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JOURNAL OF
ADOLESCENT
HEALTH

www.jahonline.org

Original article

Differences in Quality of Care of Family Planning Services Received by Age and Contraceptive Continuation Among Young Mothers in India

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Article history: Received June 9, 2021; Accepted August 28, 2022

Keywords: Family planning; Contraception; Quality of care; Contraceptive continuation; Motivation to prevent pregnancy; India; Young mothers

ABSTRACT

Purpose: Youth face barriers that affect their use of family planning (FP) services, including low quality of care and provider bias. Although young women have the highest unmet need for FP in India, little is known about the effect of age on quality of care received. Additionally, although youth have higher contraceptive discontinuation than older women, the factors associated with continuation, including the effect of quality of care, are not well known. This study aims to assess differences in quality of care received by young mothers aged 15–24 and mothers aged 25–48, and to examine factors associated with modern contraceptive continuation 6 months after initiation among young mothers.

Methods: Data come from a 12-month longitudinal study of married reversible contraceptive users in India. Multinomial logistic regression was conducted to examine adjusted associations of age and reported receipt of low, medium, or high quality of care. Logistic regression was used to assess factors associated with modern contraceptive continuation after 6 months.

Results: Results showed that young mothers were less likely to receive high quality of care than older mothers, and that among young mothers, motivation to prevent pregnancy was significantly associated with continued use after 6 months.

Discussion: As India aims to improve quality of care and increase access to services for youth, special attention should be paid to care received by young mothers, as well as options to support them in continuing to use contraceptive methods as long as they desire to prevent pregnancy.

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IMPLICATIONS AND CONTRIBUTION

Young mothers were less likely to receive high quality of care than older mothers when seeking family planning services in two states in India. High motivation to prevent pregnancy was associated with modern contraceptive continuation.

Conflicts of interest: The authors have no conflicts of interest to disclose.

Disclaimer: The Evidence Project is made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the terms of cooperative agreement No. AID/OAA-A-13-00087. The contents of this article are the sole responsibility of the authors and do not necessarily reflect the views of USAID or the United States government.

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Globally, 73 million adolescent girls and young women aged 15–24 have an unmet need for family planning (FP); that is, they would like to delay or avoid pregnancy but are not using a modern contraceptive method [1]. In India, young married women under the age of 25 have the highest unmet need for FP at 22%, compared to the national average of 13%, and the lowest demand for FP satisfied by modern methods at 43%, compared to the national average of 72% [2]. Although 48% of married women aged 15–49 in India use a modern contraceptive method, this

number drops to 24% among those aged 20%–24% and to 10% among those aged 15–19 [2]. Among all women, 44% of episodes of modern reversible method use in India are discontinued within a year [2]. To meet the needs of youth, the Government of India has committed to improving the quality of care of FP services and to enabling young people to access to sexual and reproductive health information and services [3].

In addition to focusing on improving quality of care and access to FP services for youth, in recent years, FP programs have emphasized the importance of supporting current contraceptive users to continue using their method or switch to different method if their current one is no longer suitable [4]. However, there is little evidence on the relationship between quality of care received among young people and their contraceptive use over time. To contribute to the evidence base for quality of care and contraceptive use over time among young people, this study aims to assess whether young, married mothers in India receive different levels of quality of care than older mothers and the factors associated with contraceptive continuation among young mothers.

Quality of care received by youth

Globally, youth (ages 15–24) face barriers that affect their use of health services, including low accessibility and quality of care [5] as well as bias from providers, particularly when seeking FP services [6]. This bias can manifest as minimum age requirements for providers to prescribe or administer certain, or any, contraceptive methods [6]. In Uttar Pradesh, India, a 2010 mixed-method study of 1,752 urban FP providers found that many providers routinely restricted younger women from accessing certain methods, particularly long-acting reversible and permanent methods, as well as injectables [7]. However, despite these known barriers faced by young people, there is little evidence globally measuring differences in quality of care received by youth seeking FP services compared to those aged 25 years or older.

Contraceptive use over time among youth

Although quality of care is an important outcome to examine in and of itself, there is also an interest in the relationship between quality of care received and contraceptive use over time following method initiation. Studies have shown mixed results on the link between quality of care and contraceptive continuation [8–11]. Until recently, there was not a common, validated set of items that could be used to measure the association of quality of care and contraceptive continuation. A study among a sample of married women in India has validated a set of quality of care measures in predicting contraceptive continuation [12].

Although few studies have compared contraceptive discontinuation rates by age, the existing evidence does suggest that youth discontinue at higher levels than older women for all reasons [13]. In India, girls aged 15–19 have a discontinuation rate of 44.5%, compared to 24.2% among women aged 20–49 [13]. When excluding discontinuation that occurs when women are no longer in need of FP (e.g., discontinuation due to wanting to get pregnant, not having sex, or believing they cannot get pregnant), youth generally still have higher in-need discontinuation rates, and this is true in India: the in-need discontinuation rate for girls aged 15–19 is 8.5%, compared to 5.3% for older women [13]. Additionally, youth are more likely to have shorter

periods of consistent use and are more likely to experience contraceptive failure and become pregnant while using a method [13–15].

Limited evidence suggests that these higher rates of discontinuation among youth may be due to challenges using methods consistently and correctly, being more likely to be offered and to use short-acting, user-controlled methods, and seeking methods from the private sector or informal sources, which may not provide sufficient structure or support for continued use over time [14]. When asked their reasons for discontinuation, youth are more likely to report discontinuing due to irregular sexual activity than older women, and many also discontinue because they want to become pregnant (especially among married youth) [14], but these reasons do not get at differences in in-need discontinuation. The factors associated with the higher discontinuation rates among youth have not yet been fully established. Given that quality of care is associated with contraceptive continuation for all women of reproductive age, it is important to explore whether quality of care is an important factor in contraceptive discontinuation among young women.

This study has two objectives. The first is to examine differences in quality of care received by young mothers (aged 15–24) and mothers aged 25–48, and to examine the effect of age on quality of care received after adjusting for other characteristics. The second is to assess the factors, including quality of care and motivation to prevent pregnancy, associated with modern contraceptive continuation after 6 months of initiation among young mothers aged 15–24.

Methods

Data

The analyses presented in this paper are secondary data analyses of a 12-month longitudinal study on the contraceptive use dynamics of married women aged 15–49 in Odisha and Haryana, India [16]. Women who began a new episode of intrauterine device (IUD, including postpartum), injectable, or oral contraceptive pill (OCP) use within the 30 days preceding the interview were enrolled into the study from December 2016 to October 2017. A new episode of use included those using a contraceptive method for the first time or those who had used a method in the past but were not using a method right before initiating the method selected at enrollment into the study. Women were enrolled into the study via Accredited Social Health Activists (who are community health volunteers under India's National Rural Health Mission) at the community level, at government health facilities, and at private non-governmental organization facilities. Women were interviewed by female investigators in Hindi or Odia at enrollment and 3, 6, and 12 months later, regardless of their contraceptive use status at each follow-up interview. At enrollment, the sample size was 2,699.

We obtained ethical approval for this study from the Institutional Review Board of the Population Council, the Government of Odisha's ethics committee, and from district authorities in Haryana. We obtained written informed consent from all respondents prior to each interview.

Sample population

For the first objective of this study, the analytic sample was limited to women who had at least one living child to examine

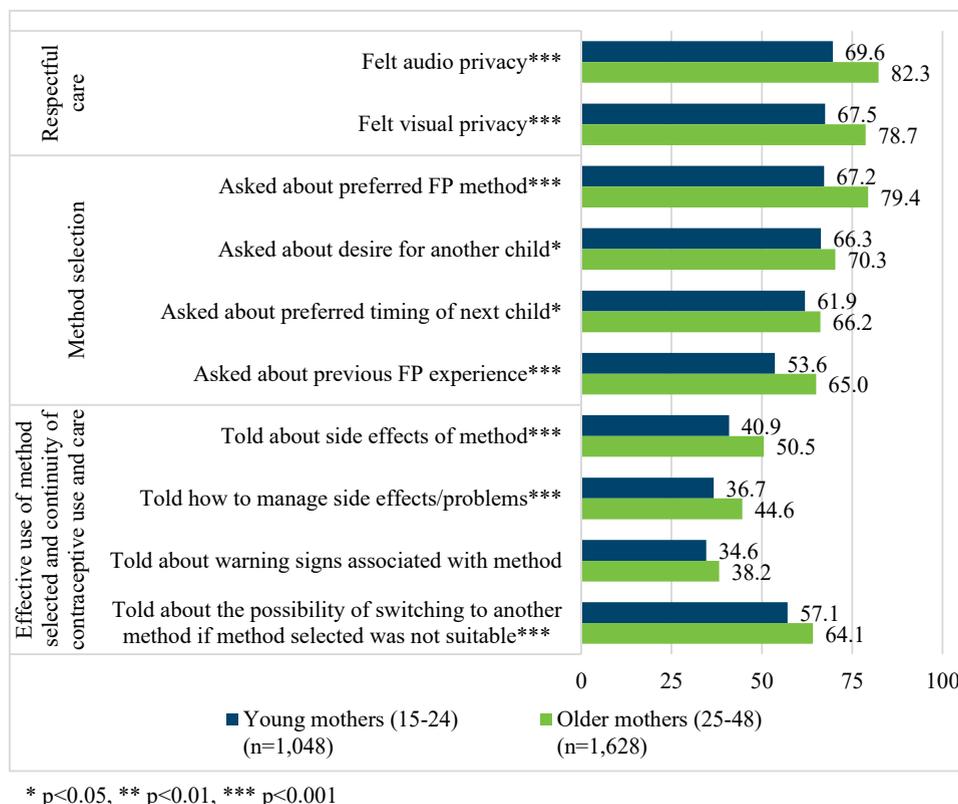


Figure 1. Percentage of mothers reporting receipt of information on four domains of quality of care at enrollment, by age. FP = family planning.

young mothers' experiences with quality of care and to reduce the effect of any bias associated with childlessness. Just 19 women did not have a living child at enrollment, and four were missing data, resulting in a sample size of 2,676.

For the second objective of the study, examining contraceptive continuation, the analytic sample included young mothers (aged 15–24) who were interviewed 3 months and 6 months later, to include those who were asked about key measures. Those who discontinued contraception because they wanted to get pregnant, their husband was not living at home, they were not having sex/having infrequent sex, and those who believed that they could not get pregnant were excluded, as they were considered not in need of contraception according to the Demographic and Health Surveys definition. Being menopausal or having a hysterectomy are other reasons for not being in need of contraception, but none of the women reported these reasons. Of 1,066 young women aged 15–24, 14 had no living children and four were missing data. In total, 137 were lost to follow-up at 6 months, and 92 were either lost to follow-up or missing data on key measures at 3 months. Finally, 19 discontinued because they were no longer in need of FP. The sample size for this objective was 800.

Measures

Dependent variable. The outcome measure for the first objective is a validated, composite measure of quality of care, capturing from the clients' perspective, information exchange and interpersonal relations between FP providers and clients [17]. This

measure was collected at enrollment and referred to the quality received at the visit in which the enrollment method was obtained, which occurred within 30 days preceding the interview. It is composed of four domains: respectful care, method selection, effective use of the selected method, and continuity of contraceptive use and care. An analysis using data from this study examined 22 items of quality across the four domains and reduced them to a 10-item proxy measure (Figure 1) [12]. The 10-item proxy measure contains measures from across the four domains but combines effective use of the selected method and continuity of contraceptive use and care for a total of three domains. The analysis showed that those who received high quality of care at enrollment were 2.7 times more likely to continue contraception after 3 months using the 22-item measure, and 2.2 times more likely using the 10-item proxy measure, demonstrating both measures' predictive validity related to contraceptive continuation after 3 months.

Following the creation of a composite measure for the 10 items, weighted additive indices (0–100) where the domains have equal weight were constructed [12]. The measure was categorized into low, medium, and high levels of quality, where low quality ranged from 0 to the mean score minus half the standard deviation, and high quality ranged from the mean score plus half of the standard deviation to 100. The 3-category, 10-item composite measure was the outcome for the first objective of the study. We coded those who received low quality of care as 0, those who received medium quality were coded as 1, and those who received high levels were coded as 2.

For the second objective, the outcome measure is modern contraceptive continuation at the 6-month follow-up interview. Modern contraceptive continuation, coded as 1, includes those who continued the same method that they began at enrollment as well as those who switched to a different modern method by the 6-month interview. Modern methods included IUD, injectable, OCP, condom, male and female sterilization, and lactational amenorrhea method. Rhythm method, withdrawal, and abstinence were considered traditional methods. We considered those who switched to traditional methods and those who discontinued contraception altogether as modern contraceptive discontinuers, coded as 0.

Independent variables. The independent variable of interest for the first objective is age of mothers, which we categorized into 15- to 24-year-olds (young mothers) and 24- to 48-year-olds (older mothers).

For the second objective, the independent variables included the 10-item composite measure of quality of care, described above, and motivation to prevent pregnancy. At the 3-month interview, we asked respondents: "On a scale of 1–10, where 10 is extremely important and 1 is not important at all, how important is it you to avoid a pregnancy now?" We categorized responses based on the mean responses. For the analytic sample ($n = 800$), the mean was 8.70. We coded women who reported low motivation (1–8 on the scale) as 0 and women who reported high motivation (9 or 10) as 1. Other independent variables considered for both objectives were education, number of living children, residence, state, religion, previous use of a modern contraceptive method, and source of the enrollment method. The method used at enrollment was also considered as a variable but was highly correlated with source of the enrollment method. Most IUD users (94.2%) obtained their method from a government hospital, injectable users from a private facility (60.8%), and OCP users from a frontline worker (82.0%). Since we were interested in quality of care, a provider- and facility-level factor, and because women could switch to other modern methods by the 6-month interview, we selected the source of the method instead of the method itself as an independent variable.

Analysis

For the first objective, we calculated descriptive statistics to examine background characteristics of women included in the sample. We conducted bivariate analyses examining the 10 items of the quality of care composite measure by age, as well as bivariate analyses examining differences in the composite quality measure by background characteristics. We used chi-squared tests to assess significance. To examine the association between age of mothers and receipt of medium or high quality (compared to low) when adjusting for other respondent characteristics, we conducted a multivariate, multinomial logistic regression for the composite 10-item quality measure.

For the second objective, we calculated descriptive statistics for the analytic sample. We then conducted a bivariate analysis to examine modern contraceptive continuation at 6 months by age of all mothers. Then, among the analytic sample of young mothers aged 15–24, we ran bivariate analyses with chi-squared tests for significance to assess differences in modern contraceptive continuation by background characteristics, quality of care, and motivation to prevent pregnancy. Finally, we employed a multivariate logistic regression model to examine the factors

associated with modern contraceptive continuation after 6 months. We conducted all analyses using Stata version 15.

Results

Table 1 presents respondent background characteristics at enrollment. Thirty-nine percent of respondents were young mothers, half had attended secondary school or higher, and 58% had two or more living children. Most lived in rural areas (82%) and in Odisha state (66%), and 84% were Hindu. Just over half of respondents had used a modern contraceptive method in the past. Half received their enrollment method from a government hospital, one third from a frontline worker, and 18% from a private facility.

For the first objective of the study, examining differences in quality of care received by age, we present the proportion of mothers who received each of the 10 quality of care items by age in **Figure 1**. On nine of the 10 items of quality, young mothers (aged 15–24) were significantly less likely to report receiving the information than mothers aged 25–48. There was no difference in the proportion told about warning signs of the method selected, as <40% of mothers from each age group received this information.

Results of the bivariate analyses of the 10-item composite quality measure by background characteristics are presented in **Table 2**. Young mothers were less likely to receive high (27%) or medium (36%) quality of care than older mothers (36% and 40%, respectively), and this difference was statistically significant ($p < .001$). Women who had attended primary/middle school were more likely to receive low quality, as were those with one child,

Table 1
Respondent characteristics at enrollment ($n = 2,676$)

	%	n
Age		
15–24 years	39.2	1,048
25–48 years	60.8	1,628
Education		
No education	22.9	614
Primary/middle	26.3	704
Secondary/higher	50.8	1,358
Parity		
1 child	41.8	1,118
2 or more children	58.2	1,558
Residence		
Urban	18.1	484
Rural	81.9	2,192
State		
Haryana	33.7	902
Odisha	66.3	1,774
Religion		
Hindu	84.1	2,250
Muslim/other	15.9	426
Previous modern contraceptive use		
Yes	52.3	1,400
No	47.7	1,276
Source of the method		
Government hospital	49.0	1,310
Frontline worker	32.7	874
Private facility	18.4	492
Method initiated at enrollment		
Postpartum IUD	15.3	408
IUD	23.7	635
Injectable	21.6	579
Oral contraceptive pill	39.4	1,054

IUD = intrauterine device.

Table 2

Bivariate analysis of 10-item composite process quality measure by respondent characteristics (n = 2,676)

	Low (%)	Medium (%)	High (%)	N
Age***				
15–24 years	37.1	36.4	26.5	1,048
25–48 years	24.1	40.0	35.9	1,628
Education***				
No education	28.0	39.4	32.6	614
Primary/middle	37.4	35.8	26.8	704
Secondary/higher	25.5	39.6	34.9	1,358
Parity***				
1 child	33.0	38.2	28.8	1,118
2 or more children	26.4	38.8	34.7	1,558
Residence**				
Urban	23.1	39.3	37.6	484
Rural	30.5	38.4	31.1	2,192
State***				
Haryana	13.5	33.4	53.1	902
Odisha	37.1	41.2	21.7	1,774
Religion***				
Hindu	31.9	38.1	30.0	2,250
Muslim/other	15.0	41.1	43.9	426
Previous modern contraceptive use***				
Yes	22.2	35.9	41.9	1,400
No	36.8	41.5	21.7	1,276
Source of the method***				
Government hospital	38.3	33.5	28.2	1,310
Frontline worker	25.1	41.4	33.5	874
Private facility	12.2	47.0	40.9	492
Total	29.2	38.6	32.3	2,676

p* < .01, *p* < .001.

women in rural areas, and those in Odisha. Muslim women, those who had previously used a contraceptive method, and those who received their method from a private facility were more likely to report high quality of care.

Table 3

Adjusted relative risk ratios for medium and high quality at method initiation (n = 2,676)

	Medium quality (Reference: low quality)		High quality	
	Adjusted RRR	95% CI	Adjusted RRR	95% CI
Age				
15–24 years	0.82	(0.65–1.04)	0.76*	(0.58–0.98)
25–48 years	Reference		Reference	
Education				
No education	0.73*	(0.55–0.97)	0.48***	(0.34–0.67)
Primary/middle	0.61***	(0.48–0.76)	0.50***	(0.38–0.66)
Secondary or higher	Reference		Reference	
Parity				
1 child	Reference		Reference	
2 or more children	0.86	(0.68–1.10)	0.62**	(0.47–0.82)
Residence				
Urban	0.67*	(0.48–0.93)	1.06	(0.75–1.50)
Rural	Reference		Reference	
State				
Haryana	Reference		Reference	
Odisha	0.37***	(0.28–0.49)	0.08***	(0.06–0.10)
Religion				
Hindu	0.69*	(0.48–0.99)	0.72	(0.49–1.07)
Muslim/other	Reference		Reference	
Previous modern contraceptive use				
Yes	Reference		Reference	
No	0.79*	(0.64–0.97)	0.34***	(0.27–0.43)
Source of the method				
Government hospital	0.16***	(0.11–0.24)	0.13***	(0.088–0.20)
Frontline worker	0.33***	(0.22–0.48)	0.30***	(0.20–0.46)
Private facility	Reference		Reference	

CI = confidence interval; RRR = relative risk ratio.

p* < .05, *p* < .01, ****p* < .001.

The multinomial logistic regression assessing the adjusted associations between age and the 10-item composite measure of quality is presented in Table 3. Young mothers were significantly less likely to receive high quality of care (compared to low) than mothers aged 25–48 (adjusted relative risk ratio [ARRR] 0.76, 95% confidence interval [CI] 0.58–0.98). Women who had no education (ARRR medium 0.73, ARRR high 0.48) or primary/middle (ARRR medium 0.61, ARRR high 0.50) were less likely to receive medium and high quality of care compared to those with secondary or higher education. Mothers living in Odisha (ARRR medium 0.37, ARRR high 0.08), those using contraception for the first time (ARRR medium 0.79, ARRR high 0.34), and those who received their method from a government hospital (ARRR medium 0.16, ARRR high 0.13) or a frontline worker (ARRR medium 0.33, ARRR high 0.30) were also less likely to receive medium and high quality. Mothers with more than one child (ARRR 0.62) were less likely to receive high levels of quality than those with only one child. Urban women (ARRR 0.67) and Hindu women (ARRR 0.69) were less likely to receive medium quality.

For the second objective of the study, we were interested to see how quality of care influences contraceptive use later in time for young mothers. There was no difference in modern contraceptive continuation between younger (88%) and older (87%) mothers after 6 months (see Table A2). Because no differences were seen between younger and older women, we limited the analysis to young mothers (n = 800). Results of the multivariate logistic regression are presented in Table 4. There were no significant differences in the odds of modern contraceptive continuation after 6 months by quality of care received for those who received medium (adjusted odds ratio [AOR] 0.93, 95% CI 0.45–1.61) or high (AOR 1.45, 95% CI 0.78–2.70) quality, compared to low. Those who were highly motivated to prevent

Table 4

Adjusted odds ratios for modern contraceptive continuation at 6 months among young mothers aged 15–24 (n = 800)

	Adjusted OR	95% CI
Quality of care at enrollment		
Low	Reference	
Medium	0.93	(0.54–1.61)
High	1.45	(0.78–2.70)
Motivation to prevent pregnancy		
Low	Reference	
High	1.68*	(1.03–2.72)
Education		
No education	0.95	(0.48–1.85)
Primary/middle	0.75	(0.45–1.24)
Secondary or higher	Reference	
Parity		
1 child	Reference	
2 or more children	1.74	(0.99–3.05)
Residence		
Urban	0.76	(0.40–1.43)
Rural	Reference	
State		
Haryana	Reference	
Odisha	1.07	(0.60–1.91)
Religion		
Hindu	1.55	(0.70–3.40)
Muslim/other	Reference	
Previous modern contraceptive use		
No	Reference	
Yes	2.10**	(1.24–3.56)
Source of the method		
Government hospital	2.87*	(1.42–5.80)
Frontline worker	4.46***	(2.08–9.54)
Private facility	Reference	

CI = confidence interval; OR = odds ratio.

* $p < .05$, ** $p < .01$, *** $p < .001$.

pregnancy at the 3-month interview, however, were 1.68 times more likely to continue using a modern method at 6 months than those with low motivation (95% CI 1.03–2.72). Previous modern contraceptive users were significantly more likely to continue using (AOR 2.10, 95% CI 1.24–3.56), as were young mothers who received their method from a government hospital (AOR 2.87, 95% CI 1.42–5.80) or a frontline worker (AOR 4.46, 95% CI 2.08–9.54). There were no significant differences in modern method continuation by education, parity, residence, state, or religion.

Discussion

The results of the analysis for the first objective suggest that among this sample of married women with children in India, age is an important factor in respondents' receipt of high quality of care, with younger mothers less likely to receive high quality. Across nine of the 10 items of quality, younger mothers were less likely to receive information or care than older mothers. Thirty-six percent of mothers aged 25 and older received high quality, while this was true of only 27% of younger mothers. On the other hand, 37% of young mothers received low quality of care, compared to 24% of older mothers. This held true when adjusting for other respondent characteristics, where, compared to older mothers, young mothers were 24% less likely to receive high quality of care. Although previous studies have demonstrated that youth face barriers to quality contraceptive services, few have measured quality of care using a validated measure from young mothers' perspectives.

Beyond age, this analysis showed that many factors were associated with quality of care received. Those with less than secondary education, with two or more children, those living in Odisha, who were first time contraceptive users, and who received their method from a government hospital or frontline worker were all less likely to receive high quality of care. Although it is critical that the FP program in India focusses on improving quality of care for young people, it is also important that providers receive support and training on eliminating bias and improving quality of care for women of all backgrounds and circumstances. Future research to assess how provider biases manifest in care provided at various service delivery avenues, and to understand why younger, less educated women, those with more children, first time contraceptive users receive lower quality of care, is important.

Previous literature has shown that contraceptive discontinuation is higher among adolescents than among older women [13], though little else is known about contraceptive use over time for youth, including factors associated with discontinuation. Because the first objective of the paper showed that quality, which has previously been shown to be a predictor of modern contraceptive continuation [12], differed by mothers' age, the second objective of the paper aimed to examine whether quality of care was an important factor in discontinuation, particularly for young mothers.

First, we examined whether young mothers were more or less likely to continue using and found no difference in continuation between younger and older mothers after 6 months. We hypothesize that this is because all of the women in this sample began using a modern, reversible method of FP at the start of the study and are therefore a group that is motivated to prevent pregnancy. At enrollment, just 0.9% of the analytic sample reported that they wanted to have a child within the next year (0.6% among young mothers and 1.2% among older mothers), and 5.1% wanted a child within the next 1–2 years (6.1% among young mothers and 4.4% among older mothers, data not shown). Additionally, over three quarters of each age group were highly motivated to prevent pregnancy: 75.6% of young mothers and 77.4% of older mothers. Female sterilization is the most commonly used contraceptive method in India, used by 36% of married women [2], and many women in India do not use modern reversible methods before ultimately choosing sterilization [18]. This group of reversible method users are therefore highly motivated to use contraception, and specifically modern reversible methods, likely explaining why both age groups had high contraceptive use after 6 months.

Next, to better understand contraceptive use over time among youth, we limited the analysis to young mothers. The results showed that quality received did not influence modern method continuation after 6 months, even though quality was an important predictor of continuation of contraception after 3 months among the whole sample of women in this study [12]. In the bivariate analysis, though not significant ($p = .11$), the relationship between quality of care received and continuation was in the expected direction: 86% of those who received low and medium quality were using contraception after 6 months, compared to 91% of those who received high quality. Again, this may be due to the high motivation to prevent pregnancy among this age group, and the extremely low desire to have another child within a year of study enrollment. Although quality of care has often been measured in the context of its relationship to contraceptive continuation [12,19], since Bruce first articulated a

framework to measure quality in 1990, the importance of high quality of care for clients' satisfaction and well-being has been, and should be, centered regardless of its effect on continuation.

Three factors, however, were significant predictors of continuation: motivation to prevent pregnancy, previous use of modern contraception, and source of the method. These results begin to shed light on why young mothers continue to use contraceptive methods. Despite lower levels of quality, which could potentially lead to selection of an inappropriate method or insufficient information about their selected method, young mothers who were strongly motivated to prevent pregnancy were more likely to continue to use. The importance of motivation to prevent pregnancy as a factor in contraceptive use and continuation has been demonstrated by previous literature [20–25]; however, there was little evidence of the strength of motivation's effect on continuation while also accounting for quality of care received. Our results suggest that motivation is an important factor in women's decision-making around contraceptive use. If a woman is strongly motivated to prevent pregnancy, for any number of reasons, including financial insecurity, marital status, experience of violence, or a recent birth, she may continue to use a contraceptive method despite experiencing barriers to use, such as experiencing side effects or family-related opposition to contraceptive use. Given that these highly motivated young women may continue to use despite barriers or unpleasant experiences with a method, and because they also experience lower levels of quality of care compared to older mothers, continuing to support them through follow-up care and information about side effects and switching methods [26] may be an important way to contribute to efforts to improve quality of care beyond the first visit. As has been shown previously, supporting women who have a met need for contraception may also help to reduce future unmet need [4].

Motivation to prevent pregnancy is an important measure to assess women's individual-level desires about pregnancy. Current widely used measures of pregnancy intentions and preferences, such as unmet need for FP, intention to use contraception in the future, desired timing for next child, and experience of unintended pregnancies, are useful programmatic indicators of fertility desires but do not capture women's individual-level preferences. This study demonstrates that asking women how important it is to use a contraceptive method to prevent pregnancy now is an important way to assess not only their current preferences, but also to predict their use of contraception in the near future.

The source of the enrollment method was also an important factor in modern method continuation after 6 months. Young mothers who received their method from a frontline worker were more likely than those who received their method from a private facility to be using a modern method after 6 months. Although frontline workers primarily distributed OCPs to women, they also provide continuing support to contraceptive users at the community level, so those who are considering discontinuing or switching to a new method could receive follow-up care from the frontline worker to ensure they are having their contraceptive needs met. Young mothers who received their method from a government facility—which was most commonly an IUD—were also more likely to be using a method after 6 months, despite government hospitals being less likely to provide high quality care. This may be because the IUD is a long-acting reversible method, as well as the fact that a wide range of methods are available at government facilities for those

who want to discontinue the IUD and switch to an alternative method, which IUD users would likely have to return to the facility to do. Finally, most young mothers in this study who went to a private facility received the injectable, which is a relatively new method available in India. Previous analysis from this study demonstrated that many injectable users experienced side effects and discontinued the method over the course of the study [16,27]. After a desire to become pregnant, side effects/health concerns are the leading cause of discontinuation in India [2]. Private facilities that provided injectables, as well as all other providers of contraceptive methods, should ensure that women are given a full range of information and counseling, including about side effects and the possibility of switching methods— aspects of quality of care—when they select their method.

This study had several limitations. First, it was conducted among married women who began using modern reversible methods of contraception. Thus, it excludes unmarried women seeking contraceptive services, who may face unique barriers to access, as well as women who may have sought a contraceptive method but did not begin using one. Young mothers who desired to prevent pregnancy but did not seek contraceptive services due to social or facility-level barriers, or those who went to facilities seeking a method but did not receive one, may also provide important insights into quality of care provided to young mothers. Bias based on parity has also been demonstrated in previous literature, but women with no living children ($n = 19$) were removed from this analysis to focus primarily on the associations between quality of care and age of mothers. Another limitation is that contraceptive users are highly motivated to use contraception to prevent pregnancy, so this study began with a highly motivated group. Once those who wanted to get pregnant were removed from the second objective, we still observed the importance of motivation to prevent pregnancy as a key factor in continued contraceptive use.

As young mothers have higher unmet need for contraception in India, ensuring that those who seek contraceptive services are met with high quality care that allows them to feel respected by the provider and obtain the necessary information about their method is paramount. This can also help to ensure that those who are motivated to prevent pregnancy are able to have the information they need to continue to use modern contraceptive methods as desired. India has committed to improving quality of care [3], and special attention should be paid to improving quality of care received by young mothers.

Acknowledgments

The authors acknowledge and thank the research assistants who collected the data in India, as well as the women who participated in the study for sharing their time and experiences.

Supplementary Data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.jadohealth.2022.08.024>.

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