

# Levels and Quality of Provider Counseling in Nepal Health Facilities during Antenatal Care, Family Planning, and Sick Child Care Visits

## Further Analysis of the Nepal Health Facility Survey 2021

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## ABSTRACT

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This report examines the levels and quality of counseling provided in the health facilities of Nepal. Providers during antenatal care, family planning, or sick child care consultations were observed for providing specific counseling to their clients. The clients were then asked in the exit interview if they received this counseling. The agreement between observation and the client's report is an indicator of the quality of the counseling that was provided. In general, there were low levels of counseling provided and lower levels of agreement that the counseling had occurred. With antenatal care, the lowest levels of counseling were related to the side effects of iron pills, breastfeeding, and use of family planning after delivery. For family planning, the lowest level of counseling was a method's protection from sexually transmitted infections, while for sick child care the lowest level was the weight and growth of the child. For other counseling items that were observed at higher levels, the agreement that the counseling had occurred was lower, which might indicate that the counseling provided was not effective. The observed counseling and agreement on counseling with the client's report differed by client, provider, and facility characteristics. For example, counseling on danger signs was more likely to be given to clients who have higher education or who had more than one visit. Nurses and midwives were found to provide more counseling and have higher agreement on counseling than other provider types. Providers' training, when significant, was found to also increase the observation of counseling and the agreement on counseling provision. The importance of counseling was related to the client's knowledge of danger signs, ways to prepare for delivery, and a method's protection from sexually transmitted infections. In general, counseling and the agreement that the counseling had occurred increased the likelihood of having knowledge compared to the clients who did not receive the counseling. These findings highlight areas of intervention that can improve the levels and quality of counseling. These include training specific providers in client-centered counseling and ensuring that effective, high-quality counseling is provided to all clients at each visit.

**Keywords:** counseling, quality of counseling, health facilities, antenatal care, family planning, sick child care

# 1 INTRODUCTION

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Provider counseling that is offered in health facilities during a consultation or health care visit is an important opportunity for promoting maternal and child health messages. Health providers can offer information and guidance to their clients based on their needs for information on eating a healthy diet, having a healthy pregnancy, knowing family planning options, recognizing symptoms and signs when further care is needed, and seeking the recommended methods of care for themselves and their children. This can help to increase the knowledge of individuals for making informed decisions about their own and their children's health and for improving health outcomes. For counseling to be effective, it must be delivered in a manner that can be received and understood by the client. It is important that providers offer the necessary counseling to their clients, and that the counseling is client-focused and effective to ensure that the essential messages are communicated and understood.

During antenatal care (ANC) visits, counseling helps mothers to maintain a healthy pregnancy and to recognize the danger signs of pregnancy complications.<sup>1-5</sup> Recent recommendations from the World Health Organization (WHO) that recommend increasing the minimum number of ANC visits to eight visits also stress the importance of counseling on nutrition, physical activity, and iron intake to maintaining a healthy pregnancy.<sup>5</sup> Recognizing danger signs and complications during pregnancy is important for women to know when they need to seek care in a timely manner.<sup>2,6-8</sup> Delays in seeking care, the first delay in the three delays model discussed by Thaddeus and Maine,<sup>9</sup> is followed by the delay in reaching the facility and then delay in providing adequate care. Any delays in obtaining adequate care after a pregnancy complication can increase the likelihood of maternal and child mortality and morbidity. The attendance at ANC visits and the counseling during ANC visits have been found to increase the likelihood of delivery by a skilled birth attendant or in a health facility and the post-partum use of family planning methods, which can help to reduce the risk of mortality, delivery complications, and unwanted pregnancies.<sup>10-17</sup>

During family planning (FP) visits to a health facility, provider counseling can help women and couples make informed decisions about the FP method they prefer. Counseling also helps to improve outcomes such as increasing the likelihood of continued use of a method, increased birth spacing, decreased unintended pregnancies, and achievement of the desired family size.<sup>18-20</sup> Depending on the clients' need, important topics in FP counseling might include use of their method of choice, the method's effectiveness, other methods available to them, side effects, the expected return for follow-up, and protection from sexually transmitted infections (STIs).<sup>21</sup> It is also important that the FP counseling is rights-based, promotes the client's right to free choice in FP, and emphasizes the effectiveness of the method compared to others.<sup>22</sup>

For caretakers of children who seek sick child care, counseling can inform caretakers of how to care for their children, while maintaining healthy nutrition and growth for their child. UNICEF and WHO developed the Integrated Management of Childhood Illnesses (IMCI) to reduce preventable mortality, minimize illness, and promote healthy growth and development for children.<sup>23</sup> One component of IMCI is improving the case management skills of health providers, which include counseling. The IMCI instructions for providers stresses the importance of counseling in feeding and breastfeeding as well as counseling for certain illnesses.<sup>24</sup>



All counseling provided in ANC, FP, or sick child care must be client-centered, which involves treating clients with respect and empathy, providing them with the necessary information for the reason for their visit or condition, and discussing their needs and preferences for treatment or prevention. All of these contribute to high quality counseling. Evidence has shown that low quality counseling can reduce the impact on improving desired outcomes. For example, the quality of the counseling received can have an effect on skilled birth delivery<sup>10,25</sup> and continued contraceptive use.<sup>18,26–28</sup> Time constraints, the providers' competency in counseling, and the methods used in counseling can influence the quality of counseling.<sup>29,30,31</sup> It is not enough to simply provide the counseling. The counseling must be delivered in a manner that can effectively communicate the essential messages to the client.

It can be difficult to measure the quality of counseling at a national level. Research that used in-depth interviews with pregnant women in Nepal has found evidence of low quality FP counseling during ANC visits.<sup>32</sup> However, this study was small and focused on only six public health hospitals. One way to obtain national level data on the observation of provider-client interactions during a consultation is using Service Provision Assessments (SPA) that are administered by the DHS Program. Using these data, interviewers who visit a health facility observe if certain counseling items were delivered. In this study, we compare observations of the provider giving a specific counseling to the client, and the client's report on whether this counseling took place. A disagreement between the observation and the client's report could signify that the counseling was not effective or of high quality. Ideally, we would like high levels of counseling to be provided as well as a high level of agreement that the counseling actually took place.

Table 1 summarizes a selection of indicators in ANC, FP, and child health using the DHS surveys in Nepal from 2001 to 2022. The country has seen major improvements in population and health indicators over the past few decades. Table 1 provides evidence of the broad scope of these changes, including declines in fertility and child mortality rates, increases in ANC, reductions in child malnutrition rates, and opportunities for further improvements and intervention. The percentage of women who have had an ANC visit by a skilled provider for their most recent birth increased greatly from 28% in 2001 to 94% in 2022. In 2022, almost 80% of women had four or more visits. This indicates that health providers have the opportunity to provide the necessary counseling for a majority of pregnant women in Nepal. The total fertility rate has decreased to almost replacement level in 2016 and 2022. However, there has been a slight stall in modern contraceptive use between 2006 and 2022 (43 to 44%), as well as a stall in the demand for FP satisfied by modern methods between 2011 and 2022 (55 to 56%). This indicates that there is room for improvement in FP use. In addition, we see that the information women received on side effects, what to do if they experience side effects, and information on other methods has not improved greatly. Therefore, there could be an opportunity for providers to offer counseling on FP methods that could help women better understand their choices and make informed decisions about their contraceptive use.

For child's health, the percentage of children under age 5 who are taken to a health facility for diarrhea symptoms has increased over the years, but declined between 2016 and 2022. This decline could be due to the data collection for the 2022 survey overlapping with the COVID pandemic, which could have caused hesitation by mothers and caretakers to use health services. In addition, the percentage of children under age 6 months who have been exclusively breastfed has declined recently. This also represents an opportunity for health providers in sick child care to provide counseling to caretakers on the proper care and nutrition for their children that can have an effect on further reducing under-5 mortality.

**Table 1 ANC, family planning, and child health indicators from the DHS surveys, Nepal 2001 to 2022**

	2001 DHS	2006 DHS	2011 DHS	2016 DHS	2022 DHS
<b>ANC indicators for the most recent birth</b>					
ANC from skilled provider	27.9	43.7	58.3	83.6	94.3
Four or more ANC visits	14.3	29.4	50.1	69.4	80.5
<b>Family planning indicators</b>					
Total Fertility Rate	4.1	3.1	2.6	2.3	2.1
Modern contraceptive use among married women age 15–49	35.4	44.2	43.2	42.8	42.7
Demand for family planning satisfied by modern methods	52.8	60.9	55.9	56.0	54.7
Users informed about side effect or problems of method used	64.4	59.5	66.5	65.5	-
Users informed what to do if experienced side effects	53.5	50.6	58.2	56.2	-
Users informed about other methods	57.8	61.4	63.4	64.1	-
<b>Child health indicators</b>					
Under-5 mortality	91	61	54	39	33
Stunted children under age 5	57.2	49.3	40.5	35.8	24.8
Taken to a health facility for diarrhea symptoms for children under age 5	43.9	48.8	61.7	64.4	57.1
Increased fluids for diarrhea symptoms for children under age 5	26.6	22.3	14.0	32.0	-
Children under age 6 months exclusively breastfed	68.3	53.0	69.6	66.1	56.4
Last born children under age 2 who began breastfeeding within 1 hour of birth	30.3	3.5	44.5	54.9	55.3

Note: The source for 2001 to 2016 DHS is STAT compiler\* and for 2022 it is the key indicator report.<sup>33</sup>

This report uses the 2021 Nepal Health Facility Survey (2021 NHFS) data to answer the following research questions:

- What is the level of counseling provided in ANC, FP, and sick children care?
- What is the level of agreement between the observation of the counseling and the client’s report of the counseling?
- What are the client, provider, and facility characteristics associated with the provision of counseling as well as the agreement on the provision of counseling?
- What is the clients’ level of knowledge of danger signs of pregnancy complications, ways to prepare for delivery, correct knowledge of the FP method they are using, and correct knowledge of their method’s protection from STIs?
- Is there an association between receiving counseling and increased knowledge of clients?

The report will identify where interventions are needed to improve the levels and quality of counseling.

\* Select indicators for Nepal surveys from 2001 to 2016 using STAT compiler on <https://www.statcompiler.com/en/>

## 2 DATA AND METHODS

### 2.1 Data

The 2021 Nepal Health Facility Survey (2021 NHFS) was used in the analysis, which was designed to provide information on the availability of basic health care services and the readiness of health facilities to provide quality health care services in Nepal.<sup>33</sup> The focus of this analysis is the health care provided in ANC, FP, and sick child care. The 2021 NHFS found that almost all health facilities in Nepal offer ANC, FP, and child health and immunization services. Table 1 summarizes the number of facilities included in the survey by facility type as well as the number of clients that were observed for each service area examined in this report. Stand alone HIV testing and counseling centers were not included in this analysis. Data collection was completed between January 27, 2021, and September 28, 2021, with a break in May through July because of the COVID-19 imposed lockdowns that began on April 29, 2021. The COVID-19 pandemic may have had some impact on the quality and delivery of health services in Nepal during the data collection period.

**Table 2 Sample size of facilities and number clients observed, 2021 Nepal Health Facility Survey**

	Federal hospitals	Provincial hospitals	Local hospitals	Private hospitals	PHCCs	Health posts	CHU and UHC	Total
<b>Number of facilities interviewed</b>	<b>6</b>	<b>21</b>	<b>17</b>	<b>116</b>	<b>51</b>	<b>1,064</b>	<b>288</b>	<b>1,563</b>
<b>Number of clients observed with exit interviews</b>								
ANC	104	269	107	447	153	802	84	1,966
Family planning	26	56	38	3	65	580	81	849
Sick child	82	198	109	429	147	1,253	165	2,383

PHCC = primary health care centers, CHU = community health units, UHC = urban health centers

### 2.2 Measures

#### 2.2.1 Counseling variables

The ANC, family planning, and sick child care observation checklist contains observations of several counseling items given to the client during their visit. In the client's exit interview, the client was asked about the occurrence of many but not all of these observed counseling items. The client was asked if the counseling occurred during this visit, this visit and a previous visit, a previous visit only, did not occur, or don't know. Only responses that the counseling occurred during this visit or this visit and a previous visit were used in the measure of the client's report on the observed counseling items.

The following ANC counseling items in the observation checklist also had a question on if the counseling occurred in the exit interview:

- danger signs of pregnancy
- nutrition during pregnancy
- how to take iron pills

- side effects of iron pills
- how to prepare for delivery
- exclusive breastfeeding
- early initiation of breastfeeding
- family planning after delivery

Only women in their third trimester of pregnancy were selected for analysis for the counseling items on preparing for delivery, exclusive breastfeeding, early initiation of breastfeeding, and FP after delivery. This is the ideal time when it is important to counsel clients on their preparations for delivery, breastfeeding of their newborn child, and consideration of FP methods after delivery.

For FP counseling, the observed counseling items with a corresponding exit interview question included:

- asking if the client had questions or concerns about the last method used
- how to use the method that was prescribed or received in the current visit
- side effects of the method prescribed or received
- when to return for follow-up

The observation items for how to use a method, side effects, and when to return differ depending on the method that was prescribed or received by the client. Appendix Table 1 summarizes how these variables were constructed depending on the observation of the provider giving the counseling for each method.

For sick child care counseling, the observed counseling items with a corresponding exit interview question included:

- told the caretaker what illness the child has
- signs or symptoms for which to bring child back
- weight and growth of child
- feeding or breastfeeding during illness
- feeding or breastfeeding when child is not ill
- giving excess fluid

In addition to examining the proportion of providers who were observed to give the counseling and the proportion of clients that reported having the counseling, we constructed a combined counseling variable to measure the level of agreement between the observation and the clients report. This combined counseling variable groups the observation and clients report into the following categories:

- agreement that the counseling did not occur
- provider not observed to give the counseling, but the client reported that it was given
- provider was observed to give the counseling, but the client reported that it was not given
- agreement that the counseling did occur

One additional FP counseling variable was included in the observation checklist but did not have a corresponding question in the exit interview. This was the observation if the provider gave counseling on

the method's protection from STIs. This was included because there is a question in the exit interview that tests the client's knowledge of their method's protection from STIs. Since one of the objectives of this research is to examine if knowledge is linked to counseling, we included this counseling variable despite the inability to construct a combined counseling variable as with the remaining counseling items.

### **2.2.2 Knowledge variables**

The client's exit interview also included questions that measure the client's knowledge of certain items. In the ANC exit interview, clients were asked what they knew about the danger signs of pregnancy. The responses are open ended and the interview did not provide options. The responses provided were vaginal bleeding, fever, swollen face or hand or extremities, tiredness or breathlessness, headache or blurred vision, seizures or convulsions, reduced or absence of fetal movement, lower abdominal pain, or other. This information was used to confirm that clients know at least one danger sign, at least three danger signs, and the number of danger signs that they know. The ANC clients were also asked what they know about preparing for delivery. The responses included having emergency transport, money, a clean delivery kit, a clean cloth for the baby, identifying a health facility or a skilled birth attendant, and identifying a blood donor. This list was used to identify clients who know at least one way to prepare for delivery, at least three ways to prepare for delivery, and the number of ways they know how to prepare. There was also a knowledge question on symptoms of iron pills, although this was not used in this analysis.

There were two possible knowledge questions in the FP exit interview. The first asks the client basic questions about their method, and how to use that method. The responses were used to construct a variable that measures if the client has the correct knowledge of the method. The responses that are considered correct for each method are summarized in Appendix Table 1. The second FP knowledge question asks the client if the method provides protection from STIs including HIV. Clients who responded "no" for all the methods except for condom users and who responded "yes" among condom users were considered to have correct knowledge.

There were no knowledge questions in the sick child care exit interview.

### **2.2.3 Background variables**

Several background variables were used to identify differences in the counseling items by client, provider, and facility characteristics. For clients, this included their age, grouped as follows: <20 years, 20–24 years, 25–29 years, and 30 or more. Client's education level was grouped into four categories: none or did not pass grade 1, basic level which includes grades 1 to 8, secondary level which includes grade 9 and if the client passed school leaving certificate (SLC) or the proficiency certificate, and bachelor level or above. The client's caste or ethnicity included Brahman or Chhetri, Terai or Madhesi, Dalits, Janajati, and other that includes Muslims, Newar, and any other responses that did not identify a specific ethnicity and were combined together due to small sample size in the categories. For ANC clients, we also identified if this was the client's first pregnancy, the number of visits to the facility for the pregnancy observed, and the client's pregnancy trimester. For FP clients, we identify if the client is a current user before coming to the consultation, a nonuser when they arrived at the facility but used in the past, and a nonuser who has not used any method in the past.

The provider variables obtained from the health worker interview included any training that the providers received in the service area (ANC, FP, or child health or illness). For ANC and FP, there was an additional training variable if there was training in ANC or FP counseling. This question was not available for sick child care providers. We also examined if the provider was given training in counseling at any time or within the past 24 months. We also included the provider's category that was grouped into three categories:

- doctor, specialist, or medical officer
- nurse or auxiliary nurse midwife
- health assistant or other

The distribution of these provider categories differed greatly by the service area (see Appendix Table 2). For example, most sick child care clients were seen by a health assistant or a doctor/specialist/medical officer, while FP and ANC clients were seen primarily by a nurse or auxiliary nurse midwife.

We also identify the facility type, which includes federal, provincial, local, or private hospitals, primary health care centers (PHCCs), health posts, and a combined category for community health units (CHU) and urban health centers (UHC) due to small sample sizes in these two categories. In addition, we also used the province variable.

## 2.3 Statistical Analysis

Descriptive statistics of the counseling variables included estimates of the Cohen's kappa statistic using the "kap" command in Stata. The kappa statistic estimates the level of agreement between the observation that the counseling occurred, and the clients' report on if the counseling occurred. A Cohen's kappa of zero or less indicates no agreement, 0.01–0.2 is considered low agreement, 0.21–0.40 is fair agreement, 0.41–0.60 is moderate, 0.61–0.80 is substantial, and any value above 0.80 is considered nearly perfect agreement.<sup>34</sup> One limitation of the Cohen's kappa statistic is that it can be low when the distribution of the crosstabulation between the two variables examined is very skewed or if the variables are rare events (low proportions).<sup>35–</sup>  
<sup>36</sup> In contrast, one advantage of Cohen's kappa is that it takes into account that the agreement is not due to chance. Agreement for the combined counseling variable is if both the observation and the client's report agree that the counseling did not occur, or if they both agree that it did occur. Ideally, we would observe high levels of agreement that the counseling did occur.

Crosstabulations between the observation that the counseling occurred and the client, provider, and facility background variables were performed. These crosstabulations were also performed on the combined counseling variables. The crosstabulations also include chi-square tests of associations. This analysis was performed only on the counseling items that were observed in 10% or more of the consultations, since this would provide an adequate number of observations in the combined counseling variable to perform the analysis. For sick child care, the counseling on giving excess fluid for a dehydrated child was also not included in the crosstabulations, because this was relevant only among children who had diarrhea or were dehydrated and did not provide sufficient observations to produce reliable estimates.

Descriptive statistics were also performed on the knowledge variables. To reduce the bias that the knowledge was acquired elsewhere or from a previous pregnancy among ANC clients, only clients whose pregnancy was their first pregnancy were selected for the analysis of knowledge on danger signs and ways to prepare for delivery. For the knowledge on ways to prepare for delivery, an additional restriction was to

select clients in their third trimester. The FP knowledge questions were analyzed among clients who were prescribed or received a method.

To examine if the counseling variables had an effect on the level of client knowledge, logistic regressions were performed for the two knowledge variables among ANC clients and for the knowledge of the method's protection from STI among the FP clients. The correct knowledge of the method and how it should be used was almost universal among clients and therefore did not provide enough variability to perform the regressions.

For the ANC analysis, unadjusted and adjusted logistic regressions were performed for knowing at least three danger signs and the counseling items on danger signs as the main independent variable. A separate model was fit for the observation of counseling on danger signs and the combined counseling on danger sign variables. The same method was used for the logistic regressions of knowing at least three ways to prepare for delivery and the counseling items on ways to prepare for delivery. Finally, unadjusted and adjusted logistic regressions were performed on having correct knowledge of method's protection from STIs and observation if the provider offered counseling on the method's protection from STIs among FP clients who were prescribed or received a method.

All analyses considered the stratification design and client sampling weight for the analysis. For the 2021 NHFS, stratification was achieved by combining the facility type and the province. All analysis was performed using Stata 17.

## 3 RESULTS

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### 3.1 Counseling Variables

Figures 1 and 2 and Appendix Table 3 summarize the counseling variables examined for ANC, FP, and sick child care.

#### 3.1.1 Levels of observed counseling

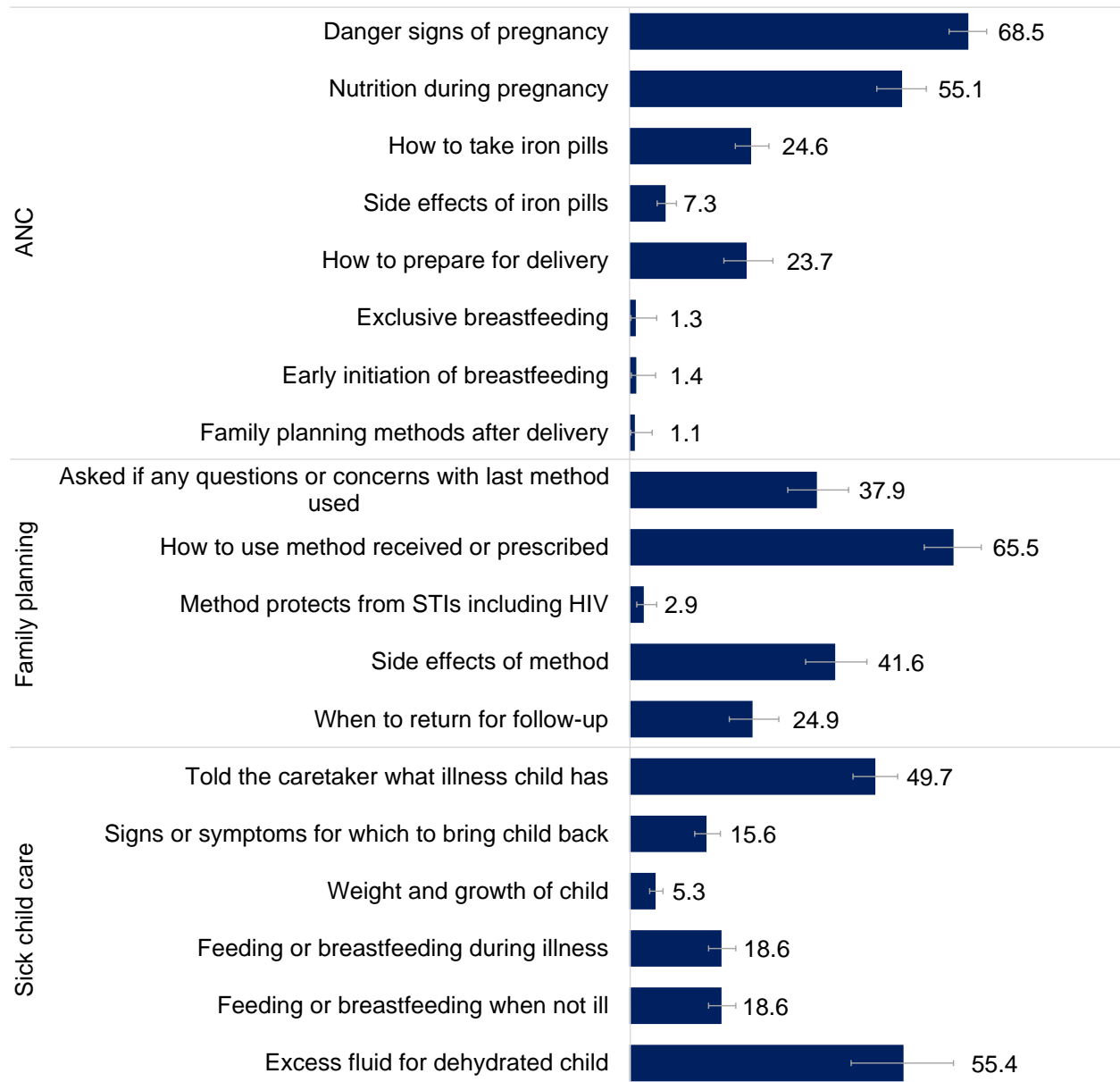
The checklist used to observe provider-client counseling includes eight items for ANC, five items for FP, and six items for sick child care services. Appendix Table 3 includes the denominators for each counseling item. Figure 1 shows the percentage of providers who offered these counseling items to the client. Overall, the counseling was low across all three services, especially counseling on exclusive and early initiation of breastfeeding and use of FP methods after delivery for ANC clients in their third trimester, method protection from STIs for FP clients, and counseling on the weight and growth of child for sick child care clients. For ANC clients, the highest percentage of providers were observed offering counseling on danger signs of pregnancy (69%) and nutrition during pregnancy (55%). For FP clients, 66% of the providers offered counseling on how to use the method received or prescribed, while 55% of providers offered counseling on excess fluid for dehydrated child for sick child care clients. Except for counseling on danger signs of pregnancy, clients always reported a higher percentage of receiving the counseling than was observed (see Appendix Table 3).

Counseling was low across all three services, especially on:

- Exclusive and early initiation of breastfeeding and use of family planning methods after delivery for ANC clients in their third trimester
- Method's protection from STIs for FP clients
- Counseling on the weight and growth of child for sick child care clients



**Figure 1 Percentage of clients observed to receive counseling on the following items during visits for ANC, family planning, and sick child care visits**



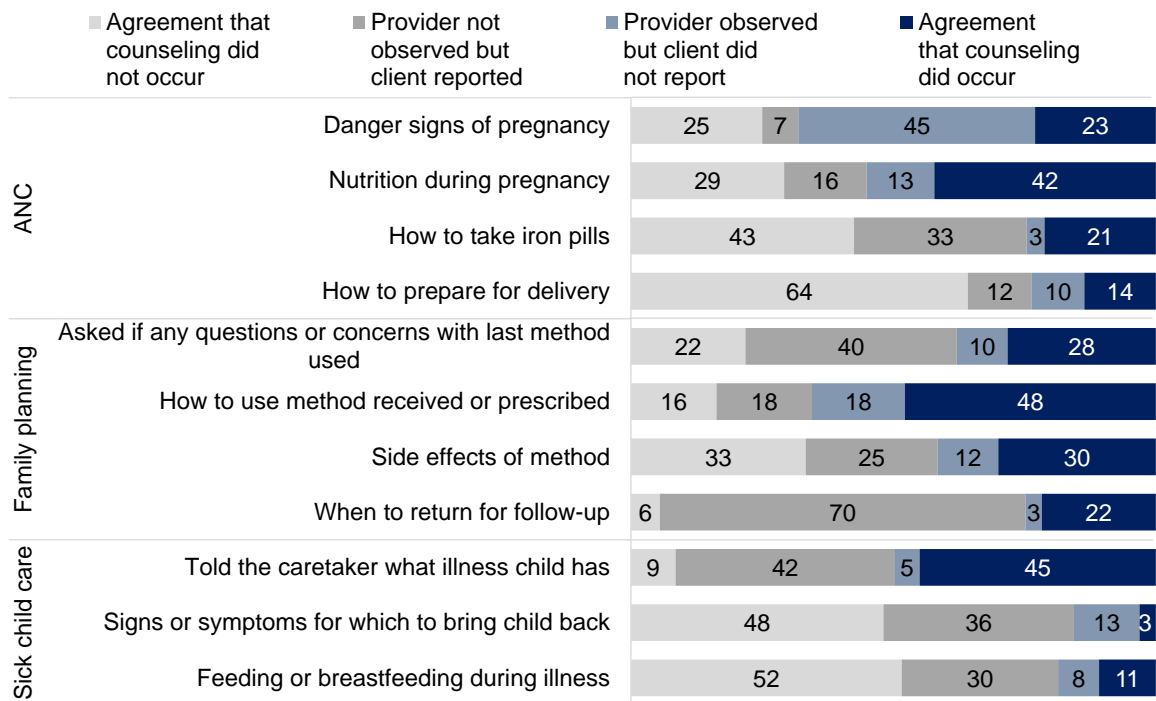
### 3.1.2 Agreement between observation and client's report

Appendix Table 3 shows the Cohen's kappa statistic, which tests the level of agreement between the observation of the counseling and the clients' reports on whether the counseling occurred. All counseling items had low to fair level of agreement (below 0.4), except for counseling on nutrition during pregnancy, which had a moderate level of agreement.

Figure 2 shows the distribution of the combined counseling variable which summarizes the agreement between the observation and the clients' report. Counseling items observed below 10%, counseling on feeding when not ill, and excess fluids for dehydrated child were not included in this analysis. For ANC clients, fewer than a quarter of the clients agreed with the observation that the counseling occurred except for counseling on nutrition during pregnancy, which had 42% of clients with this agreement. Although Figure 1 shows that 69% of clients were observed to receive counseling on danger signs, only 23% of clients agreed with this observation that the counseling occurred. Among FP clients, almost half of the clients agreed with the observation that the counseling on how to use their method was provided, while only 22% of clients agreed with the observation that counseling on when to return for follow-up occurred. For this counseling item, most clients (70%) reported receiving the counseling, although it was not actually observed to be given. Almost half (45%) of the sick child's caretakers agreed with the observation that they were told what the illness of the child was, with a further 42% reporting being told when they were not observed being told. There were very low levels of agreement that the counseling on signs or symptoms of when to bring back the child as well as feeding and breastfeeding during illness occurred with most clients agreeing that the counseling did not occur.

- Almost half of clients agreed with the observation that the counseling on how to use their method was provided.
- Only 22% of clients agreed with the observation that counseling on when to return for follow-up occurred.
- Only 23% of clients agreed with the observation that counseling on danger signs occurred.
- Almost half (45%) of sick child caretaker agreed with the observation that they were told the illness of the child.
- Very low levels of agreement that the counseling on signs or symptoms of when to bring back child and feeding and breastfeeding during illness occurred with most clients agreeing that the counseling did not occur.

**Figure 2 Percentage distribution of agreement for selected ANC, family planning, and sick child care counseling items**



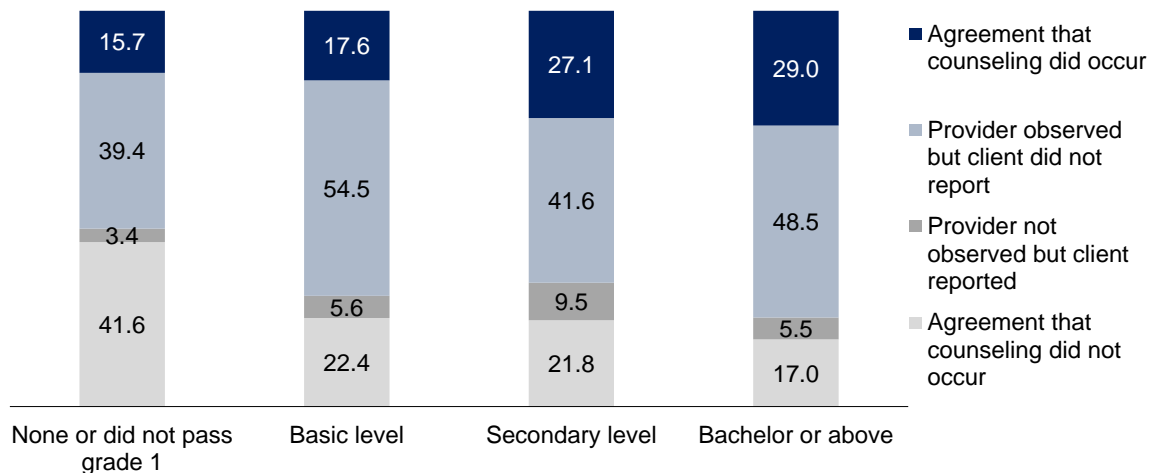
## 3.2 Crosstabulations of Counseling with Background Variables

Crosstabulations of the observed counseling and the combined counseling variables were performed with client, provider, and facility characteristics for ANC (Appendix Table 4), FP (Appendix Table 5), and sick child care (Appendix Table 6). Figures were produced where the associations were significant.

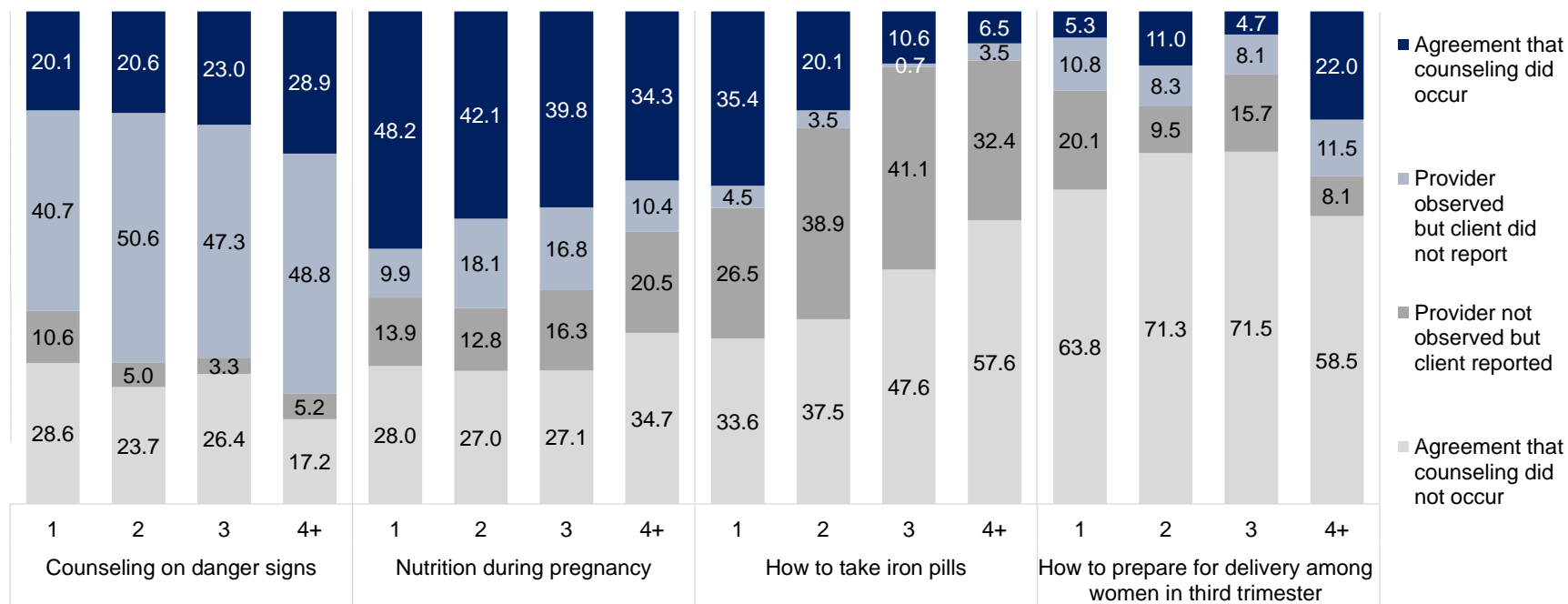
### 3.2.1 ANC crosstabulations

Client's age was not significantly associated with any of the ANC counseling items examined in Appendix Table 4 with the exception of observed counseling on how to take iron pills. Client's education was only significantly associated with counseling on danger signs during pregnancy. The observation that counseling on danger signs took place is highest for clients with bachelor level education or above (77.5%) and lowest for clients with no education or did not pass grade 1 (55%) (see Appendix Table 4). Figure 3 shows that agreement that the counseling occurred increased with increasing education level from 15.7% among clients who have no education or did not pass grade 1, to 29.0% among clients with bachelor or above education. The disagreement that the counseling was observed but the client did not report receiving the counseling was the highest among clients with basic level education (54.5%). There were no significant differences in the counseling variables by whether this was the client's first pregnancy or not. However, all ANC counseling items shown in Appendix Table 4 were significantly associated with number of client's visits to the facility. The agreement that the counseling occurred was the highest for clients who attended four or more visits for counseling on danger signs and preparing for delivery (see Figure 4). This agreement was the highest for clients in their first visit on counseling on nutrition during pregnancy and taking iron pills.

**Figure 3** Percentage distribution of agreement for counseling on danger signs during pregnancy, by client's education level



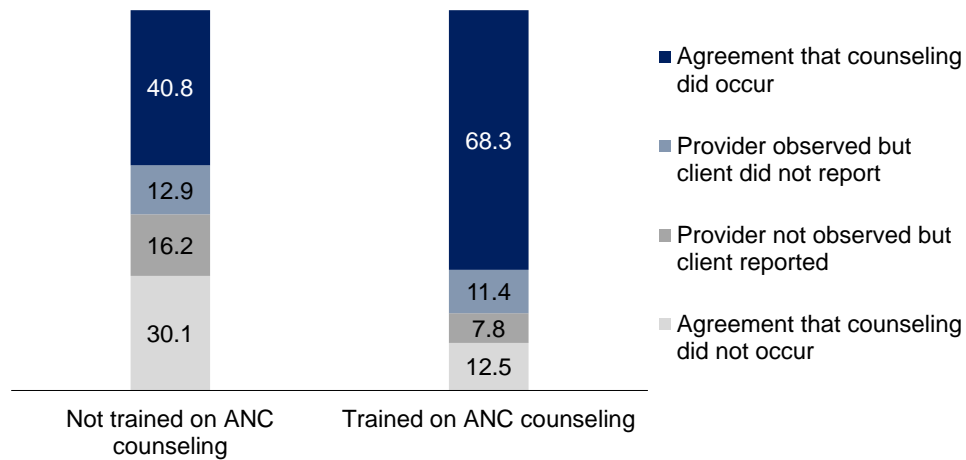
**Figure 4 Percentage distribution of agreement for ANC counseling items, by number of client's visits to the facility**



Clients who were seen by providers who had any training in ANC or postnatal care did not differ significantly by the counseling variables except for counseling on taking iron pills (see Appendix Table 4). For counseling on how to take iron pills, clients who saw a provider with no training had significantly higher percentage of agreement that the counseling did not occur (46.5%) compared with clients who saw providers who had training (35.4%). Conversely, agreement that the counseling occurred was slightly higher among trained providers (22.4%) compared with untrained providers (20.5%). When we examine training that is specific to ANC counseling, we find that only counseling on nutrition during pregnancy had significant, large differences, but this was true only if the counseling occurred within 24 months. In Figure 5 we see that clients who were seen by providers with ANC counseling training within 24 months had higher agreement that the counseling occurred (68.3%) compared with clients who saw providers without this training (40.8%). In addition, the disagreement that the provider was observed giving this counseling but the client did not report receiving it was lower among clients who saw providers with ANC counseling training.

Clients who were seen by providers with ANC counseling training within 24 months had higher agreement that the counseling occurred (68.3%) compared with clients who saw providers without this training (40.8%).

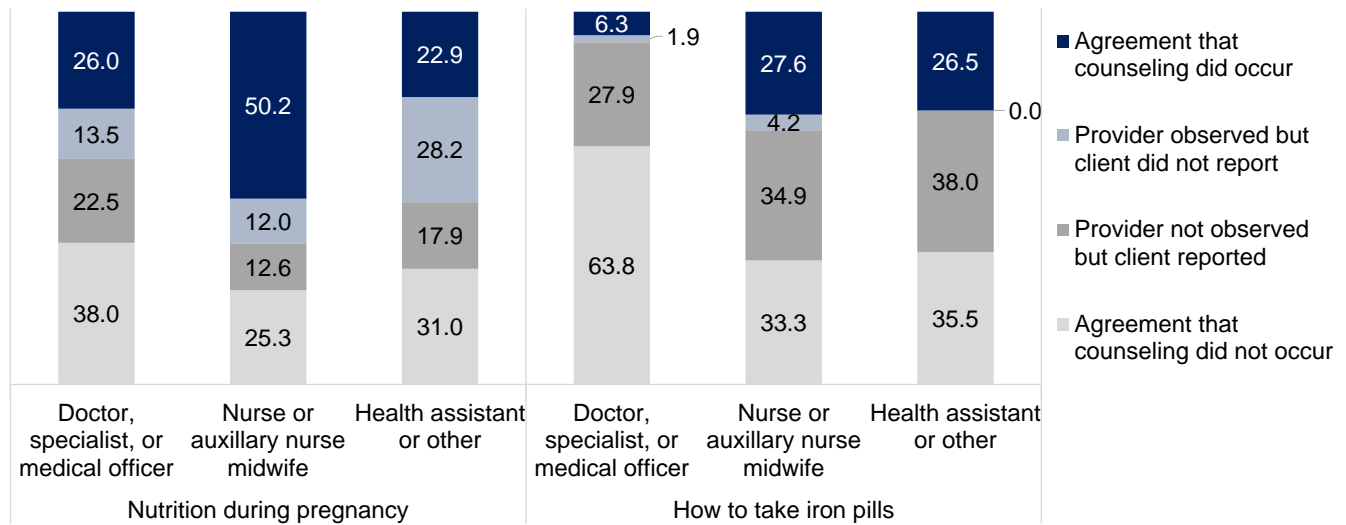
**Figure 5** Percentage distribution of agreement for counseling on nutrition during pregnancy, by provider’s training in ANC counseling within 24 months



The provider’s category was only significantly associated with the counseling on nutrition during pregnancy and how to take iron pills. There were few observations for the provider category of health assistant or other and therefore those estimates should be interpreted with caution (see Appendix Table 4). We observe that clients who have seen a nurse or auxiliary nurse midwife have significantly higher agreement that the counseling occurred (50.2%) compared with clients who have seen a doctor, specialist, or medical officer (26.0%) (Figure 6).

Clients who have seen a nurse or auxiliary nurse midwife have significantly higher agreement that the counseling occurred (50.2%) compared with clients who have seen a doctor, specialist, or medical officer (26.0%).

**Figure 6 Percentage distribution of agreement for counseling on nutrition during pregnancy and how to take iron pills, by provider's category**

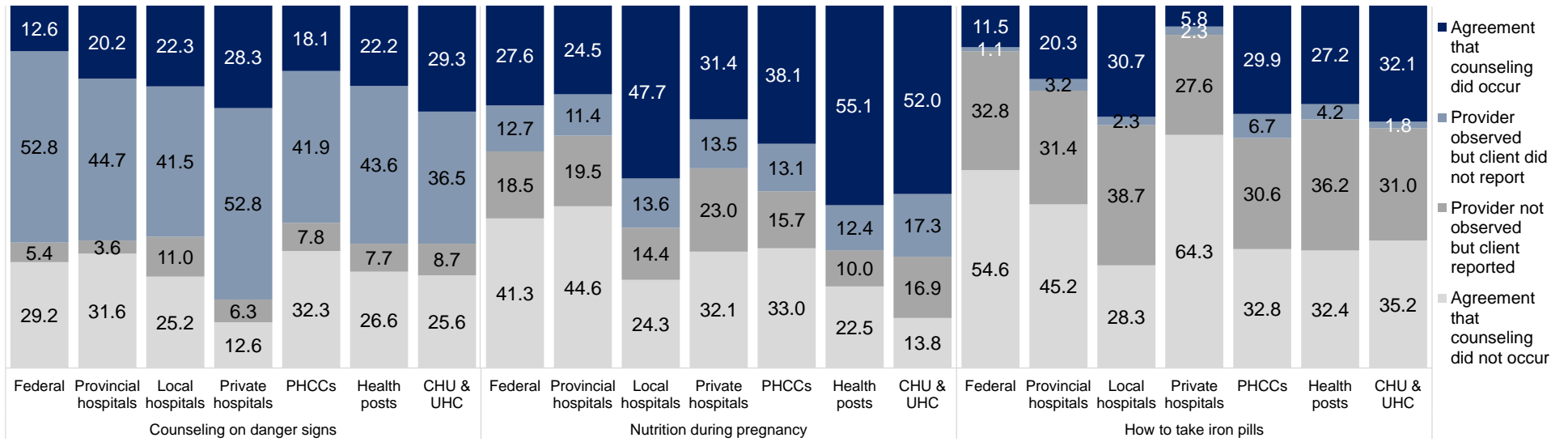


Facility type was significantly associated with all ANC counseling items except for how to prepare for delivery among clients in the third trimester. The distribution of the combined counseling variable was different for different counseling items (see Figure 7). Clients who went to private hospitals had the highest observation of counseling on danger signs (81%) compared with other facilities (between 60–65%) (see Appendix Table 4). However, only 28% of clients in private hospitals agreed with the observation that this counseling occurred and these clients also had the highest percentage of disagreement with the observation that counseling occurred (53%) compared to other facilities (see Figure 7). For counseling on nutrition during pregnancy, the agreement that the counseling occurred was the highest among clients who went to local hospitals (48%), health posts (55%), and CHU/UHCs (52%) compared with less than 40% in the remaining health facilities. These facilities also had the highest observation that counseling on nutrition occurred. The disagreement that the counseling was observed but the client did not report receiving it was very similar across the facilities with ranges from 11 to 17%. Approximately 30% of clients who went to local hospitals, PHCCs, health posts, or CHU/UHCs agreed with the observation that counseling on how to take iron pills occurred, compared with 20% or less in other facilities including only 6% in private hospitals. Compared to other counseling items, the disagreement that the provider was not observed offering counseling on how to take iron pills was higher in all facility categories compared to the disagreement that the counseling was observed but was not reported by the client.

Facility type was significantly associated with all ANC counseling items except for how to prepare for delivery among clients in the third trimester.

The province was not significantly associated with any of the combined counseling items. However, it was significantly associated with the observation that counseling occurred on danger signs with the highest observation found in Bagmati Province (80.7%) compared to the other provinces (see Appendix Table 4).

**Figure 7 Percentage distribution of agreement for counseling on danger signs, nutrition during pregnancy, and how to take iron pills, by facility type**



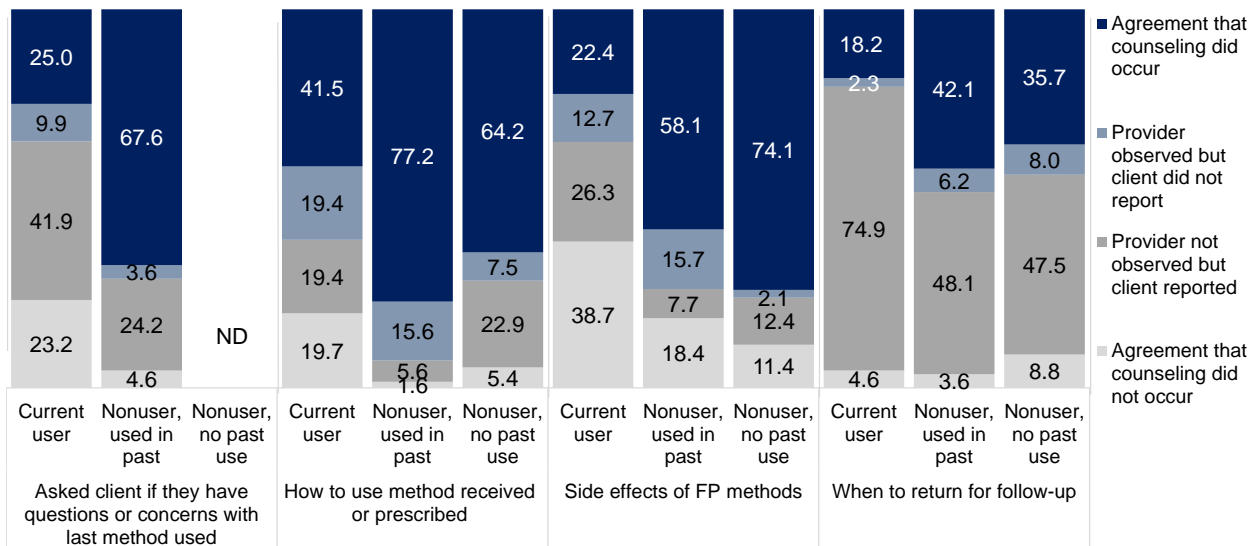


### 3.2.2 FP crosstabulations

Client's age and education were not significantly associated with either observed counseling or the combined counseling variable for any of the counseling items observed for FP services (see Appendix Table 5). However, client's caste/ethnicity was significantly associated with the observation of counseling on side effects of method, which was highest for clients belonging to the Janajati ethnic group (53%) and lowest for clients from the Dalit ethnic group (28%). Client's caste/ethnicity was also significantly associated with the observation and the agreement for counseling on when to return for follow-up. This was observed to be highest for the Janajati ethnic group (34%) and lowest for other (10%) followed by Terai/Madhesi (17%). The Janajati ethnic group also had the highest agreement that this counseling occurred compared to other ethnic groups. Client's status at the beginning of the consultation (current user, non-user but used in the past, and non-user with no past use) had significant association with all the FP counseling items for both observed counseling and the combined counseling variable. A significantly lower percentage of current user clients were observed to receive all items of FP counseling compared to the other user groups (see Appendix Table 5). For example, only 35% of the current users were observed to receive counseling on whether they had any questions or concerns with the last method used, while 71% of the non-user (who used in the past) were observed to receive that counseling. The agreement between the client and provider that the counseling occurred was lower among current users as compared to other two user groups across all four FP counseling items (Figure 8).

A significantly lower percentage of current user clients were observed to receive all items of FP counseling compared with other user groups.

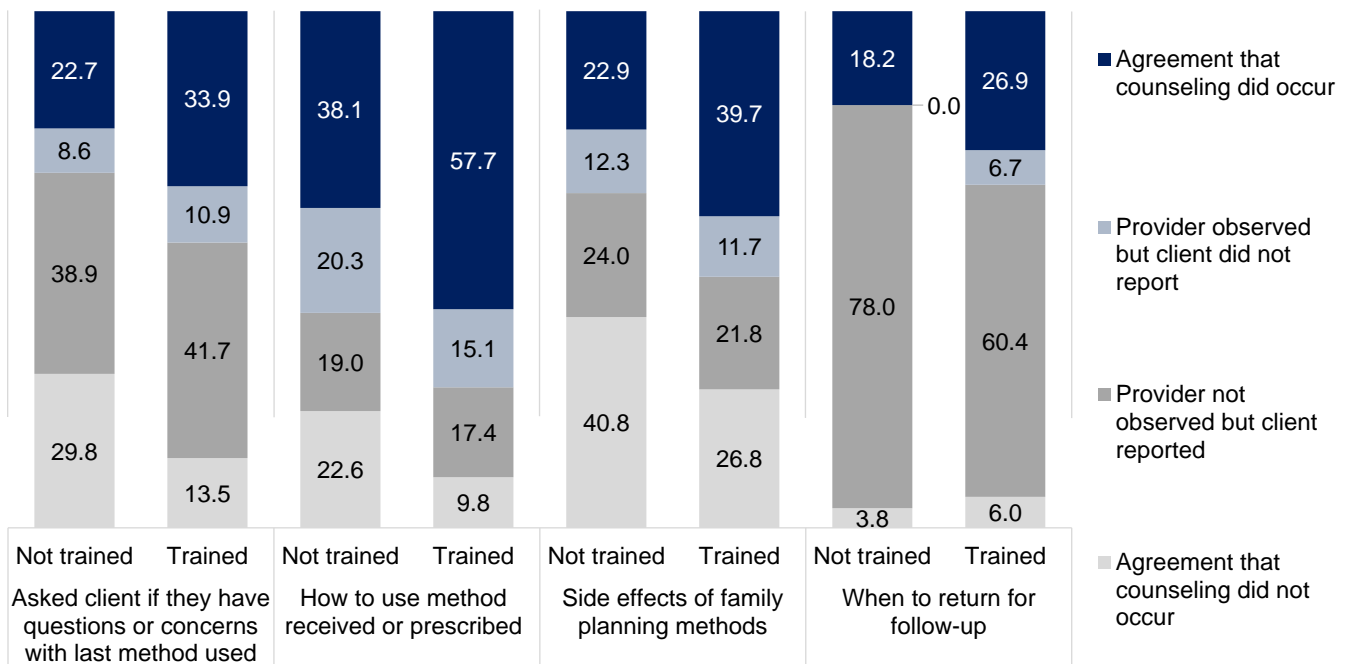
**Figure 8 Percentage distribution of agreement for family planning counseling items, by the client's status at the beginning of the consultation**



Clients who were seen by providers who received any training in FP had significantly higher observations that counseling was provided to them and agreement that counseling occurred compared to clients who did not see a trained provider. Figure 9 shows that the agreement that counseling occurred was highest among clients who have seen a trained provider who gave counseling on how to use the method received or prescribed (58%), compared with 38% with agreement among clients who did not see a trained provider. There was also a large difference in the agreement that counseling on side effects of FP methods occurred between clients who saw a trained provider (40%) compared with clients who saw an untrained provider (23%). In Appendix Table 5, we also see that clients who were seen by providers who had training in FP counseling had significantly higher observation that counseling was provided as well as higher agreement on counseling, although only for counseling on how to use a method and when to return for follow-up. This significance was lost if we only considered FP training received within 24 months.

Clients who were seen by providers that received any training in FP had significantly higher observation that counseling was provided to them and agreement that counseling occurred compared to clients who did not see a trained provider.

**Figure 9 Percentage distribution of agreement for family planning counseling items by providers with family planning training**

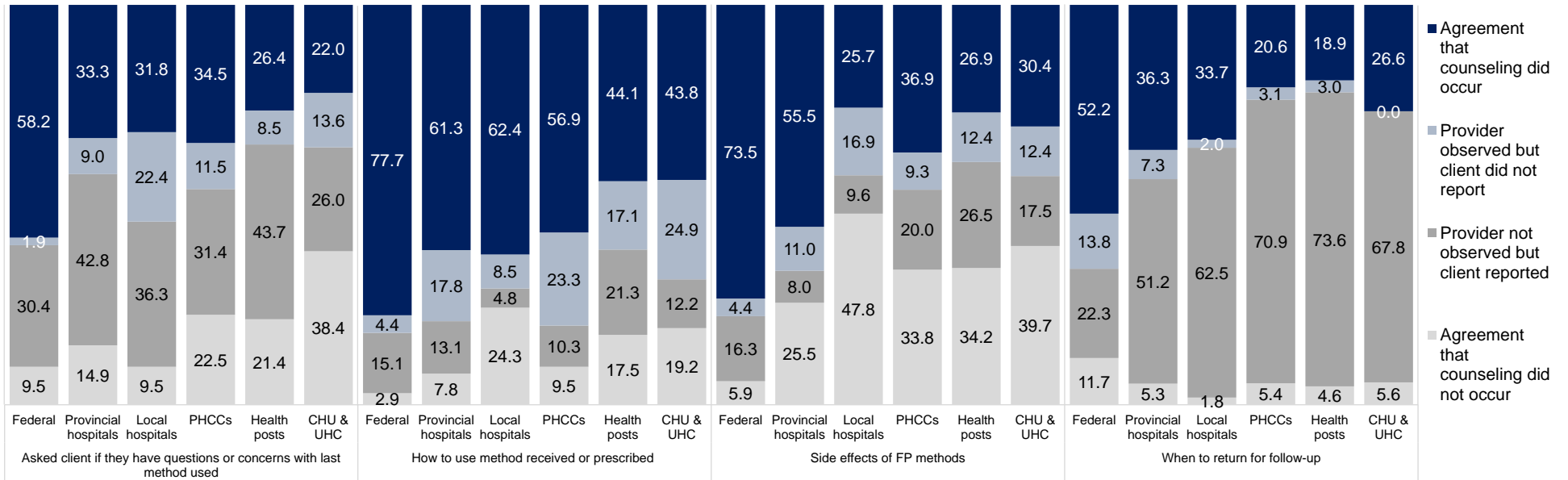


The provider's category was only significantly associated with counseling on questions or concerns with last method used. There were very few doctors, specialists, or medical officers for a reliable estimate among FP clients. However, as shown in Appendix Table 5, clients who were seen by nurses or an auxiliary nurse midwife had significantly higher observation of this counseling as well as agreement that this counseling occurred compared to a health assistant or other types of providers.

Facility type was significantly associated with both the observed counseling and combined counseling variable across all the FP counseling items. Compared to clients in higher-level health facilities, a lower percentage of clients in health posts were counseled across all four FP counseling items (see Appendix Table 5). The agreement that the counseling occurred between client's report and observation was highest in federal hospitals compared to lower-level health facilities across all counseling items (see Figure 10). However, this was the second lowest facility type that FP clients visited after private hospitals (see Appendix Table 2). Conversely, the agreement on counseling was lowest in basic health centers (health posts, CHU, and UHC) across all items except for counseling on side effects of FP methods where it was lower for local hospitals. For counseling on using FP methods, agreement that the counseling occurred was higher across all the facility types compared to other counseling items. However, 23% of the clients in PHCCs and 25% in CHU and UHCs did not report receiving the counseling when the provider was observed to offer this counseling. For counseling on side effects of FP methods, agreement that counseling did not occur was higher compared to other counseling items especially in local hospitals (48%), as well as CHUs and UHCs (40%).

- Provider's category was only significantly associated with counseling on questions or concerns with last method used.
- Clients who were seen by nurses or auxiliary nurse midwife had significantly higher observation of counseling on questions or concerns with method as well as agreement that this counseling occurred compared to health assistant or other types of providers.
- Facility type was significantly associated with both observed counseling and combined counseling variable across all the FP counseling items.

**Figure 10 Percentage distribution of agreement for family planning counseling items, by facility type**



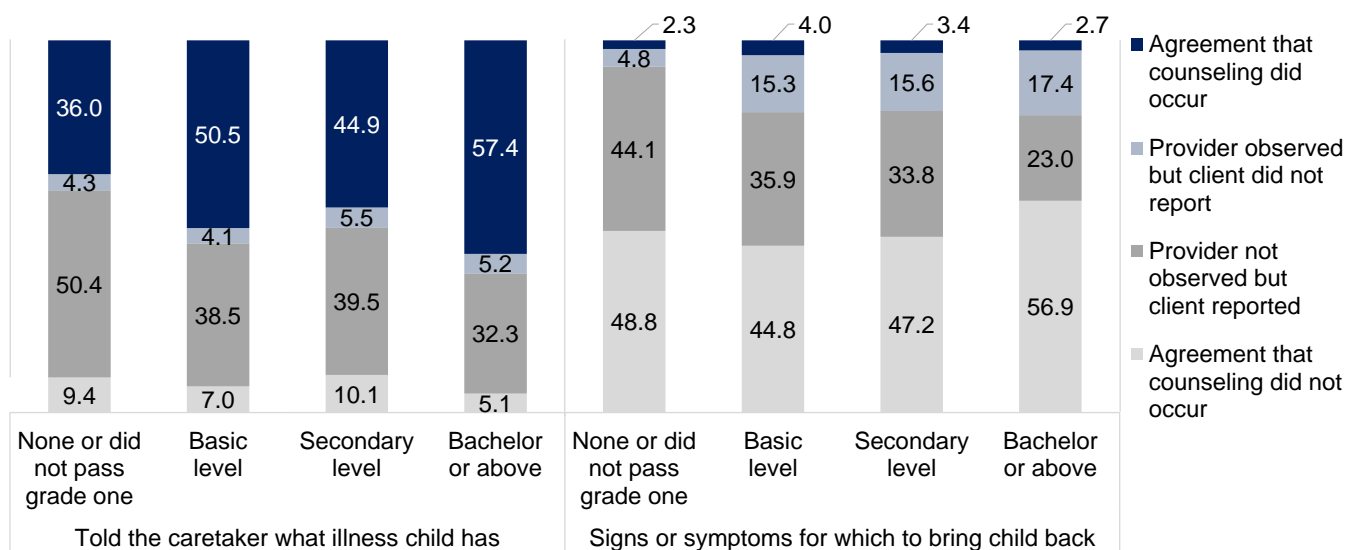
### 3.2.3 SC crosstabulations

Client's age was not significantly associated with any of the sick child counseling items (see Appendix Table 6). However, client education and client's caste/ethnicity were significantly associated with sick child care counseling on being told what illness child has and signs or symptoms for which to bring the child back. Clients with a bachelor level education or above had the highest observed counseling on what illness child has (63%) and the highest agreement that the counseling occurred (57%). (See Figure 11 and Appendix Table 6.) For counseling on signs or symptoms for which to bring child back, clients with no education or did not pass grade 1 had the lowest level of observed counseling (7%) with few differences between the remaining education categories (19–20%). However, client and observation agreement that the counseling occurred was less than 5% of the clients across all education levels.

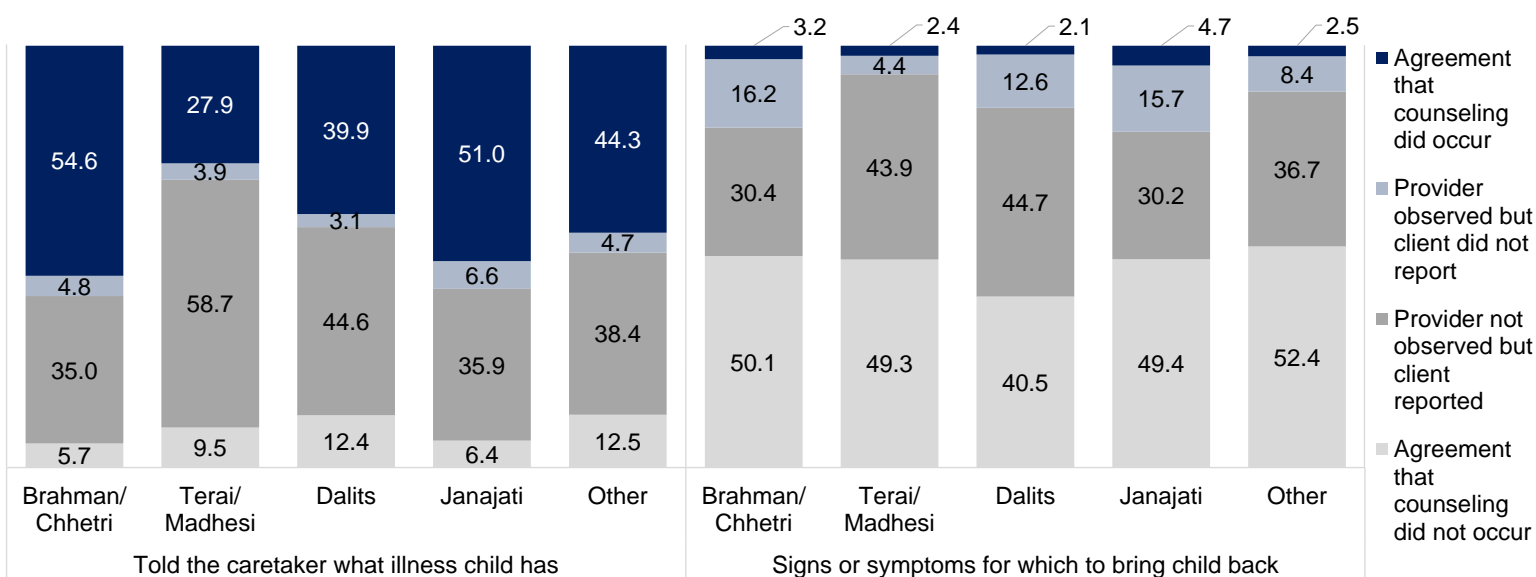
For counseling on what illness child has, both observed counseling and agreement that the counseling occurred was the highest for clients belonging to Brahman/Chhetri caste/ethnicity followed by Janajati and lowest for Terai/Madhesi clients. This pattern was also found for the observed counseling on signs or symptoms for which to bring child back, although the agreement that the counseling occurred was low across all groups (<5%) (see Appendix Table 6 and Figure 12).

- Client education and client's caste/ethnicity were significantly associated with sick child care counseling on being told what illness child has and signs or symptoms for which to bring the child back. Clients with a bachelor level education or above had the highest observed counseling on what illness child has (63%) and the highest agreement that the counseling occurred (57%).
- Counseling on what illness child has, both observed counseling and agreement that the counseling occurred, was the highest for clients belonging to Brahman/Chhetri caste/ethnicity followed by Janajati and lowest for Terai/Madhesi clients.

**Figure 11 Percentage distribution of agreement for counseling on caretaker being told what illness child has and signs or symptoms when to bring child back, by client's education level**



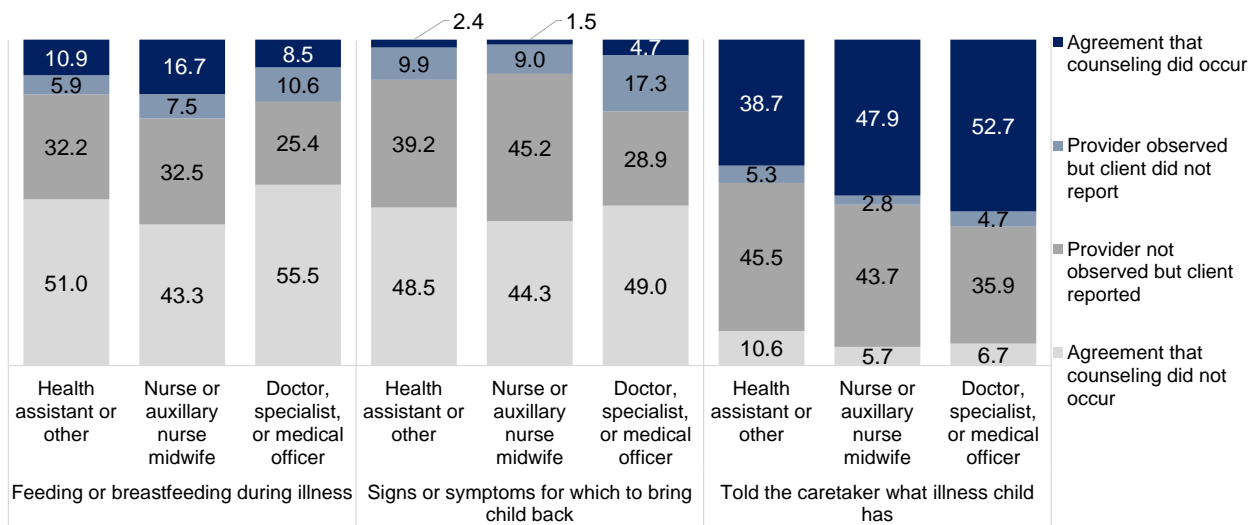
**Figure 12 Percentage distribution of agreement for counseling on caretaker being told what illness child has and signs or symptoms when to bring child back, by client's caste/ethnicity**



The provider's category was significantly associated with all the counseling items in sick child care services. Doctors/specialist/medical officers had the highest observed counseling and agreement that counseling occurred for two counseling items—told the caretaker what illness the child has and signs or symptoms to bring back the child. However, clients seen by a nurse or auxiliary nurse midwife had the highest percentage of observation and agreement that the counseling on feeding or breastfeeding during illness occurred compared to other providers. The disagreement that the counseling was observed but client did not report receiving it, was the highest among clients who were seen by doctors/specialists for counseling on signs or symptoms for which to bring child back and feeding or breastfeeding during illness as compared to other provider types (Figure 13).

- Doctors/specialist/medical officers had the highest observed counseling and agreement that counseling occurred for two counseling items—told the caretaker what illness the child has and signs or symptoms to bring back the child.
- Clients seen by a nurse or auxiliary nurse midwife had the highest percentage of observation and agreement that the counseling on feeding or breastfeeding during illness occurred compared to other providers.

**Figure 13 Percentage distribution of agreement for sick child care counseling items, by provider category**

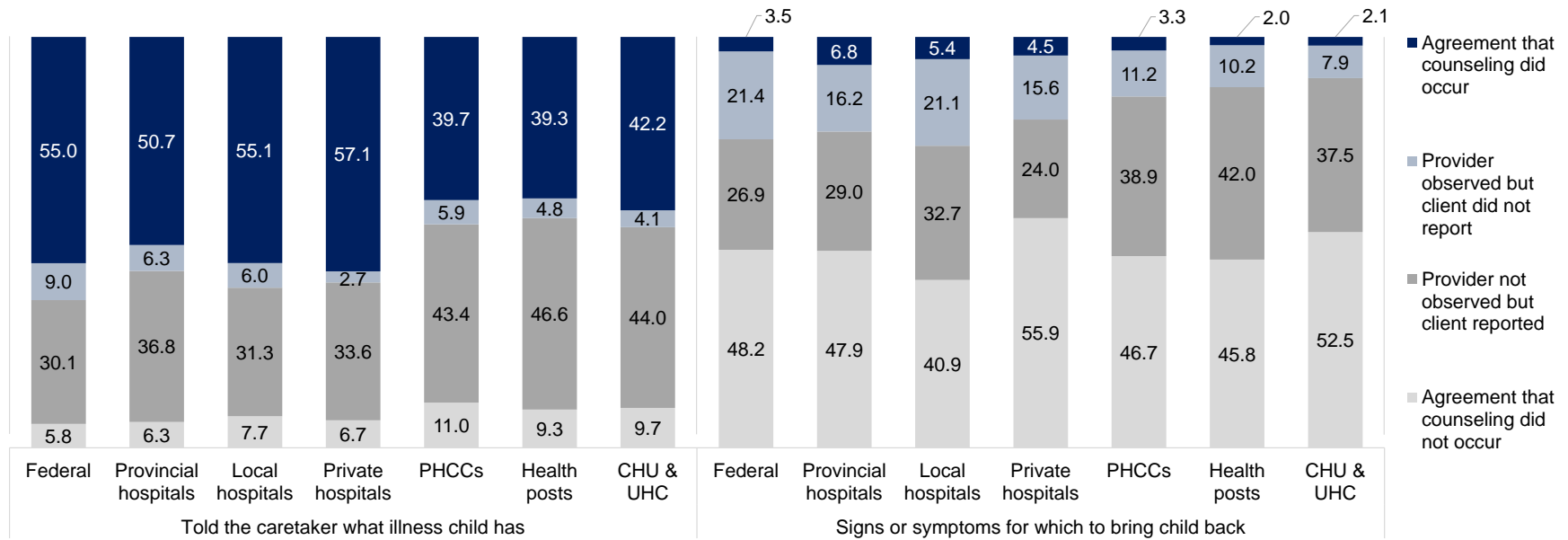


Facility type was significantly associated with two counseling items for both observed counseling and combined counseling variable in sick child care services—told the caretaker what illness child has and signs or symptoms for which to bring child back. Observed counseling and observation-client agreement that counseling occurred on what illness child has was lower for clients who visited non-hospitals (less than 45% agreement) compared with hospitals (above 50% agreement). However, while the same pattern was found for observed counseling on signs or symptoms for which to bring child back, the agreement that this counseling occurred was low between 2 to 7% for all facility types. However, observation-client disagreement that provider was observed but client did not report receiving this same counseling item was higher for federal and local hospitals (21%) compared with non-hospitals (8 to 11%) (see Figure 14).

Facility type was significantly associated with two counseling items for both observed counseling and combined counseling variable in sick child care services—told the caretaker what illness child has and signs or symptoms for which to bring child back.



**Figure 14 Percentage distribution of agreement for counseling on caretaker being told what illness child has and signs or symptoms when to bring child back, by facility type**

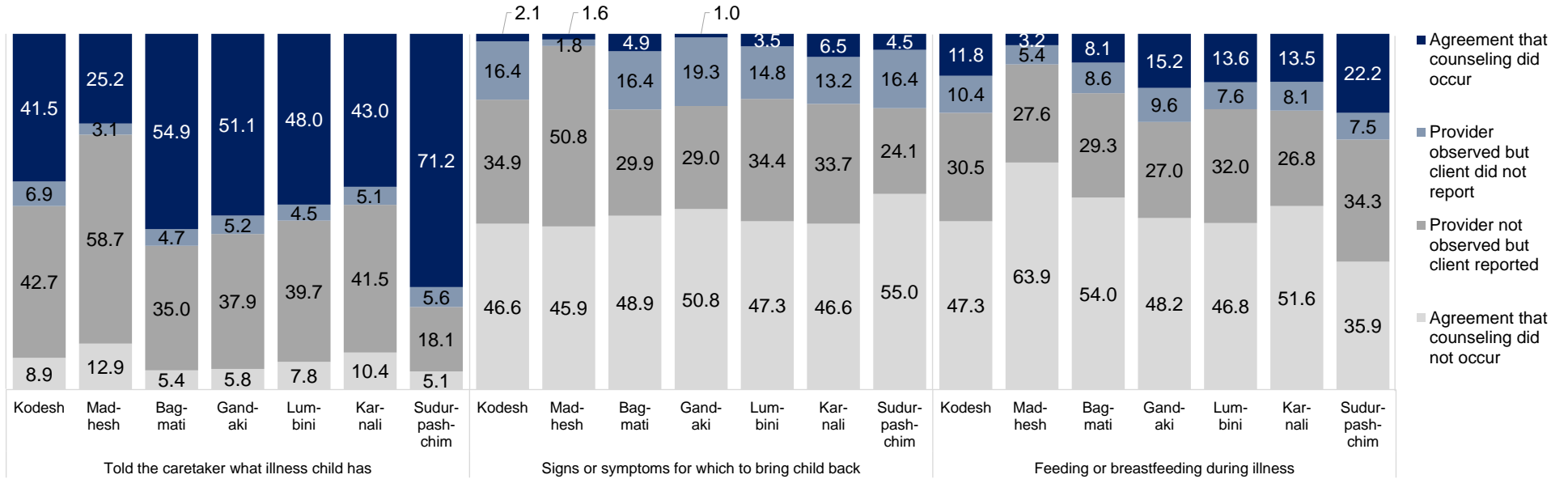


Province was significantly associated with all the counseling items for both observed counseling and combined counseling variable. For counseling on what illness child has, observed counseling and observation-client agreement that the counseling occurred was highest for clients in the Sudurpashchim Province (71% agreement) and lowest for Madhesh Province (25% agreement). Observation of counseling for the remaining two sick child care counseling items was lowest for clients in the Madhesh Province.

Province was significantly associated with all the sick child care counseling items for both observed counseling and combined counseling variable.

Agreement that the counseling occurred on signs when to bring child back was lowest among clients in the Madhesh and Gandaki provinces and for counseling on feeding or breastfeeding while ill, this was lowest for Madhesh and Bagmati provinces (see Figure 15). Observation-client disagreement that the provider was observed but client did not report receiving the counseling ranged from 5 to 10% for counseling on feeding or breastfeeding during illness and 3 to 7% for counseling on what illness the child had. However, this disagreement had higher variation across provinces for counseling on signs or symptoms for which to bring child back due to the low percentage found in Madhesh Province (2%) compared with the remaining provinces (16 to 19%).

**Figure 15 Percentage distribution of agreement for sick child care counseling items, by province**



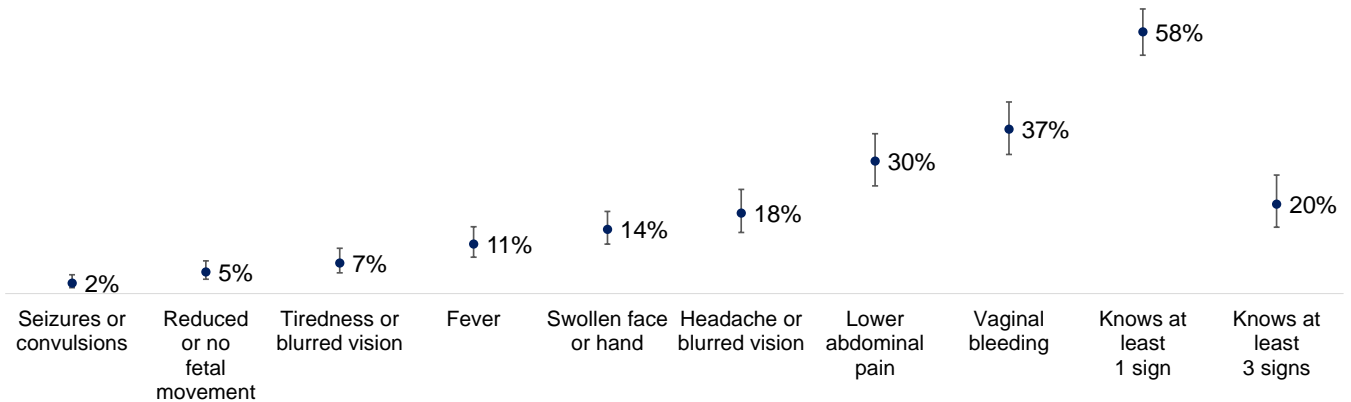
### 3.3 Client’s Knowledge

Figures 16–17 and Appendix Table 7 summarize the levels of client’s knowledge of danger signs of pregnancy complications, ways to prepare for delivery, the FP method’s protection from STIs, and knowledge about the method and its use.

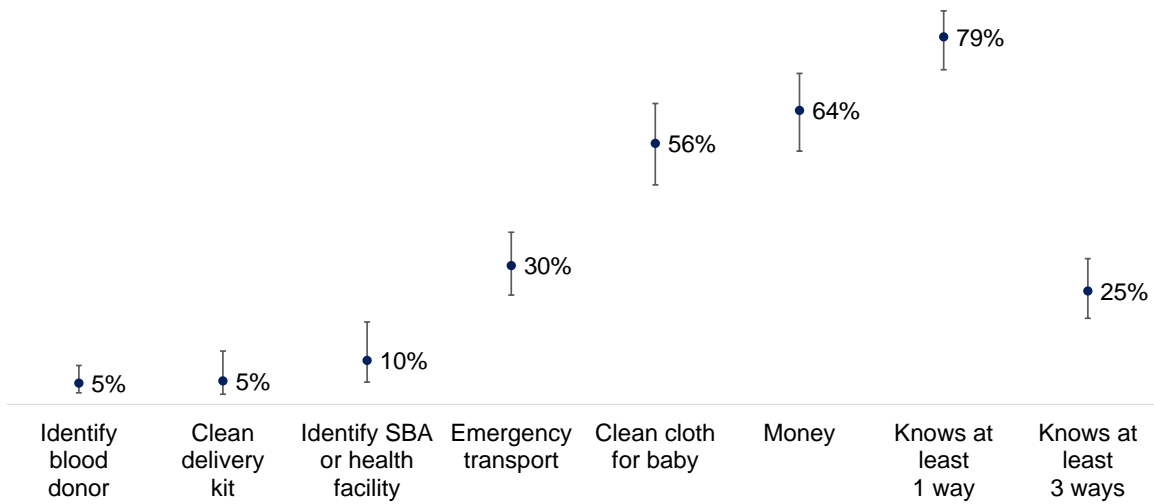
Approximately 60% of ANC clients in their first pregnancy knew at least one danger sign but only 20% knew at least three danger signs of pregnancy complications (Figure 16). The most reported danger sign known by clients was vaginal bleeding (37%), followed by lower abdominal pain (30%). Fewer than 10% of clients knew of three danger signs of tiredness or blurred vision, reduced or no fetal movement, and seizures or convulsions.

60% of ANC clients in their first pregnancy knew at least one danger sign but only 20% knew at least three danger signs of pregnancy complications.

**Figure 16** Clients’ knowledge on danger signs of pregnancy among clients with a first pregnancy



**Figure 17 Clients' knowledge of ways to prepare for delivery among clients with a first pregnancy in the third trimester**



Approximately 80% of ANC clients in their first pregnancy and third trimester knew at least one way to prepare for delivery, but only a quarter knew at least three ways to prepare. The most common way known to prepare for delivery was to have money set aside (64%) followed by having a clean cloth for the baby (56%). However, fewer than a third reported having emergency transport (30%) or identifying a skilled birth attendant or health facility (10%) as ways to prepare for delivery.

Among FP clients, there was a high level of knowledge of the method they were prescribed or received during the consultation and how to use it (94%). However only 42% of clients had the correct knowledge of their method's protection from STIs (see Appendix Table 7).

- Approximately 80% of ANC clients in their first pregnancy and third trimester knew at least one way to prepare for delivery but only a quarter knew at least three ways to prepare.
- There was a high level of knowledge of the method they were prescribed or received during the consultation and how to use it (94%). However, only 42% of clients had the correct knowledge of their method's protection from STIs.

### 3.4 Relationship between Counseling and Client's Knowledge

Appendix Table 8 and 9 summarize the unadjusted and adjusted logistic regressions on the knowledge outcomes. Among ANC clients, regressions were fit for the client's knowledge of at least three danger signs and at least three ways to prepare for delivery. Among FP clients, regressions were fit on the client's correct knowledge of their method's protection from STIs.

Table 3 summarizes the regression results for the counseling variables related to each outcome. Among clients in their first pregnancy, those who were observed to have received counseling on danger signs had almost twice the odds of knowing at least three danger signs in the unadjusted model. However, this lost significance in the adjusted model. When we examine the combined counseling variable, we see even larger differences. Compared to clients who agreed with the observation that no counseling on danger signs was delivered, those who agreed that the counseling took place had 12 times the odds of knowing at least three danger signs in the unadjusted model and 13 times the odds in the adjusted model. In addition, there was approximately 10 times higher odds of knowing at least three danger signs among clients who reported receiving the counseling but it was not observed compared to clients who had an agreement with the observation that the counseling did not occur. These estimates, although significant, had very wide confidence intervals. Even if the counseling was observed to be given, if the client did not report that it took place, then there was no significant difference in knowledge with clients who did not receive the counseling and did not report receiving it. No other client, provider, or facility background variable was found to be significantly associated with knowledge of at least three danger signs in the adjusted models.

- Compared to clients that agreed with the observation that no counseling on danger signs was delivered, those who agreed the counseling took place had 12 times the odds of knowing at least three danger signs in the unadjusted model and 13 times the odds in the adjusted model.
- Even if the counseling was observed to be given, if the client did not report that it took place, then there was no significant difference in knowledge with clients that did not receive the counseling and did not report receiving it.

**Table 3 Unadjusted and adjusted odds ratios of the counseling variables and clients' knowledge**

	Know at least three danger signs among women with a first pregnancy (n = 889)				Know at least three ways to prepare for delivery among women with a first pregnancy in the third trimester (n = 358)				Correct knowledge of method's protection from STIs among clients who were prescribed or received a method (n = 820)			
	Unadjusted		Adjusted		Unadjusted		Adjusted		Unadjusted		Adjusted	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Counseling was observed (Ref. = No)												
Yes	2.0*	1.1–3.5	1.9	0.9–3.7	3.4**	1.6–7.3	4.5***	2.2–9.1	2.8*	1.2–6.5	2.5	0.9–7.2
Combined counseling variable (Ref. = Agreement that counseling did not occur)												
Provider not observed but client reported	9.4***	2.6–34.1	11.0***	2.7–44.9	4.3*	1.2–16.0	4.9**	1.6–14.9	NA	NA	NA	NA
Provider observed but client did not report	2.1	0.8–5.5	2.0	0.6–6.3	2.4	0.6–8.9	3.0	0.7–12.7	NA	NA	NA	NA
Agreement that counseling did occur	12.0***	4.3–33.6	13.2***	4.0–43.3	6.5***	2.6– 6.2	10.3***	3.7–28.7	NA	NA	NA	NA

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

Note: The unadjusted and adjusted odds ratios for the client, provider, and facility characteristics are found in the Appendix Tables 6 and 7. NA = not available

The knowledge of at least three ways to prepare for delivery among ANC clients in their first pregnancy and third trimester followed a similar pattern as seen in the regression results for the knowledge of at least three danger signs. The observation that the counseling on ways to prepare for delivery increased the odds of clients' knowledge of at least three ways to prepare for delivery in the unadjusted and adjusted models by more than 3 times compared to clients who did not receive the counseling. For the combined counseling variable, clients who agreed with the observation that the counseling took place had approximately 7 times the odds in the unadjusted model and 10 times the odds in the adjusted model of knowing at least three ways to prepare compared to clients who agreed with the observation that the counseling did not take place. We again see no significant difference between clients who were observed to receive the counseling but did not report receiving it and clients who did not receive the counseling and did not report receiving it. Therefore, the results from the two ANC knowledge outcomes and the combined counseling variable indicate that it is the clients' report that they received the counseling that is important for increased knowledge. The only other significant variable in the adjusted regressions of knowing at least three ways to prepare for delivery was the province. Compared to Kodesh, Bagmati, Lumbini, Karnali, and Sudurpashchim provinces had significantly lower odds of knowing at least three ways to prepare for delivery (see Appendix Table 8).

- Clients who agreed with the observation that the counseling took place had approximately 7 times the odds in the unadjusted model and 10 times the odds in the adjusted model of knowing at least three ways to prepare compared to clients who agreed with the observation that the counseling did not take place.
- The results from the two ANC knowledge outcomes and the combined counseling variable indicate that it is the client's report that they received the counseling that is important for increased knowledge.

For the regression of FP client's correct knowledge of their method's protection from STIs, the counseling observed on this topic gave clients approximately 3 times higher odds of correct knowledge compared to clients who did not receive this counseling in the unadjusted model. However, after controlling for all background variables, this significance was lost in the adjusted model. Two other background variables were found to be highly significantly associated with this knowledge—the client's education and province (see Appendix Table 9). Clients with a bachelor or above level of education had approximately 10 times the odds of correct knowledge on their method's protection from STIs compared to clients with no education or who did not pass grade 1. Clients who resided in the Madhesh, Bagmati, Lumbini, and Karnali provinces all had a higher odds of correct knowledge of method's protection from STIs compared to clients from Kodesh province.



## 4 SUMMARY AND RECOMMENDATIONS

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The analysis revealed several important findings that provide insights about where and for whom interventions are required to improve the levels and quality of counseling. The findings are summarized in the main themes below, which also include recommendations on possible areas of intervention.

### Overall low levels of counseling and low level of agreement on counseling

- For ANC clients, observed counseling was especially low for counseling on side effects of iron pills, exclusive and early initiation of breastfeeding, and FP methods after delivery. Exclusive breastfeeding has declined between 2016 and 2022, and early initiation of breastfeeding did not increase greatly during the same time period (see Table 1). Therefore, it is important that counseling on breastfeeding be performed at ANC visits. Increasing the counseling on FP use after delivery can have an impact on increasing modern contraceptive use, which has not increased recently (according to Table 1). Other ANC counseling items were also not provided at a high rate, and the agreement that the counseling occurred was much lower than what was observed for all ANC counseling items. This indicates that even if the counseling was observed to be delivered, the client did not report receiving it and therefore they were not aware of this counseling. This is one measure of the quality of the counseling that was offered. For the counseling to be effective, the client must at the very least be aware that it was delivered.
- For FP clients, there was an especially low level of counseling provided on the method's protection from STIs, with only 3% of clients observed to have this counseling. This is of concern since only 42% of FP clients had the correct knowledge of their method's protection from STIs.
- For sick child care clients, the lowest level of counseling provided was on the weight and growth of the child. This counseling is important to help in further decreasing stunting in children (see Table 5). In the most recent 2022 Nepal DHS, approximately a quarter of children under age 5 were stunted. We also see low levels of counseling provided on signs or symptoms for when to return the child and feeding practices for the child when ill and when not ill. These counseling items have even lower rates of agreement that the counseling occurred.

Overall there were low levels of counseling and low level of agreement on counseling

- The level of counseling not only needs to be increased but the quality of the counseling also needs to be improved in order to effectively transfer key messages and knowledge to the client.
- Whilst it is necessary to improve policies and community awareness, helping providers to enhance their effective communication skills also helps to improve patient experience.

- Several counseling items in ANC, FP, and sick child care had low rates of delivery and even lower rates of agreement that the counseling occurred. Therefore, the level of counseling not only needs to be increased but the quality of the counseling also needs to be improved in order to effectively transfer key messages and knowledge to the client.
- Client-provider communication provides the foundation for effective counseling with body language, active listening, two-way conversation, and tone of voice being some of the most important aspects of effective communication.<sup>4</sup> However, women in Nepal still face disrespectful behavior and neglect from service providers.<sup>37</sup> While it is necessary to improve policies and community awareness, helping providers to enhance their communication skills also helps to improve the patient experience. This would also include using job aids and non-technical language to ensure that the clients understand the message from the provider.

### Counseling was not delivered equally for all clients

- For ANC clients, clients with no education or those who did not pass grade 1 had a significantly lower level of observed counseling on danger signs and lower level of agreement that the counseling occurred. This was also true among sick child care clients who were observed to receive counseling on what the child’s illness was and sign or symptoms for which to bring back the child. This may imply that providers are not providing the necessary counseling on dangerous signs of pregnancy complications or sick child care to those perceived to have lower education.
- For ANC clients, we also observe that there are significant differences between the counseling provided and the client’s number of visits and client’s pregnancy trimester. While we acknowledge that certain counseling items are more suited for clients who are closer to their delivery (such as counseling on how to prepare for a delivery), we also know from DHS data (see Table 1) that not all Nepali women attend four or more ANC visits. Therefore, waiting to provide counseling on certain items for later visits may miss some clients. For example, counseling on the danger signs of pregnancy complications was more likely to be provided to clients with more than one visit or who are past their first trimester. However, it is important for all visits since complications can arise anytime throughout the pregnancy. Conversely, counseling on nutrition during the pregnancy and how to take iron pills was more likely to be given in the first visit or first or second trimesters. However, it may be important to check on the client’s nutrition and iron intake at each visit because these are essential for a healthy pregnancy for both the mother and child.

#### Counseling was not delivered equally for all clients

- Counseling should be provided regardless of the client’s socioeconomic status including education.
- Counseling is recommended for each ANC visit and for current and past users of family planning methods.
- Use of visualizations can help improve the counseling and save time.

- Among FP clients, we observe significantly lower levels of counseling provided to current users of a method compared to clients who are nonusers but had used in the past. However, current users may still have questions or concerns about their current method or may need to be reminded of the side effects and when to return for follow up.
- Only in sick child care did we observe differences in the delivery of counseling by the client's caste/ethnicity. For example, clients from the Terai/Madhese caste had lower levels of observed counseling on being told what the illness is and signs or symptoms for which to bring the child back for follow up.
- Counseling should be provided regardless of the client's socioeconomic status including education. In addition, counseling is recommended for each ANC visit and for current and past users of FP methods. Since there are time constraints for the consultation, certain counseling items do not need to be lengthy. Use of visualizations can help improve the counseling and save time. A lengthy discussion on nutrition during pregnancy may not be needed at each visit. The provider can simply check with the client if they are still considering their food intake and then make recommendations.

### Some providers are more likely to provide counseling compared to others

- In ANC consultations, nurses and midwives were more likely to offer counseling compared to doctors. The exception was counseling on danger signs where doctors were more likely to give the counseling. However, clients who were counseled by doctors on danger signs were also more likely to report not receiving the counseling, which implies the counseling was not effective. For counseling on nutrition, how to take iron pills, and how to prepare for delivery, nurses were more likely to have clients who agreed with the observation that the counseling took place.
- Certain providers may need more training compared to others on counseling and the importance of delivering the required counseling. This is specifically true for doctors, specialists, and health assistants.
- In remote regions of Nepal, availability of adequate skilled providers remains a challenge.<sup>38-39</sup> In some cases, a single provider in a health facility must provide all the health services, and this decreases the counseling time and focus. In addition, the demands of their job affects their psychosocial status that eventually hinders their connection with their clients.<sup>40</sup>

#### Some providers are more likely to give counseling compared to others

- Certain providers may need more training compared to others on counseling and the importance of delivering necessary counseling. This is specifically for doctors and specialists and health assistants.
- Psychosocial support to improve the well-being of healthcare providers has become necessary as it influences how well they communicate with the clients and family members.

support that improves the well-being of healthcare providers has become necessary because it influences how well the providers communicate with the clients and family members.

### **Training is important for the delivery of quality counseling**

- For ANC clients, providers with any training as well as training on ANC counseling were not significantly associated with the provision of counseling. The exception was counseling on nutrition during pregnancy, where clients who saw a provider with training on ANC counseling within 24 months were significantly more likely to receive the counseling and also more likely to agree with the observation that the counseling occurred. In addition, the timing of the training mattered in this case because counseling on nutrition was not significantly associated with training on ANC counseling provided at anytime in the past. This implies that there is room for improvement in training on counseling for ANC providers.
- For FP clients, providers with any training on FP showed significantly higher observed counseling and higher agreement that the counseling occurred for all counseling items. This was not the case for training on FP counseling with the exception of training on FP counseling provided anytime with counseling on how to use the method. For this counseling item, training on counseling increased both the observation of the counseling and agreement that the counseling took place.
- For sick child care, there was no significance between providers with any training and provision of counseling to clients. There were no data available for training in sick child care counseling.
- Overall, the results indicate that there is room for improvement in training delivered to providers and especially training that is focused on counseling. This is an opportunity to also provide training on client-centered counseling which is more effective for transferring key messages to clients. It is also important to provide refresher training to providers who may have already received this training.

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## Counseling delivery and quality differed by facility type and province

- It also appears that certain facilities are more likely to provide specific counseling items. For example, clients who went to private hospitals were more likely to receive counseling on danger signs and were also more likely to agree with the observation that the counseling occurred. On the other hand, this finding was found for PHCCs and counseling on how to prepare for delivery in the third trimester. For FP, clients who visited federal and local hospitals were more likely to receive most of the FP counseling topics. However, it was not always the facility that had the highest observed counseling that also had the highest agreement on counseling, which indicated that counseling may not be of good quality at some facilities. For sick child care, clients who visited any type of hospital were more likely to receive counseling and more likely to agree that counseling occurred compared to other facilities.
- One reason for the differences we see by facility type is the time available for counseling. If a facility has many client visits during the day, the providers may feel rushed and feel that they do not have the time to offer counseling, especially if the facility does not have many providers available. Interventions should take this into account and consider providing job aids and other methods to assist providers in administering counseling in an efficient and effective manner.
- The province was not significantly associated with counseling for most ANC counseling items and all the FP counseling items. However, it was significant for all sick child care counseling items. Clients in the Sudurpashchim Province had the highest levels of counseling on danger signs of pregnancy complications during ANC visits, and the highest levels of sick child care counseling on being told what the illness was, and on how to feed the child during illness.
- The differences by facility type indicate that a universal protocol is needed for all facilities on the importance of counseling and the training of providers in these facilities on counseling. While there were some differences by province, the differences were not large and interventions are recommended across all provinces.

Counseling delivery and quality differed by facility type and province

- The differences by facility type indicate that a universal protocol is needed for all facilities on the importance of counseling and the training of providers in these facilities on counseling.

## Client's knowledge is low, and counseling was important for improving client's knowledge

- Clients' knowledge of the danger signs of pregnancy complications, ways to prepare for delivery, and their method's protection from STIs was relatively low. There was high knowledge among FP clients about their FP method and how it should be used.
- ANC clients who received counseling related to each knowledge area were significantly more likely to have the knowledge compared to clients who did not receive the counseling. This likelihood was higher if the client reported receiving the counseling compared to clients who do not report receiving the counseling.
- For FP clients, clients had significantly more correct knowledge of their method's protection from STIs if they received counseling from the provider on this topic compared to clients who did not receive the counseling. However, this significance was lost after adjusting for client, provider, and facility characteristics. The agreement between observation and clients' report for counseling on method's protection from STIs could not be measured since clients were not asked if they received this counseling in the exit interview.
- Overall, provision of counseling, especially if the client reports receiving the counseling, has an effect on increasing clients' knowledge. This highlights the importance of providing these counseling services. It is also important to deliver high quality counseling since clients who were observed to receive the counseling but did not report receiving it did not significantly increase their knowledge.

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- Overall, provision of counseling, especially if the client reports receiving the counseling, has an effect on increasing clients' knowledge.
- This highlights the importance of providing these counseling services. It is also important to deliver high quality counseling since clients who were observed to receive the counseling but did not report receiving it did not significantly increase their knowledge.
- Since clients may not be able to receive the essential messages from providers, increasing messaging through other means such as media may be necessary in the meantime.

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Overall, increasing the quality of counseling is required to increase the level of agreement between observation of counseling and clients' report that counseling occurred and to increase the client's knowledge. Improving the interaction between the provider and the client, and providing more client-centered counseling could improve the quality of counseling, increase the client's knowledge, and ensure a more positive health visit experience. Health facilities in Nepal should review the content of counseling and training on counseling, and work with health providers to ensure effective counseling and essential messages are communicated to and understood by clients.

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# APPENDIX TABLES

**Appendix Table 1 Responses or observations used to construct family planning variables by type of method**

Method	Observation of counseling			Client correct knowledge of method use
	How to use method	Side effects	When to return	
Pills or injections	<ul style="list-style-type: none"> <li>- When to take (pill daily, injection every 3 months)</li> </ul>	<ul style="list-style-type: none"> <li>- Changes that may occur with menstruation</li> <li>- Initial side effects that may occur (such as nausea, weight gain, and breast tenderness)</li> </ul>	<ul style="list-style-type: none"> <li>- Should return to clinic if side effects appear or persist</li> </ul>	<ul style="list-style-type: none"> <li>- Take pill once per day</li> <li>- Injection provides protection from pregnancy for 3 months</li> </ul>
Condom	<ul style="list-style-type: none"> <li>- Client cannot use if allergic to latex</li> <li>- Each condom can be used only one time</li> <li>- Some lubricants can be used</li> <li>- Can be used as a backup method if client fears other method will fail</li> </ul>	NA	NA	<ul style="list-style-type: none"> <li>- Use condom only once</li> </ul>
IUCD	<ul style="list-style-type: none"> <li>- Good for up to 12 years</li> <li>- User should regularly check strings after each menstruation</li> </ul>	<ul style="list-style-type: none"> <li>- Common side effects that may occur (heavy bleeding for first few months post C insertion, spotting or mild abdominal cramps)</li> </ul>	<ul style="list-style-type: none"> <li>- Should return to clinic if side effects continue</li> </ul>	<ul style="list-style-type: none"> <li>- Check string to make sure IUCD is in place</li> </ul>
Implants	<ul style="list-style-type: none"> <li>- Good for 5 years</li> </ul>	<ul style="list-style-type: none"> <li>- Changes that may occur with menstruation (irregular bleeding, decreased flow, spotting)</li> <li>- Initial side effects that may occur (such as nausea, weight gain, breast tenderness)</li> </ul>	<ul style="list-style-type: none"> <li>- Should return to clinic if side effects continue</li> </ul>	<ul style="list-style-type: none"> <li>- Provides protection from pregnancy for 5 years</li> </ul>
Emergency contraceptive pill	<ul style="list-style-type: none"> <li>- Take another dose if vomit within 2 hours of taking a dose</li> <li>- First dose to be taken within 120 hours of unprotected sexual contact</li> <li>- Second dose should be taken 12 hours after first dose (if 2 tablet pack)</li> <li>- Not for routine contraception</li> </ul>	NA	NA	
Male sterilization (vasectomy)	<ul style="list-style-type: none"> <li>- Partner is protected from pregnancy after 3 months</li> <li>- Use of a back-up method for the next 3 months (condom)</li> <li>- Procedure intended to be permanent; slight risk of failure</li> </ul>	<ul style="list-style-type: none"> <li>- Warning signs that may occur after surgery (severe pain, tenderness, bleeding)</li> </ul>	<ul style="list-style-type: none"> <li>- Should return to clinic if experience warning signs/side effects</li> </ul>	<ul style="list-style-type: none"> <li>- Must wait 3 months before you can rely on vasectomy to protect against pregnancy</li> </ul>
Female sterilization	<ul style="list-style-type: none"> <li>- Protect from pregnancy immediately</li> <li>- Procedure intended to be permanent, slight risk of failure</li> </ul>	<ul style="list-style-type: none"> <li>- Warning signs that may occur after surgery (severe pain, light-headedness, fever, C bleeding, missed periods)</li> </ul>	<ul style="list-style-type: none"> <li>- Should return to clinic if experience warning sign/side effects</li> </ul>	<ul style="list-style-type: none"> <li>- Immediate protection against pregnancy</li> </ul>

*Continued...*

**Appendix Table 1—Continued**

Method	Observation of counseling			Client correct knowledge of method use
	How to use method	Side effects	When to return	
Lactational Amenorrhea (LAM)	<ul style="list-style-type: none"> <li>- Slight risk of pregnancy during the time shortly before regular menstruation resumes</li> <li>- Must be exclusively (or near-exclusively) breastfeeding</li> <li>- Not effective after menstruation begins again</li> <li>- Infant must be less than 6 months</li> </ul>	NA	NA	- Cannot use method if menstrual period returns
Periodic abstinence	<ul style="list-style-type: none"> <li>- How to identify a woman's fertile period</li> <li>- No intercourse during woman's fertile period without alternative method (condom)</li> <li>- Use of condom as a backup method</li> </ul>	NA	NA	<ul style="list-style-type: none"> <li>- Body temperature rises</li> <li>- Mucus in vagina</li> <li>- Days 11–16 of the menstrual cycle</li> <li>- White bead days/days 8–19 of menstrual cycle</li> </ul>

NA = not available

**Appendix Table 2 Description of client, provider, and facility background variables in the analysis**

Variable	Among ANC clients		Among ANC clients in third trimester		Among FP clients		Among FP clients prescribed or received a method		Among SC clients	
	%	n	%	n	%	n	%	n	%	n
<b>Client's age</b>										
<20	12.5	246	9.9	88	2.2	19	2.2	18	4.3	102
20–24	44.9	882	45.1	401	29.1	247	29.3	240	28.5	680
25–29	28.2	555	30.0	266	31.7	269	31.1	255	31.0	738
30+	14.4	283	15.1	134	37.0	314	37.4	306	36.2	863
<b>Client's education</b>										
None or did not pass grade 1	15.8	310	17.2	153	32.7	278	33.3	273	30.3	723
Basic level	28.6	562	29.2	260	32.1	272	31.8	261	24.8	591
Secondary level	43.7	860	41.4	368	31.2	266	31.1	255	33.7	804
Bachelor or above	11.9	234	12.2	108	3.8	33	3.8	31	11.2	266
<b>Client's caste/ethnicity</b>										
Brahman/Chhetri	32.3	636	31.1	277	18.6	158	18.1	148	28.6	682
Terai/Madhesi	21.6	425	24.8	221	24.0	204	24.1	197	18.4	438
Dalits	11.3	222	10.7	95	15.6	132	15.7	129	19.5	465
Janajati	25.5	502	23.9	212	35.2	299	35.6	292	23.7	565
Other	9.2	181	9.5	84	6.6	56	6.5	54	9.8	232
<b>Client's first pregnancy</b>										
No	54.8	1,077	59.7	530	-	-	-	-	-	-
Yes	45.2	889	40.3	358	-	-	-	-	-	-
<b>Client's number of visits for this pregnancy in this facility</b>										
1	38.9	764	13.5	120	-	-	-	-	-	-
2	20.3	398	9.9	88	-	-	-	-	-	-
3	17.1	336	29.0	258	-	-	-	-	-	-
4+ visits	23.8	468	47.5	423	-	-	-	-	-	-
<b>Client's pregnancy trimester</b>										
First	14.4	283	-	-	-	-	-	-	-	-
Second	40.4	794	-	-	-	-	-	-	-	-
Third	45.2	889	-	-	-	-	-	-	-	-
<b>Client's status at beginning of consult</b>										
Current user	-	-	-	-	79.0	670	78.4	642	-	-
Nonuser, used in past	-	-	-	-	11.1	94	11.3	93	-	-
Nonuser, no past use	-	-	-	-	9.9	84	10.2	84	-	-
<b>Provider received any training in service area</b>										
No	62.8	1,231	62.0	551	49.3	418	50.8	416	44.8	1,059
Yes	37.2	729	38.0	337	50.7	430	49.2	403	55.2	1,304
<b>Provider received training in counseling for service area</b>										
No	68.9	1,349	67.0	595	81.2	688	81.3	666	-	-
Yes	31.1	610	33.0	293	18.8	160	18.7	153	-	-
<b>Provider received training in counseling for service area within 24 months</b>										
No	94.5	1,852	94.4	838	92.1	781	91.9	752	-	-
Yes	5.5	108	5.6	50	7.9	67	8.1	66	-	-
<b>Provider category</b>										
Doctor, specialist, or medical officer	29.9	589	33.8	301	0.2	2	0.2	1	36.1	861
Nurse or auxiliary nurse midwife	67.4	1,326	63.8	567	80.8	686	80.8	662	13.0	309
Health assistant or other	2.6	51	2.4	21	19.0	161	19.0	156	50.9	1,213

Continued...

Appendix Table 2—Continued

Variable	Among ANC clients		Among ANC clients in third trimester		Among FP clients		Among FP clients prescribed or received a method		Among SC clients	
	%	n	%	n	%	n	%	n	%	n
<b>Facility type</b>										
Federal	5.3	104	4.7	42	3.0	26	2.9	24	3.4	82
Provincial hospitals	13.7	269	12.2	108	6.6	56	5.8	47	8.3	198
Local hospitals	5.5	107	4.9	44	4.5	38	4.3	35	4.6	109
Private hospitals	22.7	447	27.2	242	0.4	3	0.3	2	18.0	429
PHCCs	7.8	153	6.8	60	7.7	65	7.5	62	6.2	148
Health posts	40.8	802	40.6	361	68.3	580	69.6	570	52.6	1,253
CHU & UHC	4.3	84	3.7	33	9.5	80	9.7	79	6.9	165
<b>Province</b>										
Kodosh Province	15.2	299	18.6	165	20.0	169	19.1	156	14.3	341
Madhesh Province 2	21.4	420	20.1	179	21.8	185	22.4	183	24.9	593
Bagmati Province 3	19.8	389	23.2	206	14.1	119	14.2	117	17.5	416
Gandaki Province 4	5.9	115	4.1	37	9.5	81	9.6	78	7.2	171
Lumbini Province 5	19.5	384	15.4	137	17.4	148	17.6	144	19.7	470
Karnali Province 6	5.1	101	5.5	49	5.6	48	5.3	43	6.0	143
Sudurpashchim Province 7	13.1	257	13.0	116	11.7	99	11.9	97	10.4	248
Total	100.0	1,966	100.0	889	100.0	849	100.0	820	100.0	2,383

PHCC = primary health care center, CHU = community health unit, UHC = urban health center

**Appendix Table 3 Percentages of clients who were observed to have the counseling and who reported receiving the counseling and the percentage distribution of the combined counseling variable for ANC, family planning, and sick child care counseling**

Counseling item	Provider observed			Client reported			Kappa	Combined counseling variable percent distribution			
	%	LB	UB	%	LB	UB		Agreement that counseling did not occur	Provider not observed but client reported	Provider observed but client did not report	Agreement that counseling did occur
<b>ANC (n = 1,966)</b>											
Danger signs of pregnancy	68.5	64.6	72.2	29.7	26.0	33.7	0.08	24.5	6.9	45.8	22.8
Nutrition during pregnancy	55.1	50.0	60.0	57.9	53.2	62.5	0.42	29.2	15.7	12.9	42.2
How to take iron pills	24.6	21.4	28.2	54.1	50.2	57.9	0.30	42.5	32.9	3.4	21.2
Side effects of iron pills	7.3	5.6	9.5	16.1	13.7	18.9	0.23	80.1	12.6	3.8	3.6
How to prepare for delivery <sup>a</sup>	23.7	19.1	29.0	25.7	20.4	31.8	0.41	64.2	12.1	10.1	13.6
Exclusive breastfeeding <sup>a</sup>	1.3	0.3	5.5	15.8	12.3	20.2	0.11	84.0	14.7	0.2	1.1
Early initiation of breastfeeding <sup>a</sup>	1.4	0.4	5.3	10.6	7.7	14.5	0.18	89.2	9.4	0.2	1.2
Family planning methods after delivery <sup>a</sup>	1.1	0.3	4.6	4.4	2.6	7.4	0.04	94.6	4.3	1.0	0.2
<b>Family planning (see note)</b>											
Asked client if they have questions or concerns with last method used <sup>b</sup>	37.9	32.0	44.3	68.4	62.5	73.8	0.08	21.8	40.2	9.7	28.2
How to use method received or prescribed <sup>c</sup>	65.5	59.6	71.1	66.0	60.3	71.3	0.20	16.3	18.2	17.7	47.8
Method protects from STIs including HIV <sup>c</sup>	2.9	1.5	5.5	NA	NA	NA	NA	NA	NA	NA	NA
Side effects of method <sup>d</sup>	41.6	35.6	48.0	55.1	49.4	60.7	0.28	33.3	25.1	11.6	30.0
When to return for follow-up <sup>d</sup>	24.9	20.2	30.2	91.3	87.7	94.0	-0.03	5.5	69.6	3.1	21.7
<b>Sick child care (n = 2,383)</b>											
Told the caretaker what illness child has	49.7	45.2	54.2	86.7	83.9	89.1	0.07	8.5	41.8	4.7	45.0
Signs or symptoms for which to bring child back	15.6	13.2	18.4	39.4	35.7	43.3	-0.14	48.1	36.3	12.5	3.1
Weight and growth of child	5.3	4.1	6.8	23.1	18.8	28.1	0.14	74.6	20.1	2.3	3.0
Feeding or breastfeeding during illness	18.6	16.0	21.5	40.6	36.7	44.6	0.15	51.6	29.8	7.8	10.8
Feeding or breastfeeding when not ill	18.6	16.0	21.5	30.6	27.1	34.4	0.20	60.3	21.2	9.1	9.4
Excess fluid for dehydrated child <sup>e</sup>	55.4	44.8	65.5	46.3	36.2	56.7	0.18	28.4	16.2	25.3	30.1

Note: a. Among pregnant women in the third trimester (n = 889). b. Only asked for clients that were using a method before coming to facility in the last 6 months (n = 711), c. Among those who were prescribed or received a method at the facility (n = 820), d. Among users of pills, injections, implants, IUD, vasectomy, and female sterilization (n = 791), e. Among children who have dehydration or diarrhea (n = 273). NA = not available

**Appendix Table 4 Crosstabulation of ANC counseling with client, provider, and facility characteristics**

Variable	Counseling on danger signs					Nutrition during pregnancy					How to take iron pills					How to prepare for delivery among women in third trimester																								
	Counseling was observed to occur	p value	Agreement that counseling did not occur	Provider not observed but client reported	Provider observed but client did not report	Agreement that counseling did occur	p value	Agreement that counseling did not occur	Provider not observed but client reported	Provider observed but client did not report	Agreement that counseling did occur	p value	Counseling was observed to occur	p value	Agreement that counseling did not occur	Provider not observed but client reported	Provider observed but client did not report	Agreement that counseling did occur	p value	Counseling was observed to occur	p value	Agreement that counseling did not occur	Provider not observed but client reported	Provider observed but client did not report	Agreement that counseling did occur	p value														
<b>Client's age</b>	<b>.249</b>					<b>.160</b>					<b>.812</b>					<b>.455</b>					<b>.004</b>					<b>.054</b>					<b>.308</b>					<b>.453</b>				
<20	69.4		26.7	3.9	52.5	16.9		56.5		33.8	9.7	17.8	38.7		24.4		40.1	35.5	3.3	21.0		24.4		61.8	13.9	15.2	9.1													
20–24	65.2		26.7	8.1	45.2	20.0		55.7		28.0	16.3	11.5	44.2		30.4		39.6	30.0	4.0	26.4		25.1		65.2	9.7	10.4	14.7													
25–29	73.2		19.6	7.2	45.6	27.6		55.5		28.4	16.1	14.2	41.3		16.7		45.1	38.2	2.3	14.5		25.9		59.0	15.1	9.4	16.5													
30+	69.1		25.6	5.3	42.0	27.1		51.1		30.8	18.1	10.2	40.9		22.3		48.4	29.3	4.2	18.1		14.7		73.5	11.8	7.0	7.7													
<b>Client's education</b>	<b>.002</b>					<b>.000</b>					<b>.049</b>					<b>.066</b>					<b>.064</b>					<b>.404</b>					<b>.582</b>					<b>.642</b>				
None or did not pass grade 1	55.0		41.6	3.4	39.4	15.7		56.6		30.2	13.2	17.9	38.6		23.6		40.3	36.1	2.8	20.8		18.1		69.5	12.3	2.6	15.6													
Basic level	72.0		22.4	5.6	54.5	17.6		63.8		23.4	12.8	14.5	49.3		27.8		40.1	32.1	5.2	22.6		21.9		66.4	11.7	10.5	11.4													
Secondary level	68.7		21.8	9.5	41.6	27.1		51.3		32.7	16.1	10.4	40.9		25.7		42.5	31.8	2.8	22.8		25.8		62.3	11.9	12.5	13.3													
Bachelor or above	77.5		17.0	5.5	48.5	29.0		46.0		29.4	24.6	11.2	34.8		14.5		51.0	34.5	2.4	12.1		28.6		58.3	13.1	11.5	17.1													
<b>Client's caste/ethnicity</b>	<b>.349</b>					<b>.588</b>					<b>.021</b>					<b>.087</b>					<b>.078</b>					<b>.351</b>					<b>.053</b>					<b>.135</b>				
Brahman/Chhetri	72.4		22.5	5.0	47.4	25.1		51.7		33.1	15.2	11.6	40.1		23.0		44.0	33.0	3.8	19.2		27.9		59.6	12.5	12.5	15.4													
Terai/Madhese	65.7		28.3	6.0	46.1	19.6		51.5		30.1	18.4	12.6	38.9		22.8		39.5	37.7	3.5	19.3		12.9		76.0	11.1	2.9	9.9													
Dalits	67.9		24.3	7.8	47.7	20.2		68.0		24.3	7.6	15.9	52.1		25.4		43.7	30.9	3.6	21.8		29.9		65.1	5.0	10.5	19.5													
Janajati	69.4		22.0	8.5	43.1	26.3		60.4		22.7	17.0	12.6	47.8		31.0		38.4	30.6	3.4	27.6		27.9		56.7	15.4	15.1	12.8													
Other	60.1		29.8	10.1	44.3	15.8		44.6		38.1	17.3	14.8	29.8		15.9		54.2	29.9	1.9	14.0		20.5		67.0	12.4	7.8	12.7													
<b>Client's first pregnancy</b>	<b>.779</b>					<b>.961</b>					<b>.584</b>					<b>.776</b>					<b>.461</b>					<b>.673</b>					<b>.785</b>					<b>.848</b>				
No	68.1		24.6	7.2	45.9	22.3		55.8		28.0	16.2	13.2	42.6		23.6		44.4	32.0	3.4	20.2		23.1		63.7	13.2	10.3	12.8													
Yes	69.0		24.4	6.6	45.6	23.4		54.2		30.8	15.0	12.5	41.7		25.8		40.2	34.0	3.4	22.4		24.6		65.0	10.4	9.8	14.8													
<b>Client's number of visits for this pregnancy in this facility</b>	<b>.002</b>					<b>.012</b>					<b>.019</b>					<b>.012</b>					<b>.000</b>					<b>.000</b>					<b>.000</b>					<b>.001</b>				
1	60.8		28.6	10.6	40.7	20.1		58.1		28.0	13.9	9.9	48.2		39.9		33.6	26.5	4.5	35.4		16.1		63.8	20.1	10.8	5.3													
2	71.2		23.7	5.0	50.6	20.6		60.2		27.0	12.8	18.1	42.1		23.6		37.5	38.9	3.5	20.1		19.3		71.3	9.5	8.3	11.0													
3	70.3		26.4	3.3	47.3	23.0		56.5		27.1	16.3	16.8	39.8		11.3		47.6	41.1	0.7	10.6		12.8		71.5	15.7	8.1	4.7													
4+ visits	77.7		17.2	5.2	48.8	28.9		44.7		34.7	20.5	10.4	34.3		10.0		57.6	32.4	3.5	6.5		33.4		58.5	8.1	11.5	22.0													
<b>Client's pregnancy trimester</b>	<b>.003</b>					<b>.014</b>					<b>.000</b>					<b>.001</b>					<b>.000</b>					<b>.000</b>					<b>.000</b>					<b>.000</b>				
First	60.2		28.1	11.7	41.5	18.7		56.4		27.0	16.6	8.7	47.7		31.8		46.7	21.5	6.7	25.1		-		-	-	-	-													
Second	64.9		27.3	7.8	44.6	20.3		63.3		24.6	12.2	14.7	48.6		39.1		27.4	33.5	3.6	35.5		-		-	-	-														
Third	74.5		20.9	4.6	48.1	26.4		47.3		34.1	18.5	12.5	34.8		9.4		54.7	36.0	2.2	7.1		-		-	-	-														

Continued...



Appendix Table 4—Continued

Variable	Counseling on danger signs					Nutrition during pregnancy					How to take iron pills					How to prepare for delivery among women in third trimester											
	Counseling was observed to occur	p value	Agreement that counseling did not occur	Provider not observed but client re-reported	Provider observed but client did not report	Agreement that counseling did occur	p value	Counseling was observed to occur	p value	Agreement that counseling did not occur	Provider not observed but client re-reported	Provider observed but client did not report	Agreement that counseling did occur	p value	Counseling was observed to occur	p value	Agreement that counseling did not occur	Provider not observed but client re-reported	Provider observed but client did not report	Agreement that counseling did occur	p value						
<b>Provider received ANY training in ANC/PNC</b>		.223				.598		.294					.370		.592					.027		.551		.737			
No	70.5		23.2	6.3	46.8	23.7		53.1		31.8	15.1	13.0	40.0		23.9		46.5	29.6	3.4	20.5		22.5		66.5	11.0	10.1	12.4
Yes	65.5		26.4	8.1	44.2	21.3		58.6		24.6	16.8	12.6	46.0		25.9		35.4	38.7	3.5	22.4		25.7		60.5	13.8	10.0	15.6
<b>Provider received training in ANC counseling anytime</b>		.411				.662		.051					.047		.778					.137		.825		.384			
No	69.8		24.1	6.2	46.9	22.9		51.9		32.9	15.2	12.8	39.1		24.3		45.1	30.6	3.5	20.8		24.1		65.1	10.8	11.7	12.4
Yes	66.2		25.1	8.7	43.5	22.7		62.3		20.7	17.0	13.0	49.3		25.4		36.4	38.2	3.2	22.1		23.0		62.4	14.7	6.8	16.1
<b>Provider received training in ANC counseling within 24 months</b>		.310				.633		.009					.008		.951					.476		.802		.948			
No	68.2		24.8	6.9	45.6	22.6		53.7		30.1	16.2	12.9	40.8		24.6		42.9	32.5	3.6	21.0		23.9		64.4	11.8	10.1	13.7
Yes	76.2		16.6	7.2	49.8	26.4		79.8		12.5	7.8	11.4	68.3		25.1		33.9	41.0	0.0	25.1		21.0		61.9	17.1	9.3	11.8
<b>Provider category</b>		.001				.090		.003					.004		.000					.000		.003		.254			
Doctor, specialist, or medical officer	77.5		16.7	5.8	53.2	24.3		39.5		38.0	22.5	13.5	26.0		8.3		63.8	27.9	1.9	6.3		15.2		72.7	12.1	7.9	7.2
Nurse or auxiliary nurse midwife	64.9		27.7	7.4	42.7	22.2		62.2		25.3	12.6	12.0	50.2		31.8		33.3	34.9	4.2	27.6		29.0		59.2	11.8	11.6	17.4
Health assistant or other	60.4		31.8	7.8	40.1	20.2		51.1		31.0	17.9	28.2	22.9		26.5		35.5	38.0	0.0	26.5		ND		ND	ND	ND	ND
<b>Facility type</b>		.002				.009		.000					.001		.000					.000		.094		.416			
Federal	65.4		29.2	5.4	52.8	12.6		40.2		41.3	18.5	12.7	27.6		12.6		54.6	32.8	1.1	11.5		12.2		69.7	18.1	10.5	1.7
Provincial hospitals	64.9		31.6	3.6	44.7	20.2		35.9		44.6	19.5	11.4	24.5		23.4		45.2	31.4	3.2	20.3		18.8		68.9	12.3	11.4	7.4
Local hospitals	63.8		25.2	11.0	41.5	22.3		61.3		24.3	14.4	13.6	47.7		33.0		28.3	38.7	2.3	30.7		29.3		57.8	12.9	10.6	18.7
Private hospitals	81.1		12.6	6.3	52.8	28.3		44.8		32.1	23.0	13.5	31.4		8.1		64.3	27.6	2.3	5.8		19.4		69.9	10.6	8.2	11.2
PHCCs	59.9		32.3	7.8	41.9	18.1		51.3		33.0	15.7	13.1	38.1		36.6		32.8	30.6	6.7	29.9		40.5		50.1	9.4	13.5	27.0
Health posts	65.7		26.6	7.7	43.6	22.2		67.5		22.5	10.0	12.4	55.1		31.4		32.4	36.2	4.2	27.2		24.9		62.4	12.8	10.1	14.8
CHU & UHC	65.7		25.6	8.7	36.5	29.3		69.4		13.8	16.9	17.3	52.0		33.9		35.2	31.0	1.8	32.1		34.9		55.6	9.5	11.9	23.0
<b>Province</b>		.008				.075		.124					.189		.316					.081		.063		.058			
Kodosh Province	68.2		23.3	8.6	42.0	26.2		46.7		34.5	18.8	13.8	32.8		25.4		40.7	33.8	4.1	21.3		31.4		57.7	10.9	20.1	11.2
Madhesh Province 2	60.1		32.5	7.4	44.7	15.4		55.6		29.9	14.5	17.7	37.8		24.0		39.7	36.4	4.9	19.0		12.0		77.6	10.4	2.8	9.1
Bagmati Province 3	80.7		12.8	6.5	55.1	25.6		47.5		31.9	20.6	9.7	37.7		17.4		56.4	26.2	3.0	14.4		18.0		72.0	10.0	6.7	11.3
Gandaki Province 4	70.6		21.4	8.0	51.1	19.5		57.4		27.2	15.4	13.5	43.9		28.1		39.6	32.4	1.0	27.1		33.3		60.7	6.0	18.2	15.0
Lumbini Province 5	61.9		29.7	8.4	39.8	22.1		57.0		26.9	16.1	9.5	47.4		25.7		39.1	35.2	1.0	24.7		24.2		53.5	22.3	5.3	18.9
Karnali Province 6	71.1		27.0	1.8	46.5	24.6		53.3		30.2	16.5	15.0	38.3		27.4		39.8	32.8	5.6	21.8		28.4		60.0	11.6	13.7	14.7
Sudurpashchim Province 7	72.4		23.3	4.3	43.9	28.5		72.4		22.0	5.6	12.3	60.1		31.3		35.6	33.1	4.6	26.7		35.6		54.6	9.8	14.6	21.0

PHCC = primary health care center, CHU = community health unit, UHC = urban health center, ND = Not displaced due to less than 25 unweighted observations

**Appendix Table 5 Crosstabulation of family planning counseling with client, provider, and facility characteristics**

Variable	Asked client if they have questions or concerns with last method used					How to use method received or prescribed					Side effects of method among pill, injections, IUD, vasectomy, and female sterilization users					When to return for follow-up among pill, injections, IUD, vasectomy, and female sterilization users										
	Counseling was observed to occur	p value	Agree-ment that coun-seling did occur	Pro-vider not observ-ed but client re-ported	Pro-vider observ-ed but client did not report	Agree-ment that coun-seling did occur	p value	Coun-seling was observ-ed to occur	p value	Agree-ment that coun-seling did not occur	Pro-vider not observ-ed but client re-ported	Pro-vider observ-ed but client did not report	Agree-ment that coun-seling did occur	p value	Coun-seling was observ-ed to occur	p value	Agree-ment that coun-seling did occur	p value	Coun-seling was observ-ed to occur	p value	Agree-ment that coun-seling did occur	p value	Pro-vider not observ-ed but client re-ported	Pro-vider observ-ed but client did not report	Agree-ment that coun-seling did occur	p value
<b>Client's age</b>		<b>.838</b>				<b>.580</b>		<b>.931</b>					<b>.542</b>		<b>0.191</b>				<b>.107</b>		<b>.061</b>					<b>.141</b>
<20	ND		ND	ND	ND		56.1		30.7	13.2	10.9	45.2		32.5		63.1	4.4	4.0	28.5		40.6		2.1	57.3	4.0	36.6
20–24	36.3		17.9	45.8	8.9	27.4	64.4		12.1	23.5	12.9	51.5		52.0		22.6	25.4	13.4	38.6		31.9		2.9	65.2	3.2	28.7
25–29	41.6		24.9	33.6	9.3	32.3	66.6		18.4	15.0	20.5	46.0		39.6		37.6	22.8	7.9	31.7		17.5		4.9	77.6	0.8	16.7
30+	36.1		20.5	43.3	11.1	25.1	66.1		17.0	16.9	19.5	46.6		39.6		38.3	22.1	14.7	25.0		26.8		6.6	66.6	5.2	21.6
<b>Client's education</b>		<b>.748</b>				<b>.472</b>		<b>.853</b>					<b>.335</b>		<b>0.089</b>				<b>.343</b>		<b>.193</b>					<b>.319</b>
None or did not pass grade 1	41.4		19.7	39.0	13.0	28.4	64.4		19.2	16.4	19.0	45.4		33.8		38.2	28.0	10.5	23.3		18.9		5.8	75.3	1.4	17.5
Basic level	34.1		22.2	43.7	7.3	26.8	68.8		16.3	14.9	19.4	49.4		47.5		31.0	21.5	13.7	33.7		30.8		3.4	65.7	5.0	25.8
Secondary level	38.9		21.4	39.7	7.4	31.5	63.8		11.5	24.7	15.9	48.0		47.1		32.6	20.4	12.6	34.5		27.2		4.1	68.7	3.6	23.5
Bachelor or above	32.4		44.0	23.6	20.5	11.9	62.0		31.0	7.0	6.8	55.1		57.8		32.0	10.2	6.3	51.5		31.8		14.9	53.4	1.0	30.8
<b>Client's caste/ethnicity</b>		<b>.190</b>				<b>.203</b>		<b>.624</b>					<b>.376</b>		<b>0.019</b>				<b>.156</b>		<b>.042</b>					<b>.017</b>
Brahman/Chhetri	35.7		26.2	38.1	7.6	28.1	74.0		9.8	16.2	11.2	62.7		49.5		32.7	17.8	8.1	41.4		29.1		8.4	62.6	3.2	25.9
Terai/Madhese	40.3		15.0	44.8	12.5	27.8	61.4		18.7	19.9	13.6	47.8		35.1		40.1	24.8	11.9	23.2		17.3		9.7	73.0	2.1	15.3
Dalits	24.0		34.7	41.3	6.6	17.4	64.2		13.2	22.6	26.8	37.3		28.0		40.6	31.4	13.2	14.8		24.6		1.2	74.2	3.7	20.9
Janajati	43.4		18.6	38.1	12.3	31.1	65.5		19.2	15.3	20.0	45.5		53.4		26.8	19.8	13.7	39.7		33.6		2.2	64.2	4.4	29.2
Other	41.6		20.6	37.9	0.7	40.9	60.9		17.1	22.0	16.5	44.5		37.6		36.2	26.2	11.1	26.5		10.0		0.6	89.4	0.6	9.3
<b>Client's status at beginning of consult</b>		<b>.000</b>				<b>.000</b>		<b>.000</b>					<b>.000</b>		<b>0.000</b>				<b>.000</b>		<b>.000</b>					<b>.001</b>
Current user	34.8		23.2	41.9	9.9	25.0	60.9		19.7	19.4	19.4	41.5		35.0		38.7	26.3	12.7	22.4		20.5		4.6	74.9	2.3	18.2
Nonuser, used in past	71.2		4.6	24.2	3.6	67.6	92.8		1.6	5.6	15.6	77.2		73.9		18.4	7.7	15.7	58.1		48.3		3.6	48.1	6.2	42.1
Nonuser, no past use	ND		ND	ND	ND		71.7		5.4	22.9	7.5	64.2		76.2		11.4	12.4	2.1	74.1		43.7		8.8	47.5	8.0	35.7
<b>Provider received ANY training in FP</b>		<b>.026</b>				<b>.009</b>		<b>.009</b>					<b>.003</b>		<b>0.010</b>				<b>.015</b>		<b>.003</b>					<b>.001</b>
No	31.3		29.8	38.9	8.6	22.7	58.4		22.6	19.0	20.3	38.1		35.2		40.8	24.0	12.3	22.9		18.2		3.8	78.0	0.0	18.2
Yes	44.8		13.5	41.7	10.9	33.9	72.8		9.8	17.4	15.1	57.7		51.4		26.8	21.8	11.7	39.7		33.5		6.0	60.4	6.7	26.9

Continued...

Appendix Table 5—Continued

Variable	Asked client if they have questions or concerns with last method used						How to use method received or prescribed						Side effects of method among pill, injections, IUD, vasectomy, and female sterilization users						When to return for follow-up among pill, injections, IUD, vasectomy, and female sterilization users								
	Counseling was observed to occur	p value	Agree that counseling did occur	Pro-vider not observed but client re-ported	Pro-vider observed but client did not report	Agree-ment that counseling did occur	Counseling was observed to occur	p value	Agree-ment that counseling did occur	Pro-vider not observed but client re-ported	Pro-vider observed but client did not report	Agree-ment that counseling did occur	Counseling was observed to occur	p value	Agree-ment that counseling did occur	Pro-vider not observed but client re-ported	Pro-vider observed but client did not report	Agree-ment that counseling did occur	Counseling was observed to occur	p value	Agree-ment that counseling did occur	Pro-vider not observed but client re-ported	Pro-vider observed but client did not report	Agree-ment that counseling did occur	p value		
<b>Provider received training in FP counseling anytime</b>		<b>.180</b>				<b>.655</b>		<b>.004</b>				<b>.016</b>		<b>.158</b>				<b>.373</b>		<b>.035</b>					<b>.040</b>		
No	36.3		22.4	41.3	9.3	26.9		62.2		16.8	21.0	18.4	43.8		40.9		34.4	24.7	11.8	29.1		23.3		4.7	72.1	2.1	21.2
Yes	45.1		19.3	35.6	11.5	33.7		79.8		14.4	5.8	14.8	64.9		52.7		32.1	15.2	12.9	39.7		36.3		5.8	57.9	8.3	28.0
<b>Provider received training in FP counseling within 24 months</b>		<b>.006</b>				<b>.124</b>		<b>.184</b>				<b>.045</b>		<b>.794</b>				<b>.930</b>		<b>.065</b>					<b>.071</b>		
No	36.3		22.9	40.8	8.9	27.4		64.6		16.2	19.2	18.7	45.9		43.4		33.6	23.0	12.3	31.1		24.2		4.6	71.2	2.6	21.6
Yes	57.3		9.0	33.7	19.7	37.6		75.2		17.6	7.2	6.3	68.9		40.2		38.0	21.8	9.1	31.1		42.0		7.8	50.3	10.8	31.2
<b>Provider category</b>		<b>.020</b>				<b>.002</b>		<b>.077</b>				<b>.051</b>		<b>.286</b>				<b>.431</b>		<b>.881</b>					<b>.609</b>		
Doctor, specialist, or medical officer	ND		ND	ND	ND	ND		ND		ND	ND	ND	ND		ND		ND	ND	ND	ND		ND		ND	ND	ND	ND
Nurse or auxiliary nurse midwife	41.4		17.2	41.4	11.2	30.2		68.2		13.0	18.9	17.9	50.3		44.8		31.7	23.6	12.7	32.0		25.5		5.7	68.8	3.4	22.2
Health assistant or other	25.1		39.5	35.4	4.0	21.0		54.3		30.5	15.2	17.1	37.3		36.0		43.5	20.5	8.9	27.1		26.6		1.6	71.8	2.5	24.1
<b>Facility type</b>		<b>.016</b>				<b>.001</b>		<b>.001</b>				<b>.007</b>		<b>.001</b>				<b>.005</b>		<b>.000</b>					<b>.000</b>		
Federal	60.1		9.5	30.4	1.9	58.2		82.1		2.9	15.1	4.4	77.7		77.8		5.9	16.3	4.4	73.5		66.0		11.7	22.3	13.8	52.2
Provincial hospitals	42.3		14.9	42.8	9.0	33.3		79.1		7.8	13.1	17.8	61.3		66.5		25.5	8.0	11.0	55.5		43.6		5.3	51.2	7.3	36.3
Local hospitals	54.2		9.5	36.3	22.4	31.8		70.9		24.3	4.8	8.5	62.4		42.6		47.8	9.6	16.9	25.7		35.7		1.8	62.5	2.0	33.7
Private hospitals	ND		ND	ND	ND	ND		ND		ND	ND	ND	ND		ND		ND	ND	ND	ND		ND		ND	ND	ND	ND
PHCCs	46.0		22.5	31.4	11.5	34.5		80.2		9.5	10.3	23.3	56.9		46.2		33.8	20.0	9.3	36.9		23.7		5.4	70.9	3.1	20.6
Health posts	34.9		21.4	43.7	8.5	26.4		61.3		17.5	21.3	17.1	44.1		39.3		34.2	26.5	12.4	26.9		21.8		4.6	73.6	3.0	18.9
CHU & UHC	35.6		38.4	26.0	13.6	22.0		68.6		19.2	12.2	24.9	43.8		42.8		39.7	17.5	12.4	30.4		26.6		5.6	67.8	0.0	26.6
<b>Province</b>		<b>.525</b>				<b>.240</b>		<b>.024</b>				<b>.147</b>		<b>.240</b>				<b>.195</b>		<b>.073</b>					<b>.017</b>		
Kodosh Province	32.7		19.2	48.1	2.3	30.4		67.7		9.5	22.9	20.2	47.5		51.9		24.8	23.3	12.0	39.9		34.4		2.0	63.6	8.3	26.1
Madhesh Province 2	39.9		22.3	37.8	12.6	27.2		68.2		16.1	15.7	22.3	45.9		30.6		49.6	19.8	11.6	19.0		13.1		11.4	75.6	1.9	11.1
Bagmati Province 3	29.4		34.9	35.7	8.8	20.6		42.5		34.5	23.0	14.8	27.7		35.1		39.0	26.0	11.1	24.0		23.2		3.0	73.8	1.4	21.8
Gandaki Province 4	30.5		20.2	49.3	1.3	29.3		60.5		16.5	22.9	8.5	52.0		47.2		19.6	33.2	4.5	42.7		22.3		5.6	72.1	4.3	18.0
Lumbini Province 5	46.1		14.2	39.7	17.5	28.6		69.9		14.2	15.9	13.0	56.9		52.7		31.2	16.1	13.7	39.0		30.2		2.9	66.9	0.7	29.5
Karnali Province 6	43.6		14.7	41.7	7.2	36.4		84.5		8.6	6.9	20.3	64.2		38.4		30.5	31.1	7.0	31.3		20.4		0.0	79.6	0.7	19.7
Sudurpashchim Province 7	46.1		23.9	30.1	15.5	30.6		74.0		12.2	13.8	21.7	52.3		48.5		30.2	21.3	20.4	28.2		38.1		3.8	58.1	3.4	34.8

PHCC = primary health care center, CHU = community health unit, UHC = urban health center, ND = Not displaced due to less than 25 unweighted observations

**Appendix Table 6 Crosstabulation of sick child care counseling with client, provider, and facility characteristics**

Variable	Told the caretaker what illness child has					Signs or symptoms for which to bring child back					Feeding or breastfeeding during illness										
	Counseling was observed to occur	p value	Agreement that counseling did not occur	Provider not observed but client reported	Provider observed but client did not report	Agreement that counseling did occur	p value	Counseling was observed to occur	p value	Agreement that counseling did not occur	Provider not observed but client reported	Provider observed but client did not report	Agreement that counseling did occur	p value	Counseling was observed to occur	p value	Agreement that counseling did not occur	Provider not observed but client reported	Provider observed but client did not report	Agreement that counseling did occur	p value
<b>Client's age</b>		<b>.062</b>					<b>.160</b>		<b>.048</b>					<b>.152</b>		<b>.065</b>					<b>.052</b>
<20	51.2		12.5	36.3	6.7	44.5		7.7		47.4	44.9	6.8	1.0		22.5		50.1	27.3	13.0	9.5	
20-24	50.5		9.9	39.6	3.3	47.2		16.9		45.8	37.3	13.3	3.7		23.3		43.8	32.9	10.6	12.7	
25-29	55.2		7.6	37.2	5.4	49.8		18.1		51.4	30.5	14.6	3.5		17.0		55.5	27.5	5.5	11.5	
30+	44.2		7.8	48.1	5.1	39.1		13.3		47.4	39.3	10.7	2.7		15.7		54.7	29.6	6.9	8.8	
<b>Client's education</b>		<b>.000</b>					<b>.007</b>		<b>.000</b>					<b>.000</b>		<b>.089</b>					<b>.178</b>
None or did not pass grade 1	40.2		9.4	50.4	4.3	36.0		7.2		48.8	44.1	4.8	2.3		14.5		56.3	29.3	6.4	8.1	
Basic level	54.6		7.0	38.5	4.1	50.5		19.3		44.8	35.9	15.3	4.0		21.0		43.9	35.1	8.4	12.6	
Secondary level	50.4		10.1	39.5	5.5	44.9		19.0		47.2	33.8	15.6	3.4		21.3		52.8	25.9	8.9	12.5	
Bachelor or above	62.6		5.1	32.3	5.2	57.4		20.0		56.9	23.0	17.4	2.7		16.2		52.8	31.0	7.0	9.2	
<b>Client's caste/ethnicity</b>		<b>.000</b>					<b>.000</b>		<b>.001</b>					<b>.002</b>		<b>.395</b>					<b>.113</b>
Brahman/Chhetri	59.3		5.7	35.0	4.8	54.6		19.5		50.1	30.4	16.2	3.2		22.0		48.3	29.7	8.3	13.7	
Terai/Madhese	31.8		9.5	58.7	3.9	27.9		6.8		49.3	43.9	4.4	2.4		17.4		53.3	29.3	7.8	9.5	
Dalits	43.0		12.4	44.6	3.1	39.9		14.7		40.5	44.7	12.6	2.1		18.4		56.0	25.6	7.1	11.4	
Janajati	57.7		6.4	35.9	6.6	51.0		20.4		49.4	30.2	15.7	4.7		17.7		44.9	37.4	7.7	10.0	
Other	49.1		12.5	38.4	4.7	44.3		10.9		52.4	36.7	8.4	2.5		13.3		65.9	20.9	7.9	5.4	
<b>Provider received training in child health/illness</b>		<b>.311</b>					<b>.054</b>		<b>.139</b>					<b>.242</b>		<b>.064</b>					<b>.288</b>
No	52.0		5.6	42.4	5.2	46.8		17.6		49.2	33.2	14.3	3.3		21.4		50.8	27.9	9.1	12.2	
Yes	47.9		10.9	41.2	4.4	43.5		13.9		47.0	39.1	11.0	3.0		16.3		52.5	31.2	6.6	9.7	
<b>Provider category</b>		<b>.011</b>					<b>.015</b>		<b>.001</b>					<b>.004</b>		<b>.237</b>					<b>.032</b>
Doctor, specialist, or medical officer	57.4		6.7	35.9	4.7	52.7		22.1		49.0	28.9	17.3	4.7		19.1		55.5	25.4	10.6	8.5	
Nurse or auxiliary nurse midwife	50.7		5.7	43.7	2.8	47.9		10.5		44.3	45.2	9.0	1.5		24.2		43.3	32.5	7.5	16.7	
Health assistant or other	44.0		10.6	45.5	5.3	38.7		12.3		48.5	39.2	9.9	2.4		16.8		51.0	32.2	5.9	10.9	

Continued...

Appendix Table 6—Continued

Variable	Told the caretaker what illness child has					Signs or symptoms for which to bring child back					Feeding or breastfeeding during illness											
	Coun- seling was observed to occur	p value	Agree- ment that coun- seling did not occur	Provider not observed but client reported	Provider observed but client did not report	Agree- ment that coun- seling did occur	p value	Coun- seling was observed to occur	p value	Agree- ment that coun- seling did not occur	Provider not observed but client reported	Provider observed but client did not report	Agree- ment that coun- seling did occur	p value	Coun- seling was observed to occur	p value	Agree- ment that coun- seling did not occur	Provider not observed but client reported	Provider observed but client did not report	Agree- ment that coun- seling did occur	p value	
<b>Facility type</b>		<b>.030</b>					<b>.042</b>		<b>.001</b>					<b>.000</b>		<b>.644</b>						<b>.584</b>
Federal hospitals	64.1		5.8	30.1	9.0	55.0		25.0		48.2	26.9	21.4	3.5		15.3		51.8	32.9	8.6	6.7		
Provincial hospitals	56.9		6.3	36.8	6.3	50.7		23.1		47.9	29.0	16.2	6.8		20.7		54.5	24.8	11.3	9.4		
Local hospitals	61.0		7.7	31.3	6.0	55.1		26.4		40.9	32.7	21.1	5.4		12.4		52.8	34.8	5.5	6.9		
Private hospitals	59.7		6.7	33.6	2.7	57.1		20.1		55.9	24.0	15.6	4.5		17.5		54.3	28.2	9.2	8.3		
PHCCs	45.6		11.0	43.4	5.9	39.7		14.5		46.7	38.9	11.2	3.3		19.0		57.3	23.7	7.4	11.5		
Health posts	44.1		9.3	46.6	4.8	39.3		12.2		45.8	42.0	10.2	2.0		18.9		50.1	31.0	7.0	11.9		
CHU & UHC	46.3		9.7	44.0	4.1	42.2		10.0		52.5	37.5	7.9	2.1		22.1		47.1	30.9	7.5	14.5		
<b>Province</b>		<b>.000</b>					<b>.000</b>		<b>.000</b>					<b>.000</b>		<b>.000</b>						<b>.002</b>
Kodosh Province	48.4		8.9	42.7	6.9	41.5		18.5		46.6	34.9	16.4	2.1		22.2		47.3	30.5	10.4	11.8		
Madhesh Province 2	28.4		12.9	58.7	3.1	25.2		3.3		45.9	50.8	1.8	1.6		8.6		63.9	27.6	5.4	3.2		
Bagmati Province 3	59.6		5.4	35.0	4.7	54.9		21.2		48.9	29.9	16.4	4.9		16.7		54.0	29.3	8.6	8.1		
Gandaki Province 4	56.4		5.8	37.9	5.2	51.1		20.3		50.8	29.0	19.3	1.0		24.8		48.2	27.0	9.6	15.2		
Lumbini Province 5	52.5		7.8	39.7	4.5	48.0		18.3		47.3	34.4	14.8	3.5		21.2		46.8	32.0	7.6	13.6		
Karnali Province 6	48.1		10.4	41.5	5.1	43.0		19.7		46.6	33.7	13.2	6.5		21.6		51.6	26.8	8.1	13.5		
Sudurpashchim Province 7	76.8		5.1	18.1	5.6	71.2		20.9		55.0	24.1	16.4	4.5		29.7		35.9	34.3	7.5	22.2		

**Appendix Table 7 Estimates of client's knowledge in ANC and family planning topics**

	% or mean	95% CI	
		<i>LB</i>	<i>UB</i>
<b>Danger signs<sup>a</sup></b>			
Vaginal bleeding	36.6	31.0	42.7
Fever	11.0	8.1	14.9
Swollen face or hand	14.3	11.0	18.3
Tiredness or blurred vision	6.8	4.6	10.1
Headache or blurred vision	17.9	13.6	23.2
Seizures or convulsions	2.3	1.3	4.2
Reduced or no fetal movement	4.8	3.2	7.3
Lower abdominal pain	29.5	24.0	35.6
Client knows at least one danger sign	58.3	53.1	63.4
Client knows at least 3 danger signs	19.9	14.8	26.4
Mean number of danger signs knows	1.3	1.2	1.5
<b>Ways to prepare for delivery<sup>b</sup></b>			
Emergency transport	30.0	23.6	37.2
Money	63.5	54.7	71.5
Clean delivery kit	5.1	2.2	11.5
Identify SBA/HF	9.5	4.8	17.8
Identify blood donor	4.6	2.5	8.4
Clean cloth for baby	56.4	47.4	65.0
Client knows at least one way to prepare for delivery	79.4	72.3	85.0
Client knows at least 3 ways to prepare for delivery	24.5	18.6	31.5
Mean number of ways to prepare known	1.5	1.4	1.6
<b>Family planning knowledge<sup>c</sup></b>			
Correct knowledge on method and how it should be used	93.7	90.2	96.0
Correct knowledge of method's protection from STIs	42.1	36.4	47.9

<sup>a</sup> Among ANC clients with a first pregnancy (n = 889)

<sup>b</sup> Among ANC clients with a first pregnancy and in the third trimester (n = 358)

<sup>c</sup> Among family planning clients that were prescribed or received a method during the visit (n = 820)

**Appendix Table 8 Unadjusted and adjusted odds ratios for the ANC clients' knowledge on danger signs and ways to prepare for delivery**

Variable	Know at least three danger signs among women with a first pregnancy (n = 889)						Know at least three ways to prepare for delivery among women with a first pregnancy in the third trimester (n = 358)					
	Unadjusted		Adjusted, model with observed counseling		Adjusted, model with combined counseling		Unadjusted		Adjusted, model with observed counseling		Adjusted, model with combined counseling	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
<b>Counseling was observed (Ref. = No)</b>												
Yes	2.0*	1.1–3.5	1.9	0.9–3.7	-	-	3.4**	1.6–7.3	4.5***	2.2–9.1	-	-
<b>Combined counseling variable (Ref. = Agreement that counseling did not occur)</b>												
Provider not observed but client reported	9.4***	2.6–34.1	-	-	11.0***	2.7–44.9	4.3*	1.2–16.0	-	-	4.9**	1.6–14.9
Provider observed but client did not report	2.1	0.8–5.5	-	-	2.0	0.6–6.3	2.4	0.6–8.9	-	-	3.0	0.7–12.7
Agreement that counseling did occur	12.0***	4.3–33.6	-	-	13.2***	4.0–43.3	6.5***	2.6–16.2	-	-	10.3***	3.7–28.7
<b>Client's age (Ref. = &lt;20 years)</b>												
20–24	2.8*	1.2–6.7	2.3	0.9–6.0	1.7	0.6–5.2	1.0	0.4–2.9	1.1	0.4–3.2	0.8	0.2–2.4
25–29	4.9**	1.8–13.3	2.7*	1.0–7.2	1.8	0.6–5.7	2.9	0.9–9.4	2.5	0.7–8.9	1.7	0.5–5.2
30+	2.0	0.6–6.9	1.0	0.2–3.7	0.5	0.1–2.3	1.2	0.3–5.1	1.3	0.3–6.4	0.9	0.2–4.9
<b>Client's education (Re = None or did not pass grade 1)</b>												
Basic level	1.2	0.3–5.3	1.1	0.2–6.8	1.4	0.2–9.6	0.3	0.0–2.2	0.4	0.1–3.2	0.5	0.1–3.6
Secondary level	2.5	0.6–10.1	2.3	0.4–14.4	2.3	0.3–19.6	0.7	0.1–3.3	1.0	0.1–6.4	1.2	0.2–7.2
Bachelor or above	4.8*	1.1–21.2	2.9	0.4–22.1	3.6	0.4–36.2	1.4	0.2–8.6	1.5	0.2–12.6	1.7	0.2–14.1
<b>Client's caste/ethnicity (Ref. = Brahman/Chhetri)</b>												
Terai/Madhese	0.8	0.3–1.8	1.6	0.6–4.2	1.5	0.5–4.8	1.1	0.4–3.3	1.3	0.3–4.9	1.0	0.3–4.2
Dalits	0.6	0.2–1.8	1.1	0.4–3.2	1.1	0.3–3.5	0.3	0.1–1.1	0.7	0.2–2.9	0.7	0.2–3.2
Janajati	1.1	0.6–2.0	1.3	0.6–2.8	1.1	0.5–2.2	0.8	0.3–2.2	0.6	0.2–1.9	0.5	0.2–1.7
Other	0.6	0.3–1.4	0.7	0.3–1.6	0.6	0.3–1.3	1.4	0.4–4.4	1.3	0.3–5.9	1.6	0.3–7.2
<b>Client's number of visits for this pregnancy in this facility (Ref. = 1)</b>												
2	1.9	1.0–3.7	1.6	0.8–3.0	2.0	0.9–4.6	0.6	0.2–1.8	0.4	0.1–2.4	0.5	0.1–3.3
3	1.4	0.7–3.0	1.2	0.5–2.6	1.4	0.6–3.3	0.9	0.3–3.0	0.7	0.2–2.2	0.6	0.2–2.0
4+ visits	2.4*	1.1–5.4	1.5	0.7–3.2	1.4	0.7–2.9	1.7	0.8–3.5	0.7	0.3–1.9	0.7	0.2–1.9
<b>Provider received ANY training in ANC/PNC (Ref.= No)</b>												
Yes	0.9	0.4–1.8	1.1	0.6–2.3	0.9	0.4–1.9	1.0	0.5–2.2	1.2	0.5–2.8	1.3	0.6–2.9
<b>Provider received training in ANC counseling within 24 months (Ref. = No)</b>												
Yes	0.7	0.2–2.5	0.6	0.1–2.3	0.7	0.2–3.2	0.1**	0.0–0.6	0.1	0.0–2.2	0.1	0.0–1.9

Continued...

Appendix Table 8—Continued

Variable	Know at least three danger signs among women with a first pregnancy (n = 889)						Know at least three ways to prepare for delivery among women with a first pregnancy in the third trimester (n = 358)					
	Unadjusted		Adjusted, model with observed counseling		Adjusted, model with combined counseling		Unadjusted		Adjusted, model with observed counseling		Adjusted, model with combined counseling	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
<b>Provider category (Ref. = Nurse or auxiliary nurse midwife)</b>												
Doctor, specialist, or medical officer	1.5	0.6–3.5	0.9	0.3–2.3	0.8	0.3–2.1	1.4	0.7–2.8	1.0	0.2–4.8	1.2	0.2–6.1
Health assistant or other	1.5	0.4–5.7	2.0	0.4–10.6	1.5	0.2–11.4	1.7	0.5–6.1	2.1	0.5–9.5	2.3	0.5–10.4
<b>Facility type (Ref. = Health posts)</b>												
Federal hospitals	0.6	0.2–2.0	0.4	0.1–2.2	0.5	0.1–2.9	0.6	0.2–2.1	0.4	0.0–7.0	0.5	0.0–7.4
Provincial hospitals	0.9	0.4–2.0	1.0	0.4–2.5	1.4	0.6–3.7	0.7	0.3–1.7	0.7	0.2–2.2	0.6	0.2–1.9
Local hospitals	1.9	0.7–5.2	2.1	0.6–7.0	3.4	0.9–13.0	1.6	0.5–4.9	1.5	0.5–5.0	1.5	0.5–4.4
Private hospitals	2.1	0.8–5.7	1.7	0.4–6.9	2.4	0.6–9.4	1.4	0.6–3.5	0.7	0.1–4.7	0.6	0.1–4.0
PHCCs	0.9	0.4–1.8	1.0	0.4–2.4	1.4	0.5–3.7	0.9	0.3–2.3	0.6	0.2–2.0	0.6	0.2–2.0
CHU & UHC	1.0	0.4–2.5	1.0	0.4–2.6	0.8	0.3–2.4	0.3	0.0–1.5	0.3	0.0–1.9	0.3	0.0–2.3
<b>Province (Ref. = Kodesh Province)</b>												
Madhesh Province 2	0.7	0.2–2.0	0.7	0.2–2.3	0.9	0.2–3.8	0.4	0.1–1.3	0.4	0.1–1.5	0.6	0.2–1.9
Bagmati Province 3	2.0	0.6–6.1	1.6	0.6–4.6	2.2	0.8–6.2	0.4	0.1–1.1	0.3*	0.1–0.8	0.4*	0.1–1.0
Gandaki Province 4	0.5	0.2–1.3	0.5	0.2–1.5	0.7	0.2–2.3	0.7	0.3–2.2	0.8	0.2–2.8	1.0	0.3–3.2
Lumbini Province 5	1.3	0.6–3.0	1.6	0.6–3.9	1.9	0.8–4.5	0.3	0.1–1.1	0.3	0.1–1.2	0.3*	0.1–0.9
Karnali Province 6	1.0	0.4–2.7	1.6	0.5–5.1	2.1	0.8–5.6	0.1**	0.0–0.4	0.2*	0.0–0.8	0.2*	0.0–0.8
Sudurpashchim Province 7	1.3	0.5–3.4	1.6	0.5–5.2	1.9	0.5–6.4	0.2*	0.0–0.9	0.1*	0.0–0.7	0.2*	0.0–0.7

\*p &lt; 0.05, \*\*p &lt; 0.01, \*\*\*p &lt; 0.001







**Appendix Table 9 Unadjusted and adjusted odds ratios for the family planning clients' correct knowledge of method's protection from STIs**

Variable	Unadjusted		Adjusted	
	OR	95% CI	OR	95% CI
<b>Counseling on method's protection from STIs was observed (Ref. = No)</b>				
Yes	2.8*	1.2–6.5	2.5	0.9–7.2
<b>Client's age (Ref. = &lt;20 years)</b>				
20–24	2.7	0.9–8.2	2.7	0.4–18.6
25–29	4.2**	1.5–12.0	4.7	0.7–32.0
30+	3.5*	1.2–10.6	4.6	0.7–31.7
<b>Client's education (Ref. = None or did not pass grade 1)</b>				
Basic level	1.5	0.8–2.6	2.1*	1.2–3.9
Secondary level	1.1	0.6–2.0	1.7	0.9–3.2
Bachelor or above	4.8**	1.7–14.1	10.3***	2.7–39.1
<b>Client's caste/ethnicity (Ref. = Brahman/Chhetri)</b>				
Terai/Madhesi	1.5	0.8–3.1	1.2	0.6–2.6
Dalits	1.3	0.7–2.7	1.6	0.7–3.3
Janajati	1.5	0.9–2.7	2.0*	1.1–3.8
Other	1.7	0.5–5.7	1.9	0.6–6.2
<b>Client's status at beginning of consult (Ref.= Current user)</b>				
Nonuser, used in past	1.1	0.5–2.2	1.1	0.5–2.3
Nonuser, no past use	0.7	0.3–1.3	0.8	0.3–1.7
<b>Provider received any training in FP (Ref.=No)</b>				
Yes	1.2	0.7–2.0	1.0	0.6–1.8
<b>Provider received training in FP counseling within 24 months (Ref. = No)</b>				
Yes	1.7	0.7–4.1	1.4	0.6–3.0
<b>Provider category (Ref. = Nurse or auxiliary nurse midwife)</b>				
Doctor, specialist, or medical officer	2.0	0.6–6.7	1.7	0.5–5.5
Health assistant or other	0.7	0.4–1.4	0.7	0.3–1.6
<b>Facility type (Ref. = Health posts)</b>				
Federal hospitals	1.7	0.9–3.1	1.2	0.5–2.7
Provincial hospitals	1.1	0.7–1.8	0.9	0.5–1.7
Local hospitals	2.2	0.9–5.1	2.0	0.8–5.3
Private hospitals	1.4	0.3–7.0	1.1	0.3–4.8
PHCCs	1.1	0.7–1.8	1.1	0.6–1.8
CHU & UHC	0.8	0.5–1.3	0.8	0.5–1.5
<b>Province (Ref. = Kodesh Province)</b>				
Madhesh Province 2	3.2**	1.4–7.1	4.0**	1.7–9.2
Bagmati Province 3	2.1	0.9–5.0	2.4*	1.1–5.5
Gandaki Province 4	1.9	0.8–4.4	2.0	0.8–5.3
Lumbini Province 5	2.5*	1.2–5.2	2.6*	1.2–5.5
Karnali Province 6	2.4*	1.1–5.4	3.6**	1.4–9.1
Sudurpashchim Province 7	1.4	0.6–3.5	1.6	0.6–4.3

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

## ADDITIONAL DHS PROGRAM RESOURCES

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<b>Spatial Data Repository</b> – Download geographically linked health and demographic data for mapping in a geographic information system (GIS).	spatialdata.DHSprogram.com		
<b>Learning Hub</b> – Access online courses for independent learning and workshop participation, communities of practice, and other training resources.	Learning.DHSprogram.com		
<b>GitHub</b> – Open access to Stata, SPSS and R code for DHS indicators for public use.	Github.com/DHSprogram		
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 <b>Facebook</b> www.facebook.com/DHSprogram		 <b>LinkedIn</b> www.linkedin.com/company/dhs-program	
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