use and method choice among adolescent and youth males and females.

### Full Access, Full Choice project and partners

In 2017, the Bill & Melinda Gates Foundation (BMGF) funded the Full Access, Full Choice project with the goal of generating and synthesizing evidence on expanded method choice for adolescents and youth. A key component of the Full Access, Full Choice project is partnering with other BMGF-funded projects to utilize existing data sources to inform programs and policies in two focus countries, Niger and Kenya. In Kenya, Well Told Story (WTS) is one of the organizations with whom Full Access, Full Choice is partnering. WTS is East Africa's public interest research and media company, whose mission is to deliver social and economic value to youth by producing insight-driven experience, consistent positive influence, and information that result in large scale social and behavior change among WTS target audience. WTS media comprises of a monthly comic, weekly radio show, daily engagements through digital channels, and events; all media are free to the audience. As part of routine audience consultations, audience research and program monitoring and evaluation, WTS undertakes a collection of big data, qualitative and quantitative studies, including an annual household survey of males and females ages 15-24 in Kenya.

# Methods

The data for this paper come from the 2018 and 2019 nationally representative Shujaaz State of the Kenyan Youth annual surveys. These surveys include males and females ages 15-24 in Kenya. In each round, a new sample of female and male youth was selected. A multi-stage sampling procedure was used to achieve the nationally representative sample of youth aged 15-24. First, all districts in Kenya were clustered into two strata -- urban and rural; target districts were then selected within each stratum using a probability proportional to population size (PPPS) approach. The same approach was used to select enumeration areas (EA) within each selected district. In each EA, households were selected using the random walk from a landmark chosen with the help of a Kish Grid. Eligible household members were also selected using a Kish Grid; only one respondent was interviewed in each household. If the selected respondent was not at home at the time of the interview, an interviewer would make up to 3 call backs and then replace the respondent or the household using a predefined formula. Upon giving consent for participation in each of the two surveys (parental/guardian consent and adolescent assent in the case of minors aged 15-17), respondents were asked about sociodemographic characteristics, use and access to media, family planning use, agriculture and tobacco use. On behalf of Well Told Story, Research Guide Africa, the subcontractor in this study, obtained all required study permits from the National Commission for Science, Technology and Innovation (NACOSTI). The sample size in 2018 was 2,020 (1,009 males and 1,011 females) and 2,020 in 2019 (1,023 males and 997 females). The datasets from 2018 and 2019 were combined in order to increase the sample size for analysis purposes.

The dependent variable for this analysis is contraceptive use. Males and females were asked if they had ever tried any contraceptive method in any relationship, by method. For those who had ever tried a method, they were asked to describe their current use of each method in any relationship. Response options included "I use this in all or almost all sexual encounters, I always have it with me", "I use it occasionally when I happen to have it with me", "I use it occasionally, mostly when a partner has it with them", "I use it as a back-up when another preventive method fails", "I never use it", "Other", "Don't know/Refused". We coded respondents who selected "I use this in all or almost all sexual encounters, I always have it with me" as current contraceptive users. We created separate categorical contraceptive use variables for males and females. Male respondents who used male condoms were coded '1'; users

of implants, intrauterine devices (coil/IUD), injectables, oral pills, emergency contraceptives, and female condom were coded '2' as "other modern method users", and users of traditional methods or non-users were coded as '3' or "non-users of modern contraceptives". Female responses for current method use were coded into three groups: user of a long-acting reversible contraceptive (LARC) (implants, IUD), user of a short-acting hormonal contraceptive method (injectables, oral pills, emergency contraception, female condoms), and user of male condoms. One user of female condoms was grouped with the users of short-acting hormonal methods, as female condoms are also a female controlled method, so the authors felt that it was the most appropriate category.

There are two key independent variables for this analysis. The first independent variable is based on the question, "How many of your friends use contraception to protect from pregnancy/STIs?". The second independent variable is based on the question, "How many people your age, who are not your friends, use contraceptives to protect from pregnancy/STIs?". This second variable is considered to represent a broader set of young people, called peers here. For both independent variables, the response options "All" and "Most" were both coded '1' and "Some", "None", and "Don't know/refused" were coded '0'.

Models control for the following sociodemographic characteristics: age (continuous); education (none/some primary, primary completion, some secondary, secondary completion or more); relationship status (dating, single, married/in union/divorced/separated/widowed); parity (one or more children, none); employment status in the last 12 months (current student, employed full time, employed part time, unemployed); residence status (urban, rural); and survey wave (2018, 2019).

Multinomial logistic regression models explored the influence of the independent variables on modern contraceptive use separately among males and females. Multivariate analyses adjust for the clustering in the sample at the sub-location level controlling for demographic characteristics. All analyses were performed using Stata version 14.

# Results

Table 1 presents the characteristics of males and females who participated in the 2018 and 2019 Shujaaz State of the Kenyan Youth annual surveys. Males and females have similar levels of education, age distribution, and residence status. A higher percentage of males than females are currently dating someone, but a higher percentage of females are married or in union as compared to the males. A higher percentage of females have one or more children. A similar percentage of males and females report "all or most" for both variables on perceptions of friends' or peers' use contraceptives. Use of a modern contraceptive method is similar for males and females, with slightly higher reported use among females. There are differences in the modern contraceptive method used between males and females. Males predominantly report using condoms, whereas females report a broader mix of condoms, short-acting hormonal methods, and LARCs.

Table 2 presents the cross tabulation of perceptions of friends' and peers' use of contraceptives by contraceptive method use among males and females. Among male users of condoms, 39% believe all or most of their friends use contraception whereas only 23% of users of other modern methods and 17% of nonusers perceive friends to use contraceptives. About 46% of male contraceptive users perceive that all or most of their peers use contraceptives whereas only 23% of nonusers believe the same. About 40% of short-acting hormonal method users, 42% of condom users and 35% of LARC users perceive that all or most of their friends use contraception whereas only 15% of nonusers believe the same. Similarly,

a higher percentage of condom users believe all or most of their peers use contraceptives as compared to users of LARCs or short-acting hormonal methods. Only 24% of nonusers perceive that all or most of their peers use contraceptives.

Tables 3 and 4 present the multinomial logistic regression results among males ages 15-24 years for the association between perceptions of friends' and peers' use of contraceptives and contraceptive use. Tables 3 and 4 show that males who perceive that most of all their friends and peers use contraceptives are significantly more likely to use condoms as compared nonuse/traditional use. In addition, males who perceived that all or most of their friends use contraceptives were more likely to use the condom as compared to other modern methods.

Tables 5 and 6 present the multinomial logistic regression results for the association between perceptions of friends' and peers' use of contraceptives and contraceptive use among females ages 15-24 years. Tables 5 and 6 show that females who perceive that all or most of their friends and peers use contraceptives are significantly more likely to use condoms and short acting contraceptives as compared to nonuse or traditional method use. Tables 5 and 6 show that females who perceive that all or most of their friends all or most of their friends and peers use contraceptives are significantly less likely to use LARCs as compared to condoms. In addition, they are also significantly less likely to use short-acting hormonal methods as compared to condoms.

# Discussion

Using data from a survey of male and female adolescents and youth in Kenya, this study builds on what is already known and finds that social influence, measured as perceptions of friends' and peers' use of contraceptives influences method choice. Males who perceive that their friends are using contraception are more likely to use a condom as compared to nonuse or traditional method use. For females, if they perceive that their friends or peers are using contraceptives, they are more likely to use short acting hormonal methods and condoms as compared to nonuse or traditional use. In addition, they are less likely to use LARCs or hormonal methods as compared to condoms.

Different factors, social or otherwise, may be present for young women who use LARCs. The results show that females who perceive some or none of their friends or peers use contraceptives, or those who do not know what their friends or peers do, are more likely to use LARCs and short acting methods as compared to condoms. It could be that these young women are less susceptible to the influence of their social networks. Alternatively, there could be an element of social learning from their friends or other peers where they receive information on side effects or other factors that impact method choice. In addition, social learning could be a result of information received through media, health providers or family members. Networks or communities other than friends and peers, such as family, may make contraceptive use, including LARCs, normative in their community, thereby influencing method choice.

Male and female adolescents and youth may be more likely to use condoms over other modern methods, such as LARCs and short acting hormonal methods, because condoms are a better fit for their lifestyle. Condoms can be used at the point of sexual activity, are easily accessible, often free or inexpensive, and protect against sexually transmitted infections. In addition, condoms allow young people to remain in control of their own fertility. Unlike hormonal methods such as injectables, after using condoms a person can quickly return to fertility during these key childbearing years. Due to these reasons, young people may more freely discuss condom use with friends and peers, and therefore,

perceptions about contraceptive use among young people may result in young people choosing condoms over other methods.

This study is not without limitations. Many studies that explore social factors and contraceptive use create community level variables using individual responses in order to reflect community norms and values<sup>9</sup>. Given the sample size and sampling strategy, there were not enough observations to create community average variables for the questions on perceptions of friends' and peers' use of contraceptives. In addition, existing literature also has shown that the size of an individual's social network as well as other contextual factors are important to understand so that how social factors influence behavior can be better understood<sup>9</sup>. The key independent variables in this analysis are unable to measure or provide further information on the size of the respondents' social network or any other community-level contextual factors. In addition, the independent variables only capture perceptions of contraceptive use and do not include more specific mention of methods or types of methods. Finally, cross-sectional data were used for this analysis which allowed for the examination of associations between variables but does not permit an assessment of the direction of causality.

Programs can work to disseminate and share more information about contraceptive methods to promote social learning among young people, including males, based on factual information for specific methods. In addition, programs can encourage messaging that shows peer discussion of contraceptive methods given the important influence of peers on contraceptive use and method choice. As LARC use continues to increase in Kenya, LARC use may become normative resulting in increased social influence to use longer acting methods to plan and manage fertility among sexually active young people.

|  | Male     | Female   | Total    |
|--|----------|----------|----------|
|  | (n=2032) | (n=2008) | (N=2020) |
| Age group  |          |          |          |
| 15-19  | 55.9     | 51.9     | 53.9     |
| 20-24  | 44.1     | 48.1     | 46.1     |
| Education  |          |          |          |
| None/some primary                                  | 14.3     | 15.7     | 15.0     |
| Primary completion                                 | 47.44    | 49.3     | 48.4     |
| Some secondary                                     | 28.9     | 27.5     | 28.2     |
| Secondary completion or more                       | 9.3      | 7.5      | 8.4      |
| Relationship status                                |          |          |          |
| Dating   | 43.3     | 30.2     | 36.8     |
| Single   | 50.8     | 48.3     | 49.6     |
| Married/in union                                   | 4.7      | 20.3     | 12.5     |
| Divorced/widowed/separated                         | 1.2      | 1.2      | 1.2      |
| Parity   |          |          |          |
| None   | 93.7     | 71.1     | 82.5     |
| One or more  | 6.4      | 28.9     | 17.6     |
| Employment status in the last 12 months            |          |          |          |
| Current student                                    | 61.5     | 55.2     | 58.3     |
| Employed, full time                                | 14.3     | 12.6     | 13.4     |
| Employed, part-time                                | 13.4     | 7.7      | 10.5     |
| Unemployed   | 10.9     | 24.6     | 17.7     |
| Residence status                                   |          |          |          |
| Rural  | 68.1     | 67.5     | 67.8     |
| Urban  | 31.9     | 32.5     | 32.2     |
| Survey wave  |          |          |          |
| 2018   | 49.6     | 50.4     | 50.0     |
| 2019   | 50.3     | 49.7     | 50.0     |
| How many friends use contraception to protect from |          |          |          |
| pregnancy or STI                                   |          |          |          |
| Some/None/Don't know                               | 77.3     | 78.6     | 77.9     |
| All or most  | 22.7     | 21.4     | 22.1     |
| How many peers, not including friends, use         |          |          |          |
| contraceptives to protect from pregnancy or STI    |          |          |          |
| Some/None/Don't know                               | 71.1     | 71.0     | 71.1     |
| All or most  | 29.9     | 29.0     | 28.9     |
| Contraceptive use                                  |          |          |          |
| LARC   | 0.2      | 3.9      | 2.0      |
| Short-acting hormonal                              | 1.8      | 11.3     | 6.5      |
| Condoms  | 25.9     | 9.4      | 17.7     |
| Non-use/traditional use                            | 72.1     | 75.5     | 73.8     |

Table 1. Descriptive characteristics of males and females ages 15-24 in 2018 and 2019

Table 2. Perceptions of friends and peer use of contraceptives by modern contraceptive use among males and females ages 15-24 in 2018 and 2019

|  | 1      | Males (n=20 | 32)         | Females (n=2008) |          |        |             |  |  |  |  |  |
|--|--------|-------------|-------------|------------------|----------|--------|-------------|--|--|--|--|--|
|  | Condom | Other       | Nonuse/     | LARC             | Short    | Condom | Nonuse/     |  |  |  |  |  |
|  |        | modern      | traditional |                  | acting   |        | traditional |  |  |  |  |  |
|  |        | methods     | use         |                  | hormonal |        | use         |  |  |  |  |  |
| How many friends use contraception to protect from pregnancy or STI                        |        |             |             |                  |          |        |             |  |  |  |  |  |
| Some/None/Don't  | 60.7   | 77.5        | 83.2        | 65.4             | 59.7     | 58.0   | 84.6        |  |  |  |  |  |
| know   |        |             |             |                  |          |        |             |  |  |  |  |  |
| All or most  | 39.3   | 22.5        | 16.8***     | 34.6             | 40.3     | 42.0   | 15.4***     |  |  |  |  |  |
| Total  | 100.0  | 100.0       | 100.0       | 100.0            | 100.0    | 100.0  | 100.0       |  |  |  |  |  |
| How many peers, not including friends, use contraceptives to protect from pregnancy or STI |        |             |             |                  |          |        |             |  |  |  |  |  |
| Some/None/Don't  | 53.9   | 65.0        | 77.5        | 59.0             | 56.2     | 51.1   | 76.3        |  |  |  |  |  |
| know   |        |             |             |                  |          |        |             |  |  |  |  |  |
| All or most  | 46.1   | 35.0        | 22.5***     | 41.0             | 43.8     | 48.9   | 23.7***     |  |  |  |  |  |
| Total  | 100.0  | 100.0       | 100.0       | 100.0            | 100.0    | 100.0  | 100.0       |  |  |  |  |  |

\*\*\*p≤0.001, \*\*p≤0.01, \*p≤0.05

Table 3. Multinominal logistic regression results for the association between perceptions of friends use of contraceptives and modern contraceptive use among males ages 15-24 in Kenya (n=2032)

|  | 0     | Condom    | VS.      | Other  | modern     | use vs.  | Condom vs. other modern |      |         |  |  |
|--|-------|-----------|----------|--------|------------|----------|-------------------------|------|---------|--|--|
|  | nonus | e/traditi | onal use | nonuse | e/traditio | onal use | use                     |      |         |  |  |
|  | Coef  | SE        | p-value  | Coef   | SE         | p-value  | Coef                    | SE   | p-value |  |  |
| Age (continuous)   | 0.09  | 0.03      | 0.001    | 0.24   | 0.08       | 0.004    | -0.15                   | 0.08 | 0.074   |  |  |
| Education (ref: secondary completion or                                  |       |           |          |        |            |          |                         |      |         |  |  |
| more)  |       |           |          |        |            |          |                         |      |         |  |  |
| None/some primary  | -0.65 | 0.27      | 0.017    | 0.15   | 0.68       | 0.828    | -0.80                   | 0.69 | 0.247   |  |  |
| Primary completion   | -0.35 | 0.21      | 0.095    | 0.39   | 0.63       | 0.535    | -0.74                   | 0.64 | 0.243   |  |  |
| Some secondary   | -0.14 | 0.19      | 0.462    | 0.89   | 0.59       | 0.128    | -1.03                   | 0.57 | 0.072   |  |  |
| Relationship status (ref: married/in                                     |       |           |          |        |            |          |                         |      |         |  |  |
| union/divorced/separated/widowed)  |       |           |          |        |            |          |                         |      |         |  |  |
| Dating   | 1.34  | 0.33      | 0.000    | 0.37   | 0.56       | 0.502    | 0.97                    | 0.55 | 0.077   |  |  |
| Single   | 0.34  | 0.36      | 0.346    | -1.84  | 0.92       | 0.045    | 2.17                    | 0.92 | 0.018   |  |  |
| One or more children (ref: none)   | -0.15 | 0.26      | 0.566    | 1.80   | 0.51       | 0.000    | -1.95                   | 0.49 | 0.000   |  |  |
| Employment status (ref: Unemployed)                                      |       |           |          |        |            |          |                         |      |         |  |  |
| Student (current)  | -0.21 | 0.19      | 0.258    | 1.03   | 0.86       | 0.229    | -1.24                   | 0.88 | 0.156   |  |  |
| Employed, full time  | 0.17  | 0.22      | 0.432    | 0.63   | 0.81       | 0.432    | -0.46                   | 0.82 | 0.570   |  |  |
| Employed, part time  | 0.44  | 0.22      | 0.040    | 0.39   | 0.86       | 0.654    | 0.06                    | 0.87 | 0.947   |  |  |
| Urban (ref: rural)   | -0.15 | 0.15      | 0.325    | -0.35  | 0.39       | 0.366    | 0.21                    | 0.39 | 0.598   |  |  |
| 2019 Survey wave (ref: 2018)   | -0.08 | 0.14      | 0.569    | -0.24  | 0.34       | 0.488    | 0.16                    | 0.35 | 0.650   |  |  |
| All or most friends use contraception to                                 | 0.94  | 0.14      | 0.000    | 0.06   | 0.47       | 0.906    | 0.89                    | 0.45 | 0.049   |  |  |
| <pre>protect from pregnancy or STI (ref:<br/>some/none/don't know)</pre> |       |           |          |        |            |          |                         |      |         |  |  |

Table 4. Multinominal logistic regression results for the association between perceptions of peers use of contraceptives and modern contraceptive use among males ages 15-24 in Kenya (n=2032)

|  | 0     | Condom    | VS.      | Other  | modern    | use vs.  | Condom vs. other modern |      |         |  |  |
|--|-------|-----------|----------|--------|-----------|----------|-------------------------|------|---------|--|--|
|  | nonus | e/traditi | onal use | nonuse | e/traditi | onal use | use                     |      |         |  |  |
|  | Coef  | SE        | p-value  | Coef   | SE        | p-value  | Coef                    | SE   | p-value |  |  |
| Age (continuous)   | 0.10  | 0.03      | 0.000    | 0.24   | 0.08      | 0.004    | -0.14                   | 0.08 | 0.097   |  |  |
| Education (ref: secondary completion or                      |       |           |          |        |           |          |                         |      |         |  |  |
| more)  |       |           |          |        |           |          |                         |      |         |  |  |
| None/some primary  | -0.61 | 0.27      | 0.024    | 0.25   | 0.67      | 0.709    | -0.86                   | 0.68 | 0.207   |  |  |
| Primary completion   | -0.33 | 0.21      | 0.117    | 0.45   | 0.62      | 0.466    | -0.77                   | 0.62 | 0.210   |  |  |
| Some secondary   | -0.12 | 0.18      | 0.506    | 0.93   | 0.58      | 0.113    | -1.05                   | 0.56 | 0.061   |  |  |
| Relationship status (ref: married/in                         |       |           |          |        |           |          |                         |      |         |  |  |
| union/divorced/separated/widowed)                            |       |           |          |        |           |          |                         |      |         |  |  |
| Dating   | 1.31  | 0.32      | 0.000    | 0.34   | 0.56      | 0.541    | 0.97                    | 0.55 | 0.080   |  |  |
| Single   | 0.31  | 0.35      | 0.378    | -1.85  | 0.92      | 0.043    | 2.16                    | 0.91 | 0.018   |  |  |
| One or more children (ref: none)                             | -0.21 | 0.25      | 0.398    | 1.76   | 0.51      | 0.001    | -1.98                   | 0.51 | 0.000   |  |  |
| Employment status (ref: Unemployed)                          |       |           |          |        |           |          |                         |      |         |  |  |
| Student (current)  | -0.19 | 0.19      | 0.295    | 1.01   | 0.85      | 0.234    | -1.21                   | 0.88 | 0.167   |  |  |
| Employed, full time  | 0.11  | 0.22      | 0.611    | 0.58   | 0.81      | 0.474    | -0.47                   | 0.82 | 0.568   |  |  |
| Employed, part time  | 0.39  | 0.22      | 0.078    | 0.36   | 0.86      | 0.680    | 0.03                    | 0.87 | 0.971   |  |  |
| Urban (ref: rural)   | -0.15 | 0.15      | 0.338    | -0.35  | 0.39      | 0.379    | 0.20                    | 0.39 | 0.605   |  |  |
| 2019 Survey wave (ref: 2018)                                 | -0.19 | 0.14      | 0.174    | -0.24  | 0.33      | 0.466    | 0.05                    | 0.34 | 0.873   |  |  |
| All or most peers use contraception to                       | 0.91  | 0.14      | 0.000    | 0.41   | 0.36      | 0.263    | 0.50                    | 0.40 | 0.205   |  |  |
| protect from pregnancy or STI (ref:<br>some/none/don't know) |       |           |          |        |           |          |                         |      |         |  |  |

Table 5. Multinominal logistic regression results for the association between perceptions of friends use of contraceptives and modern contraceptive use among females ages 15-24 in Kenya (n=2008)

|                               | LARC vs.           |      | Short-acting     |       | Condoms vs.        |       |       | LARC vs. condoms |       |       | Short-acting |             |         |      |       |  |
|-------------------------------|--------------------|------|------------------|-------|--------------------|-------|-------|------------------|-------|-------|--------------|-------------|---------|------|-------|--|
|                               | nonuse/traditional |      | hormonal methods |       | nonuse/traditional |       |       |                  |       |       | hormonal     |             |         |      |       |  |
|                               | use                |      | VS.              |       |                    | use   |       |                  |       |       |              | methods vs. |         |      |       |  |
|                               |                    |      |                  | nonu  | nonuse/traditional |       |       |                  |       |       |              |             | condoms |      |       |  |
|                               |                    |      |                  |       | use                |       |       |                  |       |       |              |             |         |      |       |  |
|                               | Coef               | SE   | p-               | Coef  | SE                 | p-    | Coef  | SE               | p-    | Coef  | SE           | p-          | Coef    | SE   | p-    |  |
|                               |                    |      | value            |       |                    | value |       |                  | value |       |              | value       |         |      | value |  |
| Age (continuous)              | 0.12               | 0.07 | 0.085            | 0.15  | 0.05               | 0.004 | 0.09  | 0.05             | 0.075 | 0.03  | 0.08         | 0.688       | 0.06    | 0.06 | 0.351 |  |
| Education (ref: secondary     |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| completion or more)           |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| None/some primary             | 0.32               | 0.63 | 0.613            | -0.08 | 0.47               | 0.867 | -1.06 | 0.42             | 0.012 | 1.38  | 0.78         | 0.076       | 0.98    | 0.57 | 0.085 |  |
| Primary completion            | 0.36               | 0.60 | 0.548            | -0.06 | 0.43               | 0.897 | -0.23 | 0.30             | 0.430 | 0.59  | 0.68         | 0.383       | 0.18    | 0.46 | 0.700 |  |
| Some secondary                | 0.54               | 0.64 | 0.404            | 0.19  | 0.43               | 0.655 | -0.45 | 0.32             | 0.160 | 0.98  | 0.73         | 0.175       | 0.64    | 0.49 | 0.193 |  |
| Relationship status (ref:     |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| married/in union/divorced/    |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| separated/widowed)            |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| Dating                        | -1.18              | 0.35 | 0.001            | -0.58 | 0.23               | 0.011 | 0.98  | 0.27             | 0.000 | -2.16 | 0.43         | 0.000       | -1.56   | 0.31 | 0.000 |  |
| Single                        | -1.51              | 0.44 | 0.001            | -1.41 | 0.25               | 0     | -0.50 | 0.33             | 0.131 | -1.01 | 0.56         | 0.069       | -0.91   | 0.40 | 0.023 |  |
| One or more children (ref:    | 2.44               | 0.43 | 0.000            | 1.59  | 0.26               | 0.000 | -0.34 | 0.23             | 0.138 | 2.79  | 0.48         | 0.000       | 1.93    | 0.34 | 0.000 |  |
| none)                         |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| Employment status (ref:       |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| Unemployed)                   |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| Student (current)             | -1.04              | 0.70 | 0.141            | -0.65 | 0.29               | 0.028 | -0.39 | 0.31             | 0.206 | -0.65 | 0.72         | 0.369       | -0.26   | 0.41 | 0.528 |  |
| Employed, full time           | 0.24               | 0.30 | 0.415            | 0.23  | 0.25               | 0.366 | -0.17 | 0.28             | 0.553 | 0.41  | 0.35         | 0.247       | 0.39    | 0.34 | 0.248 |  |
| Employed, part time           | 0.31               | 0.42 | 0.459            | -0.31 | 0.29               | 0.288 | 0.31  | 0.30             | 0.300 | 0.00  | 0.44         | 0.995       | -0.62   | 0.38 | 0.100 |  |
| Urban (ref: rural)            | 0.10               | 0.31 | 0.737            | 0.25  | 0.19               | 0.190 | 0.19  | 0.18             | 0.285 | -0.09 | 0.32         | 0.786       | 0.06    | 0.23 | 0.778 |  |
| 2019 Survey wave (ref: 2018)  | 0.89               | 0.30 | 0.003            | 0.03  | 0.19               | 0.873 | 0.15  | 0.18             | 0.421 | 0.74  | 0.31         | 0.015       | -0.12   | 0.24 | 0.624 |  |
| All or most friends use       | 0.42               | 0.30 | 0.172            | 0.65  | 0.20               | 0.001 | 1.08  | 0.18             | 0.000 | -0.66 | 0.33         | 0.043       | -0.43   | 0.23 | 0.058 |  |
| contraception to protect from |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| pregnancy or STI (ref:        |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| some/none/don't know)         |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |

Table 6. Multinominal logistic regression results for the association between perceptions of peers use of contraceptives and modern contraceptive use among females ages 15-24 in Kenya (n=2008)

|                               | LARC vs.           |      | Short-acting     |       | Condoms vs.        |       |       | LARC vs. condoms |       |       | Short-acting |             |         |      |       |  |
|-------------------------------|--------------------|------|------------------|-------|--------------------|-------|-------|------------------|-------|-------|--------------|-------------|---------|------|-------|--|
|                               | nonuse/traditional |      | hormonal methods |       | nonuse/traditional |       |       |                  |       |       | hormonal     |             |         |      |       |  |
|                               | use                |      | VS.              |       |                    | use   |       |                  |       |       |              | methods vs. |         |      |       |  |
|                               |                    |      |                  | nonu  | nonuse/traditional |       |       |                  |       |       |              |             | condoms |      |       |  |
|                               |                    |      |                  |       | use                |       |       |                  |       |       |              |             |         |      |       |  |
|                               | Coef               | SE   | p-               | Coef  | SE                 | p-    | Coef  | SE               | p-    | Coef  | SE           | p-          | Coef    | SE   | p-    |  |
|                               |                    |      | value            |       |                    | value |       |                  | value |       |              | value       |         |      | value |  |
| Age (continuous)              | 0.12               | 0.07 | 0.079            | 0.15  | 0.05               | 0.003 | 0.09  | 0.05             | 0.055 | 0.03  | 0.08         | 0.733       | 0.05    | 0.06 | 0.374 |  |
| Education (ref: secondary     |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| completion or more)           |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| None/some primary             | 0.28               | 0.62 | 0.649            | -0.10 | 0.47               | 0.830 | -1.08 | 0.41             | 0.009 | 1.37  | 0.77         | 0.075       | 0.98    | 0.57 | 0.083 |  |
| Primary completion            | 0.34               | 0.60 | 0.566            | -0.05 | 0.43               | 0.909 | -0.24 | 0.29             | 0.416 | 0.58  | 0.68         | 0.391       | 0.19    | 0.47 | 0.690 |  |
| Some secondary                | 0.53               | 0.64 | 0.411            | 0.21  | 0.43               | 0.631 | -0.44 | 0.30             | 0.145 | 0.96  | 0.72         | 0.178       | 0.64    | 0.48 | 0.185 |  |
| Relationship status (ref:     |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| married/in union/divorced/    |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| separated/widowed)            |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| Dating                        | -1.18              | 0.35 | 0.001            | -0.57 | 0.23               | 0.011 | 0.98  | 0.27             | 0.000 | -2.17 | 0.43         | 0.000       | -1.55   | 0.32 | 0.000 |  |
| Single                        | -1.52              | 0.44 | 0.001            | -1.42 | 0.25               | 0.000 | -0.54 | 0.34             | 0.109 | -0.98 | 0.55         | 0.077       | -0.87   | 0.41 | 0.033 |  |
| One or more children (ref:    | 2.46               | 0.43 | 0.000            | 1.62  | 0.26               | 0.000 | -0.32 | 0.24             | 0.170 | 2.78  | 0.48         | 0.000       | 1.94    | 0.34 | 0.000 |  |
| none)                         |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| Employment status (ref:       |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| Unemployed)                   |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| Student (current)             | -1.04              | 0.70 | 0.137            | -0.65 | 0.29               | 0.024 | -0.41 | 0.30             | 0.174 | -0.63 | 0.72         | 0.381       | -0.24   | 0.41 | 0.550 |  |
| Employed, full time           | 0.25               | 0.30 | 0.399            | 0.23  | 0.24               | 0.344 | -0.15 | 0.27             | 0.587 | 0.40  | 0.35         | 0.261       | 0.38    | 0.33 | 0.256 |  |
| Employed, part time           | 0.31               | 0.42 | 0.466            | -0.32 | 0.30               | 0.273 | 0.33  | 0.29             | 0.265 | -0.02 | 0.45         | 0.965       | -0.65   | 0.38 | 0.083 |  |
| Urban (ref: rural)            | 0.10               | 0.31 | 0.738            | 0.26  | 0.20               | 0.184 | 0.19  | 0.17             | 0.261 | -0.09 | 0.31         | 0.774       | 0.07    | 0.23 | 0.773 |  |
| 2019 Survey wave (ref: 2018)  | 0.85               | 0.31 | 0.006            | -0.03 | 0.18               | 0.878 | 0.02  | 0.18             | 0.931 | 0.84  | 0.30         | 0.006       | -0.04   | 0.23 | 0.852 |  |
| All or most friends use       | 0.27               | 0.29 | 0.361            | 0.47  | 0.17               | 0.004 | 0.94  | 0.19             | 0.000 | -0.67 | 0.30         | 0.025       | -0.47   | 0.22 | 0.032 |  |
| contraception to protect from |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| pregnancy or STI (ref:        |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |
| some/none/don't know)         |                    |      |                  |       |                    |       |       |                  |       |       |              |             |         |      |       |  |

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