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2009

## Understanding pregnancy-related morbidity and mortality among young women in Rajasthan

K.G. Santhya  
*Population Council*

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## Understanding pregnancy-related morbidity and mortality among young women in Rajasthan



This report is the result of an exploratory study of the pregnancy-related morbidity and mortality experiences of women who delivered in adolescence and adulthood in Rajasthan, undertaken by the Population Council with support from the John D. and Catherine T. MacArthur Foundation.

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Population Council



# Contents

<b>List of tables and figures</b>	v
<b>Acknowledgements</b>	vii
<b>Executive summary</b>	viii
<b>Chapter 1: Introduction</b>	1
Background	1
Study objectives	3
Study setting	3
Study design	4
Characteristics of respondents' households	7
Characteristics of respondents	7
Structure of the report	9
Limitations	9
<b>Chapter 2: Maternal health care practices</b>	10
Antenatal care seeking	10
Delivery practices	13
Postpartum care seeking	17
<b>Chapter 3: Awareness and experiences of pregnancy-related complications</b>	20
Awareness of pregnancy-related complications	20
Pregnancy-related morbidity and mortality experiences	22
Complications experienced during pregnancy	22
Complications experienced during labour and delivery	24
Complications experienced during the postpartum period	26
Mortality experiences	26
Summary of morbidity and mortality experiences	29

<b>Chapter 4: Treatment seeking for pregnancy-related complications</b>	30
Treatment seeking for pregnancy-related complications experienced	30
Promptness with which women had sought treatment for pregnancy-related complications	33
Promptness in recognising the need for treatment	33
Promptness in deciding to seek treatment	34
Promptness in reaching an appropriate health facility for treatment	36
Promptness in obtaining appropriate care at the facility	37
Quality of services received at the health facility	38
<b>Chapter 5: Summary and recommendations</b>	41
Summary	41
Recommendations	44
<b>References</b>	47
<b>Members of the study team</b>	51
<b>Author</b>	52

## List of tables and figures

Table 1.1:	Profile of the study district and state	4
Table 1.2:	Profile of respondents' households, according to age at most recent delivery	7
Table 1.3:	Socio-demographic characteristics and reproductive experiences of respondents, according to age at most recent delivery	8
Table 3.1:	Awareness of pregnancy-related complications among all women and low-parity women, according to age at most recent delivery	21
Table 3.2:	Complications experienced during pregnancy by all women and low-parity women, according to age at most recent delivery	23
Table 3.3:	Complications experienced during labour and delivery by all women and low-parity women, according to age at most recent delivery	24
Table 3.4:	Procedures used during labour and delivery among all women and low-parity women, according to age at most recent delivery	25
Table 3.5:	Complications experienced during the postpartum period by all women and low-parity women, according to age at most recent delivery	27
Table 3.6:	Morbidity and mortality experiences among all women and low-parity women, according to age at most recent delivery	29
Table 4.1:	Percentage of women who sought treatment for pregnancy-related complications experienced, according to selected characteristics	30
Table 4.2:	Type of provider and facility from whom/where treatment was sought for pregnancy-related complications and treatment cost, all women and low-parity women, according to age at most recent delivery	32
Figure 1.1:	Map of the study blocks, Alwar district, Rajasthan	5
Figure 2.1:	Extent of antenatal care seeking among all women and low-parity women, according to age at most recent delivery	10
Figure 2.2:	Extent of institutional delivery among all women and low-parity women, according to age at most recent delivery	13
Figure 2.3:	Extent of institutional delivery among all women before and after the expansion of the Janani Suraksha Yojana, according to age at most recent delivery	17
Figure 2.4:	Extent of postpartum care seeking among all women and low-parity women, according to age at most recent delivery	18
Figure 4.1:	Percentage who sought treatment for pregnancy-related complications experienced, all women and low-parity women, according to age at most recent delivery	31
Figure 4.2:	Percentage who promptly recognised the need for treatment of pregnancy-related complications, all women and low-parity women, according to age at most recent delivery	33
Figure 4.3:	Women's role in decisions regarding whether or not to seek treatment for pregnancy-related complications, all women and low-parity women, according to age at most recent delivery	35

Figure 4.4:	Percentage who promptly decided to seek treatment for pregnancy-related complications from an appropriate health facility, all women and low-parity women, according to age at most recent delivery	36
Figure 4.5:	Percentage who promptly reached an appropriate health facility for treatment of pregnancy-related complications, all women and low-parity women, according to age at most recent delivery	37
Figure 4.6:	Percentage who promptly obtained appropriate care for pregnancy-related complications, all women and low-parity women, according to age at most recent delivery	37
Figure 4.7:	Quality of services received by all women and low-parity women who had sought treatment for pregnancy-related complications, according to age at most recent delivery	38

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## Executive summary

Pregnancy and childbearing continue to occur in adolescence for considerable proportions of women in India. The dangers of childbearing for adolescent girls, whose bodies have not physically matured, are widely acknowledged. Yet, little is known about whether morbidity and mortality experiences vary within the subgroup of adolescent girls, whether such experiences differ between adolescent and adult women of similar parity, and whether treatment seeking behaviours and the delays experienced in seeking treatment differ between adolescent and adult mothers. To begin to fill this gap, the Population Council undertook an exploratory study of the pregnancy-related morbidity and mortality experiences of women who delivered in early adolescence (below 17), late adolescence (17–19 years) and adulthood (25–29 years), and the constraints they faced in seeking appropriate and timely care. The study was conducted in the state of Rajasthan, a state characterised by a high maternal mortality ratio and low age at marriage.

A cross-sectional study, comprising a survey and in-depth interviews, was conducted in rural settings of Alwar district in the state of Rajasthan. Respondents for the survey included: (a) young women who had experienced a recent delivery, that is, during the two-and-a-half years preceding the survey, and were aged below 20 years or between 25–29 years at the time of the index delivery; and (b) family members of young women who had died during delivery or within six weeks following delivery due to maternal complications in the two-and-a-half years preceding the survey and were aged below 20 years or between 25–29 years at the time of death. A total of 1,935 women or family members of women who had died of maternal complications were successfully interviewed, using a short structured screening questionnaire. A classification scheme, developed in consultation with the Technical Advisory Group constituted to guide the project, grouped study participants into four categories, namely, those who had died of maternal complications, experienced severe complications, experienced non-severe complications and experienced no pregnancy-related complications. Respondents for in-depth interviews were selected from among the survey respondents who fell into each of these categories. A total of 104 women, or a family member in case of maternal death, were interviewed in-depth.

Findings indicate that both adolescent and adult mothers in the study settings commonly experienced pregnancy-related complications; indeed, between two-thirds and three-quarters of all women had experienced at least one pregnancy-related complication. Specifically, less than 1 percent had died due to pregnancy-related complications; half had experienced one or more severe complications; and almost three-fifths had experienced one or more non-severe complications. Findings, moreover, indicate that women were more likely to report experiences of severe complications during pregnancy than during delivery and the postpartum period.

The study findings lend considerable support to the observation from studies elsewhere that adolescent girls, particularly those in the younger age group, are at higher risk of maternal complications than older mothers. Among low-parity women, younger adolescent mothers — those aged below 17 — were significantly more likely to experience pregnancy-related complications than were adult mothers, with older adolescent

mothers (those aged 17–19) sometimes following the pattern of their adolescent counterparts and sometimes that of adult women. Findings that adolescent mothers were more likely than adult mothers to have been referred to another health facility for treatment, and to have incurred substantial expenditure on treatment than others, also indirectly suggest that adolescent mothers were more likely to be at risk than adult mothers.

The study findings also underscore that maternal health care seeking remains limited among all women in the study setting. Just two-fifths and one-half of mothers had received three or more antenatal check-ups for their most recent birth, and only one-fourth and one-third of mothers had their most recent delivery in a health facility. Although one-fifth and one-quarter of mothers reported having received a postpartum check-up, no more than one-tenth of mothers had received a check-up as part of routine postpartum care. Findings, moreover, indicate that outreach services tended to be weak, for example, as in the case of delivery of postpartum services.

Younger adolescent mothers were more constrained than adult mothers with regard to maternal health care seeking. Findings indicate that younger adolescent mothers were less likely than older adolescent and adult mothers to have had the recommended number of antenatal check-ups, had a delivery in a health facility or received a postpartum check-up. Findings, moreover, suggest that while financial incentive schemes, such as the Janani Suraksha Yojana, appear to have contributed to promoting institutional deliveries among all women, younger adolescent mothers tended to be less likely than older adolescent and adult mothers to have benefited from such schemes.

Treatment was commonly sought for pregnancy-related complications; irrespective of age at most recent delivery, over 70 percent of women who had experienced complications had sought treatment. The majority of all women who had sought treatment for pregnancy-related complications, irrespective of age at most recent delivery, reported that they had sought treatment from a doctor in a public or private health facility, one-quarter or more reported having sought treatment from a nurse or auxiliary nurse-midwife, and almost one-fifth had sought treatment from an unqualified provider or relied on over-the-counter medications or home remedies. Findings, moreover, indicate that the majority of women had sought treatment from a private facility and only over one-third had sought treatment from a government health facility. Findings also show that one in seven and almost one-fifth of all women who sought treatment were referred to another health facility for treatment. Adolescent mothers were considerably more likely than older mothers to have sought care from untrained or unqualified providers.

Women experienced considerable delays in recognising the need for seeking treatment for pregnancy-related complications experienced, deciding to seek treatment from an appropriate facility, reaching the appropriate facility and obtaining care at that facility. For example, a sizeable proportion of all women who experienced complications, irrespective of age at most recent delivery, reported having experienced the first delay; that is, recognising the need for treatment. Indeed, awareness of danger signs was limited during pregnancy, delivery and particularly, the postpartum period. Closely related to women's limited awareness of danger signs was their delayed recognition of complications. Just one-quarter and over one-third of all women who had experienced one or more complications had recognised the need to seek treatment promptly. Indeed,

three-quarters of younger adolescents and half of older adolescents and adults who did not seek treatment for complications reported that treatment was not necessary or that the complication was not serious enough to warrant treatment. Age differences in recognising a complication were narrow; even so, older adolescent were more likely than others to recognise the need for seeking treatment promptly.

Large proportions of women also experienced the second delay — deciding to seek treatment from a health facility that could provide appropriate care. Just one-third of all women reported that the decision to seek treatment was made promptly; that is, less than six hours after recognising the need for treatment. Adolescent mothers were somewhat more likely than adult mothers to report delays in deciding to seek treatment from an appropriate health facility, a finding that can be attributed to adolescent mothers' limited participation in the decision-making process, and adolescent mothers' and their families' limited awareness of appropriate health facilities.

Women also reported experiencing the third delay; that is, reaching an appropriate health facility for the treatment of complications within an hour of making the decision to seek treatment. Indeed, just one-quarter and one-third of all women reported reaching an appropriate health facility promptly. Delays in reaching a facility were considerably more likely to be cited by adolescent mothers than adult mothers. Delays were experienced for several reasons; for example, many women had initially sought treatment from a facility that was not equipped to handle the complication experienced, several families had not made arrangements in advance for transportation in case an emergency occurred, and many had faced problems in obtaining transportation.

As compared to experiences of the other three delays noted above, fewer women reported experiencing a delay in obtaining appropriate care; that is, within an hour of reaching an appropriate health facility. Almost half of all women who experienced complications reported that they had obtained appropriate care promptly once they had reached the facility. Age differences in obtaining appropriate care were narrow.

Findings also indicate that the quality of maternal health services received varied. The majority of women who had sought treatment for pregnancy-related complications reported that the health care provider had treated them well. Even so, some women noted that the provider had not given them any information or advice about the complications experienced but had just dispensed the service. Some women also noted poor treatment by the provider, irrespective of whether the care giver was a physician or a nurse, or the kind of facility in which the provider worked. Women also articulated concerns about the quality of routine maternal health services received. A sizeable number of mothers who reported contact with health care providers noted that they were rarely given any advice regarding care during pregnancy, delivery and the postpartum period. Additionally, many cited poor quality of services as a reason for preferring not to deliver in a hospital.

Findings that younger adolescent mothers were particularly at risk of pregnancy-related complications underscore the need for programmatic efforts to support young people, in particular, newly-weds, to postpone their first pregnancy, to build awareness of the adverse effects of early pregnancy and to make it acceptable for young couples to adopt contraception prior to the first birth. At the same time, there is a need to change community and family attitudes to favour postponement of pregnancy and not link a young women's security

within the marital family with her ability to bear children. Moreover, health care providers need to be oriented to focus on married young people's special need for delaying the first pregnancy.

Findings reiterate the need for programmatic attention to improve pregnancy-related care among all women, in particular adolescent mothers. The study finding that such financial incentive schemes as the Janani Suraksha Yojana tend to have a positive effect on promoting the utilisation of maternal health services, particularly institutional delivery, is encouraging; however, programmes currently under way as part of the National Rural Health Mission would also need to focus on increasing the demand for as well as improving the availability of these services, and must specially target adolescent mothers, particularly younger adolescent mothers.

Although the vast majority of women who had experienced pregnancy-related complications had sought treatment, findings indicate that they had experienced considerable delays in recognising the need for treatment. Also evident was women's, particularly the adolescent mothers' limited awareness of pregnancy-related complications in the study setting. Programmes are needed that build in-depth awareness among women and their family members about danger signs during pregnancy, delivery and the postpartum period, as well as about appropriate facilities where treatment can be sought. Such initiatives must pay special attention to newly-married and first-time pregnant adolescent girls.

Findings indicate that although young women have some say in decisions related to pregnancy-related care, husbands and other influential adults in the family tended to play a key role in such decisions. Moreover, adolescent mothers and their families were more likely than their adult counterparts to have delayed the decision to seek treatment from an appropriate health facility. These findings call for actions that enable adolescent and young women to correctly assess the potential dangers of delayed treatment seeking, or not seeking care from an appropriate health facility, and to make informed decisions in relation to pregnancy-related care. At the same time, it is important to actively seek the participation of husbands and other influential adults in the family who have a major say in decisions related to pregnancy care, in ensuring that pregnancy is safe for young women.

Findings indicating that women experienced considerable delays in reaching a health facility call for community mobilisation activities to develop mechanisms to ensure that women experiencing complications are taken to a health facility promptly. Findings that adolescent mothers were somewhat more likely than adult mothers to experience delays in reaching a health facility, again, call for special efforts that inform newly-married and first time pregnant young women and their families about delivery preparation in general, and determining transportation options in case of an emergency, in particular.

Although the majority of women reported that health care providers had treated them well, a sizeable proportion of women raised concerns about the quality of services received. Actions are needed that enable health care providers to render maternal health services in friendly and non-threatening ways. Actions are also needed to mobilise communities to undertake social auditing to improve the quality of services provided and to create among women and their family members a sense of entitlement to health care and other services.

Findings that younger adolescent mothers were more likely than older adolescent and adult mothers to experience serious pregnancy-related complications, less likely to seek routine maternal health services and somewhat more likely to experience delays in seeking treatment for complications experienced, particularly in deciding to seek treatment from an appropriate health facility and reaching that health facility, emphasise the need to sensitise health care providers about the special vulnerability of younger adolescents, and to orient them to the need for developing appropriate strategies to reach this group. Similarly, the study findings that younger adolescent mothers were less likely than others to have benefited from the Janani Suraksha Yojana call for efforts to orient front-line health workers at the village level, including ASHAs and *anganwadi* workers, to make special efforts to inform younger adolescents about available maternal health services and to encourage them to avail these services. In the light of evidence from the National Family Health Survey-3 that the proportion of young women marrying in adolescence, especially before ages 15 and 18, has not changed significantly in the recent past in Rajasthan, the need to target younger adolescent mothers cannot be over-emphasised.

In conclusion, findings have highlighted that the majority of adolescent and adult mothers had experienced pregnancy-related complications, the utilisation of maternal health services was limited and treatment seeking for pregnancy-related complications was fraught with multiple constraints. Younger adolescent mothers were particularly at risk, both because of their age and physical unpreparedness for pregnancy, as well as because of the socio-cultural factors that inhibit young adolescent mothers from seeking prompt and appropriate care for pregnancy-related complications. While multi-pronged actions are needed that promote timely and appropriate pregnancy-related care among all women, these programmes need to specially target young women, influential adults in their families and health care providers.

## Introduction

Early marriage continues to characterise the lives of many women in India. Newly-married adolescent girls face compelling pressures to prove their fertility as soon as possible after marriage, and consequently, pregnancy and childbearing continue to occur in adolescence for considerable proportions of women in India. The dangers of childbearing for adolescent girls, whose bodies have not physically matured, are widely acknowledged. Yet, little is known about whether morbidity and mortality experiences vary within the subgroup of adolescent girls, whether such experiences differ between adolescent and adult women of similar parity, and whether treatment seeking behaviours and the delays experienced in seeking treatment differ between adolescent and adult mothers. This report presents findings from an exploratory study of the pregnancy-related morbidity and mortality experiences of women who delivered in adolescence and adulthood, and the constraints they faced in seeking appropriate and timely care, in the state of Rajasthan.

### Background

Evidence from the recent National Family Health Survey (2005–06) indicates that early childbearing continues to be common in India. Nationally, for example, one in six girls aged 15–19 have begun childbearing. This proportion is as high as one in five, or even one in four, in a number of states (IIPS and Macro International, 2007). Findings, moreover, show that the median age at first birth for women aged 20–49 years increased only marginally over the last decade, from 19.6 years in 1992–93 to 20 years in 2005–06 (IIPS and Macro International, 2007).

It is widely documented that early childbearing is associated with an array of adverse sexual and reproductive health outcomes. Globally, it is estimated that girls aged 15–19 are twice as likely to die from childbirth than are women in their twenties, while girls younger than age 15 face a risk that is five times higher (UNICEF, 2001). Findings from community-based studies in India also show that adolescent girls are significantly more likely to experience maternal mortality than are older women. Estimates derived from a community-based study in rural Andhra Pradesh, for example, indicate that in the 1980s the maternal mortality ratio among adolescents was almost twice that of women aged 25–39 (1,484 versus 706–736 respectively; Bhatia, 1988). Similarly, a community-based study in rural Maharashtra reports that adolescent girls were 1.6 times more likely than those aged 20–29 years to experience maternal mortality (Ganatra, Coyaji and Rao, 1998). Hospital-based studies in India also reiterate these differences. A national study conducted by the Indian Council of Medical Research (ICMR) of 43,550 women in 10 facilities reports that the maternal mortality ratio among adolescents was 645 per 100,000 live births, compared to 342 per 100,000 among adult women aged 20–34 (Krishna, 1995). Similarly, a facility-based study in Mumbai indicates that while the maternal mortality ratio among women aged 20–29 was 138 per 100,000 live births, the ratio among adolescents was considerably higher — 206 per 100,000 live births (Pachauri and Jamshedji, 1983).

Findings from several facility-based studies also indicate that pregnancy-related complications — including eclampsia, pregnancy-induced hypertension, intra-uterine growth retardation and premature delivery — tend to be more prevalent among adolescents than older women (Mahavarkar, Madhu and Mule, 2008; Mishra and Dawn, 1986; Pachauri and Jamshedji, 1983; Pal, Gupta and Randhawa, 1997; Sharma and Sharma, 1992; Swain et al., 1993). Peri-natal and neonatal mortality rates are also found to be significantly higher among adolescent mothers than among mothers in their twenties and thirties (Hirve and Ganatra, 1994; IIPS and Macro International, 2007).

Although it is widely acknowledged that adolescent girls in general face a high risk of maternal morbidity and mortality, evidence remains conflicting as to whether all adolescent girls are at risk or whether adolescent girls at selected ages are more at risk than others (NRC and IOM, 2005). Globally, some studies suggest higher rates of maternal morbidity and mortality among women who delivered at ages below 20 than those who delivered at slightly older ages, ranging from 20–24 year-olds to 30–34 year-olds (Chen et al., 2008; Ganatra, Coyaji and Rao, 1998; Gilbert, Jandial and Field, 2004; Gupta, Kiran and Bhal, 2008; Sharma et al., 2008; Usta et al., 2008). However, several other studies report that the risk of maternal morbidity and mortality is concentrated at selected ages of adolescence: while some report that the risk is concentrated below age 18 (Haldre et al., 2007; Jolly et al., 2000), others note that it is concentrated below age 17 (Zhang and Chan, 1991) or below age 16 (Conde-Agudelo, Belizán and Lammers, 2005; Eure, Lindsay and Graves, 2002; Harrison, 1985; Olausson, Cnattingius and Haglund, 1999; Perry et al., 1996; Phipps and Sowers, 2002; Satin, Leveno and Sherman, 1994; Sharma et al., 2008). In India,

however, little research has been conducted on the extent to which morbidity and mortality experiences vary by age within the subgroup of adolescent girls.

Evidence on the factors that place adolescent girls at greater risk of adverse maternal health outcomes than older women remains sketchy (NRC and IOM, 2005). Some studies suggest that young maternal age and associated physiological immaturity have an independent effect on adolescent girls' risk of experiencing maternal morbidity and mortality, even after controlling for potentially confounding factors (Chen et al., 2007; Haldre et al., 2007), while others note that the high risk of maternal morbidity and mortality experienced by adolescents is primarily a result of the relatively greater socio-economic disadvantages that adolescents face as compared to adult women. For example, studies in several countries, such as Ethiopia (Kwast and Liff, 1988), Kenya (Taffa, 2003), Nigeria (Loto et al., 2004), Turkey (Bukulmez and Deren, 2000) and the United Kingdom (Konje et al., 1992), indicate that poor maternal health outcomes among adolescents are related to inadequate care during pregnancy or such socio-economic constraints as poor educational attainment and poverty rather than maternal age. A few other studies note that adolescent girls' greater risk of experiencing adverse maternal health outcomes as compared to older women can be explained by both their young maternal age and their relative social disadvantages (Cooper, Leland and Alexander, 1995; Markovitz et al., 2005).

Several studies on maternal mortality among women in the reproductive age group note that delays in recognising complications, delays in deciding to seek treatment, delays in reaching a health facility and delays in receiving adequate treatment at the facility contribute in varying degrees

to the risk of maternal mortality (Fawcus et al., 1996; Kawuwa, Mairiga and Usman, 2007; Liabsuetrakul et al., 2007; Rosenstein, Romero and Ramos, 2008; Thaddeus and Maine, 1994). Studies exploring whether or not delays in seeking treatment for pregnancy-related complications differ between adolescent and adult mothers are limited; however, findings from a survey in Bangladesh indicate that delays experienced in recognising complications, deciding to seek care, reaching a health facility and receiving care did not differ significantly between adolescent and adult mothers who experienced life-threatening complications (NIPORT et al., 2003).

In India, a few studies have shown that despite being at particular risk of experiencing adverse sexual and reproductive health outcomes, married adolescent girls are as likely as, or even less likely than, older women to seek appropriate pregnancy-related care (Reynolds, Wong and Tucker, 2006; Santhya and Jejeebhoy, 2003). Even so, little is known about whether adolescent and adult mothers who experience pregnancy-related complications differ in terms of seeking timely and appropriate treatment.

### Study objectives

The study aimed to explore the pregnancy-related morbidity and mortality experiences of young women who delivered in early adolescence (below 17) and late adolescence (17–19 years), including the delays they faced in seeking appropriate care, and to compare their experiences with those of women who delivered in adulthood (25–29 years). Findings are expected to shed light on young women's experiences with regard to pregnancy-related health care, and the kind of service adjustments that may be required to overcome the particular delays that young women face in availing maternal health services.

### Study setting

The study was conducted in rural settings of Alwar district in the state of Rajasthan. The study was located in Rajasthan because it is one of the states in India in which age at marriage is low and the maternal mortality ratio high.

Rajasthan has a population (projected population for the year 2008) of 64.5 million (Office of the Registrar General and Census Commissioner, India, 2006). With 65 percent of 20–24 year-old women married before age 18, the state ranks second among all states in India in terms of the prevalence of early marriage. Moreover, two-fifths of currently married girls aged 15–19 years were already mothers and another one-tenth were pregnant at the time of the survey (IIPS and Macro International, 2008).

With a maternal mortality ratio of 445 per 100,000 live births, the state records the third highest maternal mortality ratio among all states in India (RGI, 2006). As seen in Table 1.1, the utilisation of maternal health services in the state is limited.

A number of centrally-sponsored programmes to promote maternal health are under way in Rajasthan; however, the coverage of these programmes remains limited. One such programme is the Janani Suraksha Yojana, introduced in the state in 2005 to promote institutional delivery among women from households below poverty line, was expanded in November 2006 to cover all women, irrespective of their household economic status, parity and age at delivery. According to data from the recent District Level Household and Facility Survey-3, however, just one in three mothers had received financial assistance for institutional delivery under the Janani Suraksha Yojana during 2006–08 (IIPS, 2008a).

Table 1.1:

**Profile of the study district and state**

Characteristics	Rajasthan State	Alwar District
Population <sup>1</sup>	64,534,000	2,992,592
Overall sex ratio <sup>2</sup>	921	886
Child sex ratio (0–6 years) <sup>2</sup>	909	887
Male literacy (%)	75.7	62.9
Female literacy (%)	43.9	34.9
Current contraceptive use (%)	57.0	58.0
Proportion ever married among 15–19-year-old girls <sup>3</sup>	31.5	42.3
Proportion of married girls aged 15–19 years who were already mothers <sup>3</sup>	39.4	31.3
Mothers who had at least three antenatal check-ups for the last birth (%)	27.7	14.2
Institutional delivery (%)	45.5	45.4
Mothers who received postnatal care for their last birth (%) <sup>4</sup>	38.2	28.1

<sup>1</sup> District population data are from the 2001 Census; state population data are projected figures for the year 2008.

<sup>2</sup> Sex ratio: number of females per 1,000 males.

<sup>3</sup> District-level data are from the 2001 Census; state-level data are from the National Family Health Survey-3.

<sup>4</sup> Data for the state pertain to mothers who received postnatal care within 2 weeks of delivery; data for the district pertain to mothers who received postnatal care within 2 days of delivery.

Sources: IIPS, 2008a; 2008b; IIPS and Macro International, 2008; Office of the Registrar General and Census Commissioner, India, 2004; 2006.

The study district, Alwar, was purposively selected to represent low-performing districts within the state in terms of development and health indicators. A few key indicators of the study district are presented in Table 1.1.

Four blocks, namely, Bansur, Kishangarh, Rajgarh and Tijara, which together account for one-third of the population of Alwar district, were selected for the study (see Figure 1.1). These blocks were selected so as to reflect the heterogeneity within the district in terms of development indicators and the composition of the population. For example, the female literacy rate in the study blocks ranged from 33 percent to 39 percent, and the proportion of the population engaged in non-agricultural occupations ranged from 29 percent to 37 percent. With regard to the caste composition of the population, the proportion of the population belonging to scheduled castes and tribes in these blocks ranged from 14

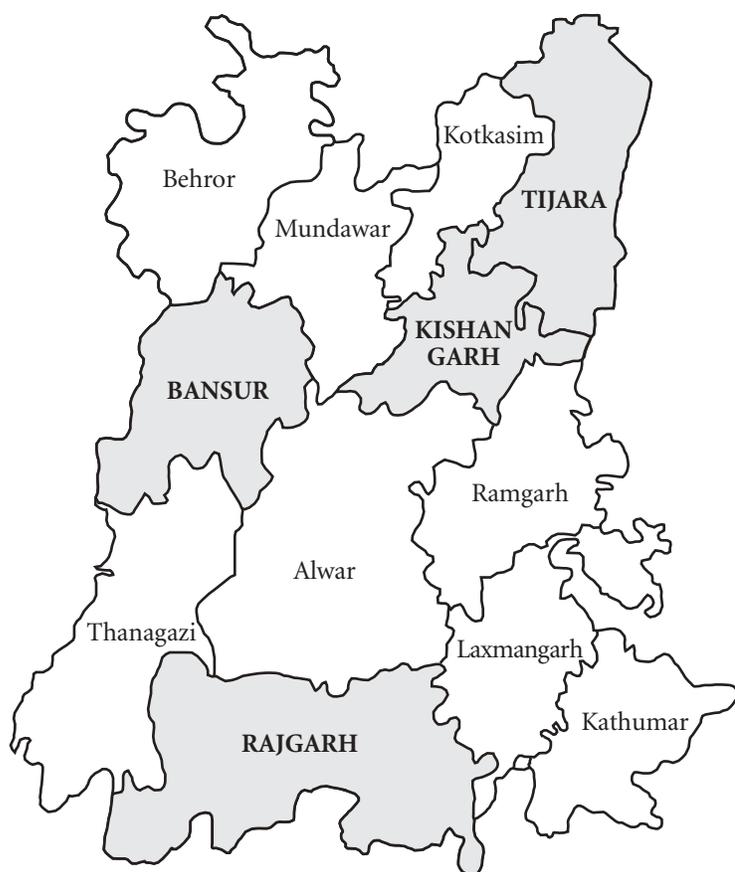
percent to 52 percent (Office of the Registrar General and Census Commissioner, 2004).

### Study design

A cross-sectional study, comprising a survey and in-depth interviews, was conducted during May–October 2007 in 100 villages randomly selected for the study. According to the 2001 Census, the total population of these villages is approximately 123,000. Taking into account the prevailing crude birth rate and the percentage of births occurring in adolescence and among women aged 25–29 years, it was estimated that roughly 2,000 women would have experienced a delivery during the two-and-a-half years preceding the survey at ages below 20 or between 25–29 years.

Respondents for the survey included: (a) young women who had experienced a recent delivery, that is, during the two-and-a-half years preceding the

**Figure 1.1:**  
**Map of the study blocks, Alwar district, Rajasthan**



survey, and were aged below 20 years or between 25–29 years at the time of the index delivery; and (b) family members of young women who had died during delivery or within six weeks following delivery due to maternal complications in the two-and-a-half years preceding the survey and were aged below 20 years or between 25–29 years at the time of death.

To identify eligible respondents, lists were prepared of women who had experienced a pregnancy during the reference period in each village from eligible couple registers maintained by auxiliary nurse-midwives and registers maintained by

*anganwadi* workers. In three villages in which these registers were not available, the field team prepared lists of eligible respondents through a house-listing exercise that identified eligible women. The field team also obtained information from auxiliary nurse-midwives and *anganwadi* workers about women who had died during delivery or within six weeks following delivery due to maternal complications during the reference period.

A short structured screening questionnaire, appropriately modified to elicit data pertaining to women who survived the last pregnancy and who did not survive the last pregnancy, was administered to eligible respondents. The questionnaire drew on a number of existing instruments used to gather data on maternal morbidity and mortality experiences (NIPORT et al., 2003; WHO, 1995). The instrument was translated into the local language, Hindi. In addition to questions on socio-economic characteristics, the questionnaire included detailed questions about the experience of complications during pregnancy, delivery and the postpartum period; awareness of pregnancy-related complications; patterns of treatment sought for complications experienced; and delays in seeking treatment, if any.

A classification scheme, developed in consultation with the Technical Advisory Group constituted to guide the project, grouped study participants into four categories, namely, those who died of maternal complications, experienced severe complications, experienced non-severe complications and experienced no pregnancy-related complications. Women who died during delivery or six weeks following delivery due to maternal complications were treated as cases of maternal

death. Women who experienced one or more of the following complications were categorised as having experienced severe complications: symptoms of preeclampsia after 20 weeks gestation (blurred vision and severe headache, or high blood pressure); fits during pregnancy; vaginal bleeding after 20 weeks gestation; high fever with severe chills or loss of consciousness; symptoms of jaundice (change in the colour of eyes to yellow and change in the colour of urine to dark yellow) during pregnancy; symptoms of severe anaemia (pale eyes, pallid face, pale palms, breathlessness on light work and breathlessness on lying on one's back) during pregnancy; labour that lasted more than 12 hours; fits during labour; abnormal presentation of the foetus, i.e., other than head; bleeding during the postpartum period that required the woman to change the cloth used to contain the blood every hour or more often; symptoms of sepsis (high fever with foul-smelling discharge within 72 hours following delivery); and fits during the postpartum period. Women who reported other complications, including symptoms of reproductive tract infection, severe lower abdominal pain, symptoms of urinary tract infection, excessive vomiting and swelling in the breast, were categorised as having experienced non-severe complications. Finally, women who experienced none of these were treated as having experienced no complications.

Respondents for in-depth interviews were selected from among survey respondents who fell into each of these categories. A quota for in-depth interviews to be conducted in each category was arbitrarily decided. Among women who delivered in adolescence, we proposed to interview at least 20 women who had not experienced any complications or had experienced non-severe complications, respectively; at least 30 women who had experienced severe complications, and family members of at least 5 women who had died of maternal complications. Among women who delivered at ages 25–29, we

proposed to interview at least 10 women who had experienced no complications, non-severe complications or severe complications, respectively, and family members of at least 5 women who had died of maternal complications. Respondents were selected purposively from the four categories so as to represent different socio-economic groups in the study area. Two sets of interview guidelines were prepared to collect in-depth information from women who survived the last pregnancy and family members of women who did not survive the last pregnancy, and were translated into Hindi.

Interviewers were recruited locally. A four-day training workshop was organised to acquaint interviewers with the screening questionnaire and interview guidelines. To ensure the quality of data collection, a field supervisor regularly supervised and monitored the fieldwork, field-edited the completed questionnaires, carried out spot-checks of interviews and assisted investigators as required. A total of 2,313 women were identified from existing registers and the house-listing exercise; 1,935 women or family members of women who died of maternal complications were successfully interviewed. Of these, 1,216 were women who had experienced their most recent delivery in adolescence (below age 20), and 719 were women who had experienced their most recent delivery at ages 25–29.

While refusal rates were low (just 2 women refused), 204 women were not interviewed as they were found to be ineligible for interview, i.e., they had delivered at ages other than below 20 years or between 25–29 years; 169 women were not interviewed because they were not at home or had moved out of the study villages; and 3 women were not interviewed because they were incapacitated. The survey data were entered using CSPro 3.0 software and analysed using SPSS 11.0.

A total 104 women or a family member in case of maternal death — 68 and 36 who experienced

their most recent delivery in adolescence and at ages 25–29, respectively — were interviewed in-depth. Interviews were tape-recorded with the consent of the participants, transcribed in Hindi and translated into English. The transcripts were coded using Atlas-ti software.

The Technical Advisory Group provided guidance at key points throughout the project, and provided valuable advice and insights on designing the questionnaire, developing the classification scheme and interpreting the study findings.

### Characteristics of respondents' households

Table 1.2 presents a profile of the households in which the respondents resided. Findings indicate significant religion and caste-wise differences

between women who had a recent delivery in early adolescence (<17 years), late adolescence (17–19 years) and adulthood (25–29 years). The proportion of Hindus was larger among those who had delivered in late adolescence than others; conversely, the proportion of Muslims was larger among those who had delivered in early adolescence and adulthood. Moreover among Hindus, the proportion of other backward castes was larger among those who had delivered in early and late adolescence than others. With regard to household amenities, however, no significant differences were evident.

### Characteristics of respondents

The socio-demographic characteristics and reproductive experiences of respondents are summarised in Table 1.3. Findings reflect substantial

Table 1.2:

#### Profile of respondents' households, according to age at most recent delivery

Characteristic (%)	<17 years (N=196)	17–19 years (N=1,020)	25–29 years (N=719)
<b>Religion</b>			
Hindu	55.6	66.8	54.8
Muslim	43.4	30.6	43.0
Sikh	1.0	2.1	2.1
Christian	0.0	0.3	0.0
<b>Caste/tribe*</b>			
Scheduled castes	23.9	23.2	30.7
Scheduled tribes	18.3	16.7	13.2
Other backward castes	49.5	47.6	37.1
General castes <sup>1</sup>	8.3	12.3	18.5
<b>Household amenities</b>			
Living in a <i>pucca</i> house	56.1	57.6	57.7
Own toilet	4.6	5.2	6.7
Gas/electricity for cooking	0.0	1.6	3.2
Own water facilities	45.4	48.1	46.6

Note: \* Among those who reported they were Hindu. For the purpose of analysis, scheduled tribes were included within the Hindu category; those who reported that they did not know their caste/tribe (0.1%) were not included. <sup>1</sup>Includes those who do not belong to scheduled castes, scheduled tribes or other backward castes.

Table 1.3:

**Socio-demographic characteristics and reproductive experiences of respondents, according to age at most recent delivery**

Characteristic	<17 years (N=196)	17–19 years (N=1,020)	25–29 years (N=719)
<b>Age</b>			
Mean age	16.7	19.4	27.7
<b>Age at marriage</b>			
Median age at marriage	12.6	14.1	15.3
<b>Educational status</b>			
Ever enrolled in school (%)	31.6	40.1	25.4
<b>Current work status</b>			
Unpaid work in the last 12 months (%)	71.4	73.3	71.6
Paid work in the last 12 months (%)	17.3	13.9	24.1
<b>Reproductive experiences</b>			
Mean number of pregnancies***	1.8	2.2	5.0
Mean number of children ever born***	1.2	1.7	4.3
Ever experienced pregnancy loss (%)***	19.4	22.4	38.7
Ever experienced a miscarriage (%)***	14.8	18.6	33.4
Ever experienced an induced abortion (%)	0.5	1.9	1.5
Ever experienced a stillbirth**	5.6	3.0	6.4

Note: \*\* Differences by age significant at  $p \leq 0.01$ ; \*\*\*  $p \leq 0.001$ .

differences between women who had experienced a recent delivery in adolescence and those who had a recent delivery at adult ages for a number of indicators. For example, a larger proportion of women who delivered in late adolescence than others had ever enrolled in school. Conversely, a larger proportion of adult mothers than adolescent mothers reported having engaged in paid work in the 12 months preceding the survey.

A profile of the reproductive experiences of adolescent and adult cohorts of women, presented in Table 1.3, indicates that the mean number of pregnancies ranged from 1.8 among those who delivered in early adolescence, to 2.2 among those who delivered in late adolescence, to 5.0 among those who delivered in adulthood. While adolescent mothers reported, on average, fewer than two live

births (1.2 and 1.7 among those who delivered in early and late adolescence, respectively), adult mothers reported 4.3 live births.

Findings also show that for sizeable proportions of women in all cohorts, particularly in the adult cohort, pregnancies had ended in miscarriage, induced abortion or stillbirth. One in five women who delivered in adolescence compared to almost two in five women who delivered in adulthood reported that they had ever experienced pregnancy loss. Notably, many reported having experienced a miscarriage; 15 percent, 19 percent and 33 percent of those who delivered in early adolescence, late adolescence and adulthood, respectively. It is also notable that 6 percent of those who delivered in early adolescence and adulthood

reported a stillbirth; in comparison, 3 percent of those who delivered in late adolescence so reported.

It is well known that the risks of maternal morbidity and mortality are high not only among adolescent women but also among high-parity women across all age groups (see for example, Al-Suleiman et al., 2004; Bai et al., 2002; Fauveau et al., 1988; Khan, Jahan and Begum, 1986; Olusanya and Amiegheme, 1988; Ujah et al., 2005). Our findings, reported in Table 1.3, highlight that a large proportion of adult women (compared to very few adolescents) were indeed high-parity mothers. Given our study objectives, it is important that the findings regarding the potentially higher risks posed by high parity do not obscure the findings regarding the risks posed by young age at delivery. In order to compare women of equal parity, therefore, findings in subsequent chapters are presented both for the overall sample as well as low-parity women (that is, those who had experienced their first or second birth during the study period).

### Structure of the report

The report is structured as follows. Chapter 2 describes adolescent and adult mothers' maternal health care seeking during pregnancy, delivery and the postpartum period. Chapter 3 compares

adolescent and adult mothers' awareness and experiences of pregnancy-related complications. Chapter 4 compares patterns of treatment seeking among adolescent and adult mothers and the extent to which adolescent and adult mothers promptly sought treatment for pregnancy-related complications. Chapter 5 summarises the main findings of the study, and suggests programme recommendations.

### Limitations

We acknowledge the limitations of our study. First, information on maternal morbidity and mortality presented in this report is based on women's self-reports or the reports of family members of women who had died during delivery or within six weeks following delivery. The limitations of self-reported morbidity are widely recognised. Second, we note that it would have been ideal to compare the morbidity and mortality experiences and treatment seeking patterns of parity 1 women across the three maternal age groups (<17 years, 17–19 years and 25–29 years); however, given the high fertility setting in which the study was located and the prevalence early marriage in this area, very few women who had delivered at ages 25–29 were of parity 1 while a substantial number were of parity 4 and above.

CHAPTER 2

## Maternal health care practices

This chapter presents findings on maternal health care seeking practices for the most recent delivery among adolescent and adult cohorts of women in the study.

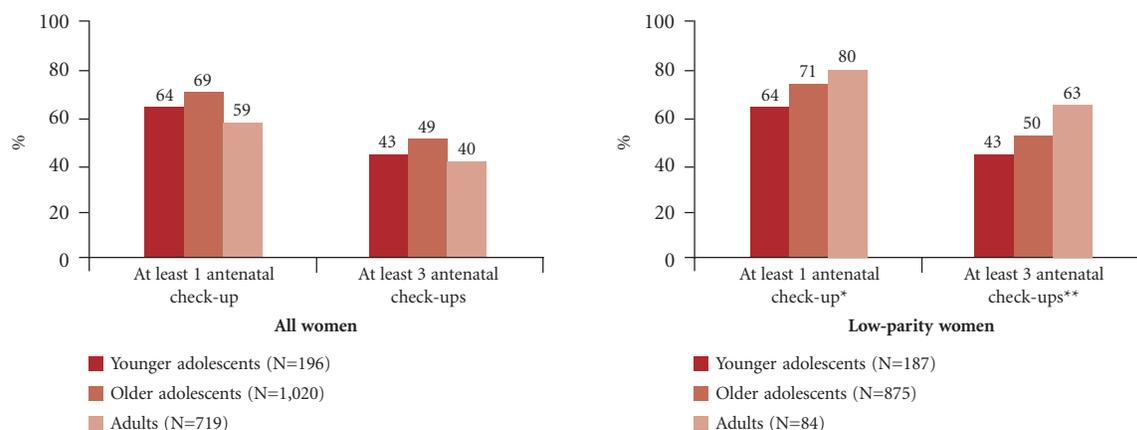
### Antenatal care seeking

Findings, presented in Figure 2.1, show that between three-fifths and over two-thirds of all women had received at least one antenatal check-up for their most recent birth. A much smaller proportion — between two-fifths and one-half — had received at least three antenatal check-ups. Although differences were narrow, adult mothers were somewhat less likely than adolescent mothers to have received at least one antenatal check-up.

When the analysis was restricted to low-parity women to control for the effects of parity-wise

differences, a reverse pattern was evident. Mothers who had delivered in early adolescence were least likely and those who had delivered in adulthood most likely to have received at least one antenatal check-up for the most recent birth (64% of those who delivered in early adolescence, compared to 71% of those who delivered in late adolescence and 80% of those who delivered in adulthood). A similar pattern was apparent with regard to receiving at least three antenatal check-ups, with 43 percent, 50 percent and 63 percent, respectively, of mothers who delivered in early, late adolescence and adulthood reporting so. These results resonate with the findings of an earlier study in India indicating that adolescent girls aged 16 or below were less likely than women aged 17–23 years to have sought antenatal care (Reynolds, Wong and Tucker, 2006).

**Figure 2.1:**  
Extent of antenatal care seeking among all women and low-parity women, according to age at most recent delivery



Note: \* Differences by age significant at  $p \leq .05$ ; \*\*  $p \leq .01$ .

The different patterns in antenatal care seeking by age observed among all women and low-parity women may be attributed to the likelihood that low-parity adult mothers have more decision-making power, mobility, access to resources and awareness of health promoting behaviour than either higher parity women of the same age or adolescent mothers, and that adult women at higher parity may be more likely than others to have perceived antenatal care as unnecessary.

Although the majority of adolescent and adult mothers reported in the survey that they had received at least one antenatal check-up, data from in-depth interviews suggest that antenatal care seeking was neither routine nor comprehensive. First, findings indicate that typically respondents had not actively sought antenatal check-ups, but rather had obtained a check-up when they had consulted a provider for a health problem experienced or when an outreach worker had visited them. This pattern was more evident among adolescent mothers than adult mothers. For example, in 26 in-depth interviews probing the experiences of adolescent mothers who died of maternal complications or experienced severe complications, 12 reported that they had received an antenatal check-up when an outreach worker had visited them or when they had consulted a provider for a health problem experienced. Among adult mothers (16 cases), in contrast, just 5 reported so.

*I was given an injection only when I went to consult the doctor at Tijara [nearby hospital] for severe pain; there the nurse gave me an injection. She told me that I should have one more injection in the seventh month. [parity 1, older adolescent mother who reported severe complications, interviewee ID 23]*

In just a few in-depth interviews (7 out of 26 death or severe complication cases among adolescent mothers, and 7 out of 16 similar cases among adult mothers), it was reported that women had actively sought an antenatal check-up.

*I went for a general check-up to see whether the baby in my womb was all right. I went to Alwar. The doctor told me that everything was fine; he also asked me to go for a sonography. [parity 1, younger adolescent woman who reported severe complications, interviewee ID 11]*

In situations in which outreach workers did not visit the mother, and respondents or their families did not actively seek services, women did not receive even basic antenatal services.

*Neither did she [the mother] go anywhere for injections [tetanus toxoid] nor did anyone come here to give her an injection. [mother-in-law of parity 1, older adolescent woman who died, interviewee ID 9]*

*I did not get a check-up done; nor was I given an injection [tetanus toxoid]. I did not go for the injections as it [the health facility] is 3 miles from here. No one came here. [parity 5, older woman who reported severe complications, interviewee ID 13]*

Second, qualitative data indicate that even women who received some antenatal services did not receive all the recommended services, including at least two doses of tetanus toxoid, and iron and folic acid supplements for three months or more. Many women, both adolescent and adult, reported that they were given iron and folic acid supplements once in a while or not at all. Adolescent mothers were more likely than adult mothers to report so (29 of the 53 adolescent mothers, and 9 of the 23 adult

mothers who discussed this issue in the in-depth interview).

*She [the mother] didn't get any of the pills that are given for increasing blood [iron and folic acid supplements]. They [auxiliary nurse-midwife/anganwadi worker] don't give anything here. These people fill their stomach first, what'll they give us? [mother-in-law of parity 1, older adolescent woman who died, interviewee ID 7]*

*She [auxiliary nurse-midwife] gave me pills [iron and folic acid] the first time she came to give me an injection. I was given pills for 6 days. When she came again to give me an injection, she did not give me any medicine; even the next time when I went to her for the injection, she did not give me the pills. [parity 1, younger adolescent woman who reported severe complications, interviewee ID 38]*

Third, as evident from the following excerpts, many women who were supplied iron and folic acid supplements did not take them for a variety of reasons.

*I didn't take the medicine [iron and folic acid] because she [auxiliary nurse-midwife] said I should take it with milk but we don't have milk at home. [parity 1, older adolescent woman who reported severe complications, interviewee ID 12]*

*She [auxiliary nurse-midwife] did give me red pills, but I never had them. I was on some other medication, which is why I didn't take the pills. [parity 1, older adolescent woman who reported severe complications, interviewee ID 21]*

*I didn't take the medicine because I used to feel uneasy; she [auxiliary nurse-midwife] asked me to take the medicine with milk and we don't have milk at home. [parity 7, adult woman who*

*reported non-severe complications, interviewee ID 53]*

*She [auxiliary nurse-midwife] had given me red pills. I didn't take them; I would vomit whenever I took the pills. [parity 1, younger adolescent woman who reported severe complications, interviewee ID 30]*

*I took the pills for increasing blood [iron and folic acid] for 10–11 days only; then I stopped because that medicine is "warm". [parity 1, older adolescent woman who reported non-severe complications, interviewee ID 50]*

Fourth, findings also indicate that women who reported contact with health care providers were seldom given advice regarding care during pregnancy. More adult mothers than adolescent mothers reported so (38 of the 57 adolescent mothers, and 22 of the 28 adult mothers who discussed this topic in the course of the in-depth interview).

*The nurse did not advise her [the mother] about what to do if she experienced a problem. In fact, no advice was given. [mother-in-law of parity 3, adult woman who died, interviewee ID 4]*

*She [auxiliary nurse-midwife] didn't explain anything to me. She said that I would be given an injection, and when I lay down, she gave me an injection and left. [parity 1, older adolescent woman who reported non-severe complications, interviewee ID 64]*

Finally, where advice regarding pregnancy-related care was given, it typically focused on the importance of a nutritious diet and rest during pregnancy. Only a couple of women reported that they were advised to have an institutional delivery or were told about preparations to be made for delivery.

Notably, not a single woman who was interviewed in-depth reported that a health care provider had discussed potential complications during pregnancy, delivery and the postpartum period with her. In fact, a few respondents noted that it was the study team who had discussed these issues with them for the first time.

*One of your friends [survey investigator] told me, otherwise no one came here and told me about the problems a woman can experience during pregnancy. [parity 1, older adolescent woman who reported non-severe complications, interviewee ID 64]*

*You [investigator] have told me, I was not aware of any of these problems before this. Who will tell us? [parity 2, older adolescent woman who reported non-severe complications, interviewee ID 66]*

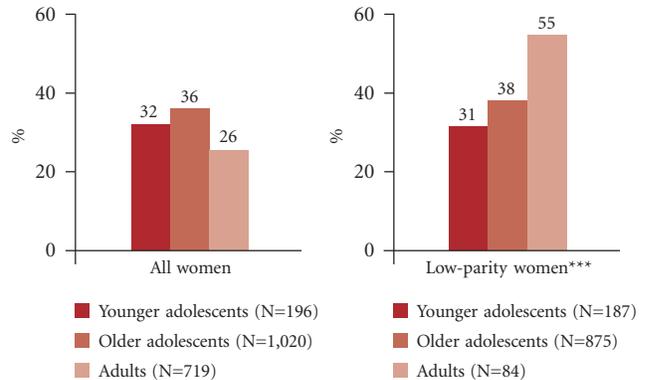
*No one came here; you [investigator] are the only one who has come here to meet me. We have not seen anyone from the anganwadi here till now. [parity 1, younger adolescent woman who reported non-severe complications, interviewee ID 72]*

## Delivery practices

Findings presented in Figure 2.2 show that in the overall sample, institutional delivery was limited across all three groups. Even so, adult mothers were less likely than adolescent mothers to report an institutional delivery for the most recent birth; just over one-third of adolescent mothers and over one-fourth of adult mothers reported that their most recent delivery had taken place in a health facility.

As with antenatal care seeking, when the analysis was restricted to low-parity women, a reverse pattern was evident. Younger adolescent mothers were least likely and adult mothers most

**Figure 2.2:**  
**Extent of institutional delivery among all women and low-parity women, according to age at most recent delivery**



Note: \*\*\* Differences by age significant at  $p \leq .001$ .

likely to have had an institutional delivery (31% of younger adolescents, 38% of older adolescents and 55% of adults reported so). These contrasting patterns observed among all women and low-parity women, reflect, as hypothesised earlier, the differing constraints faced by women who begin childbearing early as compared to older mothers; and by women who have had three or more births as compared to low-parity mothers.

Data from in-depth interviews reaffirm women's strong preference to deliver at home (51 of the 63 adolescent mothers and 23 of the 29 adult mothers who discussed their delivery preferences in in-depth interviews reported so) Women most often cited the actual or perceived poor behaviour of health care providers, on the one hand, and women's fear of or discomfort with hospital procedures, on the other, as reasons for preferring to deliver at home. Notably, adolescent mothers reported these reasons more frequently than adult mothers.

*I wanted to deliver my child in hospital but the doctor had slapped me once when I went there. I was also insulted in front of my in-laws in*

*hospital... that is why I didn't want to deliver my child in hospital. [parity 1, older adolescent woman who reported severe complications, interviewee ID 25]*

*I wanted to deliver my child with the help of the dai [traditional birth attendant] only because I was scared of being in a hospital. I was afraid of the nurse also because everyone says that the nurse slaps women. [parity 1, older adolescent woman who reported severe complications, interviewee ID 34]*

*I wanted the child to be delivered at home as I was afraid of the doctor and the nurse. They press the stomach. I wanted the dai [traditional birth attendant] to deliver my child. My husband and mother-in-law also wanted the dai to deliver my child. I wanted the child to be delivered before the auxiliary nurse-midwife comes because she puts her hand in [the uterus] and takes out the placenta. [parity 2, older adolescent woman who reported non-severe complications, interviewee ID 63]*

*I wanted to have the child delivered by the dai [traditional birth attendant] at home only because I was scared of the doctor – because he operates. [parity 1, younger adolescent woman who reported non-severe complications, interviewee ID 72]*

*I wanted to give birth to the child at home; I didn't want to deliver the child in hospital because they deliver the child by operation. [parity 5, adult woman who reported severe complications, interviewee ID 16]*

Several women also cited other reasons for opting to deliver at home, including the lack of finances to meet the cost of an institutional delivery and the difficulty in reaching health facilities that are located far away.

*We wanted to deliver the child at home because we would have had to borrow money to deliver the child in hospital. We don't have a job or a business which can provide us money to meet the delivery expenses. [parity 1, older adolescent woman who reported severe complications, interviewee ID 29]*

*The hospital is far from here; we first have to go to Kot and then to Bansur. As we would have had to go a long distance and then come back, I did not want to deliver my child in hospital. [parity 3, older adolescent woman who reported no complications, interviewee ID 81]*

*My family members wanted the child to be delivered at home because they thought that if they needed to take me to hospital, they would have to arrange for a car. If there had been a hospital in the village, they would have taken me there. When it [hospital] is so far away, how can they take me? Also, we don't have so much money. [parity 2, adult woman who reported non-severe complications, interviewee ID 75]*

*It [delivery] is fine at home. There are problems with delivery in a hospital like arranging a vehicle and having to run around; rather than facing all these problems it is better to deliver the child at home. [parity 3, older adolescent woman who reported severe complications, interviewee ID 18]*

A sizeable number of women also mentioned other reasons, such as lack of privacy, including concerns about being exposed and the lack of female doctors in the health facility, for preferring not to deliver in a hospital.

*Why go to a hospital? The doctor delivers the baby there; one feels shy and scared too. No one goes to a hospital here; women may die here [in the village], but they will not go to a hospital. The doctor sees everything [woman's private parts] while*

*delivering the baby; that is why no one goes. [parity 1, older adolescent woman who reported no complications, interviewee ID 86]*

*I wanted to deliver at home. I feel shy because everyone sees [woman's private parts] there [in hospital]. [parity 1, older adolescent woman who reported non-severe complications, interviewee ID 76]*

*I wanted to deliver the child at home. I didn't want to deliver the child in hospital because a woman has to take off her clothes at the time of delivery. [parity 4, adult woman who reported non-severe complications, interviewee ID 68]*

*If we had known earlier that there was no lady doctor at the hospital, we would have not gone there. In our family even if the woman dies, we will not allow an "outside" man to touch us. [parity 1, younger adolescent woman who reported severe complications, interviewee ID 41]*

A few women cited such reasons as having to run errands in the hospital and concerns about family members not being able to be present during a hospital delivery for preferring to deliver at home.

*It is best at home. There are no problems and all the work gets over at home. There is no running around involved, unlike deliveries in hospital. [parity 2, older adolescent woman who reported severe complications, interviewee ID 19]*

*It is good if the child is delivered at home. What would I do in hospital? There would be no one to take care of me and I would suffer. At home everyone is there to take care of me. [parity 4, older adolescent woman who reported no complication, interviewee ID 91]*

Women who preferred to deliver in a health facility cited reasons such as their apprehension about complications arising during a delivery at home, the

difficulty in managing complications at home, the availability of necessary facilities in hospitals to manage complications, and a preference for institutional delivery for the first birth.

*I wanted to deliver the child in a hospital because I felt I would not have any problem if I were in hospital. I would get treatment should any problem occur and I would be given glucose and medicine. [parity 2, older adolescent woman who reported non-severe complications, interviewee ID 44]*

*I didn't want to deliver the child at home. What would happen if a problem occurred during the delivery at home? [parity 2, adult woman who reported non-severe complications, interviewee ID 45]*

*I wanted to deliver the child in a hospital because all the facilities are available in hospitals. [parity 1, older adolescent woman who reported non-severe complications, interviewee ID 67]*

*I wanted my child to be delivered in a hospital. He [husband] also wanted the child to be born in a hospital. They [in-laws] also wanted the child to be born in a hospital, as it is the first child. [parity 1, adult woman who reported severe complications, interviewee ID 31]*

Findings, moreover, suggest that even though the majority of women expressed a preference for home delivery, not all women, particularly adolescent mothers, managed to deliver at home. For example, of the 51 adolescent mothers who wished to deliver at home, 16 delivered in a hospital and 3 delivered on the way to the hospital because of complications experienced during labour and delivery, including high blood pressure, prolonged labour, obstructed labour, excessive bleeding and retained placenta. In contrast, of the 23 adult mothers who wished to deliver at home, all except 2 delivered at home as desired.

*It is good if the child is born at home. The dai [traditional birth attendant] was called, but I had difficulty in delivering the child as I was suffering from pains for the whole night. I was taken to the hospital at 4 a.m. [parity 1, older adolescent woman who reported severe complications, interviewee ID 11]*

*Everyone thought that it [the delivery] would be good at home. The midwife checked me and said that with so many problems, it would be better to take me to the hospital; it would be a problem once night set in. The doctor saw me 10–15 minutes after we reached. He called the lady doctor and she checked me. The doctor said that though the baby would be born only the following day, I would have to stay [in hospital] because my blood pressure was high. [parity 1, older adolescent woman who reported severe complications, interviewee ID 21]*

*I wanted to deliver the child at home... We called the dai [traditional birth attendant] when my pains started. The severe labour pains started at 6–7 a.m.; the dai told us that the child could be delivered here [at home] but at 4 p.m. she told us that the child could not be delivered as the way [birth canal] had not opened. I was taken to Rajgarh where they treated me. They kept me there for three hours and then, at 10 p.m. they said I should be taken to Alwar as the child had to be delivered by operation [caesarean section]. I was taken to Mundawar finally, and the child was delivered by operation at midnight. [parity 1, adult woman who reported severe complications, interviewee ID 33]*

*When the pain started at night, the dai [traditional birth attendant] was called immediately. The dai said that there was still time [for the delivery]. The child wasn't born even by morning. Then the dai*

*said that the child could not be delivered at home as the child had got stuck in the birth canal. So they [family members] arranged for a vehicle to take me to Tapukara [nearest hospital]. After examining me, the doctor said that the baby would be delivered soon, so I would need to be admitted. Then they gave me an injection. At around 9 o'clock the pain started becoming severe. The doctor kept coming and watching the progress. He gave me a cut on the vagina [episiotomy], then he kept checking by putting his hand inside. At 12 o'clock he said that the child's head was stuck and the child could not be delivered in that hospital, so I should be taken to Alwar for the delivery. We went to Tijara [a nearer hospital] and without checking me the doctor asked us to go to Alwar. Before we reached Alwar, the child was born on its own in the car. [parity 1, younger adolescent woman who reported severe complications, interviewee ID 41]*

Likewise, not all women, particularly adolescent mothers, who wished to deliver in a health facility managed to do so. Only 7 of the 12 adolescent mothers who expressed a desire to deliver in a health facility managed to do so; among adult mothers, 4 out of 6 who wished to deliver in a facility managed to do so.

*I wanted to deliver the baby in hospital because every facility is available there and there is no problem. It was my family members [in-laws] who wished to have the delivery at home. When the dai [traditional birth attendant] came, I asked them [my family] to take me to hospital. So the dai asked, "Why won't it be delivered at home? Are you someone special?" My husband was not there, only my mother-in-law and sister-in-law were there. They said, "We delivered our children at home, so*

*your child will also be delivered here only." [parity 1, older adolescent woman who reported severe complications, interviewee ID 23]*

As noted earlier, the Janani Suraksha Yojana has been introduced by the government to promote institutional deliveries in rural areas, and has subsequently been expanded to cover all women, irrespective of their household economic status, parity and age at delivery. In this context, the study explored whether or not the scheme has indeed contributed to increasing institutional deliveries in the study setting.

Figure 2.3 presents data on institutional deliveries among women who had their most recent delivery before and after the expansion of the scheme. Findings indicate that institutional deliveries increased considerably across all groups after the scheme was expanded. Although our numbers are small, findings, moreover, suggest that older adolescent and adult mothers were more likely than younger adolescent mothers to have benefited from the scheme. For example, institutional delivery

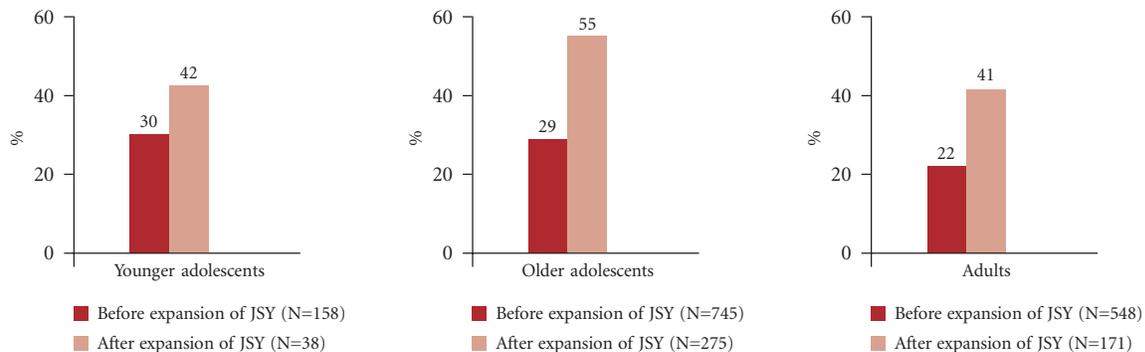
almost doubled among older adolescent and adult mothers following the expansion of the scheme (29% versus 55% among older adolescents, and 22% versus 41% among adults); the increase, however, was not as dramatic among younger adolescent mothers (30% versus 42%).

### Postpartum care seeking

Findings presented in Figure 2.4 indicate that postpartum care seeking was limited across all groups, with between one-fifth and one-quarter of all women having received a postpartum check-up. We note that amongst women who had received a postpartum check-up, most had sought care for a complication experienced post-delivery; only a few women had actively sought postpartum care as part of routine maternal health care seeking. Indeed, just 7–11 percent of all women reported having received a routine postpartum check-up (data not shown in figure). Differences by age at recent delivery were narrow for the overall sample.

As with seeking antenatal check-ups and institutional delivery, when the analysis was

**Figure 2.3:**  
**Extent of institutional delivery among all women before and after the expansion of the Janani Suraksha Yojana, according to age at most recent delivery**



Note: JSY=Janani Suraksha Yojana.

restricted to low-parity women, findings suggest that younger adolescent mothers were least likely and adult mothers most likely to have received a postpartum check-up (19%, 24% and 32%, respectively, of younger adolescent, older adolescent and adult mothers). Likewise, fewer adolescent mothers compared to adult mothers (8–11% versus 22%) reported a routine postpartum check-up (data not shown in figure).

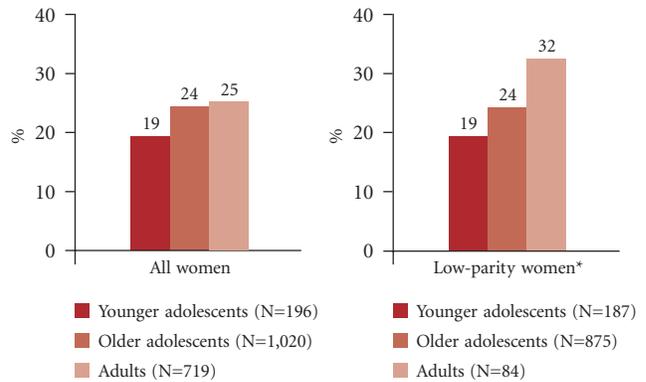
Findings from in-depth interviews reaffirm that postpartum care seeking was limited in the study setting. A typical response from both adolescent and adult mothers to questions related to postpartum care was that neither had a health worker visited them nor had they been to a health facility for a check-up. Moreover, even mothers who had received a home visit from a health worker or had visited a health worker to address a health problem reported that they were neither advised about how to take care of themselves nor given a check-up. Others reported that the health worker had provided services only to the newborn.

*A nurse came home when my child was born. She asked me to sign on a paper, and then she left after giving me money. She did not say anything. I did not go anywhere for a check-up after the delivery. [parity 1, younger adolescent woman who reported severe complications, interviewee ID 39]*

*She [nurse] came a month after [the delivery] to note down something. She also noted down my name. She advised me to go for the operation [sterilisation] as I had two sons. The anganwadi worker also came. She told me to immunise the baby against tetanus and gave me Rs.150. [parity 5, adult woman who reported non-severe complications, interviewee ID 47]*

*I didn't go anywhere after the birth of the baby. We would consult the doctor whenever the baby fell ill.*

**Figure 2.4:**  
**Extent of postpartum care seeking among all women and low-parity women, according to age at most recent delivery**



Note: \*Differences by age significant at  $p \leq .05$ .

*The auxiliary nurse-midwife came home and gave the baby an injection. I was told how to feed the baby; she also told me to protect the child from cough and cold. [parity 2, older adolescent woman who reported non-severe complications, interviewee ID 51]*

*The auxiliary nurse-midwife came after 8 days [of delivery]; she didn't tell me anything, she only gave the baby an injection. [parity 1, younger adolescent woman who reported non-severe complications, interviewee ID 67]*

The reasons why women did not seek postpartum care were not discussed in detail in in-depth interviews. However, it is likely that a combination of factors constrain women from seeking postpartum care in the study, including the customary isolation of women in the immediate postpartum period, women's lack of awareness of the importance of seeking a postpartum check-up and the lack of proactive postpartum service delivery by health care providers.

*In my family, the woman does not go out for two months at least [following delivery]. [parity 4,*

*adult woman who reported severe complications, interviewee ID 15]*

*Why should I go [for a postpartum check-up]? [parity 4, younger adolescent woman who reported severe complications, interviewee ID 14]*

*In the village, they don't allow the new mother to go out till she stops bleeding. For some mothers it takes a month, for others it takes 20 days and for*

*some it could even be a month-and-a-half. I had it [bleeding] for 25 days. [parity 1, older adolescent woman who reported non-severe complications, interviewee ID 59]*

*I was at home for 20–25 days. I did not go anywhere [for a check-up]; there was no problem so I did not go. [parity 1, older adolescent woman who reported no complications, interviewee ID 86]*

## CHAPTER 3

## Awareness and experiences of pregnancy-related complications

This chapter describes adolescent and adult mothers' awareness and self-reported experiences of complications during pregnancy, labour and delivery, and during the postpartum period for the most recent delivery in the two-and-a-half years preceding the survey. It also explores the mortality experiences of young women, as described by their family members.

### Awareness of pregnancy-related complications

Adolescent and adult mothers' awareness of complications during pregnancy, delivery and the postpartum period are presented in Table 3.1. We note that the findings reflect respondents' level of awareness at the time of the interview and not at the time of the index pregnancy; indeed, their experiences of complications could well have influenced their level of awareness at the time of the interview. Even so, findings indicate limited awareness among both the adolescent and adult cohort of mothers. Moreover, women who delivered in early adolescence were less likely than women who delivered in late adolescence and adulthood to report awareness of at least one complication during the antenatal period (18% versus 28–32%). Similar differences were evident with regard to awareness of danger signs during labour and the postpartum period (34% versus 42–49% and 15% versus 21–25%, respectively).

When the analysis was restricted to low-parity women, much wider differences were observed

between adolescent and adult women with regard to awareness of at least one complication during pregnancy, delivery and the postpartum period.

Irrespective of age at last delivery, respondents were most likely to be aware of complications during labour and delivery and least likely to be aware of complications during the postpartum period. For example, among women who delivered in adulthood, 32 percent, 49 percent and 25 percent reported awareness of at least one complication during pregnancy, labour and delivery, and the postpartum period, respectively.

In in-depth interviews similarly, women who reported awareness of complications were far more likely to mention complications during labour and delivery than during pregnancy and the postpartum period.

*A woman can have a headache, fever, bleeding, jaundice [during pregnancy].... It is dangerous if childbirth takes place in "reverse," if the umbilical cord remains inside, or if a woman suffers from excessive bleeding during labour. [parity 1, older adolescent woman who reported severe complications, interviewee ID 28]*

*I do not have that much knowledge.... There can be risk if the umbilical cord doesn't come out, and if the child's position is reverse. Also, if a woman suffers from tetanus, she can die. [parity 3, adult woman who reported severe complications, interviewee ID 24]*

*A woman can have a stomach ache, jaundice and so on. It is dangerous if the child is born in "reverse," if there is difficulty in delivery of the child, if the child gets stuck in the birth canal or if the umbilical cord doesn't come out. Many women suffer from the problem of swelling*

*[during pregnancy], but that is less risky. [parity 2, older adolescent woman who reported non-severe complications, interviewee ID 51]*

Few women perceived that a woman faces morbidity and mortality risks following delivery.

Table 3.1:

**Awareness of pregnancy-related complications among all women and low-parity women, according to age at most recent delivery**

Awareness of complications	All women			Low-parity women		
	<17 years (N=196)	17–19 years (N=1,020)	25–29 years (N=719)	<17 years (N=187)	17–19 years (N=875)	25–29 years (N=84)
<b>During pregnancy</b>						
Severe headache, blurred vision or high blood pressure	5.6	5.0	7.0	5.3	5.1	8.3
Swelling around ankles or puffiness of face <sup>1</sup> ; <sup>2***</sup>	3.6	6.2	8.2	3.7	5.9	17.9
Fits	1.5	2.8	2.8	1.6	2.7	4.8
Vaginal bleeding <sup>1***</sup> ; <sup>2***</sup>	6.1	9.4	14.0	5.3	9.0	20.2
High fever	6.6	8.4	9.7	7.0	8.0	4.8
Foul-smelling vaginal discharge <sup>1~</sup>	3.1	3.2	5.3	2.7	3.3	6.0
Jaundice	4.1	7.5	6.0	3.7	7.9	9.5
Anaemia <sup>1**</sup> ; <sup>2***</sup>	6.1	12.5	14.5	5.3	12.2	25.0
<b>Aware of at least one complication during pregnancy<sup>1***</sup>; <sup>2***</sup></b>	<b>18.4</b>	<b>27.9</b>	<b>32.3</b>	<b>18.2</b>	<b>27.3</b>	<b>44.0</b>
<b>During labour and delivery</b>						
Abnormal foetal presentation	13.8	15.9	18.9	13.9	15.5	22.6
Prolonged labour (>12 hours)	12.2	13.6	16.1	11.8	13.5	19.0
Obstructed labour <sup>1***</sup> ; <sup>2*</sup>	15.3	16.8	22.9	14.4	17.1	28.6
Heavy bleeding <sup>1~</sup>	4.1	8.8	8.9	4.3	8.5	10.7
Fits	1.0	1.9	2.9	1.1	1.9	0.0
Retained placenta <sup>1*</sup>	16.3	22.6	25.6	16.6	22.5	27.4
<b>Aware of at least one complication during labour and delivery<sup>1***</sup>; <sup>2***</sup></b>	<b>33.7</b>	<b>41.6</b>	<b>48.7</b>	<b>33.2</b>	<b>41.4</b>	<b>58.3</b>
<b>During the postpartum period</b>						
High fever	10.2	11.8	12.4	9.6	11.4	9.5
Heavy bleeding <sup>1*</sup> ; <sup>2*</sup>	9.2	12.7	16.0	9.6	13.0	21.4
Foul-smelling vaginal discharge	1.5	2.5	2.1	1.6	2.7	0.0
Fits	2.6	3.8	4.5	2.7	4.1	6.0
<b>Aware of at least one complication during the postpartum period<sup>1**</sup>; <sup>2*</sup></b>	<b>15.3</b>	<b>21.3</b>	<b>24.9</b>	<b>15.0</b>	<b>21.4</b>	<b>28.6</b>

Note: <sup>1</sup> Differences by age significant for the overall sample. <sup>2</sup> Differences by age significant for the low-parity women sample. ~ p≤.10; \* p≤.05; \*\* p≤.01; \*\*\* p≤.001.

*A woman faces no risks after the birth of a child. [parity 1, older adolescent woman who reported severe complications, interviewee ID 26]*

*There are no risks after childbirth. There can be swelling, otherwise there is no risk. [parity 4, older adolescent woman who reported no complications, interviewee ID 91]*

*A woman does not face any problem after childbirth. A woman is relieved after childbirth. [parity 2, adult woman who experienced non-severe complications, interviewee ID 45]*

Qualitative data also suggest that most women who reported knowledge of pregnancy-related complications became aware of these as a result of their own experiences. Some first-time mothers reported that they had not been aware of these complications during their pregnancy or following delivery, and that if they had prior knowledge, they would have sought better care when they had experienced complications.

*I didn't have any information [regarding pregnancy-related complications] when I was pregnant. [parity 2, older adolescent woman who experienced no complications, interviewee ID 98]*

*As I had given birth to a child earlier, I knew about it [pregnancy-related complications]; everyone comes to know after giving birth to one child. [parity 2, older adolescent woman who reported non-severe complications, interviewee ID 46]*

*If I had known before about these dangers, I would not have faced so many problems. We would have gone to the hospital without any delay. [parity 1, younger adolescent woman who reported severe complications, interviewee ID 39]*

*If I had known about these things [pregnancy-related complications] earlier I wouldn't have faced so many problems. I would have consulted a good doctor in the first place. We would not have wasted so much money on small [inexperienced] doctors. [parity 1, younger adolescent woman who reported non-severe complications, interviewee ID 72]*

## Pregnancy-related morbidity and mortality experiences

Adolescent and adult women's pregnancy-related morbidity and mortality experiences are presented in the following sections. We note that the information presented here is based on women's self-reports, or the reports of family members of women who died of maternal complications, and should be interpreted with caution.

### ***Complications experienced during pregnancy***

Table 3.2 presents adolescent and adult women's reported experiences of severe and non-severe complications during pregnancy by age at most recent delivery. In this study, severe complications during pregnancy-included symptoms of preeclampsia after 20 weeks of gestation, defined as the experience of both blurred vision and severe headache or high blood pressure, if the woman had got her blood pressure checked; fits; vaginal bleeding after 20 weeks of gestation; high fever with severe chills or loss of consciousness; symptoms of jaundice, defined as the experience of both change in the colour of eyes to yellow and change in the colour of urine to dark yellow; and symptoms of severe anaemia defined as the experience of all of the following symptoms — pale eyes, pallid face, pale palms, breathlessness following light work and breathlessness on lying on one's back. Non-severe complications included symptoms of reproductive

Table 3.2:

**Complications experienced during pregnancy by all women and low-parity women, according to age at most recent delivery**

Complications experienced	All women			Low-parity women		
	<17 years (N=196)	17–19 years (N=1,020)	25–29 years (N=719)	<17 years (N=187)	17–19 years (N=875)	25–29 years (N=84)
<b>Severe complications</b>						
Symptoms of preeclampsia after 20 weeks of gestation <sup>a,1***</sup>	16.3	14.9	19.9	15.5	15.1	13.1
Fits	2.0	1.1	1.1	1.6	1.3	0.0
Vaginal bleeding after 20 weeks of gestation	1.5	2.3	3.6	1.6	2.4	3.6
High fever with severe chills	14.3	16.1	14.7	15.0	15.9	8.3
High fever with loss of consciousness	1.5	3.4	3.6	1.6	3.4	1.2
Symptoms of jaundice <sup>b</sup>	4.6	3.6	2.9	4.8	3.8	1.2
Symptoms of severe anaemia <sup>c,1**</sup>	13.8	15.8	20.9	13.9	15.2	11.9
<b>Experienced one or more severe complications</b>	<b>39.3</b>	<b>38.4</b>	<b>43.1</b>	<b>39.0</b>	<b>38.4</b>	<b>29.8</b>
<b>Non-severe complications</b>						
Symptoms of reproductive tract infection <sup>d,1***</sup>	13.3	12.8	19.2	13.9	12.8	14.5
Severe lower abdominal pain	17.9	19.8	19.1	17.6	19.5	14.5
Symptoms of urinary tract infection <sup>e</sup>	26.5	26.9	29.3	27.3	26.4	18.1
Excessive vomiting	23.5	27.2	25.2	24.6	28.8	33.7
<b>Experienced one or more non-severe complications</b>	<b>54.1</b>	<b>54.4</b>	<b>54.8</b>	<b>55.6</b>	<b>55.2</b>	<b>50.6</b>
<b>Experienced one or more severe or non-severe complications</b>	<b>65.8</b>	<b>65.6</b>	<b>64.8</b>	<b>66.3</b>	<b>66.1</b>	<b>60.7</b>
<b>Experienced both severe and non-severe complications<sup>1*</sup></b>	<b>27.6</b>	<b>27.3</b>	<b>33.1</b>	<b>28.3</b>	<b>27.5</b>	<b>20.2</b>

Note: <sup>a</sup> Includes both blurred vision and severe headache or high blood pressure. <sup>b</sup> Includes change in the colour of eyes to yellow and change in the colour of urine to dark yellow. <sup>c</sup> Includes pale eyes, pallid face, pale palms, breathlessness following light work and breathlessness when lying on one's back. <sup>d</sup> Includes fever with foul-smelling discharge. <sup>e</sup> Includes burning while passing urine. <sup>1</sup> Differences by age significant for the overall sample. \* $p \leq .05$ ; \*\* $p \leq .01$ ; \*\*\* $p \leq .001$ .

tract infection, defined as the experience of fever with foul-smelling vaginal discharge; severe lower abdominal pain; symptoms of urinary tract infection, defined as burning sensation while passing urine; and excessive vomiting. We note that the two categories of complications, i.e., severe and non-severe, are not mutually exclusive; that is, a woman may have reported the experience of both severe and non-severe complications.

Findings indicate that irrespective of age at delivery, two-fifths or more of all mothers reported having experienced one or more severe complications during pregnancy. Differences by age at most recent delivery were negligible for the overall sample. Among low-parity women, however, mothers who delivered in adolescence were somewhat more likely than those who delivered in adulthood to report one or more severe

complications during pregnancy (38–39% versus 30%).

The most commonly reported severe complications during pregnancy were symptoms of preeclampsia (15–20%), high fever with severe chills (14–16%) and symptoms of severe anaemia (14–21%). Less commonly reported complications included fits (1–2%), vaginal bleeding (2–4%), high fever with loss of consciousness (2–4%) and symptoms of jaundice (3–5%).

Findings also suggest that somewhat larger proportions of all women (54–55%) experienced at least one non-severe complication during pregnancy. Specifically, between one-fifth and over one-quarter of all women reported having experienced such complications as symptoms of urinary tract infection (27–29%), excessive vomiting (24–27%) and severe lower abdominal pain (18–20%). Somewhat fewer women reported having experienced symptoms of reproductive tract infection such as fever with foul-smelling vaginal discharge (13–19%). Among low-parity women, as in the case of experiences of severe complications, those who delivered in adolescence were somewhat more likely to report having experienced one or more non-severe complications than those who delivered in adulthood.

In total, 65–66 percent of all women and 61–66 percent of low-parity women reported having experienced at least one severe or non-severe complication during pregnancy for the most recent delivery. Findings also show that 27–33 percent of all women and 20–28 percent of low-parity women had experienced both severe and non-severe complications during pregnancy.

### ***Complications experienced during labour and delivery***

Women's reported experiences of severe complications during labour and delivery are summarised in Table 3.3. Severe complications considered included labour that lasted for more than 12 hours, fits during labour and abnormal presentation of the foetus. Findings suggest that irrespective of age at delivery, fewer women reported having experienced complications during labour and delivery than during pregnancy; just 7–11 percent of all women and low-parity women reported experiencing one or more severe complications during labour and delivery. Differences by age at delivery were narrow for the overall sample as well as the low-parity women sample.

The most commonly reported complication was prolonged labour, reported by 6–8 percent of all

**Table 3.3:**

### **Complications experienced during labour and delivery by all women and low-parity women, according to age at most recent delivery**

Complications experienced	All women			Low-parity women		
	<17 years (N=196)	17–19 years (N=1,020)	25–29 years (N=719)	<17 years (N=187)	17–19 years (N=875)	25–29 years (N=84)
Prolonged labour (>12 hours)	7.7	6.6	6.0	7.5	6.9	7.1
Fits during labour	0.0	0.1	0.0	0.0	0.0	0.0
Abnormal presentation of the foetus <sup>1-</sup>	4.1	2.1	1.3	4.3	1.8	0.0
<b>Experienced one or more severe complications</b>	<b>11.2</b>	<b>8.5</b>	<b>7.1</b>	<b>11.2</b>	<b>8.6</b>	<b>7.1</b>

Note: <sup>1</sup>Differences by age significant for the overall sample. ~p≤.10.

women. Differences by age at delivery indicate that women who delivered in early adolescence were more likely than older women to report abnormal presentation of the foetus (4.1% versus 1.3–2.1%).

In addition to complications experienced during labour and delivery, the study also explored the use of selected procedures during delivery, including whether injections had been given to induce labour, instruments had been used for delivery, an episiotomy had been performed, the delivery had been a caesarean section, a blood transfusion had been given during delivery and injections had been given before the expulsion of the placenta following delivery. Findings presented in Table 3.4 indicate that the practice of giving injections to induce labour was widespread in the study area; moreover, women who delivered in adolescence, particularly in early adolescence (72% and 61% of those who delivered in early and late adolescence, respectively) were more likely than those who delivered in adulthood (54%) to report so. Among low-parity women similarly, those who delivered in early adolescence were more likely than others to report so (73% versus 63%).

In in-depth interviews, women reiterated that the practice of giving injections to induce or expedite labour was common; some women (19 of the 104 women who were interviewed in-depth) reported being given 2–7 injections prior to delivery.

*He [rural medical practitioner] gave me three injections, but the pains did not start. Then the nurse gave me three more injections. [parity 2, older adolescent woman who reported non-severe complications, interviewee ID 60]*

*I wanted the child to be delivered quickly, but my pains didn't start. Then the nurse gave me five injections to start the pains. [parity 1, older adolescent woman who reported non-severe complications, interviewee ID 58]*

*I was given one injection but the pains did not become severe. Then the doctor [perhaps a rural medical practitioner] was called. He gave me one more injection, then the child was delivered. [parity 6, adult woman who reported severe complications, interviewee ID 27]*

Few women (up to 3%) reported such procedures as the use of instruments for delivery,

**Table 3.4:**

**Procedures used during labour and delivery among all women and low-parity women, according to age at most recent delivery**

Procedures used	All women			Low-parity women		
	<17 years (N=196)	17–19 years (N=1,020)	25–29 years (N=719)	<17 years (N=187)	17–19 years (N=875)	25–29 years (N=84)
Injection to induce labour <sup>1***; 2~</sup>	72.4	61.3	54.0	72.7	63.3	63.1
Instrument used for delivery	1.5	2.7	1.3	1.1	3.2	4.8
Caesarean section delivery <sup>2***</sup>	1.5	2.0	2.5	1.6	2.3	11.9
Blood transfusion during delivery	0.0	1.0	0.8	0.0	1.0	0.0
Episiotomy <sup>1***</sup>	14.8	15.4	3.2	14.4	17.4	17.9
Injection given before expulsion of the placenta	8.2	7.4	7.9	8.1	7.1	10.7

Note: <sup>1</sup> Differences by age significant for the overall sample. <sup>2</sup> Differences by age significant for the low-parity women sample. ~ $p \leq .10$ ; \*\*\* $p \leq .001$ .

caesarean section delivery or blood transfusion during delivery. For the overall sample, findings suggest that adolescent mothers did not differ much from adult mothers in terms of reporting the use of these three procedures. However, among low-parity women, those who delivered in adulthood were more likely than those who delivered in adolescence to report a caesarean section delivery (12% versus 2%). Among all women, adolescent mothers were more likely than adult mothers to report an episiotomy (15% versus 3%); however, this difference disappeared when the analysis was restricted to low-parity women (14–17% versus 18%).

Although the use of oxytocin following delivery is a recommended practice, findings indicate that this procedure was rarely followed in the study area. Just 7–8 percent of all women and 7–11 percent of low-parity women reported the use of an injection before the expulsion of the placenta following delivery.

#### ***Complications experienced during the postpartum period***

Women's reported experiences of both severe and non-severe complications during the postpartum period are presented in Table 3.5. In the study, severe complications included bleeding that required the woman to change the cloth used to contain the blood every hour or more often, symptoms of sepsis defined as the experience of high fever with foul-smelling discharge within 72 hours following delivery and fits. Among non-severe complications were included the experience of swelling in the breast, as well as women's experiences of symptoms of postpartum psychological disorders.

Findings suggest that between one-sixth and one-fifth of all women reported the experience of one or more severe complications during the postpartum period. Moreover, women who delivered in early adolescence were somewhat more likely than others to report having experienced at least one

severe complication during the postpartum period (21% versus 16–17%). This pattern was more consistent among low-parity women; 22 percent, 15 percent and 13 percent of women who delivered in early adolescence, late adolescence and adulthood, respectively, reported having experienced at least one severe complication. The most commonly reported severe complication was heavy bleeding, reported by 12–15 percent of all women, irrespective of age at delivery. Symptoms of sepsis and fits were less frequently reported by all women (5–6% in the case of symptoms of sepsis and 1–2% in the case of fits).

Between two-fifths and one-half of all women reported having experienced non-severe complications. Specifically, less than one-tenth (6–7%) reported having experienced swelling in the breast and between one-fifth and almost two-fifths (19–38%) reported having experienced symptoms of postpartum psychological disorders. Women who delivered in adulthood were somewhat more likely than those who delivered in adolescence to report symptoms of postpartum psychological disorders; however, these differences were muted among low-parity women.

In total, 51–57 percent of all women and 43–58 percent of low-parity women reported having experienced one or more severe or non-severe complications during the postpartum period. In addition, among low-parity women, those who delivered in early adolescence were more likely than others to report so (58% versus 43–49%). Compared to women who experienced one or more severe or non-severe complications, far fewer —10–11 percent of all women and 9–11 percent of low-parity women — experienced both severe and non-severe complications.

#### ***Mortality experiences***

As described in the section on study design, the field team also identified cases of maternal death among

Table 3.5:

**Complications experienced during the postpartum period by all women and low-parity women, according to age at most recent delivery**

Complications experienced	All women			Low-parity women		
	<17 years (N=196)	17–19 years (N=1,020)	25–29 years (N=719)	<17 years (N=187)	17–19 years (N=875)	25–29 years (N=84)
<b>Severe complications</b>						
Heavy bleeding	14.8	11.6	11.9	15.5	11.1	12.0
Symptoms of sepsis <sup>a</sup>	6.1	5.2	6.4	6.4	4.5	0.0
Fits	1.5	1.2	1.3	1.6	1.4	3.6
<b>Experienced one or more severe complications<sup>2*</sup></b>	<b>20.9</b>	<b>16.1</b>	<b>16.8</b>	<b>21.9</b>	<b>15.1</b>	<b>13.1</b>
<b>Non-severe complications</b>						
Swelling in the breast	5.6	7.2	5.9	5.3	7.1	3.6
Sleeplessness <sup>1***</sup>	26.5	24.4	33.0	26.2	23.2	30.1
Restlessness <sup>1**</sup>	31.1	29.8	37.6	31.6	28.0	29.3
Irritability <sup>1*</sup>	30.1	26.4	32.8	30.5	24.1	21.7
Sadness <sup>1*</sup>	25.0	22.3	27.4	25.1	20.6	19.3
Depression <sup>1*</sup>	21.4	19.1	24.2	21.9	17.9	18.1
<b>Experienced one or more non-severe complications<sup>1~</sup></b>	<b>46.9</b>	<b>44.2</b>	<b>49.8</b>	<b>47.1</b>	<b>42.3</b>	<b>39.3</b>
<b>Experienced one or more severe or non-severe complications<sup>1~2*</sup></b>	<b>57.1</b>	<b>50.7</b>	<b>55.4</b>	<b>57.8</b>	<b>48.5</b>	<b>42.9</b>
<b>Experienced both severe and non-severe complications</b>	<b>10.7</b>	<b>9.6</b>	<b>11.3</b>	<b>11.2</b>	<b>8.9</b>	<b>9.5</b>

Note: <sup>a</sup> Includes experience of high fever with foul-smelling discharge within 72 hours following delivery. <sup>1</sup> Differences by age significant for the overall sample. <sup>2</sup> Differences by age significant for the low-parity women sample. ~ $p \leq .10$ ; \* $p \leq .05$ ; \*\* $p \leq .01$ ; \*\*\* $p \leq .001$ .

women who delivered in adolescence and adulthood during the reference period. A total of 8 maternal deaths were identified in the study area. Of these 5 were among women who had delivered in late adolescence and 3 were among women who had delivered in adulthood. Six of the 8 women, moreover, were first-time mothers.

All the 5 women who died in late adolescence were first-time mothers. Three had died within 2–3 hours following delivery and 2 had died within 2–3 weeks postpartum. The immediate causes of death, as gleaned from the narratives of family members, were possibly heavy bleeding or eclampsia.

*She became unwell 8 or 9 days after the delivery; she had a headache and fever. I brought her*

*some medicine and she rested the whole night after that. The next morning she bathed; immediately after that she suffered a fit. In the evening she again complained of a headache so I took her to Kishangarh [nearby hospital]. The doctor gave her an injection and said that she had paralysis. I brought her home immediately. At about 8–9 p.m. she stopped speaking, so I took her back to the doctor in Kishangarh. ... There she was given medicine and I was told to bring her in the morning. Her fever came down at night. We took her to a doctor in Alwar the next morning.... After examining her and looking at the ultrasound reports, the doctor told me that her vein was ruptured and she would not be able*

*to speak again. She was admitted to the hospital in Alwar for about 10 days. She had fits for 2 days...From Alwar, we took her to a hospital in Jaipur. After 2 days they discharged her and said that she would not live. I brought her home and she passed away the next day. [husband of parity 1, older adolescent woman who died, interviewee ID 1]*

*The child was delivered by caesarean section... the doctor told me after the delivery that she [the mother] was anaemic and she needed blood. I went for a blood test and the doctor asked me to wait for some time. Meanwhile she expired... she was not given a blood transfusion. She did not regain consciousness after the caesarean section delivery and died an hour-and-a-half or two hours after the delivery. [husband of parity 1, older adolescent woman, interviewee ID 2]*

*The child was born without any problem. We brought her [the mother] home from the hospital an hour after the child was born. She lay down next to the baby.... After a while, I noticed that she was rolling on top of him. Then I saw that she was unconscious and her head was falling back....We called the doctor. The doctor gave her an injection and told us to take her to hospital. We took her to hospital immediately. There they tried to give her intra-venous fluid, which did not work because her veins were not functioning properly. She was cold and we could not feel her pulse. Then the doctor said that they could not do anything more, that we had lost her. [mother-in-law of parity 1, older adolescent woman, interviewee ID 7]*

*She [the mother] was in pain from 2–3 p.m. We took her to Tijara [nearby hospital] at 4 p.m.; the doctor there told us that she would deliver by midnight and that there was no problem; she could either stay in hospital or go home....We came back home at around 8 p.m. Her pain*

*started again at 10–11 p.m. We called the doctor and she was given an injection. The baby was born an hour-and-a-half later. Even after half-an-hour, the second child was not delivered. So we called the doctor but he refused to give her another injection. She was taken to Tijara by vehicle....By the time we reached, her eyes were rolling upwards. The doctor asked us to arrange for blood and some medicine, but it took time. By the time we arranged for all those, she had died. [mother-in-law of parity 1, older adolescent woman who experienced a twin pregnancy and died before delivering the second baby, interviewee ID 8]*

Of the 3 adult women who died, 1 was a first-time mother and 2 were high-parity women (parity 4 and 5). While 1 woman had died during delivery, 2 had died two or three hours following delivery. As with women who died in adolescence, the immediate cause of death appeared to be heavy bleeding or eclampsia as well as retained placenta.

*As soon as we reached the hospital gate, she [the mother] delivered the baby...I called the doctor. The doctor and a boy from my village, who was accompanying me, took my wife inside the hospital; there they tried to take out the umbilical cord as it had not come out properly... Then my wife started to bleed heavily; the cord was stuck inside. After an hour, I asked the doctor what I should do. He told me to take her quickly to Alwar. I hired a jeep and rushed to Alwar. There I contacted a lady doctor and explained everything to her. The doctor took my wife inside but nothing could be done as my wife had lost too much blood. [husband of parity 1, adult woman, interviewee ID 3]*

*When mild pains started, we called a private doctor [possibly a rural medical practitioner]. He told us he would not give her [the mother] any medicine and asked us to take her to*

Mundawar [nearby hospital]. When we reached Mundawar, they told us to take her to Alwar. She was admitted to the hospital in Alwar. There they asked us to do a sonography. I asked the doctor whether there was any problem. The doctor assured me that there was no problem and she would have a normal delivery. She was given a bottle of glucose and an injection at 3 a.m. and then the bleeding started. Her condition began to deteriorate and she was unable to recover. The doctor told us she had suffered a heart attack. The child could not be delivered; he expired in her womb. [husband of parity 4, adult woman, interviewee ID 4]

The umbilical cord came out due to the "heat". Then we made her lie down. As soon as she lay down, she started running fever and her teeth began chattering. She became stiff. We immediately took her to a doctor in Tapookda. The doctor told us that her uterus had ruptured, and we should take her to Alwar. She died on the way, three or four hours after the birth of her child. [sister-in-law of parity 5, adult woman, interviewee ID 6]

### Summary of morbidity and mortality experiences

Table 3.6 summarises the morbidity and mortality experiences, excluding symptoms of postpartum psychological disorders, reported by women who delivered in adolescence and adulthood in the study setting. Findings indicate that less than 1 percent of all women in the study sample had died as a result of maternal complications. Half of all women reported having experienced one or more severe complications during pregnancy, delivery and the postpartum period. Close to three-fifths of all women reported having experienced one or more non-severe complications, and between one-quarter and one-third reported having experienced no complications. Differences by age at delivery were muted for the overall population.

Some differences were, however, notable among low-parity women. Women who delivered in adolescence were more likely than those who delivered in adulthood to report one or more severe complications (50–53% versus 37%) and one or more non-severe complications (58% versus 51%). Conversely, they were less likely to report having experienced no complications (26% versus 37%).

**Table 3.6:**

### Morbidity and mortality experiences among all women and low-parity women, according to age at most recent delivery

	All women			Low-parity women		
	<17 years (N=196)	17–19 years (N=1,020)	25–29 years (N=719)	<17 years (N=187)	17–19 years (N=875)	25–29 years (N=84)
Maternal death	0.0	0.4	0.4	0.0	0.5	1.2
Experienced one or more severe complications <sup>2*</sup>	53.1	49.4	51.6	52.9	49.5	36.9
Experienced one or more non-severe complications	56.6	56.9	55.5	58.3	57.7	51.2
Experienced no complications	26.0	27.5	30.6	25.7	26.4	36.9

Note: Percentages add to more than 100 because the two categories of complications, severe and non-severe, are not mutually exclusive. <sup>2</sup> Differences by age significant for the low-parity women sample. \* $p \leq 0.05$ .

## CHAPTER 4

## Treatment seeking for pregnancy-related complications

This chapter describes adolescent and adult mothers' treatment seeking for complications experienced during pregnancy, delivery and the postpartum period, including those that led to the woman's death, but excluding symptoms of postpartum psychological disorders. It also explores the extent to which women who had experienced complications had promptly sought treatment.

### Treatment seeking for pregnancy-related complications experienced

Table 4.1 and Figure 4.1 show the percentage of women who sought treatment for complications experienced during pregnancy, delivery or the postpartum period, according to selected background characteristics of respondents and their perception of the severity of the complication experienced. Findings suggest that treatment was typically sought for maternal complications; even so, treatment seeking was far from universal. Over 70 percent of all women who experienced complications, irrespective of age at most recent delivery, reported having sought treatment for complications experienced. Among low-parity women, similarly, 74–77 percent of those who experienced complications reported that they had sought treatment; differences in treatment seeking by age at delivery were negligible.

Differences by respondents' perception of the severity of the complication experienced indicate that women who perceived the complication to be life-threatening were more likely than those who

**Table 4.1:**

**Percentage of women who sought treatment for pregnancy-related complications experienced, according to selected characteristics**

Characteristics/ perceptions	Women who experienced pregnancy-related complications (N=1,384)
<b>Perceptions about complications experienced***</b>	
Life-threatening	76.7
Not life-threatening	51.3
<b>Education***</b>	
No formal education	71.6
At least one year of schooling	80.2
<b>Religion~</b>	
Muslim	71.4
Hindu	76.2
Others	83.3
<b>Caste/tribe</b>	
Scheduled tribes	73.8
Scheduled castes	74.0
Other backward castes	78.1
General castes	77.8
<b>Standard of living index~</b>	
Low	71.1
Medium	75.1
High	81.6

Note: ~Differences significant at  $p \leq .10$ . \*\*\*Differences significant at  $p \leq .001$ .

perceived it to be not life-threatening (77% versus 51%) to have sought treatment. Differences by respondents' background characteristics suggest that women who had completed at least one year of schooling were more likely than those without any schooling (80% versus 72%) to have sought

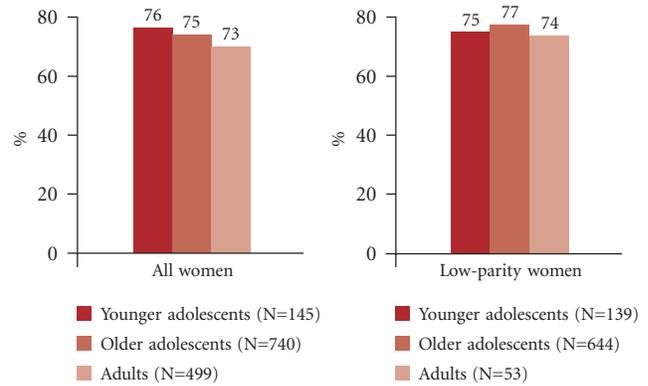
treatment. Differences by household socio-economic status and religion were mildly significant, with women from poorer households and those belonging to Muslim families less likely than others to have sought treatment. Finally, differences by caste were narrow and insignificant.

Among women who had sought treatment for complications, the majority had sought the services of a doctor from a public sector facility (31–32%) or a private sector facility (45%) (Table 4.2). One-quarter or more (25–30%) reported having sought treatment from a nurse or auxiliary nurse-midwife, and almost one-fifth (18%) reported that they had sought treatment from an unqualified provider or relied on over-the-counter medications or home remedies. Differences by age at delivery were narrow for the overall sample.

Although not statistically significant, some notable differences were apparent when the analysis was restricted to low-parity women. Women who had delivered in adulthood were more likely than those who had delivered in adolescence to have sought treatment from a doctor in a public sector facility (44% versus 32–33%). Conversely, they were less likely to report having sought treatment from a nurse, auxiliary nurse-midwife (15% versus 27–29%), or from an unqualified provider or having relied on over-the-counter medications or home remedies (10% versus 17–18%).

With regard to the type of facility from where treatment was sought, findings presented in Table 4.2 indicate that the majority of mothers who sought treatment for complications, irrespective of age at most recent delivery, had sought care from a private sector facility (53–56%). Over one-third (36–40%) reported having sought treatment from a public

**Figure 4.1:**  
Percentage who sought treatment for pregnancy-related complications experienced, all women and low-parity women, according to age at most recent delivery



Note: Includes only women who experienced complications.

sector facility, mainly a primary health centre or a community health centre. Between one in seven and one in five mothers reported having sought treatment at home, which included treatment by a qualified or unqualified provider or self-treatment.

As earlier, findings suggest notable differences by age at delivery among low-parity women. Although differences were not statistically significant, mothers who had delivered in early adolescence were least likely, and those who had delivered in adulthood most likely, to have sought treatment from a public sector facility (37%, 41% and 46% of younger adolescents, older adolescents and adults, respectively). Specifically, adolescent mothers were considerably less likely than adult mothers to have sought treatment from a higher level facility, such as a district hospital (5–6% versus 21%), and conversely, were more likely to have sought treatment from a private sector facility (55–56% versus 41%).

Table 4.2:

**Type of provider and facility from whom/where treatment was sought for pregnancy-related complications and treatment cost, all women and low-parity women, according to age at most recent delivery**

Type of provider/facility	All women who sought treatment for complications			Low-parity women who sought treatment for complications		
	<17 years (N=110)	17–19 years (N=555)	25–29 years (N=362)	<17 years (N=104)	17–19 years (N=491)	25–29 years (N=39)
<b>Type of provider from whom treatment was sought</b>						
Doctor in a public sector facility	31.8	31.4	30.7	32.7	31.8	43.6
Doctor in a private sector facility	44.5	44.9	44.5	44.2	44.2	38.5
Nurse/auxiliary nurse-midwife	30.0	25.9	24.6	28.8	26.9	15.4
Other trained health provider (ASHA, <i>anganwadi</i> worker, trained traditional birth attendant)	0.0	0.5	0.8	0.0	0.6	0.0
Unqualified provider/pharmacist/home remedies	18.2	18.2	18.2	18.3	17.3	10.3
<b>Type of facility from where treatment was sought</b>						
Public sector facility	36.4	39.8	38.1	36.5	40.5	46.2
Sub-centre	3.6	2.2	3.3	3.8	2.2	5.1
Primary health centre	8.2	12.3	14.6	8.7	12.2	10.3
Community health centre <sup>1</sup> ~	21.8	22.2	16.0	21.2	22.8	10.3
District hospital <sup>2**</sup>	4.5	6.1	5.5	4.8	6.1	20.5
Private sector facility	56.4	56.0	53.3	54.8	55.8	41.0
NGO facility	0.0	0.0	0.8	0.0	0.0	2.6
Medical store	1.8	4.3	3.3	1.9	4.5	5.1
Treatment provided at home	19.1	14.1	18.8	19.2	13.0	12.8
<b>Referred to another facility</b>	18.2	13.7	13.8	18.3	13.4	5.1
<b>Visited more than one facility or provider<sup>2*</sup></b>	32.7	25.9	23.2	32.7	25.5	10.3
<b>Cost of treatment</b>						
Average cost (Rs.) <sup>a; b; 1*</sup>	1,803	1,911	1,296	1,834	1,934	2,355
% who had spent more than Rs. 1,000 <sup>1**</sup>	29.1	29.7	23.8	28.8	30.1	28.2

Note: <sup>a</sup> 9 women who reported spending Rs. 30,000 or more on treatment and 175 women who reported that they did not know how much they had spent for treatment were excluded in the calculation of average cost for the overall sample. <sup>b</sup> 7 women who reported spending Rs. 30,000 or more and 124 women who reported that they did not know how much they had spent for treatment were excluded in the calculation of average cost for the low-parity women sample. <sup>1</sup> Differences by age significant for the overall sample. <sup>2</sup> Differences by age significant for the low-parity women sample. ~  $p \leq .10$ ; \*  $p \leq .05$ ; \*\*  $p \leq .01$ .

Findings also show that 14–18 percent of all women who had sought treatment had been referred to another health facility for treatment. Among low-parity women, more adolescent mothers, particularly younger adolescent mothers, compared to adult mothers, reported that they had been referred to

another health facility (18%, 13% and 5%, respectively, of younger adolescent, older adolescent and adult mothers reported so).

Considerably larger proportions of women who delivered in early adolescence had sought

treatment from more than one facility or provider, compared to others (33% versus 23–26% of women who had sought treatment). Among low-parity women, findings suggest that women who delivered in early adolescence were most likely and those who delivered in adulthood least likely to have sought treatment from more than one facility or provider (with 33%, 26% and 10% of younger adolescent, older adolescent and adult women, respectively, reporting so).

Table 4.2 also presents findings on the expenditure incurred by women and their families to obtain treatment for complications experienced. Results suggest that adolescent mothers were more likely than adult mothers to have incurred substantially higher expenditure on treatment. For example, among all women, the average cost of treatment ranged from Rs.1,296 among adult mothers to Rs.1,803–1,911 among adolescent mothers. Similarly, more adolescent mothers as compared adult mothers (29–30% versus 24% of those who had sought care) reported having spent more than Rs.1,000 to obtain treatment for complications. A similar pattern was evident when the analysis was restricted to low-parity women. Differences by age at most recent delivery were, however, not statistically significant.

### Promptness with which women had sought treatment for pregnancy-related complications

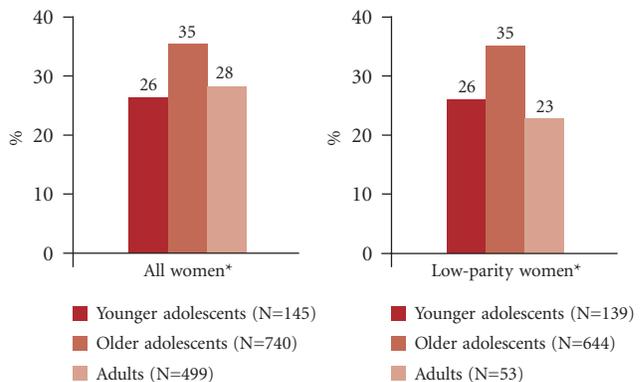
All women who had experienced complications were asked whether they had promptly recognised the need to seek treatment (that is, less than six hours following the onset of complications); promptly decided to seek treatment from a health facility that could provide appropriate care (that is, less than six hours following the recognition of the need for treatment); promptly reached an appropriate health

facility for treatment (that is, within an hour of deciding to seek treatment); and promptly received treatment at the health facility (that is, less than an hour after reaching the appropriate facility). Results are presented in the following sections.

#### *Promptness in recognising the need for treatment*

Findings suggest that complications were rarely recognised promptly. As seen in Figure 4.2, between one-quarter and one-third of all women who experienced complications reported having promptly recognised the need to seek treatment. Findings, moreover, suggest that older adolescent mothers were more likely than others to report that they had promptly recognised the need for treatment (35% versus 26–28%). A somewhat similar pattern was evident when the analysis was restricted to low-parity women: for example, 23–35 percent of low-parity women reported having promptly recognised the need for treatment. Likewise, older low-parity adolescent mothers were more likely than others to report promptly recognising the need for treatment (35% versus 23–26%).

**Figure 4.2:**  
**Percentage who promptly recognised the need for treatment of pregnancy-related complications, all women and low-parity women, according to age at most recent delivery**



Note: Includes only women who experienced pregnancy-related complications.  
\* Differences by age significant at  $p \leq 0.05$ .

Findings, moreover, indicate that among women who did not seek treatment for pregnancy-related complications, the failure to recognise complications was a leading reason for women not doing so. For example, among all women who did not seek treatment for complications, three-quarters of younger adolescent mothers (74%) and half of older adolescent and adult mothers (50%) reported that the complication was not serious enough to warrant treatment (not shown in tabular form or figure).

In in-depth interviews too, it was evident that many women who experienced complications, or their family members, had either not immediately recognised the need for treatment or had dismissed such complications as normal events during pregnancy and childbirth.

*We brought her home after the delivery and gave her tea to drink. She lay down next to the baby... She told me just once that she was experiencing some sort of burning pain in her chest. I thought it must have been because she had drunk hot tea and I told her so. After a while, I noticed that she was unconscious and her head was falling back... I didn't really think what she experienced could have been so dangerous. [mother-in-law of parity 1, older adolescent woman who died, interviewee ID 7]*

*The placenta came out two hours after I had given birth. It came out with a lot of difficulty. I was given ajwain [carom seeds] so that it would come out quickly. I didn't think it was dangerous. Also, the midwife told me not to worry.... I had bleeding for 15 days. I did not think that I had a problem; this way [by bleeding], the stomach gets cleaned up. The more that comes out [blood], the better. [parity 2,*

*older adolescent woman who reported severe complications, interviewee ID 19]*

### **Promptness in deciding to seek treatment**

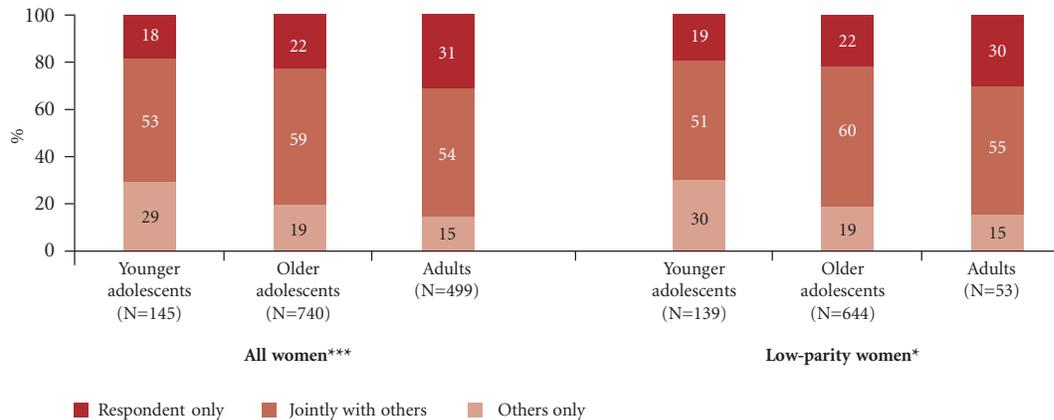
All women who had experienced complications were asked whether they had participated in the decision regarding whether or not to seek treatment, and how soon the decision was made to seek treatment from a health facility that could provide appropriate care once the need for seeking treatment was recognised. Figure 4.3 summarises the extent to which women had participated in the decision regarding whether or not to seek treatment.

Over 70 percent of all women who experienced complications reported that they had some say in the decision regarding whether or not to seek treatment for the complication experienced. Findings, however, suggest that mothers who had delivered in early adolescence were less likely than older mothers to report that they had decided independently whether or not to seek treatment (18% versus 22–31%), and conversely were more likely to report that others had made such decisions without their participation (29% versus 15–19%). A similar pattern was evident when the analysis was restricted to low-parity women; for example, 19 percent of low-parity mothers who delivered in early adolescence compared to 30 percent of those who delivered in adulthood reported that they had made the decision independently regarding whether or not to seek treatment.

In in-depth interviews too, although most women reiterated that they had some say in the decision regarding whether or not to seek treatment, they rarely made such decisions on their own. Reflecting the findings from the survey, qualitative finding also show that adolescent mothers were more

Figure 4.3:

**Women's role in decisions regarding whether or not to seek treatment for pregnancy-related complications, all women and low-parity women, according to age at most recent delivery**



Note: Includes only women who experienced pregnancy-related complications. \* Differences by age significant at  $p \leq 0.05$ ; \*\*\*  $p \leq 0.001$ .

likely than adult women to report independent decision-making. For example, in 26 in-depth interviews in which the experiences of adolescent mothers who had died or experienced severe complications were probed, 21 reported that other family members had made the decision to seek treatment; among adult mothers (16 cases), 11 reported so.

*When I suffered from stomach pain, my father-in-law, mother-in-law, sister-in-law and husband decided that I should be taken to hospital for treatment. [parity 1, older adolescent woman who reported severe complications, interviewee ID 29]*

*It [placenta] came out after an hour. The doctor was called and he gave me an injection. All my family members unanimously decided to call the doctor. [parity 5, adult woman who reported severe complications, interviewee ID 13]*

Qualitative findings also show that in cases where the respondent's decision differed from that of

members of her family, it was the latter's decision that prevailed.

*I didn't consult a doctor because everyone [family members] told me not to. They said that swellings appear when a woman is pregnant. [parity 1, older adolescent woman who reported severe complications, interviewee ID 25]*

Figure 4.4 presents findings with regard to the promptness with which the decision was made to seek treatment from a health facility that could provide appropriate care for complications experienced. Findings suggest that, as with recognising the need for treatment, women experienced considerable delay in deciding to seek treatment from an appropriate health facility. Just 31–32 percent of all women who experienced complications reported that the decision to seek treatment was made within six hours of recognising the need for treatment. Although the extent of women's participation in decisions regarding

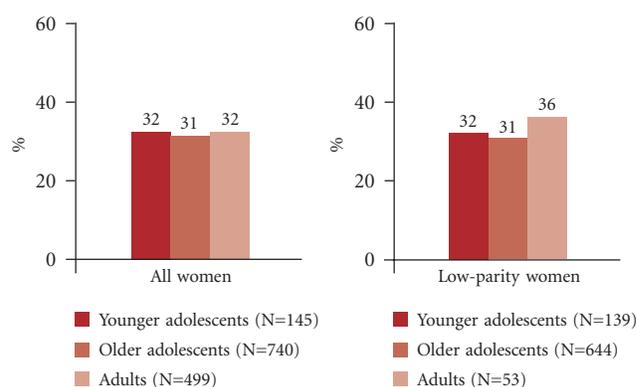
whether or not to seek treatment varied by age at most recent delivery, differences by age at most recent delivery in promptly making the decision to seek treatment from an appropriate facility were modest for the overall sample. A different pattern, however, emerged when the analysis was restricted to low-parity women, with adult mothers mildly more likely than adolescent mothers to report that the decision was made promptly to seek treatment from a health facility that could provide appropriate care (36% versus 31–32%).

#### ***Promptness in reaching an appropriate health facility for treatment***

As described earlier, women who had experienced complications had sought treatment from a variety of providers and facilities — qualified and unqualified, public and private and in health facilities and at home. Moreover, sizeable proportions were referred to other facilities for appropriate treatment. For the purpose of analysis presented in this section, the following two categories of women were defined as having reached an appropriate health facility: (a) all women who experienced complications who went first to a health facility in the public or private sector, including an NGO facility, and were not referred to another health facility for treatment; (b) all women who experienced complications who were referred to a health facility and went to the referral facility for treatment. In other words, all women who had sought treatment at home or who did not go to the referral facility, if referred, were considered as not having reached an appropriate health facility for treatment.

Findings presented in Figure 4.5 indicate that women experienced considerable delays in reaching an appropriate health facility for treatment of

**Figure 4.4:**  
**Percentage who promptly decided to seek treatment for pregnancy-related complications from an appropriate health facility, all women and low-parity women, according to age at most recent delivery**



Note: Includes only women who experienced pregnancy-related complications.

complications. For example, only between one-fourth and one-third of all women who had experienced complications had promptly reached an appropriate health facility, that is, within an hour of deciding to seek treatment. Differences by age at most recent delivery were narrow for the overall sample. When the analysis was restricted to low-parity women, findings suggest that younger adolescent mothers were less likely than others to have promptly reached an appropriate health facility (28% versus 34–38%).

Findings from in-depth interviews indicate that delays were experienced because families did not typically make arrangements in advance for transportation in case of an emergency; indeed, in 23 of the 35 in-depth interviews of women who had experienced severe complications or family members of women who died of maternal complications, in which the topic was discussed, women or their family members reported that they had not made prior arrangements for transport. It is also clear from the

transcripts that women and their families who had not been able to arrange transport in advance had experienced considerable delay in reaching the health facility.

*We hadn't organised any transport in advance. [parity 2, adult woman who reported severe complications, interviewee ID 17]*

*We had to send someone to Tapookda on a motorcycle to get a car. It took two or three hours for the car to reach here; by that time it was too late. We took her [the mother] to Tapookda [health facility] where the doctor told us that her uterus had ruptured. [sister-in-law of parity 5, adult woman who died, interviewee ID 6]*

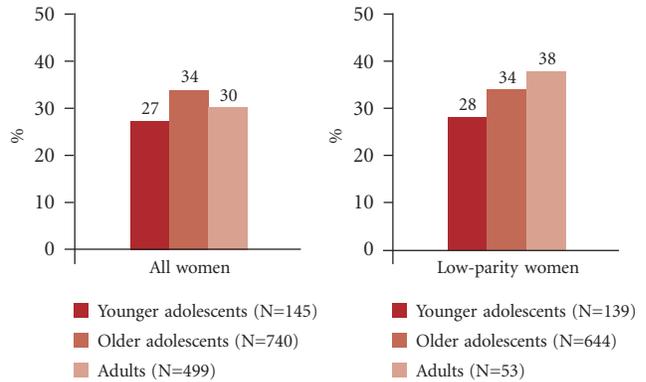
*The delay in taking me to the hospital occurred because we had to hunt for a vehicle. [parity 4, younger adolescent woman who reported severe complications, interviewee ID 14]*

*You can imagine how far Raini [nearest health facility] is from here. To reach there, we had to go by bicycle and then in some other vehicle. [parity 1, older adolescent woman who reported severe complications, interviewee ID 25]*

**Promptness in obtaining appropriate care at the facility**

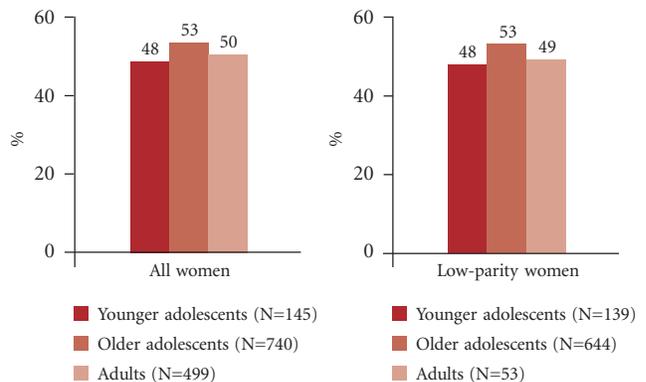
Figure 4.6 presents the percentage of women who promptly obtained proper care for pregnancy-related complications, that is, within an hour of reaching a health facility. Findings suggest that more women reported that they had obtained prompt treatment as compared to promptly reaching an appropriate health facility; indeed, 48–53 percent of all women and low-parity women who experienced complications reported that they had received proper care within an hour of reaching the health facility. Differences by age at most recent delivery were

**Figure 4.5:**  
Percentage who promptly reached an appropriate health facility for treatment of pregnancy-related complications, all women and low-parity women, according to age at most recent delivery



Note: Includes only women who experienced pregnancy-related complications.

**Figure 4.6:**  
Percentage who promptly obtained appropriate care for pregnancy-related complications, all women and low-parity women, according to age at most recent delivery



Note: Includes only women who experienced pregnancy-related complications.

modest for the overall and low-parity women samples.

In summary, most women had experienced considerable delays in seeking treatment for complications, particularly with regard to recognising the need for treatment, deciding to seek

treatment from a health facility that could provide appropriate care, and reaching an appropriate health facility for treatment. Delays were less likely to be experienced with regard to obtaining care after reaching an appropriate health facility. Indeed, adolescent mothers, especially younger adolescent mothers, were somewhat more likely than adult mothers to have experienced two of the four delays, namely, deciding to seek treatment from a health facility that could provide appropriate care, and reaching an appropriate health facility. This finding may be attributed to adolescent mothers' limited decision-making ability as well as their limited awareness of health facilities that provide appropriate treatment for complications.

### Quality of services received at the health facility

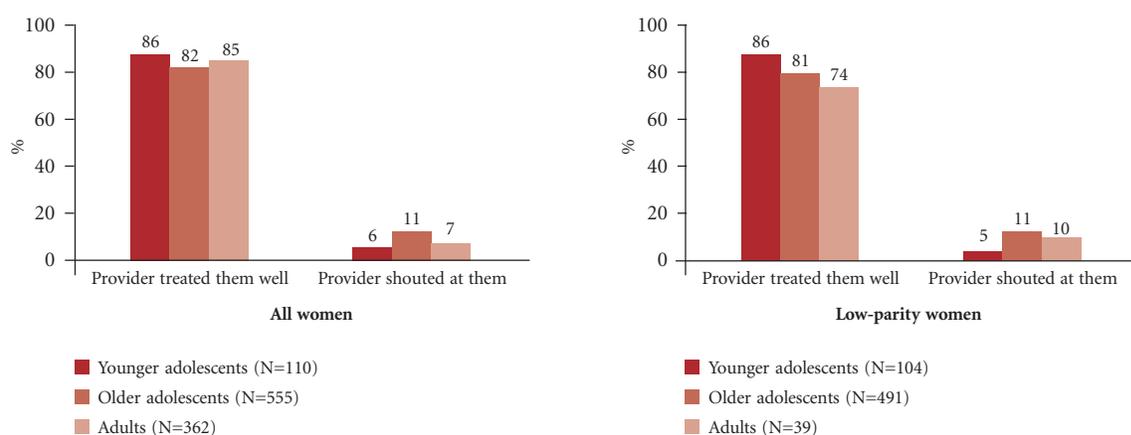
The study also explored the quality of services received by women who sought treatment for

complications. Findings presented in Figure 4.7 suggest that irrespective of age at most recent delivery, over 80 percent of all women who had sought treatment reported that the health care provider had treated them well. Among low-parity women too, somewhat similar proportions reported that the provider had treated them well; even so, adolescent mothers, especially younger adolescents, were somewhat more likely than adult mothers to report so (81–86% versus 74%).

Nonetheless, 6–11 percent of all women and 5–11 percent of low-parity women who had sought treatment for complications reported that the provider had shouted at them.

Likewise, in in-depth interviews, most mothers who had experienced severe complications, or family members of mothers who had died, who had discussed this topic (14 out of the 26 adolescent mothers and 9 out of the 16 adult mothers), reported

**Figure 4.7:**  
**Quality of services received by all women and low-parity women who had sought treatment for pregnancy-related complications, according to age at most recent delivery**



Note: Includes only women who experienced pregnancy-related complications.

that the provider had treated them well and had talked politely to them.

*The doctor talked to her [the mother] politely and treated her properly; the hospital was clean. [sister-in-law of parity 3, adult woman who died, interviewee ID 5]*

Even so, some participants noted that the provider had not given them any information or advice about the complication but had just dispensed the service. Moreover, even when information was provided, it was given to the family member accompanying the woman rather than to the woman herself.

*They took her [the mother] for a CT scan. They identified the problem, but they did not tell us what it was....They would examine her and say that she would be all right...they would just write down the name of the medicine and leave. When we bought the medicine, they would give it to her and leave. ... We would go after them sometimes; even then they would not say anything. [husband of parity 1, older adolescent woman who died, interviewee ID 1]*

*He [doctor] examined me properly but didn't tell me anything. He just told my in-laws. [parity 1, older adolescent woman who reported severe complications, interviewee ID 11]*

*Does a doctor ever talk? What does he say? He just takes your arm, gives you an injection and goes away. [parity 2, adult woman who reported severe complications, interviewee ID 17]*

A few women reported experiencing poor treatment by the provider, irrespective of whether the care giver was a physician or a nurse, or the kind of facility in which the provider worked.

*This doctor should be sent away from here because he does not know how to treat people. They die because of him. He only checks those people properly who have money. If he [doctor] had treated my daughter-in-law in time, she could have been saved. The doctor also told us to take her away quickly from there [after she died] otherwise it would have been a police case. [mother-in-law of parity 1, older adolescent woman who died, interviewee ID 8]*

*He [doctor] shouted when the baby was about to be born; the lady doctor also shouted. When I was in labour, I couldn't bear the pain and I screamed and asked why no doctor was coming. The lady doctor shouted and said that it wasn't time yet and that if we were in such a hurry, we should go to Alwar....The auxiliary nurse-midwife was also not supportive; there is such a crowd there [in the health facility] and everyone is on top of each other. They do not examine anyone properly, they just give you an injection; they do not even talk to you. They just write your name down and that is also often wrong. [parity 1, older adolescent woman who reported severe complications, interviewee ID 21]*

*Conditions in the government hospital are very bad; it is a place for exploitation. When we went there [to the government hospital], the doctor didn't even check me, he simply asked us to go to Alwar. It was very difficult for us to go to Alwar; I had a cut in the vagina [made by the provider to whom we went first] and the child was stuck somewhere, and Alwar is around 15–20 km away....it was God's wish that I was saved. [parity 1, younger adolescent woman who reported severe complications, interviewee ID 41]*

Many other women reported that their interaction with the providers had been mixed; some care givers had treated them well while others had been rude.

*It was the doctor's negligence [where she was taken first for delivery]; if he had let the umbilical cord come out completely, nothing would have happened. That doctor is like that; many women had died because of his negligence....The lady doctor [where she was referred] was very nice, she explained to me in detail and she took me inside the labour room with M [the mother in labour]. The lady doctor tried hard to save her [the mother] but she was unable to do so. [husband of parity 1, adult woman who died, interviewee ID 3]*

*He [doctor] would examine me very nicely and talk politely; but the madam who is there [nurse] would shout every time. [parity 4, adult woman who reported severe complications, interviewee ID 15]*

*He [doctor] talked to me politely and checked me patiently. He did not take any fees from me. When I was taken to the hospital for delivery, the doctor was in Jaipur; so the nurse refused to admit me. We offered to give her Rs. 600 as advance. She phoned the doctor in Jaipur and he told the nurse to admit me, then she took the money from us and admitted me. [parity 1, younger adolescent woman who reported severe complications, interviewee ID 38]*

## Summary and recommendations

This chapter summarises the major findings of the study and highlights key programme recommendations for improving pregnancy-related care among young women.

### Summary

***Pregnancy-related complications were common; however, young adolescents were more at risk than older mothers***

Findings indicate that both adolescent and adult mothers in the study setting commonly experienced pregnancy-related complications; indeed, between two-thirds and three-quarters of all women had experienced at least one pregnancy-related complication. Specifically, less than 1 percent of women had died due to pregnancy-related complications; half had experienced one or more severe complications; and almost three-fifths had experienced one or more non-severe complications. Women were more likely to report experiences of severe complications during pregnancy than during delivery and the postpartum period (38–43% versus 7–11% and 16–21%, respectively, of all women reported so).

The study findings lend considerable support to the observation from studies elsewhere that adolescent mothers, particularly those in the younger age group, are at higher risk than older mothers of maternal complications. Among low-parity women, younger adolescent mothers — those aged below 17 — were significantly more likely to experience pregnancy-related complications than were adult

mothers, with older adolescents (those aged 17–19) sometimes following the pattern of their adolescent counterparts and sometimes that of adult women. For example, 38–39 percent of younger and older adolescent mothers compared to 30 percent of adult mothers reported having experienced one or more severe complications during pregnancy; 11 percent of younger adolescent mothers compared to 7–9 percent of older adolescent and adult mothers, respectively, reported having experienced such complications during delivery; and 22 percent compared to 13–15 percent reported having experienced complications during the postpartum period. Conversely, younger and older adolescent mothers were less likely than adult mothers to report having experienced no complications.

Findings that adolescent mothers were more likely than adult mothers to have been referred to another health facility for treatment, and that they were more likely to have incurred substantial expenditure on treatment than others, also indirectly suggest that adolescent girls are more likely to be at risk than adult women.

***Maternal health care seeking was limited among all women, particularly young adolescent mothers***

The study findings underscore that maternal health care seeking was limited among all women in the study setting. Just two-fifths and one-half of women had received three or more antenatal check-ups for the most recent birth, and only one-fourth and one-third had their most recent delivery in a health facility. Although one-fifth and one-quarter of all

women reported having received a postpartum check-up, no more than one-tenth of mothers had received a check-up as part of routine postpartum care. Findings, moreover, indicate that outreach services tended to be weak, for example, as in the case of delivery of postpartum services.

Younger adolescent mothers were more constrained than older mothers with regard to maternal health care seeking. Findings from this study corroborate those observed in earlier studies that younger adolescent mothers were less likely than older adolescent and adult mothers to have had the recommended number of antenatal check-ups, had a delivery in a health facility or received a postpartum check-up.

Findings, moreover, suggest that while financial incentive schemes, such as the Janani Suraksha Yojana, appear to have contributed to promoting institutional deliveries among all women, older adolescents and adult mothers were more likely than younger adolescent mothers to have benefited from such schemes.

***Most women sought care for pregnancy-related complications experienced; however, adolescent mothers were more likely than others to have sought care from unqualified providers***

Treatment was commonly sought for pregnancy-related complications; irrespective of age at the most recent delivery, over 70 percent of women who had experienced complications had sought treatment. The majority of all women who had sought treatment for pregnancy-related complications, irrespective of age at the most recent delivery, reported that they had sought treatment from a doctor in a public or private health facility, one-quarter or more reported having sought treatment

from a nurse or auxiliary nurse-midwife, and almost one-fifth had sought treatment from an unqualified provider or relied on over-the-counter medications or home remedies. Findings, moreover, indicate that the majority of women (53–56%) had sought treatment from a private facility and only over one-third (36–40%) had sought treatment from a government health facility. Findings also show that 14–18 percent of all women who had sought treatment were referred to another health facility for treatment.

Adolescent mothers were considerably more likely than older mothers to have sought care from untrained or unqualified providers for complications experienced during pregnancy. For example, low-parity adolescent mothers were more likely than adult mothers (55–56% versus 41%) to have sought treatment from providers in a private health facility, many of whom may not have been adequately trained to dispense such treatment. Likewise, low-parity adolescent mothers were more likely than adult mothers (17–18% versus 10%) to have sought care from an unqualified provider or adopted over-the-counter medications or home remedies.

***All women experienced delays in recognising the complication experienced, deciding to seek treatment from an appropriate health facility, reaching the facility and obtaining care at the facility; adolescents were somewhat more likely than others to face delays in deciding to seek treatment and reaching the facility***

Findings suggest that a considerable proportion of all women who experienced pregnancy-related complications, irrespective of age at delivery, experienced the first delay; that is, recognising the need for treatment. Indeed, few women were aware

of danger signs during pregnancy (reported by just 18–32% of all women) and delivery (34–49%), and far fewer were aware of danger signs during the postpartum period (reported by 15–25%). Closely related to women's limited awareness of danger signs was their delayed recognition of complications; just 26–35 percent of all women who had experienced one or more complications had recognised the need to seek treatment promptly. Indeed, three-quarters of younger adolescents and half of older adolescents and adults who had not sought treatment for complications reported that treatment was not necessary or that the complication was not serious enough to warrant treatment. Age differences in recognising a complication were narrow; even so, older adolescents were more likely than others to recognise the need for seeking treatment promptly.

Large proportions of women also experienced the second delay — deciding to seek treatment from a health facility that could provide appropriate care. Just 31–32 percent of all women reported that the decision to seek treatment was made promptly; that is, less than six hours after recognising the need for treatment. Adolescent mothers were somewhat more likely than adult mothers to report delays in deciding to seek treatment from an appropriate health facility. For example, among low-parity women, 31–32 percent of adolescent mothers compared to 36 percent of adult mothers reported that the decision was made promptly, a finding that can be attributed to adolescent mothers' limited participation in the decision-making process, and adolescent mothers' and their families' limited awareness of appropriate health facilities. Findings, moreover, suggest that mothers who had delivered in early adolescence were

less likely than older mothers to report that they had decided independently whether or not to seek treatment (19% versus 30%), and conversely were more likely to report that others had made such decisions without their participation.

Women also reported experiencing the third delay; that is, reaching an appropriate health facility for the treatment of complications within an hour of making the decision to seek treatment. Indeed, just 27–34 percent of all women reported reaching an appropriate health facility promptly. Delays in reaching a facility were considerably more likely to be cited by adolescent mothers than adult mothers. For example, among low-parity women, 28 percent of mothers who delivered in early adolescence, compared to 34 percent who delivered in late adolescence and 38 percent who delivered in adulthood, reported reaching an appropriate health facility promptly. Delays were experienced for several reasons; for example, many women had initially sought treatment from a facility that was not equipped to handle the complication experienced, several families had not made arrangements in advance for transportation in case an emergency occurred, and many had faced problems in obtaining transportation.

Fewer women reported experiencing a delay in obtaining appropriate care; that is, within an hour of reaching an appropriate health facility, as compared to experiences of the other three delays noted above. Almost half of all women who experienced complications reported that they had obtained appropriate care promptly once they reached the facility. Age differences in obtaining appropriate care were narrow.

***Quality of services received at the health facility varied***

Findings indicate that the quality of maternal health services received varied. The majority of women who had sought treatment for pregnancy-related complications reported that the health care provider had treated them well. Even so, some women noted that the provider had not given them any information or advice about the complications experienced but had just dispensed the service. Some women also noted poor treatment by the provider, irrespective of whether the care giver was a physician or a nurse, or the kind of facility in which the provider worked. Women also articulated concerns about the quality of routine maternal health services received. A sizeable number of mothers who reported contact with health care providers noted that they were rarely given advice regarding care during pregnancy, delivery and the postpartum period. Additionally, many cited poor quality of services as a reason for preferring not to deliver in a hospital.

**Recommendations**

Findings reiterate the need for programmatic attention to improve pregnancy-related care seeking among all women, in particular adolescent mothers. The findings of the study suggest several priority areas for action.

***Support young people, particularly newly-weds, to postpone the first pregnancy***

Findings that younger adolescent mothers were particularly at risk of pregnancy-related complications underscore the need for programmatic efforts to support young people, in particular, newly-weds, to postpone their first pregnancy, to build awareness among young people

of the adverse effects of early pregnancy and to make it acceptable for young couples to adopt contraception prior to the first birth. At the same time, there is a need to change community and family attitudes to favour postponement of pregnancy and not link a young women's security within the marital family with her ability to bear children. Moreover, health care providers need to be oriented to focus on married young people's special need for delaying the first pregnancy.

***Promote care during pregnancy, delivery and the postpartum period, particularly among adolescent mothers***

Findings underscore that few women sought maternal health care services, including antenatal check-ups, institutional delivery and postpartum check-ups. The study finding that such financial incentive schemes as the Janani Suraksha Yojana tend to have a positive effect on promoting the utilisation of maternal health services, particularly institutional delivery, is encouraging; however, programmes currently under way as part of the National Rural Health Mission would also need to focus on increasing the demand for as well as improving the availability of these services, and must specially target adolescent mothers, particularly younger adolescent mothers.

***Build in-depth awareness of pregnancy-related complications***

Although the vast majority of women who experienced complications had sought treatment, findings indicate that they had experienced considerable delays in recognising the need for treatment. Also evident was women's, particularly adolescent mothers', limited awareness of pregnancy-related complications in the study setting.

Programmes are needed that build in-depth awareness among women and their family members about danger signs during pregnancy, delivery and the postpartum period, as well as about appropriate facilities where treatment can be sought. Such initiatives must pay special attention to newly-married and first-time pregnant adolescent girls.

***Empower adolescent and young mothers to make informed decisions related to pregnancy care, and involve influential adults in ensuring pregnancy is safe for young women***

Findings indicate that although young women have some say in decisions related to pregnancy-related care, husbands and other influential adults in the family tend to play a key role in such decisions. Moreover, adolescent mothers and their families were more likely than their adult counterparts to have delayed the decision to seek treatment from a health facility. These findings call for actions that enable adolescent and young women to correctly assess the potential dangers of delayed treatment seeking, or not seeking care from an appropriate health facility, and to make informed decisions with regard to pregnancy-related care. At the same time, it is important to actively seek the participation of husbands and other influential adults in the family, who have a major say in decisions related to pregnancy care, in ensuring that pregnancy is safe for young women.

***Mobilise communities and young women to address delays in reaching health facilities***

Findings indicating that women experienced considerable delays in reaching a health facility call for community mobilisation activities to develop mechanisms, including ensuring the availability of timely and affordable transport, to ensure that

women experiencing severe complications are taken to a health facility promptly. Findings that adolescent mothers were somewhat more likely than adult mothers to experience delays in reaching a health facility, again, call for special efforts that inform newly-married and first-time pregnant young women and their families about delivery preparation in general, and determining transportation options in case of an emergency, in particular.

***Improve the quality of maternal health care services***

Although the majority of women reported that health care providers had treated them well, a sizeable proportion of women raised concerns about the quality of services received. Actions are needed that enable health care providers to render maternal health services in friendly and non-threatening ways. Actions are also needed to mobilise communities to undertake social auditing to improve the quality of services provided and to create among women and their family members a sense of entitlement to health care and other services.

***Reorient service provision to address the unique needs of younger adolescent mothers***

Findings that younger adolescent mothers were more likely than older adolescent and adult mothers to experience serious pregnancy-related complications, less likely to seek routine maternal health services and somewhat more likely to experience delays in seeking treatment for complications experienced, particularly in deciding to seek treatment from an appropriate health facility and reaching that health facility, emphasise the need to sensitise health care providers about the special vulnerability of younger adolescents, and to orient them to the need for developing appropriate strategies to reach this group. Similarly, the study findings that younger adolescent

mothers were less likely than others to have benefited from the Janani Suraksha Yojana call for efforts to orient front-line health workers at the village level, including ASHAs and *anganwadi* workers, to make special efforts to inform younger adolescents about available maternal health services and to encourage them to avail these services. In light of evidence from the National Family Health Survey-3 that the proportion of young women marrying in adolescence, especially before ages 15 and 18, has not changed significantly in the recent past in Rajasthan (IIPS and Macro International, 2007), the need to target younger adolescent mothers cannot be over-emphasised.

In conclusion, findings have highlighted that the majority of adolescent and adult mothers had

experienced pregnancy-related complications, the utilisation of maternal health services was limited and treatment seeking for pregnancy-related complications was fraught with multiple constraints. Younger adolescent mothers were particularly at risk both because of their age and physical unpreparedness for pregnancy, as well as because of the socio-cultural factors that inhibit young adolescent mothers from seeking prompt and appropriate care for pregnancy-related complications. While multi-pronged actions are needed that promote timely and appropriate pregnancy-related care among all women, these programmes need to specially target young women, influential adults in their families and health care providers.

## References

- Al-Suleiman, S.A., M.H. Al-Sibai, F.E. Al-Jama et al. 2004. "Maternal mortality: A twenty-year survey at the King Faisal University Hospital, Al-Khobar, Eastern Saudi Arabia," *Journal of Obstetrics and Gynecology*, 24(3): 259–63.
- Bai, J., F.W.S. Wong, A. Bauman et al. 2002. "Parity and pregnancy outcomes," *American Journal of Obstetrics and Gynecology*, 186:274–78.
- Bhatia, J.C. 1988. *A Study of Maternal Mortality in Anantpur District, Andhra Pradesh, India*. Bangalore: Indian Institute of Management.
- Bukulmez, O. and O. Deren. 2000. "Perinatal outcome in adolescent pregnancies: A case-control study from a Turkish university hospital," *European Journal of Obstetrics and Gynaecology and Reproductive Biology*, 88:207–12.
- Chen, X., S.W. Wen, N. Fleming et al. 2007. "Teenage pregnancy and adverse birth outcomes: A large population-based retrospective cohort study," *International Journal of Epidemiology*, 36: 368–73.
- Chen, X., S.W. Wen, N. Fleming et al. 2008. "Increased risks of neonatal and post-neonatal mortality associated with teenage pregnancy had different explanations," *Journal of Clinical Epidemiology*, 61(7): 688–94.
- Conde-Agudelo, A., J.M. Belizán and C. Lammers. 2005. "Maternal-perinatal morbidity and mortality associated with adolescent pregnancy in Latin America: Cross-sectional study," *American Journal of Obstetrics and Gynaecology*, 192: 342–49.
- Cooper, L.G., N.L. Leland and G. Alexander. 1995. "Effect of maternal age on birth outcomes among young adolescents," *Social Biology*, 42:22–35.
- Eure, C.R., M.K. Lindsay and W.L. Graves. 2002. "Risk of adverse pregnancy outcomes in young adolescent parturients in an inner-city hospital," *American Journal of Obstetrics and Gynaecology*, 186: 918–20.
- Fauveau, V., M.A. Koenig, J. Chakraborty et al. 1988. "Causes of maternal mortality in rural Bangladesh, 1976–85," *Bulletin of World Health Organisation*, 66(5): 643–51.
- Fawcus, S., M. Mbizvo, G. Lindmark et al. 1996. "A community-based investigation of avoidable factors for maternal mortality in Zimbabwe," *Studies in Family Planning*, 27(6): 319–27.
- Ganatra, B.R., K.J. Coyaji and V.N. Rao. 1998. "Too far, too little, too late: A community-based case-control study of maternal mortality in rural west Maharashtra, India," *Bulletin of the World Health Organization*, 75 (6): 591–98.
- Gilbert, W., D. Jandial and N. Field. 2004. "Birth outcomes in teenage pregnancies," *Journal of Maternal-Fetal Neonatal Medicine*, 16(5): 265–70.

- Gupta, N., U. Kiran and K. Bhal. 2008. "Teenage pregnancies: Obstetric characteristics and outcome," *European Journal of Obstetrics, Gynaecology and Reproductive Biology*, 137(2): 165–71.
- Haldre, K., K.Rahu, H.Karro et al. 2007. "Is a poor pregnancy outcome related to young maternal age? A study of teenagers in Estonia during the period of major socio-economic changes (from 1992 to 2002)," *European Journal of Obstetrics, Gynaecology and Reproductive Biology*, 131(1): 45–51.
- Harrison, K.A. 1985. "Child-bearing, health and social priorities: A survey of 22,774 consecutive hospital births in Zaria, Northern Nigeria," *British Journal of Obstetrics and Gynaecology, Supplement* # 5:23–31.
- Hirve, S.S. and B.R. Ganatra. 1994. "Determinants of low birth weight: A community-based prospective cohort study," *Indian Paediatrics*, 31(10): 1221–25.
- International Institute for Population Sciences (IIPS). 2008a. *District Level Household and Facility Survey (DLHS-3) 2007–08, Fact Sheet: Rajasthan*. Mumbai: IIPS.
- International Institute for Population Sciences (IIPS). 2008b. *District Level Household and Facility Survey (DLHS-3) 2007–08, District Fact Sheet: Rajasthan, Alwar*. Mumbai: IIPS.
- International Institute for Population Sciences (IIPS) and Macro International. 2007. *National Family Health Survey (NFHS-3), 2005–06: India, Volume 1*. Mumbai: IIPS.
- International Institute for Population Sciences (IIPS) and Macro International. 2008. *National Family Health Survey (NFHS-3), India, 2005–06: Rajasthan*. Mumbai: IIPS.
- Jolly, M.C., N. Sebire, J. Harris et al. 2000. "Obstetric risks of pregnancy in women less than 18 years old", *Obstetrics and Gynaecology*, 96(6): 962–66.
- Kawuwa, M.B., A.G. Mairiga and H.A. Usman. 2007. "Community perspective of maternal mortality: Experience from Konduga Local Government Area, Borno State, Nigeria," *Annals of African Medicine*, 6(3): 109–14.
- Khan, A.R., F.A. Jahan and S.F. Begum. 1986. "Maternal mortality in rural Bangladesh: The Jamalpur district," *Studies in Family Planning*, 17(1): 7–12.
- Konje, J.C., A. Palmer and A. Watson et al. 1992. "Early teenage pregnancies in Hull," *British Journal of Obstetrics and Gynaecology*, 99: 969–73.
- Krishna, U.R. 1995. "The status of women and safe motherhood," *Journal of the Indian Medical Association*, 93(2): 34–35.
- Kwast, B.E. and M. Liff. 1988. "Factors associated with maternal mortality in Addis Ababa, Ethiopia," *International Journal of Epidemiology*, 17:115–21.
- Liabsuetrakul, T., K. Peeyanjarassri, S. Tassew et al. 2007. "Emergency obstetric care in the southernmost provinces of Thailand," *International Journal for Quality in Health Care*, 19(4): 250–56.

- Loto, O.M., O.C. Ezechi, B.K.E. Kalu et al. 2004. "Poor obstetric performance of teenagers: Is it age or quality of care related?" *Journal of Obstetrics and Gynaecology*, 24(4): 395–98.
- Mahavarkar, S.H., C.K. Madhu and V.D. Mule. 2008. "A comparative study of teenage pregnancy," *Journal of Obstetrics and Gynecology*, 28(6): 604–07.
- Markovitz, B.P., R. Cook, L.H. Flick et al. 2005. "Socioeconomic factors and adolescent pregnancy outcomes: Distinctions between neonatal and post-neonatal deaths?" *BMC Public Health*, 5:79.
- Mishra, S. and C.S. Dawn. 1986. "Retrospective study of teenage pregnancy and labour during a 5–year period from January 1978 to December 1982 at Durgapur Subdivisional Hospital," *Indian Medical Journal*, 80(9): 150–52.
- National Institute of Population Research and Training (NIPORT), ORC Macro, Johns Hopkins University et al. 2003. *Bangladesh Maternal Health Services and Maternal Mortality Survey 2001*. Dhaka, Bangladesh and Calverton, Maryland: NIPORT, ORC Macro, Johns Hopkins University and ICDDR,B.
- National Research Council (NRC) and Institute of Medicine (IOM). 2005. *Growing Up Global: The Changing Transitions to Adulthood in Developing Countries*. Washington, D.C.: National Academies Press.
- Office of the Registrar General and Census Commissioner, India. 2004. *Census of India 2001, India, Primary Census Abstract, Total Population: Table A-5*. New Delhi: Office of the Registrar General and Census Commissioner.
- Office of the Registrar General and Census Commissioner, India. 2006. *Population Projections for India and States 2001–2026 (Revised December 2006)*. New Delhi: Office of the Registrar General and Census Commissioner.
- Olausson, P.O., S. Cnattingius and B. Haglund. 1999. "Teenage pregnancies and risk of late fetal death and infant mortality," *British Journal of Obstetrics and Gynaecology*, 106: 116–21
- Olusanya, O. and N. Amiegheme. 1988. "Biosocial factors in maternal mortality: A study from a Nigerian mission hospital," *Tropical Journal of Obstetrics and Gynecology*, 1(1): 88–89.
- Pachauri, S. and A. Jamshedji. 1983. "Risks of teenage pregnancy," *Journal of Obstetrics and Gynaecology*, 33 (3): 477–82.
- Pal, A., K.B. Gupta and I. Randhawa. 1997. "Adolescent pregnancy: A high risk group," *Journal of the Indian Medical Association*, 95(5): 127–28.
- Perry, R.L., B. Mannino, M.L. Hediger et al. 1996. "Pregnancy in early adolescence: Are there obstetric risks?" *Journal of Maternal-Fetal Medicine*, 5:333–39.
- Phipps, M.G. and M. Sowers. 2002. "Defining early adolescent childbearing," *American Journal of Public Health*, 92(1): 125–28.

- Registrar General, India (RGI). 2006. *Maternal Mortality in India: 1997–2003, Trends, Causes and Risk Factors*. New Delhi: Office of the Registrar General.
- Reynolds, H.W., E.L. Wong and H. Tucker. 2006. "Adolescents' use of maternal and child health services in developing countries," *International Family Planning Perspectives*, 32(1): 6–16.
- Rosenstein, M.G., M. Romero and S. Ramos. 2008. "Maternal mortality in Argentina: A closer look at women who die outside of the health system," *Maternal and Child Health Journal*, 12(4): 519–24.
- Santhya, K.G. and S.J. Jejeebhoy. 2003. "Sexual and reproductive health needs of married adolescent girls," *Economic and Political Weekly*, 38(41): 4370–77.
- Satin, A.J., K.J. Leveno and M.L. Sherman. 1994. "Maternal youth and pregnancy outcomes: Middle school versus high school age groups compared with women beyond the teen years," *American Journal of Obstetrics and Gynaecology*, 171(1): 184–87.
- Sharma, V., J. Kratz, L.C. Mullany et al. 2008. "Young maternal age and the risk of neonatal mortality in rural Nepal," *Archives of Paediatrics and Adolescence Medicine*, 162(9): 828–35.
- Sharma, V and A. Sharma. 1992. "Health profile of pregnant adolescents among selected tribal populations in Rajasthan, India," *Journal of Adolescent Health*, 13(8): 696–99.
- Swain, S., K.N. Ojha, A. Prakash et al. 1993. "Maternal and perinatal mortality due to eclampsia," *Indian Paediatrics*, 30(6): 771–73.
- Taffa, N. 2003. "A comparison of pregnancy and child health outcomes between teenage and adult mothers in the slums of Nairobi, Kenya," *International Journal of Adolescent Medicine and Health*, 15(4): 321–29.
- Thaddeus, S. and D. Maine. 1994. "Too far to walk: Maternal mortality in context," *Social Science and Medicine*, 38(8): 1091–1110.
- UNICEF. 2001. *The Progress of Nations 2001*. New York: United Nations Children's Fund.
- Ujah, I.A., O.A. Aisien, J.T. Mutihir et al. 2005. "Factors contributing to maternal mortality in north-central Nigeria: A seventeen-year review," *African Journal of Reproductive Health*, 9(3): 27–40.
- Usta, I.M., D. Zoorob, A. Abu-Musa et al. 2008. "Obstetric outcome of teenage pregnancies compared with adult pregnancies," *Acta Obstetrica et Gynecologica*, 87: 178–83.
- World Health Organization (WHO). 1995. *Verbal Autopsies for Maternal Death*. Geneva: WHO.
- Zhang, B. and A. Chan. 1991. "Teenage pregnancy in South Australia, 1986–1988," *Australian and New Zealand Journal of Obstetrics and Gynaecology*, 31(4): 291–98.

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