STOCKHOLM SCHOOL OF ECONOMICS

Department of Economics 5350 Master's thesis in economics Academic year 2018–2019

### A Period in Isolation: Measuring the Prevalence Rate of Chhaupadi using the List Experiment in Nepal

Alina Ojha (41348) and Athina Swahn (23696)

### Abstract

Harmful traditional practices play an important role in development as they not only oppress people, but also inhibit economic wealth, health, and social progress. Chhaupadi is a practice prevalent in the Far and Mid–Western Nepal that forces women out of their houses to live in huts during their menstrual period. The existing literature of Chhaupadi has relied on direct questioning techniques, ignoring the respondents' incentives to answer untruthfully. Chhaupadi fulfills the criteria for direct questioning to not elicit the truthful response since it is both a socially accepted tradition and an illegal practice. This study sets out to measure the prevalence rate of Chhaupadi, and understand the characteristics of those who actually practice and claim to practice the tradition, using an indirect questioning method called list experiment. With the data collected from 500 respondents in the district of Achham, this paper shows that when the respondents' answers are anonymous, 38 percent reveal that they are practicing the tradition whilst, when asked directly, 50 percent supposedly do. When respondents are asked to estimate the prevalence rate in their own village, the number rises to 67 percent. Despite Chhaupadi being illegal, respondents seem to over–report practicing it due to the impending fear of becoming a social outcast in society. In particular, people living further away from the local market place have a stronger incentive to over–report, while literate respondents are less likely to.

**Keywords:** List experiment, Chhaupadi, Menstrual taboo, Social desirability bias, Harmful tradition **JEL:** C21 C83 C93 I15 J16 O10 O53

Supervisor: Martina Björkman Nyqvist Date submitted: December 09, 2019 Date examined: December 17, 2019 Discussant: Christina Sarah Hauser Examiner: Magnus Johannesson

### Acknowledgements

First and foremost, we would like to express our sincerest gratitude to our supervisor Martina Björkman Nyqvist for making it possible for us to conduct a field study and get hands–on experience in Development Economics. She has given us support and valuable advice throughout this whole process.

We would also like to thank Cristina Clerici for her guidance and unwavering patience throughout, from seeking funds, constructing a questionnaire, analysing the data to writing. Thank you for your prompt replies and relentless support.

We are very grateful to Abhijeet Singh for helping us decide on a method. We would also like to thank Örjan Sjöberg for his valuable feedback.

A special thanks to Nawar Al-Ebadi for taking time to help us with key insights. We are very thankful for everyone who has provided comments and feedback; in particular Subhuj, Nisha, David, Aaron, Ismael, Jörn, Simona, Sovit, Neha, Ashim, Roshni, Tone, Joakim, Ellinor, Amanda, Leonard, and Alexander.

We would also like to thank Alina's parents for taking us safely to Achham and for solving all our logistic problems on the way. Moreover, we thank all the people in Achham, especially our enumerators, for making the data collection possible.

Lastly, we recognize that none of this would have been possible without the financial support from MISUM and SIDA. We thank them sincerely for this opportunity.

All errors are our own.

### Contents

1	Introduction 1						
<b>2</b>	Bac	kground	3				
	2.1	Chhaupadi	3				
	2.2	Context	4				
3	Lite	erature Review	5				
	3.1	Harmful traditional practices	6				
	3.2	Menstruation	7				
	3.3	List experiment	8				
4	Dat	a and Methodology	10				
	4.1	Data	10				
	4.2	The sample	11				
	4.3	Experiment set–up	13				
	4.4	Empirical strategy	16				
		4.4.1 Difference–in–means	17				
		4.4.2 Multivariate regression analysis	17				
	4.5	Power calculation	18				
5	Res	ults	19				
	5.1	Descriptive statistics	19				
	5.2	Self–reported prevalence of Chhaupadi	21				
	5.3	Results from the list experiment	21				
	5.4	Discrepancy between the list experiment, direct questioning and neighbour question $\ldots$ .	26				
	5.5	Additional results: attitudes toward Chhaupadi and women	27				
6	Dise	cussion	30				
7	Lim	itation and Validity	32				
	7.1	Limitation	32				
	7.2	Validity	33				
8	Con	nclusion	34				
Re	efere	nces	36				
$\mathbf{A}$	App	pendix	42				
	A.1	Local politician's response to Chhaupadi	42				
	A.2	Picture of a chhau hut	42				
	A.3	English version of the questionnaire	43				

### 1 Introduction

Gender inequality is one of the strongest forces impeding sustainable development across the world. Not only does it oppress half of the world's population, but it also inhibits economic wealth, health and social progress. The World Bank (2018) estimates the loss in human capital wealth due to gender inequality to be USD 160.2 trillion globally – which is twice the value of the global GDP.<sup>1</sup> As a result, international objectives have been set out to fight gender inequality demonstrated by the Sustainable Development Goals (SDG) signed by 193 countries agreeing to promote gender equality (SDG 5). Despite the policy agendas in place for many years, there are more than 126 million women missing in developing countries (Bongaarts and Guilmoto, 2015).<sup>2</sup> The reasons why women are missing can range from subconscious negligence to various gender based discriminatory practices that harm women.

Most of these harmful practices tend to put women's sexual and reproductive health and rights at risk. Such practices can take different forms but are present all over the world. Female Genital Mutilation (FGM) and child marriage are just a few examples. Commonly, honour and shame are associated with the traditions which means enormous implications for any policy work focusing on eradicating them. Namely, to map out where a tradition is upheld and to what extent it is practiced, one needs to rely on surveys conducted in the areas of interest. However, how likely are victims and perpetrators to reveal a truthful answer when asked if they uphold an illegal practice? Even worse, what if one's neighbor overhears that one does not follow or like the tradition? Yet, the vast majority of the prevalence rates of these traditions have been estimated using a direct questioning technique without any respect towards the implications of such a disclosure. Today, programs tackling sensitive issues are put in motion without knowing the true prevalence rate, having no firm idea on what kind of people are actually practicing it, who is more likely to answer untruthfully, and why.

This paper sets out to measure the prevalence rate, and understand the characteristics of those who actually practice and claim to practice Chhaupadi, a discriminatory practice that sometimes comes at a cost of women losing their lives simply for menstruating. Chhaupadi is a tradition in rural Nepal where women and girls are forced to stay out of the house during their menstruation or after giving birth, as they are considered to be impure. This tradition is still ongoing even if it is a violation of human rights under international and Nepali law, where the government of Nepal has declared Chhaupadi as *"the worst form of social practice"* (Upreti and Bhandari, 2010). In this paper, we use an indirect questioning technique, called the list experiment, that ensures full privacy by giving the respondents a list of statements and asking them to report how many statements they agree with, not which ones. This method is used because there are reasons to believe that individuals may answer untruthfully if asked directly about this unlawful and sensitive practice. In the case of Chhaupadi, the prevalence rates may be biased upwards due to social pressure or biased downwards because of threat of disclosure.

<sup>&</sup>lt;sup>1</sup>The estimation is calculated under the assumption that women would earn as much as men.

 $<sup>^{2}</sup>$ A missing woman is a woman who should be alive but is not.

Current literature on Chhaupadi mainly includes reports from International Non–Governmental Organizations (INGO), such as USAID and UNICEF, which reveal important information on how Chhaupadi is practiced, anecdotal evidence of its existence, and its supporters. However, these reports do not provide any conclusive nor systematic information on how pervasive the practice of Chhaupadi is. In a UNICEF report conducted in 2010 in Far and Mid–Western Nepal, women were directly asked whether they had to stay outside the house or in an animal shed during their menstruation. They found that 19 percent of the women aged 15–49 had to stay in a separate house, and 12 percent had to stay in an animal shed. Another field bulletin by United Nations Resident and Humanitarian Coordinator's office (UNHCR) from 2011 reports a prevalence rate of Chhaupadi in the district of Achham exceeding 95 percent.

In this study, we conduct a household survey in Achham, a district in Far–Western Nepal. The survey covers several topics such as socio–economic and demographic characteristics, the list experiment, direct questions on Chhaupadi as well as several gender attitude questions. With primary data, this paper answers: What is the proportion of households currently practising Chhaupadi in Achham? How many households over or under–report their practice? Why do people over or under–report the practice of Chhaupadi? What are the characteristics of the households who self–report in direct questioning and answer affirmatively to the sensitive statement "This household currently practices Chhaupadi"?

By using the list experiment method with a successful randomization, 38 percent reveal that they practice Chhaupadi when asked anonymously. When asked directly, 50 percent of the respondents supposedly do. However, when respondents were asked to estimate the prevalence rate of Chhaupadi in their village, the estimate rises to 67 percent. The discrepancy between the measures of the list experiment and the direct questioning is a proof of social desirability bias, a phenomenon where respondents answer untruthfully in direct questioning to be favourably perceived by others. 73 percent reported that not following Chhaupadi would mean becoming a social outcast and 94 percent reported knowing about the law. This suggests that respondents over-report in direct questioning because the social punishment of being an outcast is more of a credible threat than the legal consequences.

The remainder of the paper is structured as follows. Section 2 describes the background and context of Chhaupadi. Section 3 looks at the economic costs of other well known harmful traditions as well as the areas where the list experiment has previously been used. Section 4 describes the data and lays out the empirical strategy as well as an exhaustive description of how the list experiment was constructed. Section 5 reports the overall results followed by Section 6 that offers potential explanations for the findings. Section 7 presents the limitations and discusses the potential external validity of this study. Finally, Section 8 offers some concluding remarks and suggestions for further research.

### 2 Background

### 2.1 Chhaupadi

Chhaupadi is the name of a tradition in Far and Mid–Western Nepal where women and girls are sent out of their houses during their menstrual period. This practice stems from a religious belief that menstruation is impure.<sup>3</sup> There are families that genuinely believe that they will face unfortunate incidents such as crop failure, death, disease, and water shortages as a punishment by God if the practice is not followed (Robinson, 2015). Thus, to avoid any kind of contact with impurity, women and girls are isolated from their day–to–day activities and are forced to stay in a chhau hut, until the bleeding is over.

The size of a chhau hut is usually 2.7 square meters which can be compared to the size of a single bed (Upadhyay, 2018).<sup>4</sup> Most of these huts lack lockable doors, windows, or ventilation. Notably, the huts described above are only available to the women and girls whose families can afford one. Those who cannot, have to stay in a communal chhau hut of the same size, or in an animal shed. The duration of the stay in the chhau hut is approximately 4–5 days per month (Upadhyay, 2018). The hut is often located close to the main house and is visible for neighbors and pedestrians walking by.

While women and girls are menstruating, they must follow certain restrictions including prohibition from consuming dairy products, touching male members of the family including their husbands, going to temples, cooking in the kitchen as well as participating in any religious or social programs (Kc, 2018; Upadhyay, 2018; Amatya et al., 2018; Yadav et al., 2017; Sapkota et al., 2013). Studies have shown that women and girls feel insecure, guilty, and humiliated while practicing Chhaupadi (Upadhyay, 2018). International media have in recent years covered the deaths and difficulties caused by the practice (Taracena, 2018).

Studies that measure the prevalence rate of Chhaupadi have been conducted in different areas of Far and Mid–Western Nepal. For example, Amatya et al. (2018) find that, among school girls, 72 percent practice Chhaupadi in Achham. Meanwhile, in more accessible areas of Far and Mid–Western Nepal such as Bardiya and Kailali districts, only 21 percent practice it (Ranabhat et al., 2015). Furthermore, in Pyuthan district in the Mid–West, 94.5 percent experienced Chhaupadi and only 27.5 percent slept in their usual bedroom during menstruation (Parajuli et al., 2019).<sup>5</sup> These numbers suggest not only that the prevalence rate varies geographically, but also suggests some confusion in how to estimate Chhaupadi as it can be classified in a spectrum from the most–extreme case of being isolated in a hut to a less severe one, being made to sleep in a different room of the same house.

Over time, it is not clear whether there is an increasing or a decreasing trend in the prevalence rate of Chhaupadi. Parajuli et al. (2019) claim that factors like increased social awareness, social inclusion and

<sup>&</sup>lt;sup>3</sup>According to Hindu religious myths, the king of heaven – Indra was accused for his sins of killing a high caste Hindu and his illicit sexual relationship with a woman. As a way of apologizing for his sin, all women were said to be punished through menstruation and menstrual taboos (Upadhyay, 2018).

<sup>&</sup>lt;sup>4</sup>The length, width, and height of the huts is 208.6cm, 130.9cm, and 125.4cm respectively.

<sup>&</sup>lt;sup>5</sup>However, Parajuli et al. (2019) do not explain what is meant by experiencing Chhaupadi or how it is different from not sleeping in their usual bedroom during menstruation.

advocacy lead to a decreasing trend in Chhaupadi. The Nepal Multiple Indicator Cluster Survey (NMICS) supports this by reporting a decrease in the overall practice from 68.5 percent in 2010 to 37 percent in 2014 in all of Far and Mid–Western Nepal.<sup>6</sup> When only considering women living in chhau huts the trend follows the same pattern, from 28 to 17 percent. On the other hand, when looking only at the Mid–Western Mountains it is evident that there has been an increase in people reporting that they stay in chhau huts from 52.4 percent in 2010 to 71.2 percent in 2014.<sup>7</sup>

These studies have used a direct questioning technique to estimate the prevalence rate. However, the literature suggests that such techniques could result in a biased estimate for various reasons. Respondents could lie either for fear of being faced with legal consequences, in order to adhere to social expectations, or if they perceive the questions to be intrusive (Tourangeau and Yan, 2007). Chhaupadi is controversial, both a socially accepted tradition and an illegal practice.<sup>8</sup> Hence, it fulfills all the criteria for direct questioning in surveys to not elicit truthful answers. In social science research, the discrepancy between the reported answer to a direct question and the truth is called social desirability bias and exists when respondents answer in a manner that they think will be viewed favourably by others. In this case, the prevalence rates reported in the body of literature may be biased upwards due to social pressure or biased downwards because of threat of disclosure.

### 2.2 Context

Districts in Far and Mid-Western Nepal are infamously known for practicing Chhaupadi. Some of the districts that report most Chhaupadi cases are Achham, Bajura, Kalikot, and Bajhang. Among these districts, Achham was chosen as the area of study, primarily because it is relatively more easily accessible.<sup>9</sup> The Human Development Index (HDI) that measures development through education, health and income, is 0.378 in the district of Achham (NPCUNDP, 2014). This is lower than the national average of 0.458 (for comparison: the USA has an HDI of 0.924). The annual per capita income is USD 536 compared to the national average of USD 1160. The Demographic Health Survey (DHS) estimates that 84 percent of the people in Achham are in the poorest quantile (DHS, 2016). According to the Human Poverty Index (HPI), Achham is one of the worst-off districts with an HPI of 46.68.<sup>10</sup>

 $<sup>^{6}</sup>$ We calculated these percentages using the open source data set of 2010 and 2014 provided by the NMICS. The estimates include women that are sent to either a chhau hut, different room of the same household, or to an animal shed.

<sup>&</sup>lt;sup>7</sup>In this report, Achham has been classified as a district in Mid–Western Nepal.

<sup>&</sup>lt;sup>8</sup>In May 2005, the supreme court of Nepal banned the practice of Chhaupadi. Additionally, in 2008, the Ministry of Women, Child and Social Welfare promulgated guidelines to eradicate Chhaupadi nationally through its directive called "Chhaupadi Pratha Unmulan Nirdesika 2064 BS". Tragic deaths of 10 women practicing Chhaupadi forced the Nepalese parliament in 2017 to criminalize the practise of the tradition under clause 168 (3) of the Civil and Criminal code which fines people practicing it with 3000 NPR (USD 1 is approximately 113 Nepali Rupees (NPR)) and/or 3 months in jail.

<sup>&</sup>lt;sup>9</sup>Despite being hilly like the other districts, it is relatively more connected to the road network. According to Sakchyam, an INGO based in Nepal, more than 50 percent of the Village Development Committees (VDC) in Achham are connected through a road network.

 $<sup>^{10}</sup>$ HPI is an index value of several variables such as percentage of people not expected to survive to age 40, adult illiteracy rate, percentage of people without safe water, percentage of malnourished children under the age of 5.

The Gender Empowerment Measure (GEM) measures the opportunities open to women to make decisions regarding their political and economic participation along with their power over economic resources. As the district of Achham has a female literacy rate of only 37 percent, compared to the overall literacy rate of 53 percent, women significantly lag behind in administrative and professional positions (NPCUNDP, 2014). Even though the government of Nepal made primary schooling and education up to grade 10 free of charge since 1951 and 2000 respectively, the mean years of schooling in Achham is still only 2.5 years (NPCUNDP, 2014).

### 3 Literature Review

Chhaupadi is both a harmful tradition and an extreme form of a menstrual taboo. However, the literature on Chhaupadi is scarce, thus, to map out the holistic impacts of such a tradition, this study has relied on the literature from other harmful traditions and menstrual taboos.

The overall impact of harmful traditions on the economy arises from different individual and household level costs. For instance, costs arise when affected women need to seek healthcare for wounds or psychological therapy. Institutions are burdened with providing police enforcement and legal services. Missed work days and foregone household work are common when the victims have been subject to severe discrimination. Moreover, the experience of gender-based discrimination does not only affect the victim. Third parties such as children are also affected where missed schooldays have been seen as a consequence (Duvvury et al., 2013). Notably, the literature aimed at estimating the economic cost of gender-based discrimination has simply aggregated the individual costs arising from the incidents to provide rough estimates of the loss to the economy (Raghavendra et al., 2017). Authors such as Duvvury et al. (2013), Siddique (2011), and Vara (2013) estimate these costs to be 1.41 percent of total GDP in Vietnam, 2.05 percent of total GDP in Bangladesh, and 3.7 percent of GDP in Peru.

More careful econometric techniques have shown that these traditions and taboos tend to decrease the likelihood of regular school attendance among girls which results in lower formal education levels. From an economic point of view, girls missing out on school comes at a higher opportunity cost to the economy as they have a higher marginal return to education (Psacharopoulos and Patrinos, 2004). Taking the impact of female education on fertility into account the cost gets even higher, and these costs increase if the next generation is also considered (Klasen and Lamanna, 2009).

The consequences of traditional practices on social welfare presented above are based on self-reported data. Moreover, these costs may be even bigger when people do not report the cases of discrimination due to fear and shame. We note that, in political and social science, truth-telling techniques have been used to get around the problem of biased answers. However, these techniques have typically not been used in the realm of Development Economics. One of these methods, called the list experiment, is used to study sensitive issues and could be employed when looking at the traditions that have economic implications in terms of human capital and income. After discussing the economic costs of gender-based discrimination through the lens of harmful tradition and menstrual taboo below, we will review the studies that have used the list experiment to study contentious issues.

### 3.1 Harmful traditional practices

Harmful traditional practices are committed primarily against women and can take different forms such as Female Genital Mutilation (FGM), child marriage, breast ironing, and son preference (OHCHR, 1995). Even though these traditions vary in their form, they still tend to have three main features in common. First, they are generally performed on young girls without their consent and thus, are human rights violations. Second, they almost always have a component of physical and psychological violence (Chesnokova and Vaithianathan, 2010). Third, they have often been in practice for so long that the society accepts them as part of their culture and identity without questioning it (OHCHR, 1995). Thus, some of the sinister implications of these practices are violations of human rights and has an adverse effect on women's human capital accumulation which further perpetuates the gender power imbalance and hence, diminishes a country's capacity to grow (King and Mason, 2001). Below we discuss some of these implications that arise due to FGM and child marriage in detail.

FGM is a ritual where female genital organs are altered for no medical reason. The procedure, often performed by local healers, comes with severe health consequences such as infections, excessive bleeding, infertility, and birth-related consequences (Yirga et al., 2012; Kaplan et al., 2011; Banks et al., 2006). Adam et al. (2010) estimate the global loss of life years due to excessive bleeding to be 2.8 million life years which is equivalent to a girl losing half a month of her lifespan. Other studies have shown that there is a heavy economic burden that stems from FGM on health systems. Ekenze et al. (2009) show that on average the duration of the required follow-up to deal with FGM complications is 13 months; Ekenze et al. (2007) find that average cost of management of FGM-related medical complications is USD 120 per victim. Only one of these studies, namely Adam et al. (2010) estimate the medical costs associated with FGM at the macro level. They report that FGM-related costs amount to USD 3.7 million which is 0.1 to 1 percent of what the government spends on the health of 15–45 years old women and girls in six African countries. This is an additional expense along with the psychological trauma that FGM causes.

Another example of a harmful tradition is the practice of child marriage. The tradition is upheld due to social and cultural norms, religious faith, and socio–economic status (Parsons et al., 2015). Child marriage is closely associated with early childbirths which in turn have a large impact on girls' schooling, subsequently making it harder for them to acquire knowledge about health (United Nations Children's Fund, 2014). Lloyd and Mensch (2008) find that school–aged marriage is a greater deterrent to school progress than schoolgirl pregnancy in Sub–Saharan Africa, where dropout rates range between 39.5 percent in Cameroon and 20.1 percent in Burkina Faso.<sup>11</sup> Consequently, low educational attainment among girls increases the barriers of getting a formal job, and they tend to miss out on social skills and networking (Abu-Ghaida and Klasen,

 $<sup>^{11}</sup>$ Lloyd and Mensch (2008) calculated these estimates using surveys where parents were asked why their children dropped out of school.

2004). Likewise, early and frequent childbearing can require long recovery periods, exacerbating labor force participation. Naturally, a smaller labor force affects the overall economic growth of the society (Parsons et al., 2015).

Similarly, the odds of experiencing violence are highly dependent on when the child is married. It is highest for those who marry before the age of 15 and is slightly lower for those married between the ages of 15–17 (Kidman, 2016). Child–marriage also has inter–generational impacts on children's human capital. Sekhri and Debnath (2014) instrument child marriage with age of menarche to estimate the impact on her children's ability to perform arithmetic and reading tasks. They find that delaying mother's marriage by one year increases the probability of her children being able to complete the most challenging tasks by 3.5 percentage points. Using an exogenous shock caused by drought and flood in Bangladesh, Ramnarine (2017) finds that children from child marriage unions are more likely to be stunted.

### 3.2 Menstruation

Menstruation is treated differently in different cultures – some cultures rejoice and celebrate it whereas others try to hide it (Crawford et al., 2014). It is important to understand cultural values around menstruation as it may have consequences for girls' growth through its impact on education, physical, and psychological well-being (Scott et al., 2009; Lloyd and Young, 2009). Scott et al. (2009) confirm the importance of cultural values in their study in Ghana where girls can not participate wholeheartedly due to a set of physical, and socio-cultural restrictions that label menstruation as a taboo. They also highlight the fact that girls are at an educational risk at the very onset of menstruation in itself. It interferes with a girl's ability to attend school because she naturally requires more facilities and sanitation than her male classmates (Kirk and Sommer, 2006).

Lack of modern sanitary products such as access to pads also contribute to girls' school absenteeism (Scott et al., 2009; Oster and Thornton, 2009). The existing literature associates absence from school to other outcomes such as reduced academic performance, drop–out rates and delays in their academic and social development (Balfanz, 2016; Ginsburg et al., 2014). Scott et al. (2009) find that providing sanitary pads for six months decreased the rate of absenteeism, on average, from 21 percent to 9 percent. The girls in treatment villages reported an improvement in concentration in school, higher levels of confidence and increased participation in regular activities. Similarly, Oster and Thornton (2009) conducted a randomized controlled trial study providing menstrual cups in Chitwan, Nepal.<sup>12</sup> Even though it was said that girls were more likely to be absent from school on days menstruating, they found that, on average, only 0.4 school days were missed per girl over one school year. Naturally, providing menstrual cups to these girls did not have any impact on school attendance.

Apart from this, the lack of adequate sanitary facilities in schools has an adverse effect on education. For example, Adukia (2017) find that constructing toilets in India increased enrollment in upper–primary–schools

 $<sup>^{12}\</sup>mathrm{Per}$  capita income in Chitwan is USD 1573 whereas national average is USD 1160 .

by 8 percent and primary-school by 12 percent. There are reasons to believe that the quality of facilities impacts girl's education even more. For instance, girls require clean water to manage their periods and the lack thereof complicates school participation for them (Grant et al., 2013; Maimaiti and Siebert, 2009). As a matter of fact, a sanitation program conducted in Bangladesh increased girls' enrolment rate by 11 percent (Cairncross, 1998). Moreover, developing countries tend to lack female teachers due to the lack of facilities in school, which hinders their ability to manage their menstruation comfortably and privately (Kirk, 2006). Similar evidence also exists in China, where Maimaiti and Siebert (2009) confirm that after controlling for various socio-economic variables, the impact of poor access to water reduces the duration of girls' schooling by 16 percent as compared to only 5 percent for boys. Likewise, in Panama, the lack of facilities to manage menstruation makes girls in sixth grade 6 to 10 percentage points more likely to miss at least one day of school compared to the boys in grade six or girls in lower grades (World Bank, 2017).

Along with the adverse impact on education, poor menstrual hygiene also impacts women and girls' health. Studies identify poor menstrual hygiene to be the leading cause for the widespread prevalence of reproductive tract infections (RTI) in low-income countries (Sumpter and Torondel, 2013).<sup>13</sup> A randomized controlled trial in Kenya found that RTI prevalence is only 21.5 percent for girls provided with menstrual cups compared to 27 percent in control groups (Phillips-Howard et al., 2016).

Even more interesting is a study by Ichino and Moretti (2009) that explains gender differences in labor market outcomes through a specific biological factor – menstruation, which only affects women but not men. Using a personnel data set of a large Italian bank, the authors find that females are more likely to be absent 28 days after the previous absence compared to males. They further suggest that conditional on the 28–days cyclical absenteeism, gender gap earnings would decrease by 14.1 percent primarily because employers use observable worker qualities such as absenteeism to predict productivity and set wages.

### 3.3 List experiment

List experiments have in recent years gained popularity when trying to study the incidence of sensitive behaviors which traditionally have been hard to estimate as the responses may suffer from social desirability bias.<sup>14</sup> Social desirability bias is a type of systematic error that distorts survey responses, as respondents tend to bias their self-reporting of a sensitive topic (Tourangeau et al., 2000). Different methods have been developed in order to reduce this bias, one of which is the list experiment.

In the list experiment, respondents are given statements and are instructed to report how many they agree with. The idea of the list experiment is to make the respondents' answer anonymous by not having them reveal which statements they agree with, only how many. This should make it safe to reveal the truthful

<sup>&</sup>lt;sup>13</sup>Studies suggest that RTIs are caused by infections such as bacterial vaginosis and vulvovaginal candidiasis which are introduced to the reproductive tract either through the materials used to absorb menstrual blood or due to poor menstrual hygiene during menstruation.

<sup>&</sup>lt;sup>14</sup>In the literature the list experiment is also called item–count–technique, unmatched count technique, list randomization or block total response method.

answer to the sensitive statement "This household currently practices Chhaupadi". The respondents are randomly divided into two groups – control and treatment – with differing lists of statements. The control group gets a list of J number of non–sensitive statements. The treatment group receives the same list followed by a sensitive statement J + 1. The difference between the group means provides the estimate of the people that agreed with the sensitive statement. Moreover, because the treatment and control group are randomized, it allows the results to be generalized to the whole population from which the sample is drawn (Redlawsk et al., 2010).

The list experiment method has been used for studying many different beliefs and attitudes ranging from voting behaviour to attitudes regarding extreme cases of gender discrimination.<sup>15</sup> This method has been extensively used in political science. For example, Gonzalez-Ocantos et al. (2012) used the method to study vote buying in Nicaragua and found that 24 percent of the registered voters were offered gifts/services in list experiment whereas only 2 percent reported the behaviour when asked directly; Redlawsk et al. (2010) used the list experiment when Barack Obama was about to become the first black president, and found that 30 percent of white Americans were "troubled" by this; Aronow et al. (2015) studied support for same sex marriage in the US using the list experiment, however, did not find any difference between the estimates from list experiment and direct questioning.

Similarly, the list experiment has also been used to study a variety of other issues in social sciences. Tsuchiya et al. (2007) estimate what percentage of people admit to have shoplifted. They compared direct question and list experiment technique, and found that the latter yielded higher estimates of the proportion of shoplifters by nearly 10 percentage points. The same authors also used the list experiment set—up to study a non-sensitive issue, blood donation, and found no significant difference between the estimates. This suggests that the list experiment produces different estimates when used to study contentious issues compared to non–sensitive issues where people would have no desire to lie. Moreover, Joseph et al. (2017) studied the under–reporting of domestic violence in Kerala, India and found that over 9 percent under–report it; LaBrie and Earleywine (2000) used the list experiment and confirmed that a higher number of students agreed to having been involved in a risky sexual behavior, such as having sex without a condom after drinking, than in the anonymously self-reported survey.

Only a few authors in the field of economics have used the list experiment to study sensitive issues. Karlan and Zinman (2012) used the list experiment for a micro–finance study and found that people tend to under– report the use of loans for non–enterprise purposes when asked directly. De Cao and Lutz (2018) adopts the list experiment to measure attitudes regarding illegal female genital cutting (FGC) in Ethiopia. The method confirms that respondents when asked directly, compared to when asked in the list experiment, under–report their FGC–support by approximately 9 percentage points. Moreover, Karlan and Zinman (2012) also found that the list experiment is more effective and easier to administer compared to other indirect methods such as the randomized response technique and the bogus pipeline.

<sup>&</sup>lt;sup>15</sup>Blair Imai has put together a web page collecting examples of list statements: https://imai.fas.harvard.edu/research/files/listExamples.pdf

Since the sole purpose of the list experiment is to measure a sensitive topic which is not revealed directly, it is not surprising that data validating the list experiment is hard to find. Rosenfeld et al. (2016) show that compared to direct questioning, the list experiment is able to more accurately estimate people's actual voting behaviour on an anti-abortion referendum. However, the list experiment when compared to other indirect questioning techniques did not yield the least biased estimate. Wolter and Laier (2014) find results that overall support the list experiment and prefer it over the more advanced indirect methods. de Jonge and Nickerson (2014) tested whether the list experiment estimate would be inflated or deflated depending on the number of the statements in the list by using the priors about the incidence of two behaviors. Their result suggests that the list experiment is a reliable method to study low incidence sensitive behaviors. Likewise, Haber et al. (2018) test the list experiment's validity by indirectly asking for respondents' HIV-status and compare it to the researcher-known data on HIV. They find that the list experiment did not manage to measure the prevalence rate of HIV when comparing to the true data. However, they do not exclude the possibility that the list experiment estimate could have failed not because the method itself does not work but because of the difficulties in its implementation or comprehension.

As the list experiment has been more widely used, a body of literature refining its handicrafts has grown to exist. Commonly, a simple difference–in–mean estimator has been used to measure the difference between the treatment group, receiving a list of non–sensitive statements and the sensitive statement of interest, and the control group receiving only the non–sensitive statements. Nevertheless, more sophisticated analytic methods have been brought forward, like multivariate analysis. This enables to show what characteristics the respondents answering affirmatively to the sensitive statement might have (Imai, 2011). This is discussed further in Section 4.3 where the empirical strategy is presented.

### 4 Data and Methodology

This section provides a description of how the data collection process was conducted, followed by outlining the basis of the list experiment and how it was set-up in this study. Building on this empirical strategy, we derive the difference-in-means and the multivariate regression.

### 4.1 Data

A household survey was conducted in September 2019 in three local administrative units of Achham to estimate the prevalence rate of Chhaupadi. Prior to conducting the main data collection, the questionnaire was piloted among 50 respondents in a village that resembles Achham. The main objective of the pilot was to test the translated questionnaire and the randomization technique that was to be used for the actual data collection in Achham.<sup>16</sup> After the pilot, some of the questions were updated to adjust and fit the local context. The questionnaire consisted of various sections starting with the demographic and household

<sup>&</sup>lt;sup>16</sup>The questionnaire was translated first to Nepali by one translator. Then it was again back-translated to English by another translator in order to ensure that no information was lost in the translation.

characteristics of the primary respondent. Here, questions such as age, number of fertile women in the household and religious belonging were asked. Following this, a detailed household roster was filled in. Each family member's age, gender, education level was recorded. Next, the prevalence rate of Chhaupadi was measured in three ways: the list experiment, direct questioning, and by asking the respondents to estimate the prevalence rate in their village (henceforth, referred to as the neighbour question). Moreover, several questions regarding the practice of Chhaupadi were asked. For instance, where the women stay during their menstruation, the reasons for practicing it, if they like the practice, how they think it could be eradicated, and if they were aware of the laws against Chhaupadi. Lastly, several questions capturing gender attitudes such as when a man is entitled to beat his wife, if men are more entitled to a job when jobs are scarce, and who is making the household decisions. The English version of the questionnaire can be found in Appendix A.2.

Ten enumerators were invited to a three–day long training where only six were selected to go out in the field and collect data. To be selected for the field work, surveyors were tested on their ability to fluently read and note responses, their trustworthiness, and their overall attitude toward the training and tasks assigned. On the third day of training, enumerators were sent out for a mock data collection session for half a day around the village where the training took place. The data collected by two of the enumerators from this day was excluded from the main data analysis as they failed the test. Enumerators were not told that this was a mock test before they were sent out to the field. Additional supervision and monitoring was done by the authors. Random checks were done in surveyed villages to ensure that the enumerators upheld the quality work.

### 4.2 The sample

The data was collected from 14 wards of three local administrative units. Each ward has several villages. Within each village the observational unit was households where data was collected from the mothers, fathers, mother-in-laws and father-in-laws of girls and women aged between 15–49. The reason for choosing this sample was to get answers from those who make the key decisions in the households. The sample was selected from the villages which had to pass two exclusion criteria. To be part of the study, the villages had to have at least 60 households and should not be located more than 4 hours away by car from the local market place in one of the bigger towns in Achham. The exclusion criteria were based on two reasons: first, the enumerators had to have enough houses to survey per day. Second, longer distances would not leave enough time for a minimum of six working hours. The closest village was 0.55 kilometres away from the the local market place and the furthest was 13 kilometres away. With these exclusion criteria, all the villages within a 4 hours radius were reached.<sup>17</sup> Notably, to reach these villages, one would have to walk difficult switchbacks (winding zig-zag pattern roads) which made the mental distance of the households longer than the displacement.

When enumerators reached the village, they were assigned to different clusters. The households were randomly chosen by surveying every second household located within the clusters. Enumerators were instructed

<sup>&</sup>lt;sup>17</sup>One village had to be left out due to an unforeseeable event - a case of suicide in the village. All the people living in the village were helping the grieving family and hence, no one was available to take part in the survey.

to survey the first house they saw when they reached the cluster. After surveying the first house, they were instructed to look on their left and choose the next house closest to the house they saw on the left and so on. Enumerators were instructed to look for houses on their right only when there were no houses on the left and then follow the same procedure. The enumerators were also trained to alternate between a female and a male respondent. However, in cases where the requested gender was not present, the enumerators were instructed to survey the eligible household with whoever was present at that time for the interview. If there were more than one eligible respondent available for the survey, they were instructed to interview the oldest one. Nonetheless, gender was prioritized before age.

The respondents were randomly selected into either treatment or control group. Every fifth household was assigned to the control group by the researchers.<sup>18</sup> Therefore, the enumerators were not aware of the treatment status of each respondent and thus, could not have influenced their responses. Table 1 illustrates key information about the primary data collection. As seen below, a total of 503 households were surveyed, out of which 421 were assigned into the treatment group and 78 into the control group. The study covered a total of 14 wards in three local administrative units with 61 clusters in total. The sample consists of 355 females and 147 males.<sup>19</sup>

Variable	Number of respondents
Households	503
Females	355
Males	147
Treatment	421
Control	78
Wards	14
Clusters	61

Table 1: Sample description

**Notes:** Clusters are located within the villages that were chosen based on two exclusion criteria. First, the village needed to consist of approximately 60 or more households. Second, it had to be located less than 4 hours away from the market place with car.

 $<sup>^{18}</sup>$ This led to a control group size of approximately 15 percent. Since randomization was done on an individual level, and measures were taken to avoid responses in the extremes (0/5 or 5/5), a large confidence interval was assumed to be achieved without having to allocate more respondents into the control group. We further show this through a power calculation in section 4.5.

<sup>&</sup>lt;sup>19</sup>Even though the study had prioritized getting a 50–50 male and female ratio, it could not be achieved. Primarily because more than 90 percent of the males from Achham travel to India for work. Thus, not enough males were available in the villages.

### 4.3 Experiment set–up

This study measures the prevalence rate of Chhaupadi in three different ways. Spread across the questionnaire, the three questions were asked in the following order: First through the list experiment, then through direct questioning and at last through asking the respondent to estimate the prevalence rate in their village themselves (neighbour question). The order of the questionnaire was set-up to minimize the risk of letting one question influence the response to the next one. At the very end of the questionnaire, the respondents were asked whether they knew if there exists a law against Chhaupadi.

While the Section 3.3 outlined the many use cases of the list experiment, the list used in this study was constructed based on the literature aiming at improving the list experiments' efficiency and avoiding strategic and non-strategic errors. How these errors were avoided and how the list was set up is explained below starting with the latter.<sup>20</sup>

The following introductory text was read out to the respondents as part of the list experiment. Note that before the actual list experiment was conducted, respondents were trained on an example of another list experiment (Haber et al., 2018).

For the next question, start with your hand closed behind your back so that we cannot see it. Just to be clear, we want you to do this in private so that we cannot see your hand and then we cannot know which questions you agreed or did not agree with. After the set is finished, show us how many fingers you have raised. I don't want to know which ones; just HOW MANY you agree with. As a reminder, you may refuse any question you don't want to answer.

Next, the list of non–sensitive statements used for both the control and treatment group in this study is as follows:

- 1. Members of this household have spent a whole day and night without eating anything.
- 2. A man is the head of this household.
- 3. It is not alright for an unmarried couple to live together before they get married.
- 4. Any member of this household has a bank account.

The sensitive statement given to respondents in the treatment group is:

5. This household currently practises Chhaupadi.

Traditionally, the control and treatment group differ in the number of statements. However, Ostwald and Riambau (2017) recommend to include a placebo statement – which is false or nearly false to all respondents

<sup>&</sup>lt;sup>20</sup>Other similar methods such as the item count response technique have been used to measure socially unacceptable consumer behaviours like cigarette smoking amongst pregnant women (de Jong and Pieters, 2019). This method allows for measuring the answers of the non-sensitive statements in the list to similar questions asked directly to the respondent in the survey. One of its advantages is that it does not require the struggle of having two samples (treatment and control). However, this method was not chosen for this study because of the illegality of the sensitive statement and even the slightest distrust regarding the anonymity had to be avoided.

- to the control list of statements to secure against positively biased findings due to respondents selecting the perceived middle point which is specially important when operating in a context where education levels are low or respondents are prone to satisfy.<sup>21</sup> Hence, the control group was also given a fifth statement:

5. Me and my family migrated from Kathmandu to Achham only last week.<sup>22</sup>

As mentioned above, the list experiment is sensitive to strategic and non-strategic measurement errors (Ahlquist, 2017). The strategic measurement error stem from respondents not revealing the truthful answer to the sensitive statement whereas, the non-strategic measurement errors occur in the process of data management or by the poor quality of responses stemming from respondents not understanding properly.

First, the strategic measurement errors can be avoided by incorporating at least one high-prevalence statement as well as at least one low-prevalence statement (Blair and Imai, 2012; Glynn, 2013). This is also known for avoiding floor and ceiling effects (Kuklinski et al., 1997). The floor effect is present when respondents agree to no statements in the list and hence, would reveal their position on the sensitive statement if they wanted to respond affirmatively. Similarly, the ceiling effect is reached when the respondent would reveal their true belief on the sensitive statement by wanting to agree to all the non-sensitive statements in the list experiment. Naturally, including statements that do not have high or low prevalence increases the variance of the list experiment. The list used for this study partly uses statements that are directly comparable to the survey questions asked in DHS (2016) in Achham. 98 percent of the respondents say they have never spent a whole day and night without eating. Next, 44.6 percent agree to having a bank account. Given the cultural context it is hypothesized that statement number three, whether an unmarried couple can stay together, will be a low-prevalence statement, whilst statement number two, a man is head of the household, will have some variation. From this set-up, we assume that respondents, on average, will agree to two non-sensitive statements.

Scholars suggest that selecting items with predictable response patterns can reduce the variance of control lists. Moreover, Gosen et al. (2019) suggest that non-sensitive statements should be neutral in nature. One study in South Africa that uses the list experiment to study the HIV status of individuals also used non-sensitive items that are not correlated with the sensitive question of interest (Haber et al., 2018). Some authors have also commented on the fact that the non-sensitive statements should not be in contrast to the sensitive statement. However, it can be difficult to construct the non-sensitive questions in such a fashion that they are not sensitive. Furthermore, the no-design effect, meaning that the inclusion of the sensitive statement should not affect the respondents' answers to the non-sensitive questions, is believed to be avoided by the inclusion of statements number two and three.

 $<sup>^{21}</sup>$ Ostwald and Riambau (2017) show that there is a statistical significant difference between the average reported number of statements agreed to depending on the length of the list used in the list experiment. The reason why the length matters could stem from respondents selecting the perceived middle point.

 $<sup>^{22}</sup>$ Nepal is urbanizing quickly. Since Achham is a very rural district of Nepal, the likelihood of someone moving to Achham from Kathmandu, the capital city of the country, is low. We expect it to be even lower as we ask if it happened a week before the survey. Because of this, we hypothesized that this statement would be false or nearly false to all respondents.

Moseson et al. (2015) suggest that non-sensitive items should be relevant to the population of interest. For example, in a study in Liberia, one of the non-sensitive items was "I have had malaria". It was considered a high-prevalence item. Another study conducted in South Africa also had non-sensitive items that were culturally relevant and easy to answer. The researchers designed such items in conjunction with community representatives (Haber et al., 2018). In this list, statement number two and three are believed to be culturally relevant.

Second, the non-strategic measurement error could be assumed to be particularly present in a developing country setting. Kramon and Weghorst (2012) have conducted 11 list experiments in Kenya and Tanzania from 2009 to 2012. They suggest that while conducting the list experiment it is important to understand that list experiment obliges respondents to expend more cognitive effort to accurately provide answers than other question formats. Thus, the control items should be brief and easily interpretable as this can reduce the effort required from participants substantially. They suggest that using items (both control and sensitive) in similar "topical and temporal areas of respondents' memories can make recall less laborious".

Simplifying complex and unfamiliar methods, such as the list experiment, for an illiterate respondent group is difficult. However, this study has tried to get around the problem in two ways. First, as mentioned above, following Haber et al. (2018), all respondents had to do a mock exercise before performing the actual list experiment. Second, to further decrease the non-strategic measurement error, Tsuchiya and Hirai (2010) and Nepusz et al. (2014) exploit a finger counting technique, where the respondents count the number of statements they agree with using their fingers behind their backs. In this study the respondents were instructed to do the same for the list experiment. Respondents were however instructed to count on their fingers, not holding them behind their back, during the mock list experiment performed before the actual list experiment. In this way the enumerator could see if the respondents did agree to the low-prevalence mock statements such as *I have blue hair* and explain the method further to make sure the respondent understood the task.

In order to keep the anonymity of the survey it is of great importance to construct a list experiment in such a fashion that the enumerator is not able to depict which statements the respondent has agreed to. We did this by asking the respondents to count the number of agreed statements on their fingers behind their backs which reduced the possibility of the enumerator knowing which statements were applicable to the respondent. Also, the exclusion of names and any written consent makes sure that the respondent does not feel as if any answer can be traced back to them.

However, there are two setbacks that limit the efficiency of the list experiment. Firstly, the list experiment requires a large sample size. The large sample size is needed to be able to achieve some precision in the difference–in–means estimator. Secondly, the anonymity of the experiment makes it impossible to link the attitude towards the sensitive statement with the respondent (Glynn, 2013).

### 4.4 Empirical strategy

When formalizing the empirical strategy, we have used the same notations as Imai (2011). The total number of respondents in the study is N. Respondents are assigned to a treatment status  $T_i = t$ . The respondents assigned to the control group ( $T_i = 0$ ) receive J number of statements whereas respondents associated with the treatment group ( $T_i = 1$ ) receive J + 1 statements (+1 represents the sensitive statement).<sup>23</sup> The possible responses to the control statements for any respondent, depending on their treatment status t will be j = 1, ..., J. We define our outcome variable following Holland (1986) as  $Z_{ij}(t)$ . This expression takes a value of 1 if the answer is affirmative and 0 otherwise. To clarify, a respondent i in the treatment group answering affirmative to the jth control statement is  $Z_{ij}(1) = 1$ . Moreover,  $Z_{i,J+1}(1)$  refers to respondent i's hidden answer to the sensitive statement. Naturally,  $Z_{i,J+1}(0)$  is not defined.  $Z_{ij}^*$  is the respondent i's truthful preference to jth statement where j = 1, ..., J + 1.

Respondents are asked not to reveal their answer to each statement but rather to give the total number of statements they agree with. Hence, collected data from the list experiment shows only the aggregated response  $Y_i$  that the respondent *i* has revealed. Thus, potential responses for the control group is  $Y_i(0) =$  $\sum_{j=1}^{J} Z_{ij}(0)$  where  $Y_i(0) \in \{0, ..., J\}$  whereas for the treatment group, it is  $Y_i(1) = \sum_{j=1}^{J+1} Z_{ij}(1)$  where  $Y_i(1) \in \{0, ..., J+1\}$ . The observed outcome is  $Y_i = Y_i(T_i)$ . Additionally,  $\mathbf{X}_i$  refers to a set of covariates (Imai, 2011).

The identification assumptions for the list experiment are listed below:

### i. Randomization of the treatment:

for any respondent i = 1, ..., N

$$\{\{Z_{ij}(0), Z_{ij}(1)\}_{j=1}^{J}, Z_{i,J+1}(1)\} \perp T_{ij}$$

Randomization implies that the sample was randomly assigned to treatment or control. Hence, potential and truthful responses are jointly independent of the treatment variable.

### ii. No design effect:

for any respondent i = 1, ..., N

$$\sum_{j=1}^{J} Z_{ij}(0) = \sum_{j=1}^{J} Z_{ij}(1)$$

No design effect implies that respondents do not give different answers to non-sensitive statements depending on whether they were exposed to the sensitive statement. Design effect could occur if the sensitive statement stands out notably in comparison to the non-sensitive statements. This has been avoided by including statements that are relevant both to the culture and the topic being studied.

 $<sup>^{23}</sup>$ As mentioned in the previous section, the control group also received five statements. However, this fifth placebo-statement was constructed in a fashion so that it would be false for all or nearly all of the respondent and is assumed to take the value of zero. In this case, the control group receive J + 0 statements.

### iii. No liar:

for any respondent i = 1, ..., N

 $Z_{i,J+1}(1)$  is a truthful response which means that  $Z_{i,J+1}(1) = Z_{i,J+1}^*$ . Untruthful responses are avoided by averting floor and ceiling effects which was explained above in list experiment set–up.<sup>24</sup>

### 4.4.1 Difference-in-means

From above it is clear that the "no design assumption" and "no liar assumption" together eliminate the probability of having the sensitive statement affecting the non-sensitive statements. Assuming that the assumptions above hold, it must be that:  $Y_i(1) - Y_i(0) = Z_{i,J+1}$ . Then the standard difference-in-means (DiM) estimator follows:

$$\tilde{\tau} = \frac{1}{N_1} \sum_{i=1}^{N} T_i Y_i - \frac{1}{N_0} \sum_{i=1}^{N} (1 - T_i) Y_i$$

where  $N_1 = \sum_{i=1}^{N} T_i$  is the size of treatment group and  $N_0 = N - N_1$  is the size of control group. Thus,  $\tilde{\tau}$  is the unbiased estimate of the population average response to the sensitive statement.

The expectation of the population average should equal the probability that the respondents in the treatment group answer affirmatively to the sensitive statement of interest:  $\mathbb{E}(\tilde{\tau}) = Pr(Z_{i,J+1}(1) = 1)$ .

### 4.4.2 Multivariate regression analysis

The difference-in-means estimator presented above comes with some limitations. The DiM does not allow to estimate multivariate relationships between the affirmative answer to the sensitive statement and the respondents' characteristics. Imai (2011) generalizes the DiM estimator to a multivariate regression estimator relying on assumptions of no design effect and no liars. This enables us to see which respondent characteristics are associated with answering affirmatively to the sensitive statement. Since the survey is discrete, the nonlinear least square estimator would be more suitable. However, if linearity is assumed between the control and treatment group, a linear regression with interaction terms can be used.<sup>25</sup>

Nonlinear model:

$$Y_i = f(\mathbf{X}_i, \gamma) + T_i g(\mathbf{X}_i, \delta) + \epsilon_i$$

where  $\mathbb{E}(\epsilon_i | \mathbf{X}_i, T_i) = 0$  and  $\gamma, \delta$  are unknown parameters. The model implies that  $f(\mathbf{x}, \gamma) = \mathbb{E}(Y_i(0) | \mathbf{X} = \mathbf{x})$  $g(\mathbf{x}_i, \delta) = Pr(Z_{i,J+1}(1) = 1 | \mathbf{X}_i = \mathbf{x})$  for  $\mathbf{x} \in \mathbf{X}$ .  $f(\mathbf{x}, \gamma)$  and  $g(\mathbf{x}, \delta)$  represent the regression models for the conditional expectations of the control and sensitive statements given the covariates.

If linearity is assumed  $f(\mathbf{x}, \gamma) = \mathbf{x}^{\mathsf{T}} \gamma$  and  $g(\mathbf{x}, \delta) = \mathbf{x}^{\mathsf{T}} \delta$ , then the estimator reduces to a linear regression with interaction terms (with the treatment dummy). Hence, the linear model is as follows:

$$Y_i = \mathbf{X}_i^{\mathsf{T}} \gamma + T_i \mathbf{X}_i^{\mathsf{T}} \delta + \epsilon_i$$

 $<sup>^{24}</sup>$ Answers to control items need not to be truthful. However, it is assumed that when adding the sensitive statement to the control statements the truthfulness is not affected.

 $<sup>^{25}</sup>$ There are several papers that have assumed linearity in the literature. For instance, De Cao and Lutz (2018).

Here, vector  $\delta$  constitutes the parameters of interests. They indicate which respondent's characteristics  $\mathbf{X}_i$  can explain the variation in affirmative answers to the sensitive statement. However, it is not possible to see any causal relationships with this method, one would only be able to interpret the  $\delta$  as associations.

Since the error variances are likely to differ between the treatment and control group, heteroskedasticity– consistent robust standard error are used. Using the linear regression instead of the nonlinear one makes the estimates easier to interpret. However, the response variables are not bounded in the way they would have been in the nonlinear regression.

### 4.5 Power calculation

The study was designed to have a 80 percent statistical power. Drawing upon the effect size hypothesized when creating the list experiment which assumed that the average number of agreed statements would be two, a power calculation was done to identify the required sample size for the experiment.



Figure 1: Estimated experimental-group mean for a two-sample means test

Figure 1 illustrates the estimated effect size and experimental-group mean when having 15, 17.5 or 20 percent of the sample assigned to a control group. Given the limited resources for hiring enumerators and the hypothesis that the prevalence rate, would be large an estimated minimum sample size using 17.5 percent in control group was 500 respondents which would enable a minimum detectable effect of 33 percent.<sup>26</sup>

 $<sup>^{26}</sup>$ We assumed the standard deviation to be one and that it would be the same for both the control group and treatment group. The standard deviation of one was assumed because only one statement in the list is a medium-prevalence statement. Also, when deciding sample sizes we hypothesised the prevalence rate measured through list experiment to be well above 50 percent.

### 5 Results

### 5.1 Descriptive statistics

Table 2 contains descriptive statistics from the data collected in Achham in September 2019. The study contains both female (71 percent) and male (29 percent) respondents where one member per household has been surveyed. 99 percent of the respondents follow Hinduism. The most prominent caste is chhetri which is known as the "middle" caste in Nepal. The average number of children per household is 2.11 and the average number of adults per household is 3.19. The average number of eligible women per household, that would be women of fertile age between 15–49, is 1.9. 71 percent of the respondents are currently married. The literacy rate for respondents decreases with age. It is 54 percent in the age group of 26–49, whilst being 41 percent for age group 50–65 and 24 percent for age group 65–90. On average, the surveyed households take 2.26 hours to reach from the market place by car. Lastly, 57 percent of the respondents have previously been part of Chhaupadi related NGO–programs.

In regard to the household characteristics, only 52 percent of the respondents have a separate room for the kitchen. A majority of the respondents, 68 percent, get their drinking water from public taps which means that fetching water is a logistical issue each day. Since 80 percent of the respondents report agriculture as their main occupation, it seems to be the main source of income in Achham. Only 33 percent of the respondents own a radio, 6 percent own a motorbike, and 76 percent have access to electricity.

When we compare these demographic and household characteristics of the respondents collected in the primary data to the DHS (2016) data set, it is evident that the collected data is representative of Achham.<sup>27</sup> For example, similar to the primary data, DHS estimates 100 percent of the respondents to follow Hinduism as their religion. DHS also indicates Chhetri to be the prominent caste in Achham. Similarly, the primary data estimates 40 percent of the respondents to be literate whereas DHS estimates it be 49 percent. The discrepancy between DHS and the primary data estimates could stem from the variation in the respondents' age. Our sample, on average, includes respondents who are 57 years old compared to only 32 years old in the DHS. As seen in Table 2, the rate of literacy increases for lower age groups in our sample. In the DHS data set, 57 percent have a separate room for the kitchen similar to 52 percent in the primary data. 76 percent in DHS report having access to electricity in Achham. In the primary data, this is 73 percent. The same holds for ownership of radio and motorbike where DHS reports 29 percent and 2 percent respectively which is only slightly lower than 33 percent and 6 percent respectively in the primary data. Similarly, both DHS and our primary data suggest agriculture to be the main occupation.

 $<sup>^{27}</sup>$ DHS estimates have been calculated by the authors themselves using DHS open data set of 2016.

	Mean	Std. Deviation	Min	Max	Obs.
Age of respondent	57.06	(12.96)	26	90	495
Female	0.71	(0.46)	0	1	502
Hindu religion	0.99	(0.12)	0	1	502
Caste belonging:					
% Chhetri	0.73	-	0	1	366
% Dalit	0.23	-	0	1	114
Distance to local market place	2.26	(1.04)	1	4	502
Number of children in the household	2.11	(1.49)	0	8	502
Number of adults in the household	3.19	(1.48)	1	10	502
Married	0.71	(0.45)	0	1	495
Number of eligible women	1.90	(0.86)	1	6	501
Number of rooms in household	2.83	(1.50)	1	8	502
Literacy level per age group:					
26 - 49	0.54	(0.50)	0	1	135
50-65	0.41	(0.49)	0	1	227
66–90	0.24	(0.43)	0	1	132
Occupation: agriculture	0.80	(0.40)	0	1	498
Access to electricity	0.76	(0.44)	0	1	502
Ownership of radio	0.33	(0.47)	0	1	502
Ownership of motorbike	0.06	(0.24)	0	1	501
Separate room for kitchen	0.52	(0.49)	0	1	501
Source of drinking water: public taps	0.68	(0.46)	0	1	501
Roof material: roofing shingles	0.66	(0.47)	0	1	487
Participated in NGO–program	0.57	(0.50)	0	1	500

 Table 2: Descriptive Statistics

Notes: These estimates are based on the primary data collected by the authors in Nepal in September 2019. Our sample consists of mothers/fathers/mothers-in-law/fathers-in-law of girls and women aged between 15–49 living in the district of Achham in Far-Western Nepal. Number of eligible women refers to the number of women in a household between the age of 15–49. Distance to the market place is constructed by creating a categorical variable of four steps which corresponds to the the hours of drive it took to get to the village. One hour drive was coded as 1 whereas, a two hour drive was coded as 2 and so on. Literacy level per age group is constructed to show respondent that have reported to be either literate or have a higher education level. Age group 26–49 captures the fertile female that would be exposed to the practice of Chhaupadi. The age group 50–65 and 66–90 captures the respondents still living below and above the average life expectancy in Nepal. Source of drinking water is constructed to show only the most common source. Other sources in the data set was piped into dwelling (10.58 percent), protected well (1.60 percent) and rainwater (0.20 percent). Participated in NGO–program refers to whether the respondent has been enrolled in any NGO–program related to Chhaupadi before this study. Observation number differs across the different variable because missing values have not been considered.

### 5.2 Self-reported prevalence of Chhaupadi

As mentioned in Section 2, estimating the prevalence rate of sensitive topics such as Chhaupadi based on self-reported data is biased. The following Table 3 illustrates the results from direct questioning and the neighbour question (where respondents were asked to estimate the prevalence rate in their village). These two estimates can, as argued, be biased due to different reasons.

	Direct questioning	Neighbour question
Mean	0.50	0.67
Standard Deviation	0.50	0.32
Observations	503	502

Table 3: Self-reported practice and perception of others

**Notes:** Direct questioning refers to the survey question that directly asks: "Does this household currently practice Chhaupadi?". Neighbour question refers to the question: "What percentage of people do you think, follow it?" and has only been asked to respondents that has answered affirmatively to the question: "Do you know if people in this village practice Chhaupadi?". The neighbour question is first collected on a scale from 1 to 100 and is thereafter, divided by 100 to be presented in a percentage fashion. The two questions are asked to the same respondents. The difference of observations stems from respondents refusing to answer one of the questions.

In Table 3, 50 percent of the respondents reported practicing Chhaupadi when asked directly whereas the estimate increases to 67 percent when respondents are asked the neighbour question. It is clear that the respondents believe that more people are practicing Chhaupadi in their village than they themselves self–report practicing it. Although the discrepancy between the two measures can be established, it is not clear whether the prevalence rate measured through direct questioning is either under or over–reported or at all true.

### 5.3 Results from the list experiment

To successfully measure the prevalence rate of Chhaupadi using the list experiment the sample had to be randomly divided into the treatment and control groups. Table 4 checks whether the study has been successful in creating comparable samples in the treatment and control group with respect to observable characteristics.

In essence, the identification strategy, aiming at randomly allocating treatment to respondents, was achieved. There are only three variables for which the difference in group means is statistically significant: number of adults (5 percent significance), knowledge about contraception (5 percent significance) and the "When jobs are scarce, men should have more right to a job than women?"– question (10 percent significance). The difference between treatment and control for these variables are also small in magnitude. Moreover, there is no significant difference in any of the other variables. The respondents in the different groups did not have any more or less exposure to NGO–programs focusing on Chhaupadi. In the list experiment example that all respondents were shown before the actual list experiment, both groups perform equally. Moreover, there is

 Table 4: Balance check

	Control	Treatment	Difference
Age	57.84	56.81	-1.03
	(14.76)	(12.59)	[0.52]
Female	0.74	0.70	-0.04
	(0.44)	(0.46)	[0.47]
Number of members in household	6.13	6.59	0.46
	(2.46)	(2.52)	[0.14]
Hindu religion	0.99	0.99	-0.00
	(0.11)	(0.12)	[0.92]
Literacy	0.47	0.39	-0.08
	(0.50)	(0.49)	[0.17]
Shared toilet facility	0.12	0.10	-0.02
	(0.32)	(0.30)	[0.59]
Number of rooms in household	2.91	2.82	-0.09
	(1.58)	(1.49)	[0.61]
Number of children	2.24	2.09	-0.16
	(1.50)	(1.49)	[0.39]
Number of adults	2.85	3.26	0.41
	(1.41)	(1.49)	[0.02]
Neighbour question	63.71	67.38	3.68
	(31.05)	(32.62)	[0.36]
Men have more right to a job	0.71	0.80	0.09
	(0.46)	(0.40)	[0.07]
Participated Chhaupadi related NGO–program	0.55	0.58	0.03
	(0.50)	(0.49)	[0.68]
Knowledge about contraception	0.82	0.91	0.10
	(0.39)	(0.28)	[0.01]
List experiment example	2.45	2.41	-0.04
	(0.62)	(0.67)	[0.65]

Notes: Standard deviations are in parentheses. P-values are in brackets. "Neighbour question" refers to a question in the survey asking the respondent to estimate what percentage of people practice Chhaupadi in their village. "Men have more right to a job" refers to a question in the survey asking the respondent: "When jobs are scarce, men should have more right to a job than women?". "List experiment example" refers to the given answer to the example list experiment that was practiced before the actual list experiment was conducted.

also no difference between how many respondents reported practicing Chhaupadi in their village. Therefore, it can be concluded that randomization was successful in ensuring strong internal validity of the study.

Table 5 reports the result of the DiM estimator from the list experiment. This is the most commonly used method to evaluate the prevalence rate of a sensitive item in the list. The results indicate that 38 percent of the primary respondents (mother/father/mother-in-law/father-in-law) in Achham agreed with the statement "*This household currently practices Chhaupadi*". The mean of the treatment responses (2.36) is greater than that of the control responses (1.97). The DiM estimator shows a 38 percent prevalence rate and is significant at a 1 percent level. These calculations are based on the answers of 496 respondents (84 percent in treatment and 16 percent in control).

	Control	Treatment	Difference-in-means
Mean	1.97	2.36	0.38***
Standard Error	0.90	0.91	0.11
Observations	78	418	496

Table 5: List Experiment

\* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01

One of the main assumptions for the list to be efficient is that there can be no floor or ceiling effect. The presence of many responses in the upper or lower extremes would suggest that such effects exist which has been discussed in Section 4.3. Table 6 illustrates the reported answer to the list experiment. Notably, the responses to the control and treatment list could vary from 0 to 5 agreed statements. In the control list case, it only varies between 0 and 4, which can be seen in the frequency of Table 6. This goes in line with the argument that the last placebo-statement in the control list was meant to be false for almost all. Moreover, the fact that there are very few responses with 4 agreed statements supports the measures taken to avoid the ceiling effect. This is also visible in the treatment group where there are only 4 respondents that report agreeing to all five statements and 39 respondents agreeing to 4 statements. On the contrary, the floor effect is visible neither in the control nor in the treatment group as there are only a few responses on the lower bound extreme. The majority of the respondents have agreed to two statements.

	Control		Treatment	
Response Value	Frequency	Percent	Frequency	Percent
0	3	3.85	3	0.72
1	19	24.36	64	15.31
2	37	47.44	179	42.82
3	15	19.23	129	30.86
4	4	5.13	39	9.33
5	-	-	4	0.96
Total	78	100	418	100

Table 6: Floor and ceiling effects in the list experiment

**Notes**: The table uses the observed data from the experiment and shows the total number of respondents and proportion of respondents agreeing with each value of the outcome variable for the control and treatment group. Both groups were given a list of five statements where the fifth statement for the treatment group was *This household currently practises Chhaupadi*, whereas in the control group this statement was a placebo statement false for all or nearly all respondents.

To further explore which characteristics are to be associated with answering affirmatively to the sensitive question, a multivariate regression has been performed as the DiM estimator does not provide this information.<sup>28</sup> Notably, no causality can be drawn from Table 7, only associations can. Column 1 of Table 7 presents a linear regression with the list experiment response  $(Y_i)$  as the dependent variable. Column 2 shows a linear probability model with the respondents' answer to the direct question as the dependent variable.<sup>29</sup> For example, in column 1 in the section of the sensitive statements: holding everything else constant, women disagreed with the sensitive statement 4 percent more often than men. Similarly, women were 15 percent less likely to agree with control statements. In column 1 In column 2, women seemed to disagree with the sensitive statement 8 percent more often when asked directly.

Interestingly, the further away the respondent lives from the market place, the more they agree to practicing Chhaupadi (in direct questioning). This is significant at a 1 percent level for distances 3 hours away from the market place and at a 5 percent level for distances 4 hours away. Furthermore, a literate person is less likely to agree to the statement directly (also significant at a 10 percent level). No characteristics are significantly associated with answering affirmatively to the sensitive statement in the list experiment.

 $<sup>^{28}</sup>$ Religion has not been included as one of the covariates as 99 percent of the sample is Hindu.

<sup>&</sup>lt;sup>29</sup>The choice of using a linear probability model is due to the fact that the estimates will be easier to interpret than in a logistic model. Thereto, the interest does not lay in predicting individual outcomes but rather on the marginal effects, which is possible to read out from a linear probability model.

	Dependent variable:			
	(1) (2)		(2)	
	List Experiment		Direct	
	Response	SE	Questioning	SE
Sensitive statements				
Т	0.2308	0.7775		
Age of respondent $\times$ T	-0.0012	0.0091		
Female $\times$ T	-0.0409	0.3507		
Distance to local market place $\times$ T (2h)	0.3142	0.2976		
Distance to local market place $\times$ T (3h)	0.0216	0.3741		
Distance to local market place $\times$ T (4h)	-0.2895	0.3382		
Number of rooms in household $\times$ T	0.0355	0.0670		
Literate $\times$ T	-0.2317	0.2964		
Participated in NGO–program $\times$ T	0.2100	0.2471		
Control statements				
Intercept	2.4157***	0.6860	0.6211***	0.0002
Age of respondent	-0.0005	0.0080	0.0015	0.4513
Female	-0.1582	0.3350	-0.0847	0.1378
Distance to local market place (2h)	-0.2462	0.2675	-0.0060	0.9227
Distance to local market place (3h)	-0.1773	0.3423	0.3042***	0.0001
Distance to local market place (4h)	0.1527	0.2983	$0.1579^{*}$	0.0332
Number of rooms in household	-0.0072	0.0583	-0.0300	0.0723
Literate	-0.0143	0.2762	-0.1743**	0.0017
Participated in NGO–program	-0.2499	0.2258	0.0218	0.6565
Observations	489		424	

Table 7: Multivariate regression

Notes: Estimated coefficients from the list experiment use a linear regression model. Sensitive statement is "This household currently practice Chhaupadi?". T corresponds to the treatment dummy (Treatment = 1 and Control = 0). The coefficients of interest corresponds to the  $\delta$  in the linear regression model outlined in Section 4.4. Whereas, the control coefficients corresponds to  $\gamma$ . In Column 2, the dependent variable is a dummy corresponding to the answer to the question "Does this household currently practice Chhaupadi?".

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

### 5.4 Discrepancy between the list experiment, direct questioning and neighbour question

Table 8 compares the three estimates - the DiM estimate, the direct questioning, and the neighbour question - for the full sample and for different subsamples of the study. However, it is important to note that dividing the sample into many subsamples leads to a lower sample size, thus, to increased standard errors. Section A (1) appends the DiM estimate with the estimates reported in Table 3. The DiM estimate is the lowest among the three. It is 12 percent and 29 percent lower than that of direct questioning and the neighbour question respectively. It is clear that when respondents are anonymous, the prevalence rate of Chhaupadi decreases. The list experiment was asked before the direct questioning, neighbour question or any other gender or Chhaupadi related question. Hence, one can assume that the DiM estimate is not affected by the directness of the later sensitive questions asked in the survey.

	(1) Total				(2) Liter	rate
Section A:	DiM	Direct	Neighbor	DiM	Direct	Neighbor
Mean	0.38 ***	0.50	0.67	0.32 **	0.39	0.62
[S.E.]/(S.D.)	[0.11]	(0.50)	(0.32)	[0.15]	(0.49)	(0.31)
Observations	496	503	502	201	205	204
	(	3) Fema	le		(4) Ma	ıle
Section B:	DiM	Direct	Neighbor	DiM	Direct	Neighbor
Mean	0.38 ***	0.50	0.67	0.38 ***	0.50	0.65
[S.E.]/(S.D.)	[0.14]	(0.50)	(0.32)	[0.19]	(0.50)	(0.32)
Observations	351	355	355	145	147	147
	(5) Me	n entitle	ed to job	(6) Opp	osed to l	beating wife
Section C:	DiM	Direct	Neighbor	DiM	Direct	Neighbor
Mean	0.32 **	0.59	0.67	0.27	0.46	0.72
[S.E.]/(S.D.)	[0.13]	(0.49)	(0.33)	[0.18]	(0.50)	(0.29)
Observations	387	329	388	194	181	191

Table 8: DiM, direct questioning and neighbor-question

**Notes**: Again, the Neighbor question is originally coded between 0 and 100 but is now divided by 100 to presented in percentage. Men entitles to job corresponds to the affirmative answers to "When jobs are scares". Opposed to beating wife corresponds to respondents who did not agree that a husband is justified in beating his wife in any circumstances listed in the survey. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01

Within the literate subsample presented in (2) in Section A, all the estimates decrease. Significant at a 5 percent level, only 32 percent of the literate respondents report practicing Chhaupadi in the list experiment. Interestingly, only 39 percent reveal practicing Chhaupadi in direct questioning. This is 11 percent lower than that of the total sample. However, the neighbour question estimate only decreases by 5 percent from the total sample. When dividing the sample into females and males there is no difference in any of the estimates

compared to the total sample.

In Section C, the sample is divided into a anti-female subsample (5), which corresponds to the respondents answering that when jobs are scarce men are more entitled to a job than women. This measure is often used as a proxy to understand gender stereotypes. 32 percent report practicing Chhaupadi in the list experiment while, 59 percent, that would be 9 percent more than for the total sample, reveal practicing Chhaupadi in direct questioning. On the same note, the sample is also divided into a pro-female subsample in Section C (6). The subsample include respondents who did not agree that a husband is justified in beating his wife in any circumstances listed in the questionnaire. The DiM and direct questioning estimates decrease substantially to only 27 percent and 46 percent respectively. Interestingly, the DiM estimate looses its significance, which may be due to the loss of power. However, the neighbor estimate increases by 5 percent.

### 5.5 Additional results: attitudes toward Chhaupadi and women

In order to understand the context further, but also to make the list experiment and direct questioning on Chhaupadi not stand out, several questions on gender attitudes and Chhaupadi were asked to each respondent. 94 percent of the respondents knew about there being a law against Chhaupadi. This implies that respondents do not consider the illegality of the practice to be a credible threat or that the consequences of the illegality are not severe enough. 36 percent report having stopped practicing Chhaupadi. When asked about why they stopped the practice respondents could report more than one reason. Reasons varied from them being denied social services (51 percent), social pressure (24 percent), females refusing to practice it (19 percent), and female having been assaulted in the hut (20 percent). Among the households that currently practice Chhaupadi, 51 percent of them share a hut with other households in their villages. For those who practiced Chhaupadi only in the past, 71 percent shared the hut with others in the village.

Only 24 percent of the respondents reported that they like the practice of Chhaupadi. In fact, a majority of 76 percent report not liking the practice even though 50 percent of them directly report practicing it. Respondents claim tradition to be the main reason for people following Chhaupadi. The second biggest reason is the fear of God's punishment followed by social pressure. In contrast to what other studies have listed as main reasons for following Chhaupadi, only 5 percent practice it to avoid unfortunate incidents happening to their families.

Nevertheless, when asked about the consequences of not following Chhaupadi, 73 percent report becoming a social outcast to be the primary one. This stands in contrast to only 11 percent reporting that social pressure is the reason behind following Chhaupadi. Additionally, spreading social awareness is reported to be the most effective strategy to eradicate Chhaupadi.

	Mean (St.Dev)	Sample group*
There is a law against Chhaupadi	0.94(0.24)	Total
Household practised Chhaupadi in the past	0.86(0.35)	Total
Reason to stop practicing		
-Denied Social Service	$0.51 \ (0.50)$	**NP
-Social pressure	0.24(0.43)	NP
-Female refused	$0.19\ (0.39)$	NP
-Female assaulted	0.20(0.40)	NP
Share Chhau hut	$0.51 \ (0.50)$	***P
Shared Chhau hut	0.72(0.45)	NP
Likes the practice of Chhaupadi	0.24(0.43)	Total
Why do people follow?		
- Tradition	0.72(0.45)	Total
-Social pressure	$0.11 \ (0.30)$	Total
-God will be angry	$0.57 \ (0.50)$	Total
-Bad things will happen	0.05 (0.22)	Total
Consequences of not following		
-Social outcast	0.73(0.44)	Total
-Family member falls sick	0.29(0.45)	Total
How can it be eradicated		
-Social awareness	0.76(0.42)	****LC
-Women-led activism	0.63(0.48)	LC
-Strict enforcement	$0.51 \ (0.50)$	LC

Table 9: Chhaupadi attitudes

**Notes**: \*Sample group illustrates which respondent is included in respective question. \*\*NP corresponds to those *not practicing Chhaupadi*. \*\*\*P corresponds to *practicing Chhaupadi*. \*\*\*\*LC corresponds to those who *Like the practice of Chhaupadi*. The options shown in the table are the most reported options. Respondents could select more than one option per question.

Table 10 shows descriptive statistics for the gender related questionnaire questions in the survey and their corresponding statistics in DHS (2016)). In Section A the primary data (column (1)) covers the district of Achham. DHS (2016) shows data for the province where Achham is located (column (2)) and for Nepal on a national level (column (3)). The first row and column (1) of Table 10 shows that at least 60 percent of the respondents agree that wife beating is justified under at least one of the following situations: if she goes out without telling, neglects the children, argues with her husband, refuses sex or burns the food. It is clear that estimates from the primary data (60 percent) are well above the province and national averages (34 percent and 28 percent). Focusing on each situation mentioned above, the means for the primary data are higher than that of the DHS data (e.g. if she goes out without telling 24 percent and 13 percent respectively).

Moreover, there seems to be a clear pattern across all the data that the responses on the last situation, when she burns food, is much lower than for the rest.

		Gender attitu	des
	(1)	(2)	(3)
	Survey	DHS	DHS
SECTION A:	(Achham)	(Province)	(National)
Is a husband justified to hitting or beating his wife?	.6027	.3434	.2862
(Yes=1)	(.0219)	(.0111)	(.0039)
-If she goes out without telling	.2415	.1300	.1200
	(.0191)	(.0088)	(.0033)
-If she neglects the children	.2615	.2952	.2528
	(.0196)	(.0114)	(.0044)
-If she argues with her husband	.3647	.1018	.0903
	(.0215)	(.0081)	(.0032)
-If she refuses sex	0.2000	.0644	.0461
	(.0179)	(.0107)	(.0036)
-If she burns the food	.0758	.0330	.0337
	(.0118)	(.0058)	(.0021)
Should a married person be able to say no to their	.9227	.8882	.9159
partner if they do not want to have sexual intercourse?	(.0120)	(.0102)	(.0038)
Do you think that a wife should be able to ask their	.9877	.8728	.8919
partner to use a condom if she wanted him to?	(.0049)	(.0196)	(.0082)
	Survey	World Va	alue Survey
SECTION B:	(Achham)	(South Asia)	(International)
When jobs are scarce, men should have	.7806	.7210	.4823
more right to a job than women?	(.0186)	(.0069)	(.0019)

Table	10:	Gender	attitudes
-------	-----	--------	-----------

Notes: Section A: The primary data collected for this study has 501 observations. All the estimates from the DHS data set and the World Value Survey (WVS) have been calculated by the authors using the 2014 open data-set. The DHS (2016) national data entails approximately 12800 observations whilst the DHS province has 1843 observations. WVS (2014) data on the scarcity question is coded Agree =1, Neither= ., Disagree= 0. South Asia = India and Pakistan.

Moreover, more than 90 percent of the respondents in the primary data agree that married people should be able to say no to their partners regarding sexual intercourse and condom usage. This finding seems to be similar to the DHS data, both on a province and a national level. Section B shows that 78 percent report that they agree that men should have more right to a job than women when jobs are scarce. This particular question has been used to reveal the true beliefs and values regarding the appropriate role of women in society. In comparison to the primary data it is clear that the average of South Asia (72 percent) is below the Achham value. Moreover, the international estimate is much lower at only 48 percent.

### 6 Discussion

The following section discusses the results outlined above. The impact of the sensitivity on responses can be assessed by comparing the prevalence rate of Chhaupadi measured when asked directly against when asked indirectly using the list experiment. This study measured the prevalence rate of Chhaupadi in three different ways: the list experiment, direct questioning and the neighbor question. Even though the two latter methods are not required to analyse the list experiment, they provide a good comparison between the direct and indirect way of measuring the prevalence rate.

The DiM estimator from the results above shows that 38 percent practice Chhaupadi. The anonymity provided by the list experiment along with the several measures taken such as the inclusion of a placebo–statement, a mock list experiment, asking the respondents to count on their fingers, makes the prevalence rate from the list experiment the least biased one.

When using direct questioning techniques the prevalence rates amounted to 50 and 67 percent. There are reasons to believe that the direct questioning estimate of 50 percent is under the influence of two opposing forces. These forces can be at play simultaneously and end up negating each other, or one can outweigh the other. Namely, the estimate can be positively biased due to social disapproval as those who answer against the established social norms could be deemed to become social outcasts, whereas the responses could be negatively biased due to the threat of disclosure following naturally from the illegality of the tradition. Moreover, the same could hold for the prevalence rate generated from the neighbor question of 67 percent. Respondents could be scared that their village would be marked as Chhaupadi intense and hence, the likelihood of getting denied social services would increase. On the other hand, they can believe that over–reporting could lead to beneficial NGO–program enrollments in the future. Also, the destruction of chhau huts by several NGOs in the past can make respondents under–report their practice. Since neither of these measures provide the respondents with anonymity, the likelihood of the above mentioned reasons biasing the direct estimates is high.

To further understand who practices Chhaupadi, the sample was divided into subgroups as done by Kuklinski et al. (1997) and McKenzie and Siegel (2013) to look at all three different measures of the prevalence rate of Chhaupadi. In Table 8, it is clear that dividing the sample into female and male only, does not change any of the estimates or their significance. However, for the literate subsample the estimates are lower than for the total sample. The DiM estimator is 32 percent whereas the direct questioning is 39 percent. This indicates that gender might not be a key variable in deciding whether or not the household practises Chhaupadi. Rather, respondents being literate or not actually seems to be associated with lower Chhaupadi prevalence.

This subsampling leads to a smaller number of respondents at each subgroup level and does not enable comparison between, for example, literate and illiterate. To address this problem, one has to go beyond using a simple difference–in–means estimation. In this case, a multivariate regression was used following Imai (2011) outlined in the empirical strategy in Section 4.4. Table 7 illustrates the result from the regression. As noted in column 1 of Table 6, no variables are significantly correlated with the sensitive statement. Simply,

it means that none of the characteristics listed as independent variables in the regression are associated with answering affirmatively to whether they practice Chhaupadi. This suggests that all people in Achham, independent of their characteristics, equally report practicing Chhaupadi. For instance, it seems that literate respondents do not practice Chhaupadi any less than illiterate respondents.

In contrast to the linear regression using the list experiment response as dependent variable, the linear probability model uses the answer in the direct questioning as a dependent variable. Doing so allows us to see who is more likely to report to practice Chhaupadi when asked directly. Column (2) in Table 7 illustrates this as some characteristics are significant. In particular, the distance from the local market place increases the likelihood of a respondent answering that they practice Chhaupadi. In comparison to the regression using the list experiment response as dependent variable, where the distance to the market place does not have a significant association, it seems to be more important for the respondents to claim that they are practicing Chhaupadi directly the further away they live from the market place. The same rationale would hold for literate respondents, only working in the opposite direction. Literate respondents are less likely to report practicing Chhaupadi in direct questioning. The distance from the market place may matter for two reasons. First, the further the distance the lower is the presence of law enforcement agencies and hence, lower the threat. Second, the increased distance especially in the context of developing countries implies that there are fewer formal institutions which in turn force people to rely on their network and informal institutions. Thus, following local traditions and culture tests whether the neighbour is trustworthy and reliable. Likewise, the level of literacy impacts respondents' answer when asked directly because it increases the probability of them knowing that menstruation is a biological process, because they might be more likely to guess what the enumerator expects as the right answer and finally, they may understand the legal consequences better.

As mentioned in Section 2.1, the discrepancies between the DiM estimator, the direct questioning and the neighbor question is a proof of a prevailing social desirability bias – a phenomenon where respondents answer untruthfully, by either over or under-reporting the practice, in direct questioning to satisfy the beliefs of others. This in turn proves the unreliability of direct questioning. Naturally, one can assume that since the prevalence rates reported through direct measures are greater than that through the list experiment, over-reporting the practice of Chhaupadi must outweigh the under-reporting. This study showed that 94 percent of the respondents are aware of the law against Chhaupadi, and yet an overwhelming majority still report practicing it in direct questioning. This implies that the respondents do not consider the illegality of the practice to be a credible threat or that the opportunity cost of saying that it is practiced and get a fine or jail-time is lower than the costs of going against the forces holding the tradition alive. This is not surprising given that the first person the local police arrested for practicing Chhaupadi was on December 9, 2019, despite the fact that the practice was outlawed and criminalized since 2005 and 2017 respectively (Budhathoki, 2019).

Thus, it seems that people in Achham are over-reporting their practice of Chhaupadi to obey to a social tradition in fear of becoming a social outcast. Despite only 24 percent saying that they like the practice of Chhaupadi, 38 percent say they practice it in the list experiment and 50 percent say they practice when

asked directly. This shows that liking the tradition is not the motivation behind the prevalence rate. In Table 9, 73 percent claim that becoming a social outcast is one of the primary consequences one would face when not practicing Chhaupadi. As explained in Section 2.1, the chhau huts are visibly located, which makes it easy for neighbours to keep track of whether a household follows the practice. This may also explain why the neighbour question yielded the highest estimate of the prevalence rate. The fact that 76 percent claim that social awareness programs would be the key solution to eradicate Chhaupadi may stem from the surveillance of neighbours. Respondent know that one cannot stop practicing Chhaupadi without having all community members joining.

Chhaupadi is clearly a social practice. Harmful traditional practices like Chhaupadi are the consequences of the value society places on women and girls (OHCHR, 1995). Thus, to further understand the social context in Achham which defines the attitude towards women and girls, and their role in the society, we asked respondents several questions on gender attitudes; for example, the question when jobs are scarce, men should have more right to a job than women which has been used in literature (Morton et al., 2014) to study people's perception of gender roles. 78 percent of the respondents agreed that men are more entitled to a job than women suggesting that they view women to be more suitable for housework, child-rearing than men. Knowing this is important because OHCHR (1995) suggests that such harmful traditional practices exist in areas where women and girls have unequal access to education, employment, wealth, and health. Likewise, respondents' answers to attitude towards wife-beating offer an insight on how girls and women are perceived within their society (WHO, 2009). 60 percent of the respondents believe that it is justified for the husband to beat his wife under at least one of the circumstances listed in the questionnaire. Although this does not necessarily mean that 60 percent of the women are being beaten, it defacto shows a social acceptance of wife beating (WHO, 2009). These types of social beliefs can encourage gender-based violence and harmful traditions like Chhaupadi as they decreases the value of women and girls compared to men. Even though this paper does not calculate the costs of Chhaupadi, Table 10 indicates that similar costs introduced in the literature section above are applicable to the social setting of Achham.

### 7 Limitation and Validity

### 7.1 Limitation

In this sub section, we will discuss the limitations of this study. Firstly, this study lets the respondents define Chhaupadi themselves. The definition of Chhaupadi becomes crucial when considering the most lenient cases of the tradition. In the survey, the respondent first had to answer whether or not they practiced Chhaupadi. The following question asked where the women lived during menstruation. Here, the respondent was allowed to define Chhaupadi as *living in a separate room in the same house* which represents the most lenient case. However, it can be that some do not consider this case to be valid. Hence, it could be that women that live in a different room in the same house during their menstruation did not answer affirmatively to whether or not they practice Chhaupadi. The methods used in this study fail to capture those people. This would imply that the prevalence rate estimated in this paper would be a lower bound.

Secondly, as mentioned in Section 4.3, the list experiment could be too complex in an illiterate context. Respondents had to keep count of statements and simultaneously evaluate whether or not they agree with the statements presented to them. Measures were taken to hedge against this issue by including a mock list experiment prior to the actual list experiment and by letting the respondents count the number of agreed statements on their fingers. However, it is not certain that the measures taken were enough. In Table 8, it is clear that there is a disparity between the estimates reported from the total sample and the literate subsample group. The lower estimates reported for the literate subsample could either imply that literate people tend to practice it 6 percent less than the total subsample, or that the literate subsample had an easier time understanding the experiment or because of a significant drop in statistical power. Moreover, if the respondents picked the perceived middle point, as mentioned in the literature review, the variation between the control and treatment group would be small and hence, the estimate calculated from the list experiment could be a lower bound.

Thirdly, hiring enumerators for data collection could have driven up the over-reporting in direct questioning. Respondents could fear that the local enumerator would tell neighbours about their view on Chhaupadi. However, data collection in this area would not have been feasible without employing local enumerators. The dialect spoken in the region would not make it possible for a Nepali from another part of the country to successfully explain the key concepts and understand the respondents. During the data collection for this study, enumerators were never sent to their own village but they were sometimes sent to villages nearby. Despite not being sent to their own village, we cannot say for certain that hiring local enumerators did not drive up the over-reporting. Nonetheless, this would not affect the prevalence rate estimated through the list experiment because of the anonymity of the method.

Lastly, the motivation behind the order of the questions measuring Chhaupadi was that the list experiment outcome variable should not be affected by the direct questioning. However, whether the list experiment affected the outcome of the direct questioning can not be established. Even if the list experiment in any way affects the direct questioning, it is impossible to find out in what way. The reason for this, is that the list experiment by its very design is not supposed to make the respondent biased.

### 7.2 Validity

Below, the generalisability of our results is considered from two angles. First of all, the successful randomisation between the treatment and control group ensures that our results may be extended to the population of interest in Achham. We believe that our sample is representative of Achham as it shows similar estimates on key variables as the DHS sample discussed in Section 5.1. Having said that, villages located in more remote areas of Achham may be different from the villages that we have included in our sample. These villages could be more strict about the tradition and have lower educational levels. In these cases our estimates may be seen as a lower bound. Moreover, we believe that our general finding of people over-reporting the practice of Chhaupadi when asked directly may be applicable to other adjacent districts that widely practice Chhaupadi, such as Kalikot, Bajura, or Bajhang. These districts resemble Achham in terms of their low development and high poverty rates. For instance, the HDI of these districts are: Bajhang (0.365), Bajura (0.364), Kalikot (0.374) and Achham (0.378) (NPCUNDP, 2014). NPCUNDP (2014) further reports that these areas show "contrasting spatial, developmental and socio-economic characteristics" compared to the national average. Surely, the prevalence rate could be different, but we believe that there may be a discrepancy between the estimates of the list experiment and direct measures even in these districts. The level of discrepancy between the estimates could also vary.

Second, we have a reason to believe that our results are consistent with what the literature on list experiment finds. As studies such as De Cao and Lutz (2018); Joseph et al. (2017) suggest, we also find a clear discrepancy between the direct and indirect measures which implies that the direct measures of sensitive issues are biased. Based on our results, an indirect method of eliciting truthful responses from the respondents could be applicable to study other sensitive issues that are practiced in South–Asia, such as son preferences, child marriage, and the dowry system. These traditions are similar to Chhaupadi as they are also socially accepted in some communities, thus, widely practiced, but mostly illegal.

### 8 Conclusion

This study used a unique data set gathered from 500 households in Achham, a district in the Far–Western Nepal, to measure the prevalence rate of Chhaupadi. Chhaupadi is a discriminatory and harmful practice that isolates women and girls during their menstrual period because they are considered to be impure by society. Harmful traditions such as Chhaupadi are prevalent all over the world and are known to have a significant negative impact on the economy and hinder the universal commitment to achieve gender equality exemplified by the SDGs signed by 193 countries. As Chhaupadi is a deep–rooted practice, more novel methods are required to obtain reliable measures of its prevalence. In this paper, we use an indirect questioning technique, a list experiment. This method ensures full privacy by giving the respondents a list of statements and asking them to report how many statements they agree with, not specifying which ones.

We find the prevalence rate of Chhaupadi to be 38 percent using the list experiment. Moreover, when measuring the prevalence rate through two direct measures – asking respondents directly whether they practice Chhaupadi and what the prevalence rate in their village is – the estimate rises to 50 and 67 percent respectively, which is closer to the figures mentioned in the literature. The discrepancy between the measures of the list experiment and the direct questioning is a proof of social desirability bias, a phenomenon where respondents answer untruthfully in direct questioning to be favourably perceived by others. In the case of Chhaupadi, over–reporting of the practice seems to be more common than under–reporting. However, we find that respondents' characteristics correlate differently with their direct response. Literate people are less likely to report practicing Chhaupadi while people who live further away from the local market place are more likely to report it when asked directly.

Through several other questions about the practice of Chhaupadi, we are able to conclude that the most common consequence of not practicing Chhaupadi is becoming a social outcast and that almost all the respondents are aware that Chhaupadi is illegal. This suggests that respondents over-report in direct questioning because the social punishment of being an outcast is more of a credible threat than the legal consequences of the practice.

Important policy recommendations can be derived from these findings: First, our results suggest that policy interventions to tackle Chhaupadi may be more effective if they focus on addressing the norm at the social level through community awareness programs instead of incentivising individuals. Second, the list experiment can be a state-of-art method to estimate the prevalence rate of harmful traditions. Also, when combined with direct measures, it seems to reveal some further understanding of the social context that keeps the tradition alive.

There is a lack of evidence on the practice of Chhaupadi especially in the context of understanding biases that arise in direct questioning. In that regard, our study can be a pioneer to a series of future research that aims to understand people's attitudes toward it. We believe that further research should assess the impact of correcting the social misperception – the difference in the number of individuals actually practicing it against those claiming to practice it – at the communal level. There is also a need for studies to explore a causal link between education and attitude towards Chhaupadi as it could be crucial for policies that try to eradicate it.

### References

- Abu-Ghaida, D. and Klasen, S. (2004). The costs of missing the millennium development goal on gender equity. *World Development*, 32(7):1075–1107.
- Adam, T., Bathija, H., Bishai, D., Bonnenfant, Y.-T., Darwish, M., Huntington, D., and Johansen, E. (2010). Estimating the obstetric costs of female genital mutilation in six african countries. *Bulletin of the World Health Organization*, 88:281–288.
- Adukia, A. (2017). Sanitation and education. American Economic Journal: Applied Economics, 9(2):23–59.
- Ahlquist, J. (2017). List experiment design, non-strategic respondent error, and item count technique estimators. *Political Analysis*, 26:1–20.
- Amatya, P., Ghimire, S., Callahan, K. E., Baral, B. K., and Poudel, K. C. (2018). Practice and lived experience of menstrual exiles (chhaupadi) among adolescent girls in far-western nepal. *PloS One*, 13(12):1– 17.
- Aronow, P. M., Coppock, A., Crawford, F. W., and Green, D. P. (2015). Combining list experiment and direct question estimates of sensitive behavior prevalence. *Journal of Survey Statistics and Methodology*, 3(1):43–66.
- Balfanz, R. (2016). Missing school matters. Phi Delta Kappan, 98(2):8–13.
- Banks, E., Meirik, O., Farley, T., Akande, O., Bathija, H., and Ali, M. (2006). Female genital mutilation and obstetric outcome: WHO collaborative prospective study in six African countries. *Lancet (London, England)*, 367(9525):1835–1841.
- Blair, G. and Imai, K. (2012). Statistical analysis of list experiments. Political Analysis, 20:47–77.
- Bongaarts, J. and Guilmoto, C. Z. (2015). How many more missing women? Excess female mortality and prenatal sex selection, 1970–2050. *Population and Development Review*, 41(2):241–269.
- Budhathoki, A. (2019). Nepal makes first period hut arrest after woman dies during banned custom. URL=https://www.theguardian.com/global-development/2019/dec/06/ nepal-makes-first-period-hut-arrest-after-woman-dies-during-banned-custom. The Guardian. Accessed on 08.12.2019.
- Cairncross, S. (1998). Why promote sanitation and hygiene? In From UNICEF workshop on environmental sanitation, unpublished report.
- Chesnokova, T. and Vaithianathan, R. (2010). The economics of female genital cutting. The BE Journal of Economic Analysis and Policy, 10(1).
- Crawford, M., Menger, L. M., and Kaufman, M. R. (2014). 'This is a natural process': managing menstrual stigma in nepal. *Culture, Health and Sexuality*, 16(4):426–439.

- De Cao, E. and Lutz, C. (2018). Sensitive survey questions: measuring attitudes regarding female genital cutting through a list experiment. Oxford Bulletin of Economics and Statistics, 80(5):871–892.
- de Jong, M. G. and Pieters, R. (2019). Assessing sensitive consumer behavior using the item count response technique. *Journal of Marketing Research*, 56(3):345–360.
- de Jonge, C. P. K. and Nickerson, D. W. (2014). Artificial inflation or deflation? Assessing the item count technique in comparative surveys. *Political Behavior*, 36(3):659–682.
- DHS (2016). DHS- demographic health surveys. URL=https://dhsprogram.com/data/dataset\_ admin/login\_main.cfm;jsessionid=328387CFA372757E69E1F2F6BF89C011.cfusion?CFID=26915638& CFTOKEN=90b891fa41b807b7-83301163-FE36-7E32-AAE4D59DA7E5375F. Data retrieved after given access from DHS on 10 June, 2019.
- Duvvury, N., Carney, P., and Nguyen, H. M. (2013). Estimating the costs of domestic violence against women in Viet Nam. United Nations Entity for Gender Equality and the Empowerment of Women (UN Women).
- Ekenze, S., Ezegwui, H., and Adiri, C. (2007). Genital lesions complicating female genital cutting in infancy: a hospital-based study in south-east nigeria. *Annals of Tropical Paediatrics*, 27(4):285–290.
- Ekenze, S. O., Mbadiwe, O. M., and Ezegwui, H. U. (2009). Lower genital tract lesions requiring surgical intervention in girls: perspective from a developing country. *Journal of Paediatrics and Child Health*, 45(10):610–613.
- Ginsburg, A., Jordan, P., and Chang, H. (2014). Absences Add Up: How School Attendance Influences Student Success. Attendance Works.
- Glynn, A. N. (2013). What can we learn with statistical truth serum? Design and analysis of the list experiment. *Public Opinion Quarterly*, 77(S1):159–172.
- Gonzalez-Ocantos, E., de Jonge, C. K., Meléndez, C., Osorio, J., and Nickerson, D. W. (2012). Vote buying and social desirability bias: Experimental evidence from Nicaragua. *American Journal of Political Science*, 56(1):202–217.
- Gosen, S., Schmidt, P., Thörner, S., and Leibold, J. (2019). Is the list experiment doing its job? In Einstellungen und Verhalten in der empirischen Sozialforschung, pages 179–205. Springer VS, Wiesbaden.
- Grant, M., Lloyd, C., and Mensch, B. (2013). Menstruation and school absenteeism: evidence from rural Malawi. Comparative Education Review, 57(2):260–284.
- Haber, N., Harling, G., Cohen, J., Mutevedzi, T., Tanser, F., Gareta, D., Herbst, K., Pillay, D., Bärnighausen, T., and Fink, G. (2018). List randomization for eliciting HIV status and sexual behaviors in rural Kwazulu-Natal, South Africa: a randomized experiment using known true values for validation. *BMC Medical Research Methodology*, 18(1):46.

- Holland, P. W. (1986). Statistics and causal inference. Journal of the American Statistical Association, 81(396):945–960.
- Ichino, A. and Moretti, E. (2009). Biological gender differences, absenteeism, and the earnings gap. American Economic Journal: Applied Economics, 1(1):183–218.
- Imai, K. (2011). Multivariate regression analysis for the item count technique. *Journal of the American Statistical Association*, 106(494):407–416.
- Joseph, G., Javaid, S. U., Andres, L. A., Chellaraj, G., Solotaroff, J. L., and Rajan, S. I. (2017). Underreporting of gender-based violence in Kerala, India. World Bank, Washington DC.
- Kaplan, A., Hechavarría, S., Martín, M., and Bonhoure, I. (2011). Health consequences of female genital mutilation/cutting in the Gambia, evidence into action. *Reproductive Health*, 8(1):26.
- Karlan, D. S. and Zinman, J. (2012). List randomization for sensitive behavior: an application for measuring use of loan proceeds. *Journal of Development Economics*, 98(1):71–75.
- Kc, S. (2018). Impacts on social well-being of women due to the chhaupadi tradition (being untouchable during menstruation) among the women of Far Western Nepal. The case study of the 'chhaupadi' tradition (a form of culture based gender discrimination) in Achham district, Far Western region, Nepal. Master's thesis, OsloMet-Oslo Metropolitan University.
- Kidman, R. (2016). Child marriage and intimate partner violence: a comparative study of 34 countries. International Journal of Epidemiology, 46(2):662–675.
- King, E. and Mason, A. (2001). Engendering development: through gender equality in rights, resources, and voice. World Bank, Washington DC.
- Kirk, J. (2006). The impact of women teachers on girls' education. Policy Brief. Bangkok, UNESCO.
- Kirk, J. and Sommer, M. (2006). Menstruation and body awareness: linking girls' health with girls' education. pages 1–22. Royal Tropical Institute (KIT), Special on Gender and Health.
- Klasen, S. and Lamanna, F. (2009). The impact of gender inequality in education and employment on economic growth: new evidence for a panel of countries. *Feminist Economics*, 15(3):91–132.
- Kramon, E. and Weghorst, K. R. (2012). Measuring sensitive attitudes in developing countries: lessons from implementing the list experiment. Newsletter of the APSA Experimental Section, 3(2):14–24.
- Kuklinski, J. H., Cobb, M. D., and Gilens, M. (1997). Racial attitudes and the "new south". The Journal of Politics, 59(2):323–349.
- LaBrie, J. W. and Earleywine, M. (2000). Sexual risk behaviors and alcohol: higher base rates revealed using the unmatched-count technique. *Journal of Sex Research*, 37(4):321–326.
- Lloyd, C. B. and Mensch, B. S. (2008). Marriage and childbirth as factors in dropping out from school: an analysis of dhs data from Sub-Saharan Africa. *Population Studies*, 62(1):1–13. PMID: 18278669.

- Lloyd, C. B. and Young, J. (2009). New lessons: the power of educating adolescent girls: a girls count report on adolescent girls. New York Population Council 2009.
- Maimaiti, Y. and Siebert, S. (2009). The gender education gap in China: the power of water. *IZA Discussion Paper*.
- McKenzie, D. and Siegel, M. (2013). Eliciting illegal migration rates through list randomization. *Migration Studies*, 1(3):276–291.
- Morton, M., Klugman, J., Hanmer, L., Singer, D., et al. (2014). Gender at work: a companion to the world development report on jobs. World Bank, Washington DC.
- Moseson, H., Massaquoi, M., Dehlendorf, C., Bawo, L., Dahn, B., Zolia, Y., Vittinghoff, E., Hiatt, R. A., and Gerdts, C. (2015). Reducing under-reporting of stigmatized health events using the list experiment: results from a randomized, population-based study of abortion in Liberia. *International Journal of Epidemiology*, 44(6):1951–1958.
- Nepusz, T., Petróczi, A., Naughton, D. P., Epton, T., and Norman, P. (2014). Estimating the prevalence of socially sensitive behaviors: attributing guilty and innocent noncompliance with the single sample count method. *Psychological Methods*, 19(3):334.
- NPCUNDP (2014). Nepal human development report 2014: beyond geography, unlocking human potential. Nepal Planning Commission and United Nations Development Programme. Accessed on 10 June, 2019.
- OHCHR (1995). OHCHR- Fact sheet no. 23: Harmful traditional practices affecting the health of women and children. URL=https://www.ohchr.org/Documents/Publications/FactSheet23en.pdf. Accessed on 01 June, 2019.
- Oster, E. and Thornton, R. (2009). Menstruation and education in nepal. *National Bureau of Economic Research*. NBER working papers.
- Ostwald, K. and Riambau, G. (2017). Placebo statements in list experiments. SSRN Electronic Journal.
- Parajuli, S. B., Heera, K., Mishra, A., Bhattarai, P., Shrestha, M., and Srivastav, K. (2019). Chaupadi during menstruation still a major community health challenge: perspective from Mid-Western Nepal. *BIBECHANA*, 16:228–235.
- Parsons, J., Edmeades, J., Kes, A., Petroni, S., Sexton, M., and Wodon, Q. (2015). Economic impacts of child marriage: a review of the literature. *The Review of Faith and International Affairs*, 13(3):12–22.
- Phillips-Howard, P. A., Nyothach, E., ter Kuile, F. O., Omoto, J., Wang, D., Zeh, C., Onyango, C., Mason, L., Alexander, K. T., Odhiambo, F. O., et al. (2016). Menstrual cups and sanitary pads to reduce school attrition, and sexually transmitted and reproductiiete tract infections: a cluster randomised controlled feasibility study in rural western Kenya. *BMJ Open*, 6(11):e013229.

- Psacharopoulos, G. and Patrinos, H. A. (2004). Returns to investment in education: a further update. *Education Economics*, 12(2):111–134.
- Raghavendra, S., Duvvury, N., and Ashe, S. (2017). The macroeconomic loss due to violence against women: the case of Vietnam. *Feminist Economics*, 23(4):62–89.
- Ramnarine, A. (2017). The effect of child marriage on children's health outcomes: evidence from Bangladesh. Master's thesis, Florida International University.
- Ranabhat, C., Kim, C.-B., Choi, E. H., Aryal, A., Park, M. B., and Doh, Y. A. (2015). Chhaupadi culture and reproductive health of women in Nepal. Asia Pacific Journal of Public Health, 27(7):785–795.
- Redlawsk, D. P., Tolbert, C. J., and Franko, W. (2010). Voters, emotions, and race in 2008: Obama as the first black president. *Political Research Quarterly*, 63(4):875–889.
- Robinson, H. (2015). Chaupadi: the affliction of menses in Nepal. International Journal of Women's Dermatology, 1(4):193.
- Rosenfeld, B., Imai, K., and Shapiro, J. N. (2016). An empirical validation study of popular survey methodologies for sensitive questions. *American Journal of Political Science*, 60(3):783–802.
- Sapkota, D., Sharma, D., Pokharel, H., Budhathoki, S. S., and Khanal, V. K. (2013). Knowledge and practices regarding menstruation among school going adolescents of rural Nepal. *Journal of Kathmandu Medical College*, 2(3):122–128.
- Scott, L., Dopson, S., Montgomery, P., Dolan, C., and Ryus, C. (2009). Impact of providing sanitary pads to poor girls in Africa. University of Oxford.
- Sekhri, S. and Debnath, S. (2014). Intergenerational consequences of early age marriages of girls: Effect on children's human capital. *The Journal of Development Studies*, 50(12):1670–1686.
- Siddique, K. (2011). Domestic violence against women: cost to the nation. *Care-Bangladesh Research Report* on Women Empowerment.
- Sumpter, C. and Torondel, B. (2013). A systematic review of the health and social effects of menstrual hygiene management. *PloS One*, 8(4):e62004.
- Taracena, K. (2018). Her space: design explorations for menstrual health management in Western Nepal. PhD dissertation, State University of New York at Buffalo.
- Tourangeau, R., Rips, L. J., and Rasinski, K. (2000). The psychology of survey response. Cambridge University Press.
- Tourangeau, R. and Yan, T. (2007). Sensitive questions in surveys. *Psychological Bulletin*, 133(5):859.
- Tsuchiya, T. and Hirai, Y. (2010). Elaborate item count questioning: why do people underreport in item count responses? In Survey Research Methods, volume 4, pages 139–149.

- Tsuchiya, T., Hirai, Y., and Ono, S. (2007). A study of the properties of the item count technique. Public Opinion Quarterly, 71(2):253–272.
- United Nations Children's Fund (2014). Ending child marriage: Progress and prospects. UNICEF. New York.
- Upadhyay, P. (2018). Menstruation pollution taboos and gender based violence in western Nepal. *NEHU Publication.* India.
- Upreti, D. A. and Bhandari, R. R. (2010). Mid-term review of chaupadi elimination project in Achham. Save the Children. Nepal.
- Vara, A. H. (2013). Violence against women and its financial consequences for businesses in Peru. Faculty of Administrative Sciences and Human Resources, University of San Martin de Porres and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). Lima.
- Vyas, S. (2013). Estimating the association between women's earnings and partner violence: evidence from the 2008-2009 Tanzania National Panel Survey. World Bank. Washington, DC.
- WHO (2009). Changing cultural and social norms that support violence. World Health Organization, Geneva.
- Wodon, Q. T. and De La Briere, B. (2018). Unrealized potential: the high cost of gender inequality in earnings. *The Cost of Gender Inequality Notes Series*. World Bank. Washington, DC.
- Wolter, F. and Laier, B. (2014). The effectiveness of the item count technique in eliciting valid answers to sensitive questions. an evaluation in the context of self-reported delinquency. In Survey Research Methods, volume 8, pages 153–168.
- World Bank (2017). La obra debe citarse de la siguiente manera: Banco Mundial. 2017. las conexiones entre pobreza y la provisión de agua, saneamiento, e higiene (ash) en panamá: Un diagnóstico.
- WVS (2014). WVS- World Values Survey: round six—country-pooled datafile version. URL=http://www.worldvaluessurvey.org/WVSDocumentationWV6.jsp. Accessed on 12 November, 2019.
- Yadav, R. N., Joshi, S., Poudel, R., and Pandeya, P. (2017). Knowledge, attitude, and practice on menstrual hygiene management among school adolescents. *Journal of Nepal Health Research Council*, 15(3):212–216.
- Yirga, W. S., Kassa, N. A., Gebremichael, M. W., and Aro, A. R. (2012). Female genital mutilation: prevalence, perceptions and effect on women's health in Kersa district of Ethiopia. *International Journal* of Women's Health, 4:45.

### A Appendix

### A.1 Local politician's response to Chhaupadi

A local politician said this about Chhaupadi, "In my view, it is not right to force a woman to practice Chhaupadi and maybe there are legal provisions against this. However, my soul doesn't permit me to enter inside my house while I am menstruating. The deep-rooted culture inside me pushes me to stay outside the house."

### A.2 Picture of a chhau hut



## A HOUSEHOLD SURVEY TO UNDERSTAND GENDER NORMS AND PERCEPTIONS IN ACHHAM DISTRICT OF FAR WESTERN NEPAL

Stockholm School of Economics

August – September 2019

Researchers: Athina Swahn & Alina Ojha

This is an independent study carried out by the students from the Stockholm School of Economics, Sweden. It focuses on the views of everyday Achammese such as yourself. You have been chosen to contribute to this study. Your contribution is important and will help researchers to understand how people in Accham think. This means that for most of the questions we are going to ask you, there is no right or wrong answer. We are just interested in what you think about a variety of issues. Everything you say will remain confidential. The results based on the anonymized survey responses will be used for academic research. Hello my name is .....

I would like to reemphasize that the survey will never record respondents name to ensure anonymity. We cannot in anyway trace back the responses to the individual respondents.

### A.3 English version of the questionnaire

1.1 Enumerator's details:	a) Name:	b) Enumerator's ID Code:
1.2 Municipality	a) Name:	
1.3 Ward	a) Number:	
1.4 Village	a) Name:	b) Village Code:
1.5 Does this HH have a female between the age of 15 to 49?	<ol> <li>Yes</li> <li>No → not a valid household and <u>skip</u></li> </ol>	to question 1.7
<ul> <li>1.5.1 <u>If yes to 1.6:</u> how many women between 15 to</li> <li>49 years old are there in this household?</li> </ul>	1. 1 2. 2 3. 3 4. 4 5. 5 6. 6	
1.5.2 Do ANYONE OF THE F currently live with their fi in this HH? <b>TICK ALL</b>	EMALES between 15 to 49 years old ather/mother/father-in-law/mother-in-law <i>THAT APPLY</i>	Yes     NO       a.) Father     1     2       b.) Mother     1     2       c.) Mother-in-law     1     2       d.) Father-in-law     1     2

			a.) Mother
ONLY ASK FOR THE OPTIONS THAT ARE         IDENTIFIED IN 1.5.2         YES       NO         a.) Mother       1       2         b.) Father       1       2       1         c.) Mother - in - law       1       2       1         d.) Father - in - law       1       2       1         d.) Father - in - law       1       2       1         Skip to question 1.7       5       1	<ol> <li>Due to health concerns</li> <li>Due to permanent/ long term unavailability</li> <li>Other</li></ol>	<ol> <li>Yes → <u>skip to question 1.9</u></li> <li>No</li> <li>The HH has no female between the age of 15 to 49</li> <li>The HH does not have father/mother/father-in- law/mother-in-law who are our primary respondents.</li> <li>The primary respondents (father/mother/father- in-law/mother-in-law) cannot be interviewed due to health concerns</li> <li>The primary respondents (father/mother/father- in-law/mother-in-law) cannot be interviewed due to permanent/ long term unavailability.</li> <li>Other</li> </ol>	<ol> <li>If both Father (Father in law) and Mother (Mother in law) are available, CHOOSE male (female) if the last HH had female (male).</li> </ol>
<ul> <li>1.6 Can mother/ father/ father-in- law/ mother-in-law be interviewed for this survey <u>NOW</u>?</li> </ul>	1.6.1 If no to 1.6: why cannot they be interviewed?	1.7 FILL OUT YOURSELF: Is this a valid HH? 1.8 FILL OUT YOURSELF: Why is this not a valid HH?	1.9 Choose the primary respondent(s).

wfather and       wfather and         wfather and       the oldest one.         it he oldest one.       b         b       Day of the interview         b       Day of the interview         b       Day of the interview         cffather-in-law/PM       E         E       IDENTIFIED PRIMARY RESPONDENT         ceffather-in-law/II also be anonymous.       exponse	available, choose the oldest one available, choose the oldest one father-in-law are present, choose the oldest one if ther in-law are present, choose by No	• If only one primary       2.         respondent, please tick on       3.         • If more than one available, the selected respondent.       3.         • If more than one available, then use the appropriate condition described on the right column and then tick on the selected respondent.       2.         0 Is the Interviewee' identified       1.         nary respondent present?       2.         1 How old is the primary       1.         respondent?       2.         2 Gender of the primary       1.         respondent?       2.         1 How old is the primary       1.         7 respondent?       2.         8 Date of interview       a)         4 Start time       a)         5 Household ID       1.         *NOTE: QUESTIONNAIRE       a)         SECTION 2: PRIMARY RES
	1 Vec	
	ESPONDENT	SECTION 2: PRIMARY RES
er/father-in-law/mother-in-law). I am going to ask you a couple of questions mely confidential and will also be anonymous.	ed primary respondent (father/moth d. Your responses will be kept extre	
E IDENTIFIED PRIMARY RESPONDENT	E TO BE DISTRIBUTED TO TI	*NOTE: QUESTIONNAIRE
		lousehold ID
AM /PM	I) Start: HH:MM (12.00 hours):	a) a)
b) Day of the interview		ate of interview a)
	2. Male	respondent 2.
	l. Female	ender of the primary 1.
		ow old is the primary spondent?
	L. Yes	the Interviewee/ identified 1. y respondent present? 2.
		then use the appropriate condition described on the right column and then tick on the selected respondent.
s/m-laws are w/father and the oldest one	available, choose the oldest one 3. If both mother and mother -in-la father in law are present choose	f only one primary 2. respondent, please tick on the selected respondent. 3.

0		<ol> <li>Yes   → ask/suggest the interview</li> </ol>	ewee to move a bit further from the house/other people to ensure confidentiality
7.7	<b>OBJEAUE FOUNDELT:</b> Is there any one apart from the interviewee present?	2. No	
2.3	Does this HH have a fertile female	1. Yes	
	between the age of 15 to 49?	<ol> <li>No  → END SURVEY and thank</li> </ol>	
		the respondent	
2.4	Are vou her father/mother/father-in-	1. Mother	
	law/mother-in-law?	2. Mother-in-law	
		3. Father	
		4. Father-in-law	
		<ol> <li>N<sub>0</sub> → END SURVEY and thank the</li> </ol>	
		respondent	
2.5	Are vou the head of the household?	<ol> <li>Yes → skip to section 3</li> </ol>	
		2. No	
251	If no to 2.5. What is your relationship	1. Wife	
	to the head of the household?	2. Husband	
		3. Daughter	
		4. Son	
		5. Mother	
		6. Mother-in-law	
		7. Son – in – law	
		8. Daughter - in - law	
		9. Uncle	
		10. Aunt	
		96. Other(specify)	
	SECTION 3: DEMOGRAPHIC CHAF	<b>LACTERISTICS OF THE PRIMAR</b>	Y RESPONDENT

I am now going to ask you some questions about you and the people that live in your household (everyone who lives in the same house and shares resources such as money and food and have a joint decision-making process). To start with I am going to ask...

2 1	How mony neonle live in this		
1.0			
	household including yourself?		
3.2	Which religion do you belong to?	1. Hinduism	
		2. Buddhism	
		3. Islam	
		4. Kirat	
		5. Christian	
		6. Sikh	
		7. Jain	
		8. No religion	
		96. Other (specify)	
3.3	Which caste do you belong to?	1. Brahmin	
		2. Chhetri	
		3. Newar	
		4. Dalit	
		5. Janajati	
		6. Madhesi	
		96. Others(specify)	
3.4	How long have you been living in	1. Born in Accham	
	Accham?	2. In years	
3.5	Which is the highest level of	1. No education	
	education you ever attained?	2. Literate	
		3. Primary School	
		<ol> <li>Secondary school</li> </ol>	
		<ol><li>High school</li></ol>	

		C Dashalam	
		0. Dauguos	
		7. Masters	
		8. Professional Degree	
		(specify)	
		96. Other	
		(specify)	
		95. Don't know (don't read out this	
		option)	
3.6 What is your marital status	~	1. Married or living together	
		2. Divorced/Separated	
		3. Widowed	
		<ol> <li>Never married and never lived together</li> </ol>	
SECTION 4: HOUSEH	OLD CH	ARACTERISTICS OF THE PRIMARY RESPONDE	LN
4.1 What is your main	Never h	tad a job	
occupation?	Student		
	Housew	vife/homemaker	
	4 Agricult	ture/ farming/ fishing/ forestry	
	Trader/	hawker/ vendor	
	6 Retail/ s	shop	
	Unskill	ed manual labour	
	8 Artisan	or skilled manual worker (eg., Trades like electrician, mechanic,	_
	machini	ist or skilled manufacturing worker)	
	Clerical	l or secretarial	
	0 Supervi	isor / foreman / senior manager	
	1 Security	y services (police, army, private security)	
	2 Mid-le	evel professional (eg., Teacher, nurse, mid-level government officer)	
	3 Upper –	- level professional (eg., Banker/finance, doctor, lawyer, engineer,	
	account	tant, professor, senior - level government officer)	
	4 Unempl	loyed	-
	5 Retired		
	6 Disable	q	

	96. Other	
	95 Don't know (don't read this option out)	
4.2 How many rooms are there in this household?	Rooms	
4.3 Do you have a separate room used only for cooking?	1. Yes 2. No	
4.4 What is your main source of drinking water?	Piped Water         11. Piped into dwelling         12. Piped into neighbour         13. Piped into neighbour         14. Public Taps/Standpipe         21. Tube well or borehole         32. Unprotected well         32. Unprotected well         32. Unprotected spring         41. Protected spring         42. Unprotected spring         43. Eainwater         64. Tanker truck         71. Cart with small tank         81. Surface water (river/dam/lake/ponds/stream/canal/irrigation channel)         91. Bottled water         92. Other	
4.5 What kind of toilet facilities do members of your family use?	Flush or pour flush toilet 11. Flush to piped sewer system 12. Flush to septic tank 13. Flush to pit latrine 14. Flush to somewhere else 15. Flush, don't know where	

	Fit Latrine					
	21. Ventilated improved	pit latrine				
	22. Pit latrine with slab					
	23. Pit latrine without sla	ab/open pit				
	31. Composting toilet					
	41. Bucket toilet					
	51. Hanging toilet/hangi	ng latrine				
	61. No facility/bush/fiel	d/river				
	96. Other	(specify)				
4.5.1 Do you share the toilet	1. Yes					
facilities with other	2. No					
households?						
4.6 Does your household have:		YES NO				
a) electricity?	a.) Electricity	1 2				
b) A radio?	b.) Radio	1 2				
c) A Mobile Phone?	c.) Mobile Phone	1 2				
d) A television?	d.) Television	1 2				
e) A bike?	e.) Bike	1 2				
f) A bicycle	f.) Bicycle					
4.7 How often do you get news fre	om the following sourc	ces?				
Source Everyday	A few times a	A few times a month	Less than once a	Never	Don't know	Not applicable
	week		month			(if no to 4.6)
a.) Television 4	3	2	1	0	95	8
b.) Newspaper 4	3	2	1	0	95	8
4.8 FILL OUT YOURSELF	Natural Roofing					
AT THE END: The main	<ol> <li>No Roof</li> <li>Thatch/Palm leaf</li> </ol>					
	13. Sod					
				-		

mate	erial of the roof of	the Rudime	entary Roofing				
lowb	lling	21. Ru	stic Mat				
nwc	umg.	22. Pal	lm/Bamboo				
		23. W(	ood Planks				
Ree	cord Observation.	24. Ca	rdboard				
		Finishe	d Roofing				
		31. Me	etal		-		
		32. Wc	poq				
		33. Ca	lamine/Cement Fiber				
		34. Ce	ramic Tiles				
		35. Ce	ment				
		36. Ro	ofing Shingles		]_		
		96. oth	her (specify)				
	SECTION 5: HO	USEHOLD F	ROSTERS				
	Sub-Section: 5.1 1	Household ros	sters (children under 1:	2			
	I am now going to	ask you abou	t all children living in th	te household who are belo	w 15 years old.		
	A. How many	y children und	ler the age of 15 years o	Id live in this household?	If 0 → ski	p to section 5.2)	
	5.1.2 Age of 5 HH-	5.1.3 Gender	5.1.4 Relationship	5.1.5 Highest level	5.1.6 Is this nerson	5.1.7 If yes to 5.1.6 which	5.1.8 If no to 5.1.6, What was
	member		of the HH		still in	level are	this person didn't
				_	school	they	continue their studies
						studying in?	further?
		<ol> <li>Female</li> </ol>	1. Son	1. No education	1. Yes	<ol> <li>Primary school</li> </ol>	<ol> <li>Due to Poverty</li> </ol>
a		2. Male	2. Daughter	2. Literate	2. №	2. Secondary school	2. Parent's didn't allow

5.1.1 Member ID

Need to do household work

9

95. don't know

5. School facility far away

Got married
 Had children

96. Other .....

High school

<u>skip to question</u> <u>5.1.8</u>

Primary School
 Secondary School

Grand daughter
 Grand son

High school

4. %

Niece Nephew

9

		96. Other (specify)	96. Other			7. They didn't like studying	
			(specify) 95. Don't know ( <b>don't read</b>			<ol> <li>Physically disabled</li> <li>Other</li> <li>(specify)</li> </ol>	
			out this option)			95 don't know	
						55 refused to answer	
umerator chec	k: I have writte	en down that there are	[total from children u	ider 15 roster] peo	ple in this househ	ld age under 15 years old.	
this correct? yes $\rightarrow$ continue	e to the next sec	tion. If no $\rightarrow$ revisit an	id correct roster according	ty.			
th-Section 5.2:	: Household ros	sters (members between	1 15 – 49 years old)				
um now going t	to ask you about	t all HH members living	g in the HH who are betwe	en 15 - 49 years o	old including your	self.	
A. How ma thank th	ny members bet ie respondent)	tween the age of 15 - 49	) years old besides you live	in this household	2  (If 0 +	end the survey and	
.2 Age of HH-	5.2.3 Gender	5.2.4 Relationship to the head of the	5.2.5Highest level of ed	ucation 5.2.	6 For HH members	(.2.7 <u>If No to 5.2.6.</u> What was the main reason why this person didn't	
member		household			under 18: are they still in school?	continue their studies further?	
-				-			

ï	Female	I.	Head of the HH	1. No education	<ol> <li>Yes          skip to     </li> </ol>	<ol> <li>They didn't want to cont</li> </ol>	nue their
5	Male	5	Wife	2. Literate	section 6	education.	
		3.	Husband	3. Primary School	2. No	2. Due to Poverty	
		4	Son	<ol><li>Secondary School</li></ol>		3. Parent's didn't allow	
		vi v	Daughter Dauchter – in – law	<ol><li>High school</li></ol>		4. Got married	
			Son - in - law	6. Bachelors		5. School facility far away	
		œ.	Brother	7. Masters		6. Need to do household w	rk
			Sister	<ol> <li>Professional degree (specify)</li> </ol>		<ol><li>They didn't like studying</li></ol>	
		10.	Stster – in – law Brother – in – law			8. Physically disabled	
		96.	Other (specify)	96. Other (specify)		96. Other	:
				95. Don't know (don't read out this		(specify)	
				option)		95. Don't know (don't read	out this option)
			-	55. refused to answer			
	_						
	_						
	_						
	_						
							-

[total from household member between 15 to 49 years old roster] people in this If yes  $\rightarrow$  continue to the next section. If no  $\rightarrow$  revisit and correct roster accordingly. Enumerator check: I have written down that there are household are between 15 to 49 years. Is this correct?

# SECTION 6: PERCEPTION/ATTITUDE ON DIFFERENT GENDER ISSUES

PRACTICE/EXAMPLE QUESTION: INSTRUCTIONS TO PARTICIPANT: Here I will ask questions in a different way: I would like you set, we will count the number of fingers you have up. For this first set, keep your hand in front of you so that we can see and make sure we get the numbers right. Feel free to ask for help for this example question. to take one hand and close it into a fist. I will ask you five questions. If you agree with a question, raise one more finger. At the end of each

How many of these statements do you agree with?

	How many of these statements do you agree with?
• I brushed my teeth today.	1
• I have blue hair	2
• I ate rice yesterday.	3
• I prefer apples over mangoes.	4
<ul> <li>I am currently wearing socks.</li> </ul>	5

### ASK THE RESPONDENT:

- 1. Do you understand the method?
  - a. Yes, I do b. No. I don'
- No, I don't.  $\rightarrow$  explain the method again as we practiced during the training.
- Do you have any questions/doubts about this? Please let me know if you do, before we proceed to the next set. a. Yes, I have some questions.  $\rightarrow$  explain the method again as we practiced during the training. ä
  - b. No, I don't have any questions/doubts. → proceed to question 6.1

Please take your hand behind your back first. Then, how many of these statements do you agree with?

	<ul> <li>Members of</li> </ul>	this household have spent a		
	whole day ar	nd night without cating anything.	How many of these sta	tements do you agree with?
	<ul> <li>A man is the</li> </ul>	head of this household.	1	
	<ul> <li>It is not alrig live together</li> </ul>	ht for an unmarried couple to before they get married.	7	
	<ul> <li>Any member</li> </ul>	: of this household has a bank	e	
	account.		4	]
			ŝ	
	This househ     Chhaupadi.	old currently practises		
In the next section questions. We are	n, I will continu e simply interes	e to ask you some questions ab ted in your opinion. Anything y	out different topics. There is r ou say will be kept strictly co	no right or wrong answer to these nfidential.
6.2 Do you know what contraceptic	on means?	l. Yes		
		<ol> <li>No → read "what we provide you on and skin to question 6.3</li> </ol>	contraception in training manual"	
4 mar de mart 2 3; Ham de mar de	more about 140	1 From ads on radio		-
0.2.1 <u>II yes to 0.2.</u> How do you k SFLECT ALL THAT APPLY		<ol> <li>From ads on television</li> </ol>		
		<ol><li>NGO programs</li></ol>		

	4. Family and friends	
	96. Other (specify)	
6.3 In a typical HH in this village, who do you	1. Husband	
think usually decides about using	2. Wife	
	<ol><li>Wife and Husband decide together</li></ol>	
connaception	95. Don't know (don't read out this option)	
	55. Refused to answer	
6.4 Who usually decides how the money will be	1. You	
used: von hushand/wife, von and vour nartner	2. Your partner	
	<ol><li>You and your partner decide together</li></ol>	
decide together?	4. Someone else	
	95. Don't Know (don't read out this option)	
	55. Refused to answer	]
6.5 Who usually makes decisions about your	1. You	
visits to your family or relatives?	2. Your partner	
	<ol><li>You and your partner decide together</li></ol>	
	4. Someone else	
	95. Don't know (don't read out this option)	
	55. Refused to answer	
6.6 In a typical HH in this village, do you think	1. Yes	
that a married person should be able to say no	2. No	
to their partner if they do not want to have	95. Don't know (don't read out this option)	
sexual intercourse?	55. Refused to answer	
6.7 In a typical HH in this village, do you think	1. Yes	
that a wife should be able to ask their partner	2. No	
to use a condom if she wanted him to?	<ol> <li>Don't know (don't read out this option)</li> <li>Refused to answer</li> </ol>	
6.8 In your opinion, is a husband justified to hitting	or beating his wife in the following situations:	
YE	S NO	
a.) If she goes out without telling her husband? $1 \mid $		
b.) If she neglects the children? $1 \mid $		

2 [ 2 ] 2 [ 2 ]	Yes No . Refused to answer	YESNOLTraditional healers12D.Elder men in the village12LElder women in the village12LReligious leaders12LHealth Post12	Very often (every week) Often (once a month) Sometimes (once a year) Never	Yes No <u>→ skip to question 6.15</u> 6. Refused to answer	Yes No → <u>skip to question 6.14</u> . Refused to answer <u>→ try to convince otherwise skip to 6.15</u>
<ul> <li>c.) If she argues with him?</li> <li>d.) If she refuses to have sex with him?</li> <li>e.) If she burns the food?</li> </ul>	<ul> <li>6.9 When jobs are scarce, men should have more</li> <li>1. right to a job than women?</li> <li>5.</li> </ul>	<ul> <li>6.10 When you or any one of your family members are sick, do you seek help from: <u>ASK ONE BY ONE</u></li> <li>a) Traditional healers?</li> <li>b) Elder men in the village?</li> <li>c) Elder women in the village?</li> <li>d) Religious leaders?</li> <li>e) Health Post?</li> </ul>	<ul> <li>6.11 How often do you go to them (traditional 1. healers, religious leader and village elders) 2. when you or any of your family members 4. have problems such as financial difficulty, relationship issues within the family, etc.?</li> </ul>	<ul> <li>6.12 Does this household ever (even if in the 1. past) have at least one member who has 2. followed/who follows Chhaupadi? 5.</li> </ul>	6.13 Does this household currently practice       1         Chhaupadi?       2         Chhaupadi?       5         6.13.1 If yes to 6.13: How many women in this       5         HH practice it?       1

TT O UT					
0.15.2 II	yes to 0.13: While practising				
Ch	haupadi, where do the females live:			-	
a) A Chh	an chad?	ಣೆ	Animal Shed		
		ġ.	Different room of the same house 1 2		
b) Differe	ent room of the same house?	5	Chhau shed 1 1 2 1		
c) Anima	il shed?	ġ.	Outside the house/open space 1 2		If Other, please specify where they
d) Outside	the house/open space outside the		outside the house		live:
house?		ė	Other 1 2		
e) Other.	(specify)		Sk	dip to question 6.14	
6.13.3 If y	yes to any one of the options above:	-i	Yes		
Do	oes the Chhau hut have	5	No		
wii	indows/ventilation?	55.	. Refused to answer		
6.13.4 Do	o you share Chhau hut with other	-i	Yes		
C01	mmunity members?	5	No		
AFTER AS	SKING THIS QUESTION DIRECTLY	55.	. Refused to answer		
GO QUES	rtion 6.15				
6.14 If no	o to 6.13:		Yes		
a) Have	any females in this household ever	i'	No $\rightarrow$ skip to guestion 6.15		
practi	tised Chhaupadi in the past?	95.	. Don't know (don't read out this option)		
-		55.	. Refused to answer		
b) If yes	s to a:		YES	NO	
W	here did the females live while practising	<u>م</u>	Animal shed?	2	If Other, please specify where they
Ch	haupadi?	î	Different room of the same house?	2	lived:
(i	A Chhau shed?	<u> </u>	Chhau shed?	2	
(ii	Different room of the same house?	2	<ul> <li>Outside the house/Open space outside 1</li> <li>the house?</li> </ul>	2	是 不有 资格的 有有的 的复数 化合金 医白骨 医白骨 医白白 医白白 医白白 医白白 医白白 医白白 医白白 医白白
(III	Animal shed?	ĥ	Other 1	2	
iv)	Outside the house/open space outside the		]	]←	
	house?			Skip to question e	
()	Other (specify)				

<ul> <li>55. Refused to answer</li> <li>1. Yes</li> <li>2. No</li> <li>55. Refused to answer</li> <li>55. Refused to answer</li> <li>55. Refused to answer</li> <li>3. 1 year ago</li> <li>3. 1 year ago</li> <li>3. 1 year ago</li> <li>3. 1 year ago</li> <li>55. Refused to answer</li> <li>55. Refused to answer</li> <li>55. Refused to answer</li> <li>55. Refused to answer</li> <li>1. Local government offices denied service (such as issuif food subsidies to the families who still practice Chhaup food subsidies to the families who still practice Chhaup food subsidies to the families who still practice Chhaup food subsidies to the families who still practice Chhaup food subsidies to the families who still practice Chhaup food subsidies to the families who still practice Chhaup hut</li> <li>2. Social pressure (The village where their house is locate practising Chhaupadi)</li> <li>3. (One of the) Females who practiced Chhaupadi in the fi Chhau hut</li> <li>4. Head of the household asked them to stop following it</li> <li>5. The females themselves didn't want to follow it:</li> <li>6. Some organizations (such as NGOs, local mother's grow stop practising it</li> <li>7. The females who practiced Chhaupadi.</li> <li>9. Conter(specify)</li> <li>55. Refused to answer</li> <li>96. Other(specify)</li> <li>55. Refused to answer</li> <li>97. No, no one does &gt; <u>skip to question 6.16</u></li> <li>95. Don't know (don't read out this option)</li> </ul>	y I. Y. 2. Na	53 0	
1. Yes         2. No         55. Refused to answer         55. Refused to answer         1. Recently (2-3 months ago)         2. 6 months ago         3. 1 year ago         4. More than 1 year ago         55. Refused to answer         56. Refused to answer         57. Refused to answer         58. Refused to answer         55. Refused to answer         55. Refused to answer         56. Rouths ago         57. Refused to answer         58. Refused to answer         59. Refused to answer         50. Social pressure (The village where their house is locate practising Chhaupadi in the fi coold subsidies to the families who still practice Chhaupadi in the fi Chhau hut         6. Social pressure (The village where their house is locate practising Chhaupadi)         7. The females themselves didn't want to follow it         8. Animals attacked the females staying in the Chhau hut         9. Understood that menstruation is a biological phenomen do with religion         10. It is illegal to practice Chhaupadi.         9. Understood that menstruation is a biological phenomen do with religion         10. It is illegal to practice Chhaupadi.         96. Other	55. R.	sfused to answer	
<ol> <li>No</li> <li>Refused to answer</li> <li>Recently (2-3 months ago)</li> <li>I Recently (2-3 months ago)</li> <li>I year ago</li> <li>I year ago</li> <li>I year ago</li> <li>I year ago</li> <li>Social pressure offices denied service (such as issuir food subsidies to the families who still practice Chhaupadi in the fiperatising Chhaupadi)</li> <li>Cond subsidies to the families who still practice Chhaupadi in the fiperatising Chhaupadi)</li> <li>Cone of the) Females who practiced Chhaupadi in the fiperatising Chhau hut</li> <li>Cone of the household asked them to stop following it</li> <li>The females themselves didn't want to follow it</li> <li>Chhau hut</li> <li>Cone organizations (such as NGOs, local mother's grow stop practising it</li> <li>The females were physically/sexually assaulted inside t</li> <li>B. Animals attacked the females staying in the Chhau hut</li> <li>Cone organizations (such as NGOs, local mother's grow stop practising it</li> <li>The females were physically/sexually assaulted inside t</li> <li>Mo with religion</li> <li>I. Yes, most people do</li> <li>Yes, some people do</li> <li>No, no one does &gt; <u>skip to question 6.16</u></li> <li>No, no one does &gt; <u>skip to question 6.16</u></li> </ol>	1. Y.	8	
<ul> <li>55. Refused to answer</li> <li>1. Recently (2-3 months ago)</li> <li>2. 6 months ago</li> <li>3. 1 year ago</li> <li>3. 1 year ago</li> <li>3. 1 year ago</li> <li>55. Refused to answer</li> <li>55. Refused to answer</li> <li>55. Refused to answer</li> <li>56. Refused to answer</li> <li>57. Refused to answer</li> <li>58. Refused to answer</li> <li>59. Social pressure (The village where their house is locate practising Chhaupadi)</li> <li>3. (One of the) Females who practiced Chhaupadi in the find of the household asked them to stop following it Chhau hut</li> <li>4. Head of the household asked them to stop following it Chhau hut</li> <li>6. Some organizations (such as NGOs, local mother's grout practising it the finales themselves didn't want to follow it to practising it</li> <li>7. The females themselves didn't want to follow it</li> <li>6. Some organizations (such as NGOs, local mother's grout practising it</li> <li>7. The females themselves didn't want to follow it</li> <li>6. Some organizations (such as NGOs, local mother's grout practising it</li> <li>7. The females themselves didn't want to follow it</li> <li>7. The females themselves didn't want to follow it</li> <li>8. Animals attacked the females staying in the Chhau hut</li> <li>9. Understood that menstruation is a biological phenomendo with religion</li> <li>10. It is illegal to practice Chhaupadi.</li> <li>55. Refused to answer</li> <li>10. It is illegal to practice Chhaupadi.</li> <li>55. Refused to answer</li> <li>3. No, no one does &gt; skip to question 6.16</li> <li>55. Don't know (don't read out this option)</li> </ul>	2. N		
<ol> <li>Recently (2-3 months ago)</li> <li>6 months ago</li> <li>1 year ago</li> <li>1 year ago</li> <li>More than 1 year ago</li> <li>55. Refused to answer</li> <li>Local government offices denied service (such as issuir food subsidies to the families who still practice Chhaup food subsidies to the families who practice (Such as isolate practising Chhaupadi)</li> <li>2. Social pressure (The village where their house is locate practising Chhaupadi)</li> <li>3. (One of the) Females who practiced Chhaupadi in the famales themselves didn't want to follow it Chhau hut</li> <li>4. Head of the household asked them to stop following it Chhau hut</li> <li>5. The females themselves didn't want to follow it Chhau hut</li> <li>6. Some organizations (such as NGOs, local mother's grosting practising it</li> <li>7. The females staying in the Chhau hut</li> <li>9. Understood that menstruation is a biological phenomen do with religion</li> <li>10. It is illegal to practice Chhaupadi.</li> <li>9. Other(specify)</li> <li>55. Refused to answer</li> <li>10. It is illegal to practice Chhaupadi.</li> <li>9. Other(specify)</li> <li>55. Refused to answer</li> <li>10. It is illegal to practice Chhaupadi.</li> <li>11. Yes, most people do</li> <li>12. Yes, some people do</li> <li>13. No, no one does &gt; <u>skip to question 6.16</u></li> <li>14. Yes no thread out this option)</li> </ol>	55. R(	sfused to answer	
<ol> <li>6 months ago</li> <li>1 year ago</li> <li>1 year ago</li> <li>More than 1 year ago</li> <li>55. Refused to answer</li> <li>1. Local government offices denied service (such as issuir food subsidies to the families who still practice Chhaup</li> <li>1. Local government offices denied service (such as issuir food subsidies to the families who still practice Chhaup</li> <li>2. Social pressure (The village where their house is locate practising Chhaupadi)</li> <li>3. (One of the) Females who practiced Chhaupadi in the fit Chau hut</li> <li>4. Head of the household asked them to stop following it Chau hut</li> <li>6. Some organizations (such as NGOs, local mother's grow stop practising it</li> <li>7. The females themselves didn't want to follow it</li> <li>6. Some organizations (such as NGOs, local mother's grow stop practising it</li> <li>7. The females themselves didn't want to follow it</li> <li>6. Some organizations (such as NGOs, local mother's grow stop practising it</li> <li>7. The females themselves didn't want to follow it</li> <li>6. Some organizations (such as NGOs, local mother's grow stop practising it</li> <li>7. The females themselves didn't want to follow it</li> <li>6. Some organizations (such as NGOs, local mother's grow stop practise of the females staying in the Chhau hut</li> <li>7. The females were physically/sexually assaulted inside ta assome dow with religion</li> <li>10. It is illegal to practice Chhaupadi.</li> <li>96. Other(specify)</li> <li>55. Refused to answer</li> <li>10. It is illegal to practice Chhaupadi.</li> <li>96. Other</li></ol>	1. Ré	cently (2-3 months ago)	
<ol> <li>1 year ago</li> <li>More than 1 year ago</li> <li>More than 1 year ago</li> <li>Refused to answer</li> <li>Local government offices denied service (such as issuit food subsidies to the families who still practice Chhaup</li> <li>Social pressure (The village where their house is locate practising Chhaupadi)</li> <li>(One of the) Females who practiced Chhaupadi in the fi Chhau hut</li> <li>(One of the) Females who practiced Chhaupadi in the fi Chhau hut</li> <li>Exactly of the household asked them to stop following it</li> <li>The females themselves didn't want to follow it</li> <li>Some organizations (such as NGOs, local mother's grow stop practising it</li> <li>The females were physically/sexually assaulted inside t</li> <li>Animals attacked the females staying in the Chhau hut</li> <li>Understood that menstruation is a biological phenomen do with religion</li> <li>It is illegal to practice Chhaupadi.</li> <li>Yes, most people do</li> <li>Yes, some people do</li> <li>No, no one does <i>&gt;</i> <u>skip to question 6.16</u></li> <li>Don't know (don't read out this option)</li> </ol>	2. 61	nonths ago	
<ol> <li>More than 1 year ago</li> <li>Refused to answer</li> <li>Local government offices denied service (such as issuir food subsidies to the families who still practice Chhaupati to od subsidies to the families who practiced Chhaupadi in the fipractising Chhaupadi)</li> <li>Cone of the) Females who practiced Chhaupadi in the fipractising Chhaupadi)</li> <li>(One of the) Females who practiced Chhaupadi in the fipractising Chhaubati)</li> <li>Cone of the household asked them to stop following it Chhau hut</li> <li>The females who practiced Chhaupadi in the fip and of the household asked them to stop following it</li> <li>The females themselves didn't want to follow it</li> <li>The females were physically/sexually assaulted inside t Animals attacked the females staying in the Chhau hut</li> <li>Understood that menstruation is a biological phenomen do with religion</li> <li>It is illegal to practice Chhaupadi.</li> <li>Ne, most people do</li> <li>Yes, some people do</li> <li>No, no one does → <u>skip to question 6.16</u></li> </ol>	3. 13	year ago	
<ol> <li>S. Refused to answer</li> <li>Local government offices denied service (such as issuir food subsidies to the families who still practice Chhaup food subsidies to the families who still practice Chhaupadi</li> <li>Social pressure (The village where their house is locate practising Chhaupadi)</li> <li>Cone of the) Females who practiced Chhaupadi in the fiend of the household asked them to stop following it</li> <li>The females themselves didn't want to follow it</li> <li>Some organizations (such as NGOs, local mother's grostop practising it</li> <li>The females themselves didn't want to follow it</li> <li>Some organizations (such as NGOs, local mother's grostop practising it</li> <li>The females were physically/sexually assaulted inside t</li> <li>Animals attacked the females staying in the Chhau hut</li> <li>Understood that menstruation is a biological phenomen do with religion</li> <li>It is illegal to practice Chhaupadi.</li> <li>Other(specify)</li> <li>Refused to answer</li> <li>Yes, most people do</li> <li>Yes, some people do</li> <li>No, no one does &gt; <u>skip to question 6.16</u></li> <li>No, no ne does &gt; <u>skip to question 6.16</u></li> </ol>	W	ore than 1 year ago	
<ul> <li>Local government offices denied service (such as issuit food subsidies to the families who still practice Chhaup food subsidies to the families who still practice Chhaup practising Chhaupadi)</li> <li>Corate practising Chhaupadi)</li> <li>(One of the) Females who practiced Chhaupadi in the fine of the household asked them to stop following it Chhau hut</li> <li>Head of the household asked them to stop following it chan hut</li> <li>The females themselves didn't want to follow it some organizations (such as NGOs, local mother's group practising it</li> <li>The females themselves didn't want to follow it</li> <li>Some organizations (such as NGOs, local mother's grout practising it</li> <li>The females themselves didn't want to follow it</li> <li>One stop practising it</li> <li>Onderstood that menstruation is a biological phenomen do with religion</li> <li>On the religion</li> <li>It is illegal to practice Chhaupadi.</li> <li>Other(specify)</li> <li>Refused to answer</li> <li>Yes, some people do</li> <li>Yes, some people do</li> <li>Yes, some people do</li> <li>No, no one does &gt; <u>skip to question 6.16</u></li> <li>Don't know (don't read out this option)</li> </ul>	5. R(	sfused to answer	
food subsidies to the families who still practice Chhaup Social pressure (The village where their house is locate practising Chhaupadi) (One of the) Females who practiced Chhaupadi in the fi Chhau hut Head of the household asked them to stop following it The females themselves didn't want to follow it Some organizations (such as NGOs, local mother's gro stop practising it The females themselves the formales staying in the Chhau hut Understood that menstruation is a biological phenomen do with religion It is illegal to practice Chhaupadi. It is illegal to practice Chhaupadi. Refused to answer Yes, most people do Yes, some people do No, no one does → <u>skip to question 6.16</u> No, no one does → <u>skip to question 6.16</u>	Ľ	ocal government offices denied service (such as issuing birth certificate,	
Social pressure (The village where their house is locate practising Chhaupadi) (One of the) Females who practiced Chhaupadi in the fi Chhau hut Head of the household asked them to stop following it The females themselves didn't want to follow it Some organizations (such as NGOs, local mother's grous stop practising it The females were physically/sexually assaulted inside t Animals attacked the females staying in the Chhau hut Understood that menstruation is a biological phenomen do with religion It is illegal to practice Chhaupadi. Other(specify) Refused to answer Yes, most people do Yes, some people do No, no one does <b>&gt; skip to question 6.16</b> Don't know ( <b>don't read out this option</b> )	fo	od subsidies to the families who still practice Chhaupadi, etc.)	
practising Chhaupadi) (One of the) Females who practiced Chhaupadi in the fi Chhau hut The a of the household asked them to stop following it Head of the household asked them to stop following it Some organizations (such as NGOs, local mother's gro stop practising it The females were physically/sexually assaulted inside t Animals attacked the females staying in the Chhau hut Understood that menstruation is a biological phenomen do with religion It is illegal to practice Chhaupadi. Other(specify) Refused to answer Yes, most people do Yes, some people do No, no one does ≯ skip to question 6.16 Don't know (don't read out this option)	Sc	cial pressure (The village where their house is located decided against	
(One of the) Females who practiced Chhaupadi in the fi Chhau hut Chhau hut Head of the household asked them to stop following it The females themselves didn't want to follow it Some organizations (such as NGOs, local mother's grous stop practising it The females were physically/sexually assaulted inside t Animals attacked the females staying in the Chhau hut Understood that menstruation is a biological phenomen do with religion It is illegal to practice Chhaupadi. Other(specify) Refused to answer Yes, most people do Yes, some people do No, no one does <b>&gt; skip to question 6.16</b> Don't know (don't read out this option)	pr	actising Chhaupadi)	
Head of the household asked them to stop following it The females themselves didn't want to follow it Some organizations (such as NGOs, local mother's gron stop practising it The females were physically/sexually assaulted inside t Animals attacked the females staying in the Chhau hut Understood that menstruation is a biological phenomen do with religion It is illegal to practice Chhaupadi. Other(specify) Refused to answer Yes, most people do Yes, some people do No, no one does → <u>skip to question 6.16</u> Don't know ( <b>don't read out this option</b> )	9 5	me of the) Females who practiced Chhaupadi in the family died in the hau hut	
The females themselves didn't want to follow it Some organizations (such as NGOs, local mother's grou stop practising it The females were physically/sexually assaulted inside t Animals attacked the females staying in the Chhau hut Understood that menstruation is a biological phenomen do with religion ft is illegal to practice Chhaupadi. Other(specify) Refused to answer Yes, most people do Yes, some people do No, no one does → <u>skip to question 6.16</u> Don't know ( <b>don't read out this option</b> )	Η̈́	ead of the household asked them to stop following it	
Some organizations (such as NGOs, local mother's gro stop practising it The females were physically/sexually assaulted inside t Animals attacked the females staying in the Chhau hut Understood that menstruation is a biological phenomen do with religion It is illegal to practice Chhaupadi. Other(specify) It is illegal to practice Chhaupadi. Other(specify) Refused to answer Yes, most people do Yes, some people do No, no one does <u>&gt; skip to question 6.16</u> Don't know ( <b>don't read out this option</b> )	Ē	e females themselves didn't want to follow it	
The females were physically/sexually assaulted inside t Animals attacked the females staying in the Chhau hut Understood that menstruation is a biological phenomen do with religion It is illegal to practice Chhaupadi. Other(specify) Refused to answer Yes, most people do Yes, some people do No, no one does <u>&gt; skip to question 6.16</u> Don't know ( <b>don't read out this option</b> )	S t	withe organizations (such as NGOs, local mother's group) pressurized you	to
I he ternales were physically/sexually assaulted inside t Animals attacked the females staying in the Chhau hut Understood that menstruation is a biological phenomen do with religion It is illegal to practice Chhaupadi. Other(specify) Refused to answer Yes, most people do Yes, some people do No, no one does → <u>skip to question 6.16</u> Don't know ( <b>don't read out this option</b> )			
Animals attacked the females staying in the Chhau hut Understood that menstruation is a biological phenomen do with religion It is illegal to practice Chhaupadi. Other		he females were physically/sexually assaulted inside the Chhau hut	
Understood that menstruation is a biological phenomen do with religion It is illegal to practice Chhaupadi. Other	Ā	nimals attacked the females staying in the Chhau hut	
do with religion It is illegal to practice Chhaupadi. Other(specify) Refused to answer Yes, most people do Yes, some people do No, no one does → <u>skip to question 6.16</u> Don't know ( <b>don't read out this option</b> )	ñ	rderstood that menstruation is a biological phenomenon and has nothing	to
It is illegal to practice Chhaupadi. Other(specify) Refused to answer Yes, most people do Yes, some people do No, no one does → <u>skip to question 6.16</u> Don't know ( <b>don't read out this option</b> )	ф	with religion	
Other(specify) Refused to answer Yes, most people do Yes, some people do No, no one does → <u>skip to question 6.16</u> Don't know ( <b>don't read out this option</b> )	I	is illegal to practice Chhaupadi.	_
Refused to answer Yes, most people do Yes, some people do No, no one does → <u>skip to question 6.16</u> Don't know (don't read out this option)	õ	ther(specify)	
Yes, most people do Yes, some people do No, no one does <b>→ skip to question 6.16</b> Don't know ( <b>don't read out this option</b> )	Re	sfused to answer	
Yes, some people do No, no one does <b>→ <u>skip to question 6.16</u></b> Don't know ( <b>don't read out this option</b> )	Ϋ́	ss, most people do	
No, no one does → <u>skip to question 6.16</u> Don't know ( <b>don't read out this option</b> )	Ϋ́	ss, some people do	
. Don't know (don't read out this option)	ž	b) no one does → skip to question 6.16	
	S. D	on't know ( <b>don't read out this option</b> )	

	55. Refused to answer	
: What percentage of people follow it?	[]. (0 – 100) %	
if there are any laws against	<ol> <li>Yes, I know there is a law</li> <li>No, there is not any law → skip to question 6.17</li> </ol>	
	95. Don't know if there is any law (don't read out this option)	
	55. Refused to answer	
: What does the law say?	<ol> <li>Chhaupadi is illegal</li> </ol>	
	<ol><li>Chhaupadi is criminalized</li></ol>	
	96. Other(specify)	
	95. Don't know (don't read out this option)	
	55. Refused to answer	
hink some people follow	<ol> <li>It is our tradition.</li> </ol>	
TICK ALL THAT APPLIES.	2. Social Pressure (everyone else in the village practice it and those who don't	
SNOITE ANT THE AV	become an outcaste)	
AD 001 1HE 0F110W	<ol><li>It is written in the Hindu scripts that women and girls are impure during</li></ol>	
E FOR SPECIFIC ANSWER.	menstruation	
	<ol><li>Someone has died in the family when they tried to stop practicing it</li></ol>	
	5. Something bad such as no rainfall, no good yields in the farm has happened to	_
	some family who don't practice Chhaupadi or has tried to stop practising it.	
	<ol><li>People think God will get angry if they don't practice it.</li></ol>	_
	7. Anything that the menstruating women/girls touches becomes impure and will	
	bring misfortune.	
	96. Other	
	(specify)	
	95. Don't know (don't read out this option)	
	55. Refused to answer	
nen/girls allowed to do during	1. Go to school	
enstruation? TICK ALL	<ol><li>Study on their own</li></ol>	
LEC	<ol><li>Play/work outside normally</li></ol>	
631	<ol><li>Work in the farm</li></ol>	
	<ol><li>Work in the kitchen</li></ol>	

	96. Other	
	95. Don't know (don't read out this option)	
	55. Refused to answer	
6.19 What are women/girls not allowed to do	<ol> <li>Not allowed to worship, go to temples.</li> </ol>	
during Chhaunadi/ menstruation? TICK	<ol><li>Not allowed to go to school</li></ol>	
	<ol><li>Not allowed to touch books/copies</li></ol>	
	<ol><li>Not allowed to cook in the kitchen</li></ol>	
	<ol><li>Not allowed to touch any male members of the family</li></ol>	
	<ol><li>Not allowed to look at any male member of the family</li></ol>	
	<ol><li>Not allowed to eat dairy products</li></ol>	
	<ol><li>Not allowed to eat meat</li></ol>	
	<ol><li>Not allowed to eat vegetables</li></ol>	
	10. Not allowed to eat fruits	
	11. Not allowed to attend social gathering	
	96. Other (specify)	
	95. Don't know (don't read out this option)	
	55. Refused to answer	
6.20 Do you like the practice of Chhaupadi?	I. Yes	
	2. No $\rightarrow$ skip to question 6.20.2	
	95. Don't know (don't read out this option)	
	55. Refused to answer	
6.20.1 If yes to 6.20, Why do you like it? TICK	1. It is our tradition	
ALL THAT APPLIES. DO NOT READ	2. Menstruation can get dirty, we cannot afford sanitary napkins, so this helps us	
SNOITED ANT THO	to maintain cleanliness around the house	
001 1HE 01 1000	<ol><li>Gives women/girls at least 5 days of rest from work</li></ol>	
AFTER ASKING THIS QUESTION DIRECTLY	96. Other (specify)	
GO TO QUESTION 6.21	95. Don't know (don't read out this option)	
	55. Refused to answer	
6.20.2 If no to 6.20, why do you not like it?	<ol> <li>It isolates women/girls alone for days</li> </ol>	
TICK ALL THAT APPLIES. DO NOT	2. It is discriminatory	
READ OUT THE OPTIONS	3. During the time when they need good food and support, this practice weakens	
	them.	

											line line line line line line line line		-				no l													
5. Don't know (don't read out this option)	6. Other (specify)	5. Refused to answer	. Social awareness on the biological process of menstruation	Strict enforcement of the laws by the local authorities	<ul> <li>Women led activism against Chhaupadi</li> </ul>	. Teaching children about the biological process of menstruation from a ver	young age	. Explanation of the Hindu scripts by well-known religious leaders that the	scripts do not promote Chhaupadi or any such practices	. Successful women such as political leaders, actresses, Miss Nepal winners	giving their personal examples of how they don't practice it and are still d	well.	6 Other (specify)	5 Don't know (don't read out this option)	5 Refused to answer	. That family becomes a social outcaste	Unfortunate things start happening to them such as no yields in their farm,	rainfall that year	<ul> <li>The girls from that family will not be allowed in school</li> </ul>	<ul> <li>Someone in the family might die</li> </ul>	<ul> <li>Someone in the family might fall sick</li> </ul>	6 Other (specify)	<ol><li>Don't know (don't read out this option)</li></ol>	<ol><li>Refused to answer</li></ol>	. Yes, it can cause some problems	No, there are no problems <b>Askip to 6.23</b>	<ol><li>Don't know (don't read out this option) →skip to 6.23</li></ol>	<ol><li>Refused to answer →skip to 6.23</li></ol>	. Physical and sexual assault (such as rape)	. Theft of their belongings
6	6	5	6.20.3 If no to 6.20, What do you think can be	done to ston it?		IICK ALL THAT APPLIES	DO NOT READ OUT THE OPTIONS	5		9			<u>e</u>	6	5	6.21 What happens to the families who don't	practice it?		IICA ALL IHAI APPLIES	DO NOT READ OUT THE OPTIONS	5	9	6	5	6.22 Do you think Chhaupadi can cause any 1	problems to women/pirls?	b	2	6.22.1 If yes to 6.22, what kind of problems do	2

5. Insects/bugs bite       -			
6. Animal attack       6. Animal attack         7. Physical problems such as falling sick, fever, back pain, UTI       1         96. Other (specify)       1         97. Don't know (don't read out this option)       1         97. Don't know (don't read out this option)       1         97. Don't know (don't read out this option)       1         97. Don't know (don't read out this option)       1         97. Don't know (don't read out this option)       1         97. Don't know (don't read out this option)       1         97. Don't know (don't read out this option)       1         97. Don't know (don't read out this option)       1         97. Don't know (don't read out this option)       1         97. Don't know (don't read out this option)       1         97. Don't know (don't read out this option)       1         97. Don't know (don't read out this option)       1         97. Don't know (don't read out this option)       1         97. Don't know (don't read out this option)       1         97. Don't know (don't read out this option)       1         97. Don't know (don't read out this option)       1         97. Don't know (don't read out this option)       1         97. Don't know (don't read out this option)       1         1 <tr t=""> Do yo</tr>		5. Insects/bugs bite	
7. Physical problems such as falling sick, fever, back pain, UTI		6. Animal attack	
96. Other (specify)       97. Don't know (don't read out this option)         95. Don't know (don't read out this option)       97. Don't know (don't read out this option)         97. Refused to answer       97. Don't know (don't read out this option)         98. Don't know (don't read out this option)       97. Don't know (don't read out this option)         99. Don't know (don't read out this option)       97. Don't know (don't read out this option)         90. Don't know (don't read out this option)       97. Don't know (don't read out this option)         Do you have any comments on the questions or the survey in general?       97. Don't know (don't read out this option)		7. Physical problems such as falling sick, fever, back pain, UTI	
95. Don't know (don't read out this option)       []         3 Have you ever participated in any programs       55. Refused to answer         1. Yes, I have       []         Chhaupadi organized by different       2. No, I haven't         95. Don't know (don't read out this option)       []         anizations?       55. Refused to answer         Do you have any comments on the questions or the survey in general?       []		96. Other (specify)	
3 Have you ever participated in any programs       55. Refused to answer		95. Don't know (don't read out this option)	
3 Have you ever participated in any programs       1. Yes, I have         3 Have you ever participated in any programs       1. Yes, I have         Chhaupadi organized by different       2. No, I haven't         95. Don't know (don't read out this option)       []         anizations?       55. Refused to answer         Do you have any comments on the questions or the survey in general?		55. Refused to answer	
Chhaupadi organized by different     2. No, I haven't       anizations?     25. Don't know (don't read out this option)       55. Refused to answer     []]       Do you have any comments on the questions or the survey in general?	23 Have you ever participated in any programs	1. Yes, I have	
anizations? 95. Don't know (don't read out this option) 95. Refused to answer Do you have any comments on the questions or the survey in general?	Chhaunadi oroanized hv different	2. No, I haven't	
anizations? 55. Refused to answer Do you have any comments on the questions or the survey in general?		95. Don't know (don't read out this option)	
Do you have any comments on the questions or the survey in general?	anizations?	55. Refused to answer	
	Do you have any comments on the question	ons or the survey in general?	
	Thank you so much for your contribution. I results based on all anonymized survey res	. I really appreciate your effort to provide us with answers. I would once sponses will only be used for academic research.	again like to remind you that the
Thank you so much for your contribution. I really appreciate your effort to provide us with answers. I would once again like to remind you that the results based on all anonymized survey responses will only be used for academic research.	Have a good day. Namaste!		

NOTE TO SURVEYOR: Please go back to section 4, question 4.8 and record the answer before walking away from the house!

End-time: HH:MM (12.00 hours): |\_\_\_|:|\_\_| AM / PM