Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Youth Relationships in the Era of COVID-19: A Mixed-Methods Study Among Adolescent Girls and Young Women in Kenya

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A B S T R A C T

Background: Measures to mitigate COVID-19's impact may inhibit development of healthy youth relationships, affecting partnership quality and sexual and reproductive health (SRH) outcomes.
Methods: We conducted a mixed-methods study to understand how COVID-19 affected girls' and young women's relationships in Kenya. Bivariate and multivariate logistic regression examined factors associated with relationship quality dynamics and SRH outcomes among 756 partnered adolescents aged 15–24 years. Qualitative data from in-depth interviews were analyzed using inductive thematic analysis to explore youth perceptions of how intimate relationships changed during COVID-19.
Results: Nearly three-quarters of youth described changes in relationship quality since COVID-19 began, with 24% reporting worsening. Reduced time with partners was the strongest predictor of changed relationship quality. Youth experiencing complete or partial COVID-19-related household income loss had heightened risk of deteriorating partnerships (relative risk ratio = 2.43 and 2.02; $p < .05$); those whose relationships worsened were more likely to experience recent intimate partner violence, relative to no relationship change (20.8% vs. 3.5%; $p < .001$). Qualitative analysis revealed how COVID-19 mitigation measures hindered intimate relationships, school closures accelerated marriage timelines, and economic hardships strained relationships, while increasing early pregnancy risk and girls' financial dependency on their partners.
Conclusions: COVID-19 disrupted adolescent girls' and young women's romantic relationships, depriving some of partner emotional support and exposing others to sexual violence, early pregnancy, and economically motivated transactional relationships. Increased social support systems, including access to psychosocial services, are needed in low-income communities in Kilifi, Kisumu, and Nairobi, in particular the informal settlement areas, to mitigate COVID-19's consequences on girls' SRH.

IMPLICATIONS AND CONTRIBUTION

Public health measures to mitigate COVID-19 may jeopardize girls' SRH in low-income communities in Kenya. The balance between the epidemiologic benefits and social risks of restrictive measures should be re-evaluated throughout the pandemic to lessen potential long-term consequences of COVID-19 on youth's health and well-being, including unintended pregnancy and childbearing.

Romantic partnerships represent an important developmental task in the transition to adulthood, with implications for young people's social and health trajectories [1]. These

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relationships often involve affectionate and intimate expressions, increasing with age, and can contribute to improved well-being and self-esteem. However, girls' sexual experiences also entail risks, including sexually transmitted infections, coercion, violence, and unintended pregnancy—one of the greatest health burdens for girls 15–19 years old living in low- and middle-income countries [2].

In 2020, unprecedented measures to control COVID-19, specifically school and business closures, curfews, and bans on large gathering, profoundly altered social interactions for youth worldwide. Although the African continent has suffered a lower burden of COVID-19 mortality relative to other regions, the pandemic has stressed Africa's fragile economies and escalated poverty [3,4]. By June 2020, 39% of women aged 15–49 years in Kenya reported complete household income loss and 30% experienced food insecurity since COVID-19 began [5]. With growing poverty, more girls are at risk of early pregnancy and marriage [6,7], especially in the context of sexual and reproductive health (SRH) service disruptions [8,9]. Although the range and magnitude of SRH consequences are unknown, concerns about rising intimate partner violence (IPV) have ignited widespread concerns about changing relationship dynamics amid the pandemic [10–12].

Emerging literature, from online surveys in high- and middle-income settings, suggests significant disruptions to romantic and sexual relationships during COVID-19 lockdowns [13–16], yet few studies focus on experiences of youth in low- and middle-income countries. The landscape of youth relationships during COVID-19 provides insight into potential social, economic, and health consequences that may develop in the months ahead. These concerns are salient among young women in Kenya who face heightened risks of unprotected, nonvolitional sexual intercourse, leading to increased exposure to unintended pregnancy and HIV [17]. This study aims to understand how COVID-19 restrictions affected girls' and young women's relationship experiences, examine drivers of these changes, and explore how these changes inform youth SRH and well-being.

Methods

This analysis uses data from a mixed-methods study conducted by the Population Council to understand COVID-19's implications on social and economic stability, health, and well-being.

Quantitative analysis

Data were collected via phone-based surveys from June to August 2020 to assess households' knowledge, attitudes, practices, and needs during COVID-19. We used four existing cohorts, including the Adolescent Girls Initiative-Kenya and Nisikilize Tuengane in Nairobi, Nia project in Kilifi, and DREAMS study in Kisumu, which tested interventions to promote girls' empowerment and improve SRH [18,19]. Participants resided in five urban slums of Nairobi and in rural and urban/peri-urban communities of Kilifi and Kisumu, respectively. Study geographies varied in terms of household wealth (ranging from 10.9% in the highest quintile in Nyanza, where Kisumu is located, to 67.4 % in Nairobi), median age at first marriage (18.6 in Nyanza to 22.1 in Nairobi), and completion of secondary school or higher (26.3% in Kilifi to 66.1% in Nairobi), with study populations living in informal settlements and lower resource communities in these contexts [20]. COVID-19 restrictions were implemented from March 2020 onward at a national level, affecting people across study settings. Closures lasted longer in Kilifi, and curfews affected urban populations more than those in rural areas. COVID-19 survey participation ranged from 75% of those eligible in Nairobi to 79% in Kisumu and 59% in Kilifi, resulting in a cross-site sample of 2,337 girls and young women aged 15–24 years. Given our focus on relationship dynamics, we restricted the analytic sample to the 756 partnered participants, including those who were married or had a serious/casual boyfriend (Nairobi: n = 301; Kilifi: n = 132; Kisumu n = 323).

This analysis uses data about household wealth collected among adults before COVID-19 and income loss during COVID-19, matched with adolescent data about their sociodemographic and relationship characteristics, fertility intentions and behaviors, food insecurity, and experience of IPV during COVID-19. Interviewers confirmed adolescents were in a safe space to respond to sensitive questions prior to implementation, and participants reporting IPV were provided confidential, warm referrals for local psychosocial, legal, and medical resources through study partnerships with local community-based organizations specializing in IPV support services. Participants were told they could refuse questions or end participation at any time and were provided 100 Kenyan shillings (~US$1) for their time. Verbal informed consent was obtained from participants aged 18 and older; those younger than 18 provided verbal assent with a parent/guardian providing consent. Ethical approvals were received from the Population Council Institutional Review Board (protocol #p936) and AMREF-ESRC (P803/2020) in Kenya.

Our dependent variable was *relationship quality dynamics* during COVID-19, which evaluated changes in (1) emotional support and (2) tensions with the participant's main partner since COVID-19 began, relative to pre-COVID-19. We combined these two dimensions to create a four-category measure: (1) *worsening* (less emotional support with increased tensions), (2) *no change*, (3) *mixed changes* (less emotional support with decreased tensions, or more emotional support with increased tensions), and (4) *improvement* (more emotional support and decreased tensions).

We also considered three SRH indicators: relationship satisfaction (very satisfied/not); experience of IPV (yes/no) based on reports of emotional, physical, or sexual violence perpetrated by the partner in the last month using a modified version of the Revised Conflict Tactics Scale; and contraceptive use (yes/no). Sociodemographic characteristics (age, site, schooling, wealth), COVID-19-related experiences (household income loss, food insecurity), and relationship characteristics (type, cohabitation, recency of last interaction, number of partners, and changes in frequency of partner interactions) were also assessed.

Descriptive statistics explored distributions of key variables by site and age group (adolescent girls: 15–19 year olds vs. young women: 20–24 year olds). We conducted cross-site multivariate multinomial logistic regressions to assess factors associated with relationship quality dynamics, as only two interactions by site and age were significant: age and site ($p = .03$) and age and change in time spent with partner ($p = .02$). Finally, we used bivariate analysis to examine how relationship quality dynamics were related to relationship satisfaction, IPV, and contraceptive use (among participants wanting to avoid pregnancy).

Qualitative analysis

Qualitative data came from in-depth interviews with adolescents sampled from the COVID-19 cohorts in each site. Youth were eligible for qualitative interviews if they were aged 15–24, enrolled in the COVID-19 study cohort, and consented to follow-up. Participants were purposively selected to reflect a diversity of perspectives that varied by life course stage (e.g., marital status, parity) and educational attainment. At least three participants were selected per segment (i.e., parity, age) and site to reach thematic saturation, based on prior experience in study contexts. Domains of inquiry included ways COVID-19 affected participants' lives, comprising school attendance, economic status, health, and relationships. Interviews were conducted by trained interviewers in relevant local languages, lasting 45–60 minutes, transcribed into English verbatim, and independently validated using Krippendorf's alphas for coding reliability.

This secondary analysis focused on interview sections exploring changes in relationships during COVID-19. Researchers in Kenya coded the transcripts following an inductive thematic approach. We identified 24 codes relating to partnerships during COVID-19 and developed site-specific thematic matrices to identify commonalities and distinctions in relationship dynamics across sites. ATLAS.ti was used for coding and qualitative analysis.

Results

Quantitative findings

Thirty-nine percent of participants were from Nairobi, 18.0% from Kilifi, and 42.8% from Kisumu (Table 1). On average, participants were 19.5 years old, with 72.0% of participants aged 15–19 in Kilifi versus 41.5% of those in Kisumu. One-fifth were cohabitating and half attended school pre-COVID-19. Sixty-seven percent reported skipping meals more frequently since COVID-19 began, and 47.9% and 30.1% experienced partial and complete household income loss during COVID-19, respectively. Three percent of participants were pregnant during COVID-19 (no difference by age) and 6.0% of 20–24 year olds, relative to .5% of 15–19 year olds, were trying to become pregnant. Approximately 11.1% reported experiencing IPV in the last month, and 55.9% of those wanting to prevent pregnancy were using contraception.

Most participants were in a serious relationship (50.7%) or married (19.6%), and 68.3% spent less time with their partner since COVID-19 began (Table 2). Three-quarters described changes in relationship quality during COVID-19, relative to pre-COVID-19: 23.5% described *worsening* quality (less emotional support with more tensions) and 22.2% reported *improvement* (more emotional support with less tensions). Another 27.8% described *mixed changes*: 22.7% reported less tensions but also less emotional support, and 5.1% indicated more emotional support with increased tensions (Table 3).

Relationship quality dynamics were generally more positive among adolescent girls compared to young women, especially in Kisumu, where 17.0% of adolescents and 33.2% of young women described worsening relationships. Participants in casual relationships were least likely to report improvement, while those in serious partnerships were least likely to report worsening. Increased time with partners was associated with improved relationship quality, while less time had mixed effects, with associations differing by age (interaction, $p = .02$). Adolescents aged 15–19 who spent less time with partners were as likely to report worsening, relative to improving, relationships (22.0% vs. 24.9%, respectively), while their counterparts aged 20–24 were

Table 1
Sociodemographic characteristics and COVID-19 experiences, by site

	Nairobi (n = 301), % (n)	Kilifi (n = 132), % (n)	Kisumu (n = 323), % (n)	Total (n = 756), % (n)
Sociodemographic characteristics				
Age (y)				
15–19	59.1 (178)	72.0 (95)	41.5 (134)	53.8 (407)
20–24	40.9 (123)	28.0 (37)	58.5 (189)	46.2 (349)
Attending school pre-COVID-19				
No	49.5 (149)	23.5 (3,431)	54.8 (177)	47.2 (357)
Yes	50.5 (152)	76.5 (101)	45.2 (146)	52.8 (399)
Partner status				
Non-cohabiting	88.7 (267)	87.9 (116)	68.1 (220)	79.8 (603)
Cohabiting	11.3 (34)	13.0 (16)	31.9 (103)	20.2 (153)
Household wealth				
Low	30.2 (91)	44.7 (59)	49.9 (161)	41.1 (311)
Medium	48.2 (145)	47.0 (62)	34.7 (112)	42.2 (319)
High	21.6 (65)	8.33 (11)	15.5 (50)	16.7 (126)
COVID-19-related experiences				
Household income loss				
None	20.6 (60)	34.9 (46)	18.0 (58)	21.9 (164)
Partial	44.9 (131)	35.6 (47)	55.7 (180)	47.9 (3,585)
Complete	34.6 (101)	29.6 (39)	26.3 (85)	30.1 (225)
Food insecurity				
None	22.3 (67)	29.6 (47)	27.7 (91)	26.7 (205)
Increased	72.4 (218)	59.4 (82)	65.2 (214)	67.0 (514)
Chronic consistent	5.3 (16)	6.5 (9)	7.0 (23)	6.3 (48)
Sexual and reproductive health				
Satisfied with main partner[a]	81.3 (221)	67.4 (89)	77.7 (251)	77.2 (561)
Intimate partner violence in last month	7.6 (23)	12.1 (16)	13.9 (45)	11.1 (84)
Using contraception[b]	42.6 (115)	41.6 (52)	74.2 (218)	55.9 (385)

p Values represent chi-squared test.
[a] Relationship satisfaction assessed among 96% of respondents (n = 727) with complete satisfaction data.
[b] Contraceptive use analysis restricted to the 91% of respondents (n = 689) who were not pregnant and did not want to become pregnant at the time of survey.

Table 2
Relationship characteristics and changes in relationship quality, by age among adolescent girls and young women aged 15–24 in three Kenyan counties, 2020

	15–19 years (n = 407), %	20–24 years (n = 349), %	Total (n = 756), %
Type of relationship			
Married	5.4	36.1	19.6
Serious	57.5	42.7	50.7
Casual/other	37.1	21.1	29.8
Number of partners versus pre-COVID-19			
More	6.1	4.3	5.3
Less	39.3	30.4	35.2
Same	54.6	65.3	59.5
Recency of last interaction with partner			
Within past two weeks[a]	45.2	56.2	50.3
Three or more weeks past	54.8	43.8	49.7
Amount of time spent with main partner			
More	9.6	18.9	13.9
Less	76.4	58.7	68.3
Same	14.0	22.4	17.9
Emotional support from partner			
More	18.4	19.5	18.9
Less	42.3	44.1	43.1
Same	39.3	36.4	38.0
Tension with main partner			
More	17.0	24.9	20.6
Less	42.8	33.8	38.6
Same	40.3	41.3	40.7

[a] Within past two weeks includes participants cohabitating with their partners.

more likely to report relationships worsening than improving (28.9% vs. 14.2%, respectively). A higher proportion of those who reported partial or complete household income loss described worsening relationship quality compared to those who were not economically affected by COVID-19. Conversely, youth from the wealthiest households were least likely to report worsening and most likely to report improving relationships.

Results from the multivariate analysis indicate changes in the amount of time spent with partners since COVID-19 began was the strongest predictor of changes in relationship quality (Table 4). Across ages, participants who spent less time with partners were more likely to report any relationship change (worsening, mixed changes, or improvement), relative to no change, while young women who interacted with their partners less were less likely to experience improved relationships relative to no change ($p < .05$). Conversely, participants who interacted with their partners more were more likely to experience mixed relationship quality dynamics, reflecting discordant changes in emotional support and tension (relative risk ratio = 8.63, $p < .001$). Finally, participants who reported partial or complete household income loss were more likely to describe worsening relationships or mixed changes, while those living in the wealthiest households were less likely to describe worsening relationships ($p < .05$).

Changes in relationship quality were correlated with a range of SRH outcomes (Table 5). Participants who described worsening relationship quality were the least likely to be satisfied with their relationship, more likely to experience IPV from their partner in the past month, and among those wishing to avoid pregnancy, were most likely to report using contraception ($p < .05$).

Qualitative findings

Among the 57 qualitative interview participants, 40 lived in Nairobi, eight in Kilifi, and nine in Kisumu; three-quarters were 15–19 years old. Across sites, participants described a range of changes to their own and peers' romantic relationships. Disruptions were discussed in relation to COVID-19 mitigation measures, school closures, and economic hardship.

COVID-19 mitigation measures hinder intimacy. Participants across sites discussed difficulties sustaining intimate relationships due to restrictions on movement and fears of viral transmission. Some girls described how concerns of becoming infected or infecting their partners reduced intimacy. Participants discussed changes to their physical interactions with romantic partners similarly across sites:

> *[There] was a time that, if you met with, like your boyfriend, you would hug him and maybe kiss. Some kiss, but now, [kissing] is not there. If you meet with your friend, even a hug, you fear giving him [Coronavirus], even the handshake, you fear [Coronavirus]. You just think that he may be carrying that disease.*
>
> — *17-year-old, Nairobi*

> *Now that people are at home and a lot of social distancing is observed, it has become hard to meet with my boyfriend who is in Uganda. It is really hard since we just converse on phone, and I'm forced to wait for him to come back.*
>
> — *18-year-old, Kisumu*

In Nairobi, participants described how COVID-19 mitigation measures (e.g., social distancing) led to tensions and conflict with their partners, as limited interactions instilled mistrust and fears of infidelity, especially in long-distance or non-cohabiting relationships.

> *Corona has caused people to change partners because some are told they can't leave work until Saturday or Sunday, [so] they board there. So, maybe you can't know where he is, what he is doing with his colleague.*
>
> — *18-year-old, Nairobi*

The effects of these restrictions on participants in more established, cohabitating partnerships were less widely shared. In contrast, cohabitating partners discussed the impacts of increased time together, due to curfews and lockdowns, as positive for some who enjoyed increased closeness but negative for others.

> *When Corona came, we stayed at home a lot. It made me know him more than I used to know him… I think Corona opened my eyes a little bit wider. So, that made me maybe lose my relationship or something. Maybe it opened my eyes to see the true kind human being he was.*
>
> — *16-year-old, Nairobi*

School closures accelerate relationship timelines. Across sites, participants noted ways school closures led some girls to spend more time with their partners due to fewer obligations, increased free time, or heightened familial tensions. Prolonged school closures led to loss of hope or interest in studying for some, thereby accelerating cohabitation and considerations about marriage. Many participants perceived increased risks of early pregnancy and marriage related to school closures, although few knew people in their communities who had experienced these changes.

Table 3
Sociodemographic and COVID-19-related experiences and changes in relationship quality during COVID-19 among adolescent girls and young women aged 15–24 in three Kenyan counties, 2020

	No change, %	Worsening, %	Mixed changes, %	Improvement, %	*p* value
Total, % (n)	26.6 (201)	23.5 (178)	27.9 (211)	22.0 (166)	
Sociodemographic characteristics					
Site					
Nairobi	24.6	21.3	27.5	26.6	**.002**
Kilifi	39.4	22.0	26.5	12.1	
Kisumu	23.2	26.3	28.8	21.7	
Age					
15–19 years	26.5	20.2	29.7	23.6	.092
20–24 years	26.7	27.5	25.8	20.1	
Attending school pre-COVID-19					
Yes	24.1	28.0	26.0	21.9	**.043**
No	28.8	19.6	29.6	22.1	
Household wealth					
Low	25.4	25.4	27.7	21.5	**.006**
Medium	25.1	26.0	30.1	18.8	
High	33.3	12.7	23.0	31.0	
COVID-19-related experiences					
Household income loss					
None	36.0	17.1	24.4	22.6	**.044**
Partial	24.3	25.4	28.2	22.1	
Complete	22.2	25.8	30.2	21.8	
Food insecurity during COVID-19					
None	25.8	20.2	26.8	27.3	.266
Chronic stable	18.8	22.9	31.3	27.1	
Increased	27.7	24.9	28.0	19.4	
Relationship characteristics					
Type of relationship					
Married	26.4	34.5	16.9	22.3	**<.001**
Serious	26.6	18.3	29.8	25.3	
Casual/other	26.7	25.3	32.0	16.0	
Recency of last interaction with partner					
Within past two weeks[a]	28.2	24.1	22.4	25.3	**.005**
Three or more weeks past	25.0	22.9	33.5	18.6	
Amount of time with main partner					
More	24.8	23.8	23.8	27.6	**<.001**
Less	21.3	24.8	33.5	20.4	
Same	48.2	18.5	9.6	23.7	

Worsening includes less emotions and more tensions. Mixed changes include less emotions and less tensions or more emotions and more tensions. Improvement includes more emotions and less tensions.
Bolded values indicate statistical significance at $p < .05$.
[a] Within past two weeks includes participants cohabitating with their partners.

> *People have a lot of free time. When one is done with house chores and feels bored, she just decides to go to her boyfriend. There is just a lot of free time… [Girls] go to their boyfriends, spend time, and roam around, eventually…[laughter].*
>
> *— 20-year-old, Kilifi*

> *You know, during this Corona period, people are not going to school. Right now, when you go [to see your boyfriend] you know that the following day there is no school, so you continue with being there, and that's how you end up getting into an early marriage.*
>
> *— 20-year-old, Nairobi*

Economic hardships strain relationships and increase girls' dependency. Participants extensively discussed how economic hardships experienced by their partners and families informed their relationships and could increase risk of early pregnancy and marriage. Young women's narratives suggested that, in the face of economic insecurity, existing gender stereotypes, specifically, women's and men's roles as "reproducers" versus "providers," were amplified. Girls often viewed their partners' COVID-19-related income loss as a failure to provide for the couple, leading to suspicion, tensions, and relationship conflict. These situations could lead to separation, as girls sought other sexual partners to ensure their financial needs were met.

> *Before Corona, he used to give me 500ksh, and then the following day he [gave] me the same amount. Now, he is giving me 200ksh. So, when he comes back, he finds me angry. There is no good relationship, so you cannot make love because you are angry.*
>
> *— 22-year-old, Nairobi*

> *Let's say a girl does not have money and needs money, and there is a guy who can provide that money, but in exchange for sex. Then she goes [to him]. She does not have any other option.*
>
> *— 19-year-old, Kisumu*

Youth shared that they were becoming more reliant on their partners' income than they were pre-COVID-19 due to their own or their family's pandemic-related income loss. The quest for economic stability through sexual

Table 4
COVID-19-related experiences and sociodemographic and relationship characteristics associated with changes in relationship quality, among adolescent girls and young women aged 15–24 in three Kenyan counties, 2020

	Worsening versus no change			Mixed versus no change			Improvement versus no change		
	RRR	95% CI		RRR	95% CI		RRR	95% CI	
Sociodemographic characteristics									
Site									
Nairobi	Reference			Reference			Reference		
Kilifi	.66	.35	1.24	.57	.31	1.03	**.25**	**.13**	**.50**
Kisumu	1.22	.73	2.06	1.33	.80	2.19	.86	.51	1.44
Age									
15–19	Reference			Reference			Reference		
20–24	1.21	.40	3.61	.82	.25	3.08	1.54	.60	3.97
Attending school before COVID-19									
No	Reference								
Yes	.69	.41	1.17	.87	.53	1.42	.95	.56	1.60
Household wealth									
Low	Reference			Reference			Reference		
Medium	1.24	.77	1.99	1.32	.83	2.11	.93	.56	1.53
High	**.46**	**.23**	**.93**	.71	.38	1.31	.97	.54	1.75
COVID-19-related experiences									
Household income loss									
None	Reference			Reference			Reference		
Partial	**2.02**	**1.13**	**3.61**	1.59	.91	2.73	1.22	.711	2.13
Complete	**2.43**	**1.30**	**4.54**	**2.22**	**1.24**	**3.98**	1.46	.80	2.68
Food insecurity during COVID-19									
None	Reference			Reference			Reference		
Chronic stable	1.95	.68	5.58	1.93	.70	5.34	1.45	.53	3.99
Increased since COVID-19	1.01	.60	1.70	.80	.49	1.31	.58	.35	.95
Relationship characteristics									
Change in time spent with partner									
No change	Reference			Reference			Reference		
More time	2.32	.61	8.87	**8.63**	**2.54**	**29.40**	2.85	.86	9.49
Less time	**4.94**	**1.96**	**12.44**	**8.43**	**3.22**	**22.10**	**3.88**	**1.73**	**8.71**
Relationship type									
Married	Reference			Reference			Reference		
Serious	**.40**	**.19**	**.84**	.92	.42	2.03	1.16	.54	2.47
Casual/other	.50	.22	1.13	.87	.37	2.04	.69	.29	1.66
Recency of last interaction with partner									
Within past 2 weeks[a]	Reference			Reference			Reference		
Three or more weeks past	1.20	.72	1.99	1.37	.85	2.21	.88	.53	1.46
Test of interaction									
Interaction: age × change in time spent with partner									
Aged 20–24 × more time	.72	.14	3.71	.33	.06	1.81	.69	.15	3.11
Aged 20–24 × less time	.77	.23	2.54	1.04	.27	4.00	**.29**	**.09**	**.87**

Worsening includes less emotions and more tensions. Mixed changes include less emotions and less tensions or more emotions and more tensions. Improvement includes more emotions and less tensions.
Bolded values indicate statistical significance at $p < .05$.
CI = confidence interval; RRR = relative risk ratio.
[a] Within past two weeks includes participants cohabitating with their partners.

partnerships, sometimes involving older men, was common among girls from lower-income families that could no longer afford their basic needs. Several participants shared how men exploited this economic vulnerability to pursue sexual relationships:

> *Before COVID, [girls'] parents provided them with everything they wanted. But, since COVID came, parents do not have jobs. So, a girl sees the best thing she has is her boyfriend. He dupes her with some little money he has, so the girl will go to her boyfriend because her boyfriend will provide her with everything she wants. The boyfriend just wants to use her, after which he'll leave her there.*
>
> — *22-year-old, Nairobi*

Participants across sites noted that girls entered sexual relationships to afford necessities, such as sanitary pads. Economically motivated relationships increased girls' risks of unintended pregnancy and early marriage; participants emphasized potential shame and rejection by their families if they became pregnant.

> *With this COVID-19, they are getting married sooner because life has been hard… Maybe an adolescent started seeing her menses, and the parent does not have the money to buy for her those pads. It will force the girl to sleep with a man, so that she can get money. She feels that is the easiest way.*
>
> — *22-year-old, Nairobi*

> *The girl can't afford some personal stuff, so she'll have to get a boyfriend who'll provide for her. In the long run the girl will eventually get pregnant then she will have to leave her home for her now husband's home.*
>
> — *19-year-old, Kilifi*

Table 5
Implications of change in relationship quality during COVID-19 on relationship satisfaction, IPV, and contraceptive use among adolescent girls and young women aged 15–24 in three Kenyan counties, 2020

	Satisfied with relationship[a]		Experienced IPV in the last month		Using contraception[b]	
	%	*p*-value	%	*p*-value	%	*p*-value
Total						
Change in relationship quality						
No change	82.3	<.001	3.5	<.001	59.1	.014
Worsening	64.2		20.8		75.0	
Mixed	74.3		15.2		62.4	
Improvement	88.6		4.8		66.4	

Row percentages presented, by outcome. Worsening includes less emotions and more tensions. Mixed changes include less emotions and less tensions or more emotions and more tensions. Improvement includes more emotions and less tensions. *p*-values from chi-square test.
IPV = intimate partner violence
[a] Relationship satisfaction assessed among 96% of respondents (n = 727) with complete satisfaction data.
[b] Contraceptive use analysis restricted to the 91% of respondents (n = 689) who were not pregnant and did not want to become pregnant at the time of survey.

Discussion

This mixed-methods study conducted across diverse populations of adolescent girls and young women in Kenya suggests that COVID-19 restrictions significantly affected youth's partnerships—improving relationships for some, while reducing interactions and increasing conflict, instability, and health risks for others. These disruptions varied by relationship type before COVID-19 and were also largely informed by economic hardships induced by the pandemic.

Consistent with emerging literature on partnerships and sexual lifestyles during COVID-19 [15,16,21–24], we found that the pandemic disrupted youth's romantic and sexual relationships in Kenya, often reducing opportunities for intimacy, with impacts differing by age and relationship type. Sixty-eight percent of girls spent less time with their partners since COVID-19 began, a change that was associated with worsening or mixed relationship quality. Romantic deprivation was most common among non-cohabiting participants who had not seen their partner in the last two weeks, supporting similar findings of prior studies among adults in high- or middle-income settings [16,25]. Together these results alert us to the consequences of social restrictions on romantic experiences of non-cohabiting youth. An online study, including participants from 63 countries, mostly from the United States and Europe, found significant declines in relationship satisfaction among non-cohabitating partners due to decreased time together amid COVID-19 [16]. The consequences of social restrictions were magnified in our study's young population, including adolescents, which often entertains clandestine relations—interactions difficult to sustain while schools or social venues are closed due to the pandemic. Findings also indicate that romantic isolation led to tensions and conflict, largely related to growing mistrust between partners and fears of infidelity, especially among young adults.

Although few adolescents reported spending more time with their partners during COVID-19, this proportion grew with age. Studies conducted during lockdowns in high-income settings demonstrate a sudden increase in shared time between cohabitating partners, with no impact on the overall quality of their relationships [16] or increases in conflict [25]. Studies centered on issues of intimacy during COVID-19 also report declines in the frequency of sexual intercourse among cohabitating partners during lockdown, related to increased anxiety and depression [24,26,27]. In our study, 28% of participants who spent more time with their partners described rising tensions and decreased emotional support, while 23% experienced the opposite. These contrasting relationship dynamics likely reflect the diversity of youth's relationships, ranging from long-time commitments to recent partnerships, as well as economic pressures straining circumstances.

As reasoned by Giami [20], the effects of COVID-19 restrictions "operate a magnifying mirror and a revealer" of social forces shaping partnerships and sexual relations. Our quantitative and qualitative results suggest that poverty and loss of financial resources related to COVID-19 debilitated existing relationships and motivated transactional partnerships. Economic consequences of COVID-19 amplified a gender divide [27]. We found that existing relationships were destabilized and re-evaluated in the face of a partner's income loss, leading to conflict, accusations of infidelity, and relationship dissolution. Young women's economic instability drove them to seek new partners, including older men, to meet their basic needs. Financial support came at the cost of unprotected sex and heightened risk of unintended pregnancy—trends that prompt concerns about the potential for increased rates of early pregnancy and child marriage during COVID-19 [6,28].

Supporting these concerns, we found that relationship quality dynamics were linked to young women's sexual health. Girls who experienced no change or an improvement in relationship quality expressed the greatest relationship satisfaction, while those describing deteriorating relationships were more likely to experience recent IPV. These results align with emerging literature on the rise of IPV during COVID-19 lockdowns [29–31] and highlight the importance of understanding relationship quality dynamics as an indicator of potentially adverse circumstances. In Kenya, 26% of women report recent experience of partner-perpetrated violence, highlighting the magnitude of this problem, even prior to COVID-19-induced stressors [20]. Youth experiencing worsening relationships who wanted to avoid pregnancy were the most likely to use contraception, suggesting efforts are made to protect reproductive autonomy amid partner conflict. Recent studies in Kenya suggest increases in contraceptive adoption in the early stage of the pandemic [32], including among adolescents [26]. Family planning services must be readily available for adolescent girls and young women, especially those experiencing increased economic hardship and relationship instability, to reduce the negative impact of COVID-19 on youth SRH.

We acknowledge limitations of this analysis. Our sample is not nationally or regionally representative, reflecting the perspectives of youth participating in four trials across three Kenyan counties. Additionally, our quantitative analysis was restricted to information collected from partnered adolescents and young women who owned phones and were successfully recontacted for follow-up. This analytic approach excluded participants who discontinued their relationships and those who lacked access to phones, which may reflect omission of socially or economically disadvantaged populations. Data were also self-reported and collected via phone, subjecting responses to potential biases, including social desirability and recall bias. Findings reveal associations between adolescents' direct report of relationship

quality changes during the pandemic and co-occurrence of SRH outcomes but do not imply causality. Although quantitative and qualitative participants were from the same existing cohort studies, qualitative participants were slightly younger and fewer were partnered, relative to the quantitative sample. Thus, while our qualitative sample may not fully represent our quantitative sample, our qualitative data provide added nuance to enhance our quantitative assessment of relationship dynamics during COVID-19.

In conclusion, this study illustrates how COVID-19 has resulted in significant disruptions in adolescent girls' and young women's romantic relationships, depriving some from their partner's emotional support and exposing others to sexual violence and early pregnancy. In the months ahead, young people's sexual and reproductive needs may evolve as COVID-19 continues to hinder the economy and limit educational opportunities. Sustained monitoring efforts are needed to ensure SRH services meets these evolving circumstances.

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References

[1] Collins WA. More than myth: The developmental significance of romantic relationships during adolescence. J Res Adolesc 2003;13:1–24.
[2] Darroch JE, Woong V, Bankole A, Ashford LS, et al. Adding it up: Costs and benefits of meeting the contraceptive needs of adolescents. New York: Guttmacher Institute; 2016. https://www.guttmacher.org/report/adding-it-meeting-contraceptive-needs-of-adolescents.
[3] Musa HH, Musa TH, Musa IH, et al. Addressing Africa's pandemic puzzle: Perspectives on COVID-19 transmission and mortality in sub-Saharan Africa. Int J Infect Dis 2021 Jan;102:483–8.
[4] OECD 2021. Available at: http://www.oecd.org/coronavirus/policy-responses/covid-19-and-africa-socio-economic-implications-and-policy-responses-96e1b282/.
[5] Performance monitoring for action (PMA). COVID-19 data dashboard. Available at: https://www.pmadata.org/pma-kenya-covid-19-dashboard. Accessed March 2, 2021.
[6] Cousins S. 2·5 million more child marriages due to COVID-19 pandemic. Lancet 2020;396:1059.
[7] Odimegwu C, Mkwananzi S. Factors associated with teen pregnancy in sub-Saharan Africa: A multi-country cross-sectional study. Afr J Reprod Health 2016;20:94–107.
[8] Aly J, Haeger KO, Christy AY, Johnson AM. Contraception access during the COVID-19 pandemic. Contracept Reprod Med 2020;5:17.
[9] Shapira G, Ahmed T, Drouard SHP, et al. Disruptions in maternal and child health service utilization during COVID-19: analysis from eight sub-Saharan African countries. Health Policy Plan 2021;36:1140–51.
[10] Evans ML, Lindauer M, Farrell ME. A pandemic within a pandemic - intimate partner violence during Covid-19. N Engl J Med 2020;383:2302–4.
[11] Hamadani JD, Hasan MI, Baldi AJ, et al. Immediate impact of stay-at-home orders to control COVID-19 transmission on socioeconomic conditions, food insecurity, mental health, and intimate partner violence in Bangladeshi women and their families: An interrupted time series. Lancet Glob Health 2020;8:e1380–9.
[12] Connor J, Madhavan S, Mokashi M, et al. Health risks and outcomes that disproportionately affect women during the Covid-19 pandemic: A review. Soc Sci Med 2020 Dec;266:113364.
[13] Li W, Li G, Xin C, et al. Challenges in the practice of sexual medicine in the time of COVID-19 in China. J Sex Med 2020;17:1225–8.
[14] Coombe J, Kong F, Bittleston H, et al. Contraceptive use and pregnancy plans among women of reproductive age during the first Australian COVID-19 lockdown: Findings from an online survey. Eur J Contracept Reprod Health Care 2021:1–14.
[15] Delcea C, Chirilă VI, Săuchea AM. Effects of COVID-19 on sexual life – a meta-analysis. Sexologies 2021;30:e49–54.
[16] Vigl J, Strauss H, Talamini F, Marcel. Relationship satisfaction in the early stages of the COVID-19 pandemic: A cross-national examination of situational, dispositional, and relationship factors, 2021. https://doi.org/10.31219/osf.io/b5c8g. Accessed March 12, 2021.
[17] Wado YD, Bangha M, Kabiru CW, Feyissa GT. Nature of, and responses to key sexual and reproductive health challenges for adolescents in urban slums in Sub-Saharan Africa: A scoping review. Reprod Health 2020;17:149.
[18] Austrian K, Muthengi E, Mumah J, et al. The Adolescent Girls Initiative-Kenya (AGI-K): Study protocol. BMC Public Health 2016;16:210.
[19] Muthengi E, Austrian K. Cluster randomized evaluation of the Nia project: Study protocol. Reprod Health 2018;15:218.
[20] Kenya National Bureau of Statistics, Ministry of Health/Kenya, National AIDS Control Council/Kenya, Kenya Medical Research Institute, and National Council for Population and Development/Kenya. Kenya Demographic and Health Survey 2014. Rockville, Maryland. 2015. Available at: http://dhsprogram.com/pubs/pdf/FR308/FR308.pdf.
[21] Giami A. COVID-19 and sexualities: The emergence of a new paradigm of sexualities [COVID-19 et sexualités: l'émergence d'un nouveau paradigme des sexualités]. Sexologies 2021;30:e1–7.
[22] Lehmiller JJ, Garcia JR, Gesselman AN, Mark KR. Less sex, but more sexual diversity: Changes in sexual behavior during the COVID-19 Coronavirus pandemic. Leis Sci 2021;43:295–304.
[23] Panzeri M, Ferrucci R, Cozza A, Fontanesi L. Changes in sexuality and quality of couple relationship during the COVID-19 lockdown. Front Psychol 2020;11:565823.
[24] Karagöz MA, Gül A, Borg C, et al. Influence of COVID-19 pandemic on sexuality: A cross-sectional study among couples in Turkey. Int J Impot Res 2020:1–9. Available at: https://www.nature.com/articles/s41443-020-00378-4. Accessed August 13, 2021.
[25] Lee SJ, Ward KP, Rodriguez C. Longitudinal analysis of short-term changes in relationship conflict during COVID-19: A risk and resilience perspective. 2020. https://doi.org/10.31234/osf.io/yqv7j. Accessed March 14, 2021.
[26] Williamson HC. Early effects of the COVID-19 pandemic on relationship satisfaction and attributions. Psychol Sci 2020;31:1479–87.
[27] Pinchoff J, Austrian K, Rajshekhar N, et al. Gendered economic, social and health effects of the COVID-19 pandemic and mitigation policies in Kenya: Evidence from a prospective cohort survey in Nairobi informal settlements. BMJ Open 2021;11:e042749.
[28] UNFPA's technical report "How will COVID-19 impact fertility?". Available at: https://www.unfpa.org/publications/how-will-covid-19-impact-fertility. Accessed August 16, 2021.
[29] Sánchez OR, Vale DB, Rodrigues L, Surita FG. Violence against women during the COVID-19 pandemic: An integrative review. Int J Gynaecol Obstet 2020;151:180–7.
[30] Agüero JM. COVID-19 and the rise of intimate partner violence. World Dev 2021;137:105217.
[31] Fereidooni R, Mootz J, Sabaei R, et al., The COVID-19 pandemic, socioeconomic effects, and intimate partner violence against women: A population-based cohort study in Iran. Available at SSRN: https://ssrn.com/abstract=3752688 or https://doi.org/10.2139/ssrn.3752688.
[32] Karp C, Wood SN, Guiella G, et al. Contraceptive dynamics during COVID-19 in sub-Saharan Africa: Longitudinal evidence from Burkina Faso and KenyaBMJ sexual & reproductive health. BMJ Sex Reprod Health 2021. https://doi.org/10.1136/bmjsrh-2020-200944. Accessed February 12, 2021.