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Pharmacists' attitudes, knowledge, and practices in providing emergency contraception and medical abortion to adolescents in three districts of the Kathmandu Valley, Nepal, 2012

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An abstract of

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Abstract

Pharmacists' attitudes, knowledge, and practices in providing emergency contraception and medical abortion to adolescents in three districts of the Kathmandu Valley, Nepal, 2012

By Kavitha Balakumar

Background: Nepal has made incredible strides in reducing maternal deaths and bringing down fertility; however, for this progress to continue, family planning policies must also address the reproductive and sexual health needs of adolescents. This paper details research conducted by Ipas Nepal that explores how adolescents access emergency contraception (EC) and medical abortion (MA) from pharmacies. Specifically, we examine pharmacists' levels of knowledge surrounding EC and MA and their attitudes towards the use of these methods by adolescents. We also discuss how pharmacists' knowledge and attitudes to EC and MA may impact the quality of "care" adolescents receive at pharmacies, and provide recommendations for future research and policies.

Methods: We conducted structured, open-ended interviews with a convenience sample of 22 pharmacists from Kathmandu, Lalitpur, and Bhaktapur, three districts within the Kathmandu Valley. Interviews were conducted in Nepali by local researchers trained in qualitative research methods. An independent consultant translated the interview data from Nepali back to English. Upon receiving the translated data, we conducted a detailed content analysis using MaxQDA and Epi Info software.

Results: Pharmacists' levels of knowledge surrounding emergency contraception and medical abortion varied across the three study areas, with pharmacists in Kathmandu having the least complete knowledge of each method. Additionally, an attitude assessment revealed that pharmacists generally support adolescents accessing contraceptives including EC, and support adolescents' use of medical abortion. Pharmacists in Kathmandu, however, carried more conservative attitudes than those in the two smaller study regions of the Valley.

Conclusions: Pharmacists require additional education for the safe provision of emergency contraception and medical abortion. Their training should include a Values Clarification and Transformation (VCAT) workshop. We also encourage partnerships with youth organizations in the community to increase pharmacists' capacity to manage the needs of their adolescent clients with greater sensitivity. Finally, additional research is needed to develop systematic evaluation tools to assess family planning services rendered in pharmacies.

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INTRODUCTION:

Problem Statement

Family planning has been on the forefront of health reform in Nepal for the last three decades. The legalization of abortion in 2002 and the integration of medical abortion into the health system in 2009 have resulted in significant improvements in maternal and child health. However, in order for Nepal to achieve its goals to increase contraceptive prevalence and further reduce unintended pregnancy, family planning programs must focus on adolescents, a group balancing limited autonomy with growing contraceptive needs. Seeking convenience and confidentiality, adolescents are increasingly accessing family planning methods from local pharmacies. However, we lack an assessment of the interactions between pharmacists and adolescent clients.

Statement of Purpose

With this research we are looking to address a critical gap in the information on pharmacists' breadth and accuracy of knowledge of contraceptive methods and medical abortion. In addition, we assess the extent to which this information is being imparted to youth accessing family planning methods, as well as whether pharmacists' attitudes and beliefs influence their behavior towards this group. To gain a broader understanding of the practices within the pharmacy and the reproductive and sexual health needs of adolescents, we also identify what pharmacists report as the contraceptive and abortion requests of adolescents visiting pharmacies, identify the information on MA given to clients at the time of purchase, and explore pathways of referrals of post-abortion complication cases from pharmacists to CAC providers.

Statement of Significance

Ipas Nepal who has commissioned, guided and funded this observational study will use the results to inform policies centered on adolescent sexual and reproductive health.

To understand the context of this research, this report includes background on Nepal, a history of family planning initiatives in Nepal including the legalization of abortion, Nepal's achievements in reaching its Millennium Development Goals (MDGs), and finally an overview of the current utilization of contraceptives and medical abortion in Nepal. We will also summarize the existing literature on adolescent sexual and reproductive health, along with the role of pharmacists in increasing access to contraceptives and medical abortion. Finally, we discuss our research and its contributions to the existing body of literature.

BACKGROUND:

Geography and Population

Nepal is a small country in Southeast Asia nestled between the People's Republic of China in the north and the Republic of India to the south. Located in the hill region of Nepal is Kathmandu, the country's capital. With over one million people living in the Valley alone, it is Nepal's most densely populated region. [1] According to the 2011 Demographic and Health Survey (DHS), Nepal is currently home to approximately 26.6 million people. The population has more than doubled in the last 40 years, growing at a rate of 2.6% between 1971 and 1981. Since then, the growth rate has declined to 1.4% due to a number of factors, an increased emphasis on family planning being chief among them. [1]. In spite of the growth in public and private sector family planning initiatives, the population is expected to reach 30.4 million by July of 2013. [2]

Government

Nepal was ruled by a monarch until 1990 when a multiparty democracy was established within the framework of the constitutional monarchy. Frustrated by the lack of progress and reforms passed through the democratically elected government, the general public launched a movement against the government led by the Nepal Communist Party, a movement also known as the Maoist insurgency. The armed conflict lasted for 10 years from 1996 until November 21, 2006 when a peace agreement was signed between the seven major political parties and the Nepal Communist Party. General elections were held in April of 2008 and the king was officially dethroned at this time. [1] Currently, a constitution is still pending approval due to contending democratic and communist ideologies.

Family Planning Policies and Programs

In 1959, the Family Planning Association of Nepal (FPAN) was established to create awareness about the need for and the importance of family planning. The FPAN spearheaded a number of family planning initiatives throughout the country until 1965 when the Ministry of Health launched the Nepal Family Planning and Maternal and Child Health (FP/MCH) Project. Every decade or so, the Ministry of Health created a new implementation plan with specific objectives for this project. Between 1970 and 1975, their objective was to target the provision of family planning services to 15% of married couples. Between 1975 and 1980, they began to address population issues from a programmatic perspective by expanding family planning services and employing outreach workers. By 1997, the focus was to reduce population growth through social awareness and the expansion of education programs. By the 2000s, their ultimate goal was to lower fertility rates by encouraging small family norms. Currently the Ministry of Health and Population is looking to increase access to health services, particularly for vulnerable populations such as the rural poor, and to improve the quality of these services. [1]

Key Stakeholders

Ipas Nepal works as a technical advisor for the Ministry of Health and Population of the Government of Nepal. In addition, a number of non-governmental organizations have a presence in Nepal. Marie Stopes International (MSI) has established comprehensive abortion care (CAC) clinics in various districts of Nepal and Population Services International (PSI) has played an integral role in utilizing social marketing mechanisms to promote the use of family planning methods.

History of Abortion Reform

Between 1990 and 1996 the maternal mortality ratio (MMR) of Nepal averaged 539 deaths per 100,000 live births. [3] Through increased surveillance in the 1980s and 1990s, it became clear that a large proportion of these deaths were attributable to unsafe abortion.[1] One study found that 20% of maternal deaths were caused by post-abortion complications [4] and another found that 53.7% of obstetric complications were the result of clandestine abortions, providing evidence that unsafe abortion was the cause of extensive maternal morbidities and mortality at this time. [5, 6] Many abortion-related deaths were due to infection following the use of highly dangerous techniques such as the insertion of a foreign body into the uterus. Another factor that contributed greatly to maternal deaths was the lapse of time between a woman's abortion attempt and seeking care for her symptoms of complications. [6]

At the time, abortion was prohibited under the *Muluki Ain* legal code with no exceptions for cases of rape or incest, or if the woman's life was threatened. [7] Numerous women who had obtained abortions or experienced spontaneous abortions were prosecuted for committing infanticide which carried the same sentence as homicide. [8, 9] In fact, nearly one-fifth of women in Nepali prisons were convicted on the charges of obtaining an illegal abortion [10] and many more were the victims of unsafe abortion, accounting for Nepal's high maternal mortality ratio. In 1997, under the umbrella of a broader bill advocating for gender equity, the Ministry of Health outlined a Safe Motherhood policy which framed abortion law reform as an important measure to save women's lives. Members of the Nepali Parliament fiercely debated provisions of the *Muluki Ain* 11th Amendment Bill, particularly those pertaining to

[1] The World Health Organization (WHO) defines unsafe abortion as a procedure terminating a pregnancy that is performed by an individual lacking the necessary skills, or in an environment that does not conform to minimal medical standards, or both. [4]

women's property rights. Finally, in March of 2002 during the 21st session of the House of Representatives, a liberalized abortion law was passed and the first legal abortion services became available at the Kathmandu Maternity Hospital on March 18, 2004. [8] The current abortion law allows a woman to terminate pregnancies up to 12 weeks voluntarily, up to 18 weeks in cases of rape or incest, any time in the case of fetal anomaly or impairment, or anytime the woman's physical or mental health is in danger. [8] Discrimination on the basis of a woman's past or present marital status is unlawful, and obtaining an abortion for the purposes of sex-selection is still strictly prohibited. [11] As a result of the liberalization of Nepal's abortion law and other improvements in health care utilization, Nepal's MMR declined from 539 to 281 deaths per 100,000 live births between 1996 and 2006.[3]

In a continuing effort to combat high rates of maternal mortality in Nepal, the Family Health Division (FHD) of the Department of Health Services (DoHS) initiated an expansion of abortion services in 2009 to include medical abortion (MA) in all 75 districts of Nepal. [12, 13] Introducing the option of MA, which is the process of terminating a pregnancy with the help of pharmaceutical drugs, [14] offered women an accessible, non-invasive option for abortion and played an important role in decentralizing care. [13, 15, 16] Medical abortion also vastly increased access to safe abortion in remote areas where women had limited access to health facilities, or where health systems lacked the equipment and trained providers to perform surgical abortions. [17]

With the establishment of strategic public-private partnerships, an emphasis on training mid-level providers to deliver abortion services, and by capitalizing on existing networks of service provision, 532 sites in all 75 districts of Nepal are now authorized to provide safe abortion services. As a result, over 500,000 Nepali women have received safe abortion

services since 2004. [13] While Nepal's efforts in combating maternal mortality are commendable, the MMR must continue to decline by 13% per year, particularly amongst vulnerable populations such as marginalized groups and adolescents in order for the country to achieve its MDGs. [11]

Millennium Development Goals (MDGs)

Through a tumultuous political period, Nepal was able to make astonishing progress in the areas of health and development. For example, the country has made many advances in attaining universal access to education. In 2011, 94.6% of males were enrolled in primary schools and achieved literacy. 89% of females were also enrolled in primary school but only had a literacy rate of 82.7%. Nepal has also shown advancements in gender parity in schools. Based on reported net attendance, an equal number of boys and girls attended secondary school in 2011. Unfortunately, gender parity decreased as levels of education increased due to fewer females pursuing higher education. [1]

In examining well-established indicators for maternal health, 36% of births in the 5 year period preceding the DHS survey were attended by a skilled birth attendant, a figure very low compared to that of neighboring countries, India and China. 58.3% of pregnant women had at least one antenatal care visit by a professional, however only half of pregnant women received the requisite 4 antenatal care visits by any provider. [1] Although the advancements in education cannot be discounted, a continued investment in maternal and child health is necessary for Nepal to remain on track to achieve its MDGs.

Reproductive Health Indicators

Between 1996 and 2011, the total fertility rate (TFR) decreased from 4.6 to 2.6 births per woman in 2011. Nevertheless, Nepalese women continue to have about one child more than their ideal number. The total fertility rate of 2.6 children per woman is 44% higher than it would be if unintended births were avoided. [1]

According to the 2011 DHS, knowledge of contraception is widespread in Nepal. However, less than 50% of currently married women of reproductive age (15-49) are using any method of contraception. In fact, the contraceptive prevalence rate has been stagnant since 2006. [18] Of the women actually using contraception, 43% are using a modern method. The most popular methods are female sterilization (15%), injectables (9%), and male sterilization (8%). Use of modern methods was the highest among women with no education owing to the high percentage contributed by sterilization among this group. Alternatively, temporary methods were more popular among women with higher education. There was also a marked increase in the popularity of implants and IUDs between 2006 and 2011, a shift most likely driven by the Ministry's emphasis on long-acting reversible contraceptives. [1]

Although modern methods are highly effective in avoiding unintended pregnancy, discontinuation remains a major issue among users of temporary contraceptives. Over 51% of users stopped a method within 12 months of starting its use. Among the numerous explanations women gave for discontinuing their method, 40% of the time women cited their husbands being away from home as the main reason. [1]

Consistent with the figures capturing the limited knowledge of family planning methods as well as average use of methods, about one fourth of Nepali women have an unmet need for family planning methods. In 2011, 27% of married women were in need of family planning

with 10% of this need for birth spacing and 17% for limiting the number of pregnancies. [1] The Ministry of Health is looking to reduce these unmet needs and increase the contraceptive prevalence rate to 67% by 2015 through further health promotion.

For women who wish to prevent pregnancy after unprotected sex or contraceptive failure, emergency contraception offers women a safe, effective, and affordable option to do so. Among participants surveyed in 2011, a greater percentage of men knew about EC than women, and a greater percentage of unmarried individuals knew about EC than married individuals. However, this survey simply asked whether the respondent had heard of the method and failed to assess the depth or accuracy of their knowledge of EC. [1]

Unlike contraceptive methods, knowledge of medical abortion was not assessed among DHS participants. Only 9.1% of women who obtained abortions did so through the use of medical abortion and 5.3% acquired their MA through a pharmacist. In addition, a study conducted by Ipas in 2012 revealed that 33% of women receiving MA services at health posts were less than 25 years old suggesting an increased popularity of MA among young women. [14] Some providers have articulated concerns about the use of medical abortion in three specific contexts: (1) the use of medical abortion in lieu of contraceptives resulting in repeat abortions; (2) the use of medical abortion in second trimester pregnancies which can lead to incomplete abortions, excessive bleeding, and a host of other complications; and (3) the use of medical abortion by adolescents who may experience effects on their future fertility. [19] While some of these assumptions may not be evidence-based, they reflect a noteworthy ambivalence among providers towards MA that may impact provision of MA.

LITERATURE REVIEW:

Global research and policy work has increasingly mobilized around adolescents due to their demographic significance and their growing sexual and reproductive health needs. This work has become especially important in developing nations, such as Nepal, where adolescents comprise a growing portion of the population and are undergoing significant social and cultural transitions. In fact, "one of the most important challenges facing reproductive health programs in Asia is how to address the needs of adolescents as they initiate sexual activity and are exposed to the risk of unwanted pregnancy and infection."[20] Although a body of literature exists evaluating the experience of adolescents globally, information on adolescents in Nepal remains sparse and unreliable. In the following section, we will review documented trends in adolescent reproductive and sexual health as well as the importance of pharmacists in increasing access to family planning methods among this group. Additionally, we will highlight the gaps in knowledge about both adolescents and pharmacists that we intend to fill with this research, specifically as it pertains to the provision of emergency contraception and medical abortion to youth through pharmacies in the Kathmandu Valley.

ADOLESCENTS

Define adolescence

Defining adolescence and all of its constructs has proven to be a challenging task for health care professionals. While "puberty" describes the biological transition from childhood to adulthood, these physical changes are accompanied by mental, emotional, and behavioral changes during the period we refer to as adolescence. The experience of adolescence is highly individual and contextual, thus assigning age markers continues to be an arbitrary process. Based on WHO standards, 'adolescent' refers to a person aged 10 to 19 years old

and a person aged 15 to 24 is considered a 'young adult'. [21, 22] However, due to the heightened sexual awareness that occurs at this stage of adolescence and the availability of data for this group in Nepal, we chose to focus on young people aged 15-19 as our target demographic for research. We will hereafter refer to adolescents and youth interchangeably.

Demographic Significance

"Of the 1.15 billion adolescents in the world, more than 700 million live in Asia," solidifying their demographic importance in both global and country-specific contexts. [20] In Nepal, adolescents aged 10-24 comprise more than one-fifth (22%) of the total population [22] and the composition of many developing nations such as Nepal is expected to become younger in the near future due to larger cohorts entering adolescence. [21, 23] Thus, the Ministry of Health has dedicated additional resources for research and the development of programs focusing on this critically important group.

Delayed Youth Transition

Not only is this demographic expected to grow, but youth are transitioning into adulthood in developing nations on a different timeline than generations before them, a phenomenon that has recently been documented in a number of Asian countries including Nepal. Youth are experiencing key transitional events – leaving the home, entrance into the workforce, and marriage – later in their twenties leading to an extended period of adolescence. [20, 24, 25]

The trend of delayed marriage and the replacement of marriage as a marker of adulthood by other indicators of self-development are both of particular importance within this paradigm of emerging adulthood. A multi-country study conducted in 2006 found rising mean ages at marriage and a higher percentage of individuals living outside of formal unions such as

marriage across every age group, sex, and country. [26] Similarly, in Nepal, marriage among adolescents has steadily decreased from 75% in 1961, to just under 50% by 1991, to 40% in 2001 [27] and finally to 28.8% in 2011. [1] This transition, which some Nepalis view as a breakdown of traditional customs, has been accredited to forces such as demographic transition, industrialization, globalization and exposure to the media. Many social scientists also believe that the incidence of premarital and extramarital sex is evidence of the growing influence of western attitudes on Nepali society. [28]

Furthermore, improved nutritional status among women in Nepal has led to a reduction in age at first menarche. [27] 10% of Nepali females have experienced puberty by the age of 12 and 50% have experienced it by the age of 14. Adolescents are also immersing themselves in 'youth institutions' such as peer groups and relationships at younger age. [26] The initiation of sexual contact earlier in life coupled with the delay in marriage leaves adolescents in a critical period during which they are increasingly at greater risk of contracting sexually transmitted infections (STIs) and experiencing unintended pregnancy. [23]

Burden of unintended pregnancy

An unintended pregnancy is a pregnancy that is either mistimed (occurred earlier than desired) or unwanted (no desire for pregnancy for any number of reasons). [29] A multi-country study conducted by the Guttmacher Institute exploring adolescent sexual behaviors found that between 28% and 57% of adolescents in Bangladesh, Nepal, Kenya, Bolivia, and Nicaragua reported that their last pregnancy was unintended. Among women aged 15-19, 33.7% reported that their last birth was unintended. In 2001, 35% of births in Nepal resulted from unintended pregnancies. Since mothers are unlikely to admit that a pregnancy carried to term was unintended and because data was only collected among married women, this is

likely an underestimate. A study conducted in 2002 examining the socio-cultural determinants of adolescents in Nepal found that 47% of married respondents had accidental pregnancies which were carried to term because abortion was illegal in Nepal at this time. [30] In 2009, "More than two-fifths of the currently pregnant married women (41%) reported that their current pregnancy was unintended." [31]

Drivers of unintended pregnancy among adolescents

The incidence of unintended pregnancy is driven by numerous biological, social, economic, and cultural factors. For example, the Guttmacher study also found unintended pregnancies were more prevalent in the richest wealth quintile, suggesting that there are a number of factors beyond socioeconomic status which contribute to the incidence of unintended pregnancy in adolescents. Among married women, these include the age of the woman, her age at first marriage, and the couple's ideal number of children. [31] Among unmarried women, determinants of unintended pregnancy include sexual risk taking of women and men and limited access to contraceptives due to stigmatization of pre-marital sex. Finally among both groups, lack of knowledge and use of family planning methods, as well as high rates of discontinuation of use have been cited by a number of studies as primary causes of unintended pregnancy.

As previously mentioned, early marriage is common in high-fertility societies such as Nepal and plays a significant role in determining a woman's childbearing trajectory. [32] Data sources such as the DHS estimate that women in Nepal are initiating sexual contact at the time of marriage, with few exceptions. [1] If marriage does in fact coincide with first sexual contact, it also marks the point when women must respond to societal and marital pressures to bear children. In 2002, a case-control study looking at the determinants of pregnancy

among adolescents found that 51.4% of married women were pressured into pregnancy by their spouses. [30] A study conducted in 2002 exploring the correlates of unintended pregnancy among currently pregnant women in Nepal found that increased age at first marriage reduced the likelihood of unintended pregnancy (OR=0.93). [31] Although the median age of marriage has steadily increased over the last few decades, in 2011 28.4% of Nepali women had given birth by the age of 18 and nearly 40% of women had delivered their first child by the age of 19. [1]

Traditionally, public health programs have focused solely on the contraceptive needs of married individuals; however given the current trend of delayed marriage, this group comprises a very small proportion of the adolescent population. According to the 2011 DHS of Nepal, 71% of females and 92.9% of males aged 15-19 were never married. Less than 30% of females and 6.9% of males in this age group reported being married, which included individuals living with a partner in a consensual but informal union. [1]

As previously mentioned, sexual risk taking among male and female adolescents is perhaps the most important determinant of unintended pregnancy within this group. Due to a high probability of having unexpected sexual encounters along with limited access to contraceptive methods, unmarried youth are especially vulnerable to unintended pregnancy. "The Nepal Adolescent and Young Adult Survey (NAYS) 2000 reported that almost one-fourth of sexually active unmarried young people were involved in risky sexual practices and unexpected opportunity is the most commonly described reason for risky sexual behavior." [33] In the NAYS conducted in 2010, girls aged 15 to 19 had on average 1.2 sexual partners at the time of the survey and boys in the same age group had 1.65 sexual partners providing evidence of more than one sexual partner but not how many unplanned sexual encounters

they experienced. [34] "A study conducted with young factory workers in Kathmandu [in 2006] showed that 35% of unmarried boys and 16% of unmarried girls have experienced sex and that among unmarried people, love and curiosity were the most frequently reported reasons for their first sexual intercourse." [35] Citing these reasons, adolescents can often feel compelled to engage in sexual acts without the protection of contraception to prevent unintended pregnancy and the transmission of STIs. While these statistics provide a picture of adolescents' sexual behavior, these sources do not characterize the length of these relationships, nor do they include adolescents who may be engaged in sex work which can considerably increase the aforementioned risks.

Along with managing unexpected sexual encounters, extensive research shows that adolescents have limited access to information about contraceptives and health services. [36] One study found that women who were more familiar with contraception were 40% less likely to experience an unintended pregnancy than women without knowledge, or with limited knowledge of family planning methods. [31] Unfortunately, "social and cultural norms impose barriers to the transfer of sexual health information." [27] Numerous studies have provided evidence of the lack of acceptance and stigmatization of adolescents' use of family planning methods among community members. [32] As a matter of fact, "evidence from other settings has shown that young people choose not to access the sexual health services because they perceive clinic staff to be judgmental, incompetent, and lacking confidentiality." [37] For example, "most unmarried boys and girls felt shy and uncomfortable while buying condoms and other contraceptives from local stores, although urban participants claimed that the larger number of urban stores provide an opportunity to them to buy condom anonymously." In addition, "rural young people are more likely to be embarrassed accessing services than are urban young people since there is a fear of

stigmatization from local people in rural areas." [32] Furthermore, 95.2% of women aged 15-19 did not discuss family planning either with a female community health volunteer (FCHV) or at a health facility. [1] This hesitation of adolescents to openly discuss family planning may be a perceived reaction to anticipated judgment from providers and community members for accessing contraceptives. Moreover, the lack of dialogue underscores adolescents' acute need for reliable information alongside sustained access to methods.

In addition to coping with perceived feelings of judgment, adolescents must navigate other barriers to accessing contraceptives including limited financial independence and logistical obstacles to visiting health centers or pharmacies. For instance, the Guttmacher study revealed that 39.8% of women aged 15-19 who worked for cash reported no economic autonomy or decision-making power which undoubtedly creates challenges for accessing contraceptives. [23] Additionally, "Most young people in Nepal have to depend on government health clinics to receive such information and services, although private clinics are on the rise but not affordable to all. Existing practices show that most school, college, and health clinics are open at the same time. In such a situation, young people need to be absent from their school/college if they require some sort of sexual health information and services." [28]

A direct consequence of limited knowledge of and poor access to family planning methods is the unmet need for contraceptives among adolescents. Currently, 41.5% of married adolescents continue to have an unmet need for family planning, with 37.5% of the need for birth spacing and 4.0% for limiting the number of pregnancies. [1] However, as this metric is only collected through the DHS that disproportionately interviews married individuals, we lack estimates on the unmet need for contraceptives among unmarried adolescents. While

the proportion of teenage pregnancy in Nepal has declined by 10% in the five years preceding the survey, 82.4% of currently married adolescents are not using a contraceptive method. Similarly, 94.9% of unmarried adolescents are not using a contraceptive method. In fact, a study conducted among college students revealed that only half of male students used a condom the first time they had sexual intercourse. [38]

Consequences of unintended pregnancy

Unintended pregnancy has several documented consequences on adolescents' physical, mental, and social well-being. For one, unintended pregnancy that results in early childbearing increases the risk of complications to both the mother and child. [22, 31, 39] For example, pregnancy in adolescence has been associated with increased risk of preeclampsia and eclampsia, intrauterine growth retardation, pre-term delivery, low birth weight, and maternal and perinatal mortality. [40] Furthermore, "disapproval of a pregnancy whether within the institution of marriage (as in the case of love marriages that threaten parental authority) or outside of marriage can result in poor care of pregnant adolescents (increased anemia from poor nutrition) and low birth weight babies." [30] Unintended pregnancy among adolescents also has several social consequences. An unintended pregnancy has the potential to damage extended kinship networks and often has long-lasting impacts on a woman's life, including her future marriage prospects, her ability to pursue higher education, and consequently her ability embrace greater economic opportunities.[22] As a result, young girls often seek the means to end their pregnancies. However, given their limited privacy and economic independence, young girls often feel compelled to seek unsafe abortions putting themselves at serious risk for disease and death. In 2012, 20% of maternal deaths due to unsafe abortion are among adolescents. [41] Furthermore, recent reports from

Nepal indicate that the leading cause of death among women is suicide [42] and additional research should determine whether fear of or presence of unintended pregnancy contributes to these suicides.

Need for EC and MA

Emergency contraception and medical abortion offer options to mitigate the burden of unintended pregnancy in adolescents that results from: non-use of contraceptives due to limited access [22], contraceptive method failure or misuse [43], experiencing rape or sexual assault, or breastfeeding but not using LAM. [22, 31] In addition, adolescents with limited financial means and concerns about confidentiality have a keen need for low-cost options such as EC and MA that can be easily disguised as any type of medication and can be used in the privacy of one's home. [32]

Paucity of Data

The broad programmatic changes that are required to accommodate the needs of a growing adolescent population must be evidence-based. However, data on adolescents' sexual behaviors, patterns of accessing health care systems, and reproductive health needs have been poorly documented thus far.

Current data suffers from two significant limitations. First, many of the existing methods of data collection such as surveys treat adolescents as a homogenous group. Unlike analyses of the broad population that clearly acknowledge social and economic diversity, many of these sources do not highlight these differences among adolescents. They also fail to capture the gender-specific stresses adolescents suffer such as pressure for females to marry early and bear children. [20] Furthermore, broad national surveys such as the Demographic Health

Survey which inform family planning programs across the country primarily collect data on married women. Assessing the reproductive health needs of unmarried adolescents, particularly women, has historically been difficult. In Nepali society where pre-marital sex continues to be taboo, unmarried women are unlikely to truthfully report sexual activity, contraceptive use, or contraceptives needs; therefore the information that has been collected may not accurately reflect the behaviors or needs of this population. [20, 27] For example, as seen in the Nepal Adolescent and Youth Survey (NAYS) that was commissioned by the Ministry of Health and Population (MoHP) in 2010, only 8.7% of females and 36.4% of males reported engaging in pre-marital sex. [34] Compared against rates of pregnancy among this group, we can assume that these are underestimates. Given trends observed in the delayed youth transition (principally delayed marriage) in conjunction with continued stigma associated with pre-marital sex, self-reported data on age at first sexual contact is most likely an inaccurate representation of youth behaviors.

Not only is it important to collect data on sexual behaviors and the contraceptive prevalence rate among adolescents, programs must also address adolescents' discontinuation of methods. Data on discontinuation rates is scarce, however, a study done by the Guttmacher institute that examined trends in adolescent contraceptive use found that married adolescents were "more likely than older women to discontinue their method within the first year of use. They were also 2-3 times more likely as older women to abandon contraceptive use for reasons such as side effects or health concerns, desire for a more effective and convenient method, problems of access, or their husband's disapproval."[20] Unfortunately, this data is not available for adolescents in Nepal and could potentially impact the constellation of services and methods that are provided specifically to this population.

Suffice to say, data on this critical demographic is limited and unreliable. This dearth of information combined with an acute need for family planning services inspired the current study focusing on how adolescents access emergency contraception and medical abortion.

PHARMACISTS

In the following section, we will provide background on the role of pharmacies in expanding access to medical abortion, review current practices that have been documented in existing literature, and discuss the gaps in information on pharmacists that we are looking to address with this research. Moreover, as emergency contraception is often confused as an abortifacient drug and prescribed as such, we highlight the critical need for additional research on the provision of this contraceptive method in particular.

Role of pharmacists

An important step in improving contraceptive uptake and sustained use among adolescents was increasing access through mid and lower-level providers such as nurses, midwives, community health workers, and especially pharmacists. [15] Next to the government sector that accommodates the contraceptive needs of 69% of the population, most users obtain their methods from the private sector, namely from pharmacies (10.8%) and private hospitals or clinics (7.7%). [1] Due to their location, short wait times, and direct sales of medications, pharmacies are a convenient point of access for family planning methods. [44] However, building pharmacists' knowledge of methods as these drugs are introduced into the health system, particularly emergency contraception and medical abortion is essential for their safe use. [45]

Current practices

Despite the requirement of a prescription from a physician for the dispersal of pharmaceuticals such as medical abortion, research has shown that pharmacists are increasingly selling these drugs over the counter putting patients at risk of receiving incorrect information or limited counseling on how to use the method correctly. Many studies have found that illegal over-the-counter sales of medical abortion are common in countries where this method has gained popularity, including Nepal. [15, 46] This practice has raised concerns that pharmacists do not have adequate knowledge or the most up-to-date information about proper dosage, side effects, mode of administration and gestational limits of using medical abortion. [16, 44, 47] Furthermore, those who are trained may not always be available in the pharmacy. They may also be unwilling to provide information on abortifacients due to: worry about risk to their employment; ethical, moral, and religious grounds; fear of backlash from anti-abortion groups; and perceptions that physicians rather than pharmacy workers should provide such information.[44] Thus, clients who are purchasing these drugs over-the-counter without having visited a physician or health worker first may not be receiving information on how to safely administer these drugs and where to go if they experience complications. [11]

Reviewing pharmacists' knowledge

In examining the existing literature concerning the medical abortion and pharmacists, three studies are relevant; however among them only one directly assessed the accuracy of pharmacists' knowledge surrounding EC and MA. The first study was conducted in India in 2005 and provides a cursory appraisal of pharmacists' roles in the provision of MA. As only 12 pharmacists were interviewed, this study failed to provide a picture about their levels of

knowledge surrounding these methods. [46] The second study, conducted in Nepal, attempted to gauge providers' attitudes towards MA prior to its introduction into the health system in 2009. While a significant number of pharmacists were interviewed, the survey focused more on their awareness of Mifepristone and Misoprostol and their willingness to dispense these drugs rather than the specifics of safe use of medical abortion. [48] Finally, another study which was commissioned by the Ipas office in India honed in on the role of pharmacists and directly evaluated their knowledge of the methods; however, these results cannot be extrapolated to pharmacists in Nepal where policies and practices may differ. [47] Hence, a similar knowledge assessment must be conducted among pharmacists providing EC and MA in Nepal to inform future research and the development of training materials for these front-line health workers.

Reviewing pharmacists' attitudes

In addition to evaluating pharmacists' levels of knowledge, examining their attitudes towards medical abortion and emergency contraception is critical considering the level of stigma that continues to surround these methods. Prior studies that have explored providers' attitudes towards medical abortion in both India and Nepal have excluded pharmacists. [46, 48] In fact, a group of authors reviewed the literature pertaining to pharmacy workers and medical abortion. While they were able to identify studies that examined the incidence of over-the-counter dispersal of MA and levels of knowledge, they were unable to find research that discussed how pharmacists feel about dispensing abortifacient drugs. [44] Furthermore, the "attitude assessments" that were done gauged providers' views about dispensing medical abortion to the population at large, but do not pinpoint their views about providing MA to adolescents.

The importance of understanding pharmacists' attitudes towards adolescents stems from a number of articles that have cited adolescents' fear of judgment from providers and shop keepers as barriers to accessing contraceptive methods. [37] In 2010, Regmi et al. conducted a qualitative study among adolescents in Nepal to elucidate the barriers young people face in accessing health services. The focus group discussions and in-depth interviews revealed ambivalence among youth to visit local shopkeepers for fear that the provider would violate their confidentiality by sharing information about them with the customer's friends and family members. Young girls also felt they could not buy condoms easily because "the shopkeeper looks at you differently." [32] These findings suggest that pharmacists' attitudes and behavior towards youth clients affects their ability to access contraceptives and likely medical abortion as well. However, this research was done solely from the perspective of adolescents. As of yet, no one has identified the views of pharmacists, specifically as they pertain to this population.

MANUSCRIPT:

Contribution of the Student:

Upon receiving the objectives of this research from the Ipas country director, the student conducted background research on adolescents and pharmacists, developed the research instrument, devised a budget for the project with the help of Ipas research staff, contracted data collectors and a translator to work on the project, oriented data collectors to the objectives of the research and reviewed qualitative research techniques with them, provided input in site selection, conducted all qualitative and quantitative data analysis, and compiled the results of the research into a comprehensive report.

Pharmacists' attitudes, knowledge, and practices in providing emergency contraception and medical abortion to adolescents in three districts of the Kathmandu Valley, Nepal, 2012

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Abstract:

Background: This research explores how pharmacists' levels of knowledge surrounding emergency contraception (EC) and medical abortion (MA) and their attitudes towards adolescents using these methods may impact adolescents' access to EC and MA in the Kathmandu Valley.

Methods: We conducted structured, open-ended interviews with a convenience sample of 22 pharmacists from three districts within the Kathmandu Valley. Interviews were conducted in Nepali by local researchers trained in qualitative methods. Upon receiving the translated data, we conducted a detailed content analysis using both MaxQDA and Epi Info software.

Results: Pharmacists' level of knowledge about emergency contraception and medical abortion varied across the three regions, with pharmacists in Kathmandu having the least complete knowledge of each method. Additionally, an attitude assessment revealed that pharmacists generally support adolescents accessing EC and MA. However, pharmacists in Kathmandu carried more conservative attitudes than those in the two smaller study areas.

Conclusions: Pharmacists require additional education and training for the safe provision of EC and MA. Their training should include a Values Clarification and Transformation (VCAT) workshop. We also encourage partnerships with youth organizations in the community to increase pharmacists' capacity to manage the needs of their adolescent clients with greater sensitivity.

Keywords: emergency contraception, medical abortion, adolescents, youth, pharmacies, Nepal

Introduction

Nepal's progress in reducing maternal mortality from 539 to 281 deaths per 100,000 live births over 1996 to 2006 has been largely attributed to the legalization of safe abortion in 2002 up to 12 weeks of pregnancy. [8] An enabling political environment and advocacy on the part of health workers fueled the creation of a national family planning policy and safe

motherhood initiative that included comprehensive abortion care (CAC) services in certified health facilities across the country. In a continuing effort to combat high rates of maternal mortality in Nepal, the Family Health Division (FHD) of the Department of Health Services (DoHS) initiated an expansion of abortion services in 2009 to include medical abortion (MA) in all 75 districts of Nepal. [12] Introducing the option of MA where access to health facilities remains problematic offered women a safe, effective, affordable option for abortion.

Despite significant progress in the family planning sector, nearly 20% of adolescent girls are pregnant or already have one child in Nepal. Additionally, this group accounts for nearly 20% of maternal deaths. [41] Facing stigma for accessing contraceptives, young women often need safe abortion services to terminate unwanted pregnancies. Given the option between obtaining an abortion procedure and purchasing MA, they are often drawn to the latter because this method affords them anonymity and privacy in the experience of terminating a pregnancy. [15] Youth are increasing accessing this method and other contraceptive methods from pharmacies or medical shops. However, pharmacists do not have adequate knowledge of MA to safely provide this option to women. [16] As a result, MA drugs are being sold without proper instruction about dosage, side effects, and without management of complications. Additionally, emergency contraception (EC) has been confused as an abortifacient drug resulting in the observed increase in emergency post-abortion complications. Youth with little prior knowledge of MA and contraceptive methods such as EC are at greater risk of acquiring the incorrect information, putting them at greater risk for morbidities and mortality.

The purpose of this study is to assess pharmacists' knowledge of contraceptive methods and medical abortion, and explore how pharmacists' attitudes towards youth accessing medical abortion may affect their distribution practices. With this research, we seek to fill a critical gap in the literature about adolescents' sexual behaviors and reproductive health needs, as well as an assessment of pharmacists' practices and attitudes concerning this demographic. Understanding the potential gaps in knowledge and overall attitudes will inform future research and the development of interventions directed towards pharmacists.

Methods:

Study population & design

To accomplish the study objectives set forth above, we conducted structured, open-ended interviews with pharmacists around the Kathmandu Valley. The interviews were done with a convenience sample of 22 pharmacies from Kathmandu, Lalitpur, and Bhaktapur in the Kathmandu Valley. Ipas's research team calculated the number of interviews designated to each district based on the relative size of the population, thus 10 interviews were conducted in Kathmandu, 7 in Lalitpur, and 5 in Bhaktapur which is the least populous of the three areas. The target respondent was identified through screening questions to discover the employee at each pharmacy who handles the greatest volume of customers.

The structured interview guide was created based on pharmacy surveys that have been used in similar research and included an attitude scale alongside open-ended questions that would allow respondents to elaborate on their answers. Prior to data collection, an independent translator (hereafter referred to as the "consultant") translated the interview guide from English into Nepali. The interview guide was then pilot tested in each district, however, few changes were made.

Data Collection

Ipas's youth coordinator recruited four research assistants, two male and two female, to conduct interviews based on their affiliation with various health education programs in the Kathmandu Valley. From their prior work experiences, all of the data collectors were well versed in contraceptive methods and medical abortion, and more importantly had prior experience conducting interviews. The data collectors participated in a half-day training session held at Ipas Nepal's headquarters which covered the project objectives, interview techniques, and their contractual agreement with Ipas. The interviewers worked in pairs to conduct each interview during which one person served as the interviewer and the second as a note-taker. Each interview lasted approximately 45 minutes, however if respondents were reluctant to answer questions about medical abortion, the interview proceeded faster. The interviews were recorded using a digital recorder to capture responses verbatim which assisted with data validity. Data collection was completed over six weeks from August to mid-September of 2012.

Data preparation & analysis

Concurrently with data collection, the hand-written interview notes were typed and translated from Nepali into English by the consultant. Once the notes were typed and translated, the consultant double-checked each transcript using the recording from the corresponding interview. The final translated interviews were sent to Emory University, Rollins School of Public Health and the audio files remain with Ipas Nepal. We conducted a detailed analysis of the translated interview notes using a mix of quantitative and qualitative analytic techniques. The quantitative analysis included categorization and counting used Epi

Info software, and MaxQDA software was used to conduct the qualitative analysis which explored broader themes found in responses to the open-ended questions.

Emory University IRB

Emory University's Institutional Review Board (IRB) defines research as "a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge." Because our findings will be used to make recommendations to Ipas Nepal to improve the quality of their programming and intervention development and they will not be generalizable outside of the organization, we were not required to submit a protocol to the IRB. This was confirmed by Carol Corkran from the Emory IRB over email on March 15, 2013.

Results:

The results section is divided into two topics, and quantitative and qualitative study results are presented under each. Topic 1 details results on pharmacists' levels of knowledge of emergency contraception and their levels of knowledge of medical abortion. Within each of these sections, we compare variations in knowledge across the three study districts. Topic 2 presents the attitude assessment conducted using a Likert Scale. Variations between the three districts are also highlighted.

Topic 1: Assessing pharmacists' knowledge and training about emergency contraception and medical abortion pills

Emergency Contraception (EC):

Pharmacists' knowledge of emergency contraception was evaluated based on the inclusion of the following information in their description of how to use the method: (1) EC is for use after unprotected sex, (2) EC is used to prevent pregnancy, (3) the correct time frame for the use of EC is 72-120 hours after unprotected sex, and (4) an explanation of how to use the method specifically how many pills must be taken, at what intervals, and that the pills must be taken orally. All pharmacists who responded to this question said that EC is for use after unprotected sex, 85.7% stated that EC is used to prevent pregnancy, and 95.2% cited the correct time frame for use following unprotected sex. 71.4% of pharmacists mentioned the number of pills to be taken and at what intervals but only three (14.3%) explicitly said EC should be taken orally.

Exploring differences in pharmacists' knowledge of EC in Kathmandu, Lalitpur, and Bhaktapur districts

Pharmacists in Lalitpur and Bhaktapur study sites demonstrated greater accuracy and completeness in their knowledge of this method than pharmacists in Kathmandu who either gave vague responses to these questions or gave no answer at all. While 100% of pharmacists in Lalitpur and Bhaktapur mentioned that this method is used to prevent unintended pregnancy, only 66.7% of pharmacists in Kathmandu included this critical piece of information in their answers. In terms of how to properly administer the EC, most pharmacists from Lalitpur and Bhaktapur knew the correct number of pills to take and the spacing of each dose (85.7% and 100% respectively). Less than half of pharmacists in Kathmandu (44.4%) detailed doses and timing, but everyone who explicitly stated that this method should be taken orally were from Kathmandu.

Medical Abortion (MA):

45.5% of all pharmacists stated that they did not know anything about MA or did not respond to questions on MA because they don't carry the method. Among the 54.5% who did answer, their knowledge was assessed on five indicators: (1) whether they knew the correct time period during pregnancy that it is safe for a woman to use MA, (2) whether they mentioned the doses or number of Mifepristone and Misoprostol pills a woman must take as well as when these pills should be taken, (3) whether they conveyed how the pills should be taken by the patient, (4) if they mentioned side effects, and (5)if they explained how a client would know whether the MA had worked or not.

83.3% of pharmacists who provided MA in their pharmacy correctly stated that MA can be used safely up to 9 weeks of pregnancy and 16.7% of pharmacists said that the method can be used up to 12 weeks. All of the pharmacists who answered provided correct doses and timing of Mifepristone and Misoprostol which varied according to the brand of MA being sold. 66.7% of pharmacists stated how the woman should take the pills, whether it is orally, sublingually, or vaginally. However, 25% misinterpreted this question to mean "How do you convey information about this method to the client?" and we were not able to elicit appropriate responses from them. Less than half of the pharmacists (41.7%) mentioned side effects in their answers although this was not explicitly asked in the interview. Finally, 58.3% explained at least one method to verify whether the MA has worked for the woman. For example, pharmacists said a woman will know the MA has worked by the presence of bleeding, the return of menstruation, through a urine test, or by taking a "video x-ray" which most likely refers to an ultrasound.

To determine where and how the pharmacists obtained knowledge of MA, they were asked whether they received any training on MA. 50% of pharmacists said they had not received training, 31.8% gave no answer to the question, and 18.2% said they had received training. Among those who were trained, 50% (N=2) were trained by Population Services International (PSI), 25% (N=1) were trained by Marie Stopes International (MSI), and 25% (N=1) were trained by the Association of Pharmacists.

Exploring differences in pharmacists' knowledge of MA in Kathmandu, Lalitpur, and Bhaktapur districts

50% of pharmacists from Kathmandu said they were familiar with MA, 57.1% from Lalitpur said they knew of the method, and 60.0% from Bhaktapur said they were acquainted with MA. These percentages are aggregates of the pharmacists who answered "Yes, I know about MA" and "I know very little about MA", as both groups demonstrated knowledge of the method. (Table 1)

Among the pharmacists who stated they knew the method (N=12), all of the pharmacists in Bhaktapur and Lalitpur stated the correct gestational age that it is permissible to use MA. (Table 1) Some pharmacists in Kathmandu remarked that this method can be used safely up to 12 weeks of pregnancy but those who mentioned this time frame do not carry MA in their shops. Across all districts, pharmacists knew the doses and timing of Mifepristone and Misoprostol and while almost all of the pharmacists in Bhaktapur and Lalitpur explained how to ingest the pills, less than half the pharmacists in Kathmandu (40%) provided this information. 66.7% of pharmacists in Bhaktapur mentioned side effects in their explanations of MA, however very few pharmacists in Kathmandu and Lalitpur (40% and 25% respectively) included information about side effects in their responses. The one category in which pharmacists in Kathmandu were the strongest was in providing detailed means of

verification that the method has worked for the woman (100%). However, overall levels of knowledge about MA were more consistent among pharmacists in the smaller districts of Lalitpur and Bhaktapur than in Kathmandu.

Only 20% of pharmacists in Kathmandu said they received training in MA which may account for the variability in their knowledge. (Table 1) However, none of the pharmacists in Lalitpur were trained in this method and still demonstrated more complete knowledge than those in Kathmandu. It is indisputable that pharmacists in all districts must be trained more thoroughly in MA in order to dispense it safely to customers. However, considering 62.5% of pharmacists who stated they provide MA were concentrated in Kathmandu, additional training must be prioritized in the district where MA is most widely available.

Table 1: Pharmacists' knowledge of medical abortion (MA) stratified by district in the Kathmandu Valley, 2012

INDICATORS	KTM (N=10)	LAL (N=7)	BHA (N=5)	Total (N=22)
What percentage of pharmacists said they carry MA?	62.5% (5)	25.0% (2)	12.5% (1)	36.4% (8)
What percentage of pharmacists in each district received training on MA?	20.0% (2)	0.0%	40.0% (2)	18.2% (4)
How well did the pharmacist say he knew MA?				
(1) Yes, I know about MA	40.0% (4)	28.6% (2)	20.0% (1)	31.8% (7)
(2) I know very little about MA	10.0% (1)	28.6% (2)	40.0% (2)	22.7% (5)
(3) I don't know anything about MA (or gave no answer)	50.0% (5)	42.9% (3)	40.0% (2)	45.5% (10)
AMONG THOSE WHO KNEW MA vs. TOTAL	**KTM (N=5)**	**LAL (N=4)**	**BHA (N=3)**	**Total (N=22)**
Did they include the following items in their description of how to use MA?				
(1) Cited correct gestational age a woman can safely use MA	60.0% (3)	100.0% (4)	100.0% (3)	45.5% (10)
(2) Stated the doses or number of Mifepristone & Misoprostol pills to take along with the timing of each dose	100.0% (5)	100.0% (4)	100.0% (3)	54.6% (12)
(3) Explained how to ingest pills (orally, sublingually, vaginally)	40.0% (2)	75.0% (3)	100.0% (3)	36.4% (8)
(4) Mentioned that there are some side effects to this medication and/or named a few of them	40.0% (2)	25.0% (1)	66.7% (2)	45.5% (10)
(5) Stated some method for a woman to verify that the MA has worked (bleeding, return of menstruation, urine test, x-ray)	100.0% (5)	25.0% (1)	33.3% (1)	31.8% (7)

* KTM = Kathmandu; LAL = Lalitpur; BHA = Bhaktapur

Topic 2: Assessing pharmacists' attitudes towards youth accessing medical abortion pills

68.2% of pharmacists agreed that young, married men should have access to medical abortion pills and one participant (4.6%) strongly agreed. (Table 2) A slightly higher

percentage of participants (72.7%) agreed that young, married women should have access to medical abortion pills and one participant (4.6%) strongly agreed. Fewer participants agreed with young, unmarried people accessing the method. 50% agreed for young, unmarried men and 54.6% agreed for young, unmarried women. No pharmacists strongly agreed with unmarried adolescents accessing MA and more participants were neutral in their views on this issue when asked to express their beliefs about adolescents.

Correlations between attitudes & provision of MA:

Most of the pharmacists who said they did not carry MA still agreed with young people accessing the method indicating that the pharmacists' attitudes have little bearing on whether or not the method is available in the shops.

Table 2: Pharmacists' attitudes towards adolescents accessing medical abortion (MA), stratified by adolescents' marital status and gender, Kathmandu 2012

"How do you feel about (blank) accessing MA pills?"		**Married Males (N=22)**	**Married Females (N=22)**	**Unmarried Males (N=22)**	**Unmarried Females (N=22)**	**Row Totals**
Strongly Agree	KTM	0	0	0	0	
	LAL	1	1	0	0	
	BHA	0	0	0	0	
	Subtotal	4.6% (1)	4.6% (1)	0.0% (0)	0.0% (0)	2
Agree	KTM	4	5	2	3	
	LAL	6	6	6	6	
	BHA	5	5	3	3	
	Subtotal	68.2% (15)	72.7% (16)	50.0% (11)	54.6% (12)	54
Neutral	KTM	1	1	5	4	
	LAL	0	0	0	0	
	BHA	0	0	0	0	
	Subtotal	4.6% (1)	4.6% (1)	22.7% (5)	18.2% (4)	11
Disagree	KTM	4	3	3	3	
	LAL	0	0	1	1	
	BHA	0	0	2	2	
	Subtotal	18.2% (4)	13.6% (3)	27.3% (6)	27.3% (6)	19
Strongly Disagree	KTM	1	1	0	0	
	LAL	0	0	0	0	
	BHA	0	0	0	0	
	Subtotal	4.6% (1)	4.6% (1)	0.0% (0)	0.0% (0)	2

* KTM = Kathmandu; LAL = Lalitpur; BHA = Bhaktapur

† All percentages refer to column totals

Comparing attitudes of pharmacists in Kathmandu, Lalitpur and Bhaktapur districts towards youth accessing MA

All participants who strongly agreed with young, married men and women accessing MA were from Lalitpur. Nearly 50% of the participants who agreed with young people accessing MA regardless of gender and marital status were from Lalitpur as well. In fact, Lalitpur had almost double the number of "Agree" responses than Kathmandu in spite of being a much smaller district. The one pharmacist from this district who disagreed with young people accessing MA remarked that in his opinion, "pre-marital sex is not good." (Interview 17)

Participants from Bhaktapur overwhelmingly agreed with young people accessing MA; however two participants preferred that these clients be married. One explained, "Generally, I agree for family planning contraceptives, but disagree for abortion pill, because the young people they need not want to be aware and they just abort their pregnancy with the help of this pill which is not digested in our society." (Interview 18)

All participants who gave neutral responses were from Kathmandu. Nearly 70% of the "Disagree" and all of the "Strongly Disagree" responses were from Kathmandu. The participant who strongly disagreed with use of MA stated, "there should be mutual understanding between husband and wife whether to have child or not before the conception because abortion is a crime." He continued with, "using contraceptive and abortion pill by an unmarried women is not acceptable in society" due to cultural values and norms. (Interview 1) These quotes are consistent with his comments throughout the interview that abortion is "not a good thing." Another pharmacist from Kathmandu remarked, "Agree for contraceptives, but not for abortion pill. I don't feel comfortable when they take abortion pill. I feel happy in the sense that they were aware about family planning,

but I am not happy with the abortion, it is not a good thing. Someone has its compulsion even if it is just like a homicide." (Interview 8) These quotes demonstrate continued opposition to abortion among some pharmacists even a decade after its legalization. One pharmacist articulated his discomfort with unmarried youth accessing the method and attributed this behavior to the influence of the media.

Additionally, in comparing our quantitative analysis of attitudes in Kathmandu with the additional comments pharmacists made throughout the interview we detected nuances in many of the pharmacists' responses. For example, at the start of the interview, one pharmacist claimed, "Due to socio cultural values and norms, using contraceptive and abortion pill by unmarried women is not acceptable in society". Once he reached the attitude section, he argued that young unmarried men should have safe sexual relationships and unmarried women should use family planning effectively contradicting his previous statement and offering support for the use of contraceptives among young people. However, in his final comments, he said he feels badly when youth come to his shop for contraceptives and "counsels" them. While it is unclear what "counseling" may entail, his comments demonstrate clear contradictions and the discomfort pharmacists may potentially feel when balancing community norms with their obligation to enhancing young people's health. (Interview 1) Unlike the nuanced responses detected from pharmacists in Kathmandu, pharmacists from Lalitpur and Bhaktapur delivered answers to the attitude assessment that were consistent with any comments that were made throughout the interview.

The patterns observed across districts analyzed alongside the participants' comments regarding abortion throughout the interviews suggest that pharmacists in Kathmandu are

less supportive of young people accessing MA than the pharmacists in Lalitpur or Bhaktapur.

DISCUSSION:

Most important findings

Topic 1, Assessing pharmacists' knowledge and training about EC and MA: Given the common misconception that emergency contraception functions as an abortifacient drug, we assessed the accuracy and completeness of pharmacists' knowledge of this contraceptive method. Overall, respondents demonstrated adequate knowledge of how to administer emergency contraception. However, in comparing levels of knowledge across the three study districts, pharmacists in Kathmandu exhibited the poorest levels of knowledge in this area. Considering EC was most widely available in Kathmandu and also most requested by women in this district compared with other districts, pharmacists dispensing this method must be trained more thoroughly.

Similarly, levels of knowledge surrounding MA among pharmacists in Kathmandu were incomplete in comparison to levels of knowledge among Lalitpur and Bhaktapur pharmacists. For example, pharmacists in Kathmandu asserted that MA may be used up to 12 weeks of gestation, however due to lack of empirical evidence, WHO recommendations on the use of MA up to 12 weeks of pregnancy are weak.[45] Only 37.5% of pharmacists who initially stated that they provide MA also received training on the method underscoring the importance of providing pharmacists with information that mirrors WHO guidelines. Assessing the impact of pharmacists' knowledge and levels of training on the distribution of MA poses significant challenges considering only two of the pharmacists that provide MA were formally trained and levels of knowledge surrounding the method are inconsistent.

Additionally, we can only understand the full effect of pharmacists' knowledge on young customers if it is weighed against the customers' knowledge of the method, providing support for a follow-up study to be conducted with adolescent customers.

While we observed variations in levels of knowledge across the three districts, we were unable to determine the magnitude of these differences using statistical testing because of the small size of our sample.

Topic 2, Assessing pharmacists' attitudes towards youth accessing MA: The attitude assessment conducted on a Likert Scale revealed general support for young married and unmarried males and females accessing medical abortion. However, despite these seemingly liberal attitudes, some pharmacists made stern comments about abortion throughout the interview, likening it to homicide which mirrors conceptions of abortion under the old law. [8] Many pharmacists also reported significant stigma surrounding unmarried individuals using contraceptive methods, and particularly medical abortion pills. Unmarried individuals visiting pharmacies to obtain MA may rush to leave the pharmacy due to fear of being seen making their purchase. This gives them even less opportunity to obtain information from the pharmacist on how to use the method correctly, and consequently puts them at greater risk for complications.

While the assessment revealed interesting patterns in pharmacists' attitudes, the data gathered in this section must be carefully interpreted. Initially, the interview was designed to assess pharmacists' attitudes towards young people accessing contraceptives and medical abortion pills. However, due to the length of the interview, this section was limited to include only views on abortion. Unfortunately, the topic retained the title "Views about young people accessing contraceptives and medical abortion pills". Because of this oversight,

data collectors may have introduced the topic with this heading. Hence, many pharmacists' answers included their views on both contraceptives and abortion pills, muddling the responses garnered from the Likert Scale. Furthermore, it is often unclear whether the pharmacist is expressing his own personal views regarding young people accessing contraceptives and/or medical abortion, or whether he is explaining societal norms surrounding these methods.

Comparisons with existing literature

To date, there are three pertinent studies that have examined medical abortion in the context of pharmacists in South Asia. The first was conducted in Nepal and assessed providers' and pharmacists' openness to the introduction of medical abortion into the market. This study did not do a systematic evaluation of pharmacists' knowledge of medical abortion, as it had not yet been introduced into the health systems and health workers had not received training on the method. The questionnaire simply asked if they were aware of the drugs Mifepristone and Misoprostol, and if the pharmacists would be willing to stock these drugs if they became available. This study revealed that 93.8% of pharmacists were willing to prescribe or sell medical abortion drugs, suggesting widespread support for their use. This mirrors our findings, as the majority of pharmacists were supportive of the use of medical abortion in the Kathmandu Valley with few exceptions.[48] While the research questions may have been slightly different, this study employs a methodological design that would have been fitting for the data that we were looking to collect with this research. In the aforementioned study, researchers randomly selected participants from purposefully selected districts around Nepal. They had a large sample of 177 pharmacists which allowed them to detect statistical significance in their outcome variables. [48]

In a similar study, in order to gain an understanding of the availability and use of MA in South India, physicians, pharmacists, and women were interviewed in 2005 about their experiences with Mifepristone and Misoprostol. Open-ended interviews were carried out with a purposive sample of pharmacists that were selected using a non-random snowball sampling technique. Physicians were interviewed about their views on the appropriateness and safety of medical abortion, pharmacists were questioned about their stocking practices of Mifepristone and Misoprostol, and women were interviewed about the decision-making process one goes through prior to seeking an abortion. Pharmacists were certainly not the focus of this study, as they were only asked about stocking practices and not about their knowledge or distribution of this method to clients. The study done in India simply revealed that pharmacists were selling medical abortion over-the-counter in spite of the requirement for a prescription. Unfortunately, in the current study, pharmacists were the sole participants and unlikely to admit acting outside the law; therefore we were unable to gauge the frequency at which pharmacists may be selling medical abortion over-the-counter. Furthermore, in the study conducted in India, large medical shops staffed by trained pharmacists and small shops selling medicines were analyzed as one homogenous group. One of the initial research questions posed for our study involved exploring the differences between distinct *types* of medical shops. However, given our limited sample size, we were unable to make meaningful comparisons among these groups. This represents an opportunity for future research. [46]

Finally, a study commissioned by the Ipas office in India examined many of the same indicators that we were focused on in this research. Ganatra et al. assessed the availability of drugs for menstrual regulation, stocking patterns of mifepristone and misoprostol, details of the clientele who typically purchase abortifacient drugs, and the percentage of clients who

come in with a prescription versus those who do not. In addition, Ganatra et al. comprehensively reviewed pharmacists' knowledge of medical abortion through a structured questionnaire and found similar results to those we presented earlier. 51.3% of their pharmacists knew of Mifepristone and Misoprostol but were unable to name the doses at which these drugs should be taken together. Many pharmacists could not confidently cite the safe gestational age up until which MA can be used but those who answered estimated that it should not be used beyond 60 days after the last menstrual period (LMP). 73% of pharmacists were unable to list side effects of MA, and a number of pharmacists thought that Mifepristone and Misoprostol can be used in the same way as emergency contraception. Overall, as we found in our study, the pharmacists interviewed in India said their levels of knowledge about medical abortion were inadequate and most expressed interest in learning more about the method. An attitude assessment was not explicitly incorporated into this study. Although, pharmacists were asked about their willingness to sell these drugs to which 24.4% said they were not willing to stock them because the demand for these drugs was inadequate to offset their high cost. [47]

Limitations

These data were subject to several limitations. As in every international research study that uses translation, word meanings and the phrasing of questions may have changed during the translation of the original interview guide from Nepali to English. Also, although the interview responses were digitally recorded, we used the note-takers' hand-written field notes as the primary source of data for analysis, as it was the custom of the consultant. This technique may have failed to capture nuances in the responses. Additionally, in questions regarding the marital status of customers, it was difficult to gauge whether the pharmacists'

answers pertained to the general clientele or whether they tailored their answers to youth who are the population of interest. This may be attributable to poor question wording in specific sections. For the majority of the interview questions this was a non-issue.

Furthermore, we assessed pharmacists' levels of knowledge of emergency contraception and medical abortion based on the inclusion of certain pieces of information in participants' responses. However, these percentages must be interpreted cautiously, as the knowledge assessment was conducted in an in-depth interview instead of a systematic survey. For example, pharmacists were not explicitly asked to discuss side effects; therefore a pharmacist's failure to mention side effects does not necessarily reflect lack of knowledge. It simply reflects a failure to mention them in one's answer.

Also, given the stigma associated with contraceptive methods, pharmacists cannot be certain that their young customers are being truthful in their reasons for purchasing particular methods over others, or who they are purchasing these products for. Likewise, we cannot be sure that pharmacists are unaffected by this potential stigma and spoke truthfully about their adolescent clients in these interviews.

Finally, because this study was not initially designed to collect quantitative data, an appropriate sample size was not calculated for this type of analysis. Therefore, we were unable to find statistically significant correlations between our variables. The frequencies presented in this report may be misleading, as they are calculated based on a very small sample. To this extent, we were unable to conduct any meaningful comparisons on the basis of listing status or pharmacy class (public versus private, pharmacy versus clinic) since the respective groups were extremely small.

Implications of findings for future research

- Perform a more systematic assessment of pharmacists' knowledge of emergency contraception and medical abortion using a structured survey, similar to the instrument used in Ipas's research in India, with a sample of pharmacists large enough to yield statistically significant results
- Conduct focus group discussions with pharmacists in the three districts, Kathmandu, Bhaktapur, and Lalitpur in order to parse out attitudes towards adolescents accessing these methods and pharmacists' perceived barriers of communication with this cohort.
- Conduct additional research on the client experience through in-depth interviews with adolescents to explore the prevalence of over-the-counter sales of contraceptives as well as the frequency and quality of contraceptive counseling that adolescents receive at medical shops.
- Additionally, as of yet, limited research has been done on the retention of training among pharmacists. To mitigate the effects of poor information dissemination in pharmacies, Ipas and PSI trained local pharmacists to provide women with knowledge about medical abortion, referrals to abortion services, and information on the legality of abortion in Nepal since many were unaware of the change in the law. [49] Both institutions continually work to monitor the impact of these training exercises however; to date information is lacking on how well pharmacist training has been received and the appropriate level of follow-up necessary to ensure retention of information.

Recommendations:

- Pharmacists' general lack of complete information surrounding methods such as EC and MA must be addressed with additional training exercises.
- Conducting Values Clarification and Transformation (VCAT) workshops with pharmacists will give them the skills to identify if and when pre-existing beliefs about abortion are shaping their interactions with customers seeking medical abortion. [15]
- Perhaps one of the most important contributions of this research was the evidence of a clear disconnect between pharmacists and their youth clientele with pharmacists characterizing youth as "aggressive" and unwilling to accept advice or information. Whether this inability to communicate openly stems from adolescents anticipating the pharmacists will disapprove of their choices, their unwillingness to be "counseled", embarrassment, or discomfort associated with speaking to an adult about intimate life choices including the choice to purchase contraception, a clear divide exists between these two groups. In addition, qualitative research conducted in 2010 cites a lack of age and gender-appropriate providers as a barrier to adolescents utilizing sexual health services. [32] To bridge this gap, we propose the establishment of partnerships between local pharmacies and youth groups. The efficacy of peer-delivered information to adolescents is well documented, particularly in the purview of sexual and reproductive health.[50] Following this common approach to youth engagement and health education, these partnerships will allow young clients seeking counsel and contraceptives to interact with a peer educator who has received adequate training on all the methods, rather than an owner or pharmacy employee. Given the presence and strong leadership of youth groups such as the Bhaktapur

Youth Information Forum in one of our study districts, a partnership of this nature would increase the capacity of pharmacies to manage youth clients while addressing the needs of this population directly. Certain researchers caution practitioners in the application of this commonly lauded strategy due to challenges in monitoring and evaluating significant behavior change.[51] However, if the goal is simply to create a safe space within these establishments for youth to acquire information prior to using methods such as MA, this recommendation merits consideration.

Conclusion

Open-ended interviews with pharmacists in the Kathmandu Valley revealed their limited knowledge of dosage, side effects, modes of administration, and timing for the appropriate use of medical abortion and emergency contraception. Through these interviews, we also identified pharmacists' broad support for adolescents accessing contraception and in Lalitpur and Bhaktapur, their access of medical abortion. Pharmacists in Kathmandu gave more nuanced responses that reflected less support for the use of medical abortion pills. With these findings, we recommend follow–up research with both pharmacists and adolescents to gain a more accurate understanding of their interactions. Moreover, to address their dearth of information about these methods, we recommend pharmacists undergo additional knowledge training as well as VCAT workshops to manage any hesitation or discomfort that they feel towards dispensing medical abortion.

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ADDITIONAL RESULTS:

Topic 1: Characteristics of pharmacists in the Kathmandu Valley

Among the twenty-two pharmacies that data collectors visited, 50% of respondents were employees, 9.1% held managerial positions, and 40.9% owned the establishments. The participants' roles within the pharmacy related directly to their levels of experience. Overall, 72.7% of respondents had spent between 1 and 10 years working at the pharmacy where they were interviewed. Although most respondents fell into this interval, we observed a broad range of work experience across the group. Some pharmacists said they had been working at that particular shop for as little as 3 months. Others were well-established in their place of work and at the higher end, had spent 25-32 years there. All of the respondents with over 21 years of experience owned the shops where they worked.

Data collectors looking to identify the target respondent found that 95.5% of participants claimed to interact with customers directly. Although nearly all of the pharmacists remarked that they are the primary vendor in the shop, many went on to explain who takes care of customers in their absence. Among the participants who provided alternatives, 44.4% said that when they are not present, other staff members assist customers in the pharmacy. 22.2% said that a nurse or ANM takes care of clients in this case, and another 22.2% said that their family members sometimes manage customers. One participant (11.1%) said his friend occasionally handles customers in his stead.

Comparing characteristics of respondents across Kathmandu, Lalitpur, and Bhaktapur

Comparing responses from the screener questions across our three districts of interest, we found that 80% of respondents in Bhaktapur were staff members while most of the respondents in Lalitpur (57.1%) were owners of the shop where they were interviewed. In

addition, Kathmandu was the only district where respondents held managerial positions. (Table 3) The presence of staff managers solely in Kathmandu suggests that these pharmacies are larger and have more employees to serve a more populated area, thus requiring someone in a managerial position.

While 80% of respondents in Kathmandu and Bhaktapur had between 1 and 10 years of experience, respondents in Lalitpur had the most varied levels of experience ranging from 3 months to 32 years. The concentration of highly experienced professionals in Lalitpur was consistent with high levels of ownership in the district (57.1%). Pharmacists interviewed in Lalitpur said they usually interact directly with customers unless another staff member is requested by the customer. As this most often occurs with female customers, the pharmacist defers female customers to a nurse or an auxiliary nurse midwife (ANM).

All of the respondents in Bhaktapur said they are assisted by family members in this situation. One respondent mentioned he dispenses medication with the help of his brother. Another man mentioned that his wife who comes from a health background interacts with female customers who feel uncomfortable discussing their reproductive health issues with him.

Table 3: Respondent's role in the pharmacy, stratified by district in the Kathmandu Valley

Respondent's role in the pharmacy	**DISTRICT**			**TOTAL (N=22)**
	Kathmandu (N=10)	Lalitpur (N=7)	Bhaktapur (N=5)	
Employee/Staff Member	40.0%	42.9%	80.0%	50.0%
Manager	20.0%	0.0%	0.0%	9.1%
Owner	40.0%	57.1%	20.0%	40.9%
TOTAL	100.0%	100.0%	100.0%	100.0%

Topic 2: Characteristics of adolescents visiting pharmacies in the Kathmandu Valley

In exploring the sex and age composition of the youth clientele, 9 out of 20 pharmacists (45%) said that both young men and women visit their shops on a daily basis and another 8 pharmacists (40%) said most of their adolescent clients are women. 8 out of 17 pharmacists (47.1%) said that their clients are typically above the age of 20, followed by another 6 (35.3%) who said their clients are over the age of 18. Interestingly, 2 out of 17 pharmacists (11.8%) said some of their clients are as young as 14 years old. Another point of interest was the proportion of married and unmarried youth clients who reportedly visit these shops. 36.4% of all pharmacists (N=22) said their clientele are married and another 36.4% said they typically have a mix of married and unmarried clients. Only 4 out of 22 pharmacists (18.2%) said most of their clients are unmarried and two (9.1%) said they are unable to tell a customer's marital status.

In addition, for a fuller exploration of how youth are accessing contraceptives and medical abortion pills at pharmacies, we asked whether they typically visit the shops alone or accompanied by another person. Among the pharmacists who answered this question (N=21), 52.4% said that youth clients visit the pharmacy alone whereas 47.6% said that youth are visiting the pharmacy with someone else. Should a person be accompanied to the pharmacy, this company consists of partners, friends, or other relatives. 70.6% of pharmacists said a young person is typically joined by friends or peers, or simply comes in a group. 58.8% of pharmacists said that when people come to the pharmacy with another person, it is their spouse or partner. Only 23.5% of pharmacists said that young people are accompanied by other relatives including parents and anyone deemed a "guardian." Due to the open-ended nature of the interview, pharmacists gave multiple scenarios in which youth

visit the pharmacies accompanied by another person. For this reason, the previously mentioned percentages do not add up to 100%.

Comparing demographic characteristics of adolescents customers in Kathmandu, Lalitpur, and Bhaktapur

In Kathmandu, 75% of pharmacists said it is primarily young women who visit their pharmacies and 60% said their clients are married. Of the few men who come into the shops, they are usually between 18 and 30 and unmarried. The female clients that visit these pharmacies range in age from 15 to 50 years old, but 50% of pharmacists said their clients are above the age of 20. Some of them explained that unmarried women pose as married women while visiting the pharmacy; however they did not elaborate on how often this happens or how they are able to identify when an unmarried women is posing as a married women. One pharmacist explained that he screens young women by their marital status and does not supply unmarried youth with the abortion pill because he does not want to be held responsible for managing complications, should they arise.

In Lalitpur, over 50% of pharmacists said both men and women visit their pharmacies but two of the pharmacies noted that young men visit more often than young women. Sixty percent said their clients are over the age of 18 and typically fall between 18 and 25 years old. Both married and unmarried individuals frequent these shops and unmarried individuals usually request medicines or contraceptives. Most of the people coming to pharmacies are economically disadvantaged. One pharmacist noted that young visitors often demand services immediately and characterized them as aggressive.

In Bhaktapur, 80% of pharmacists remarked that their clientele consist of both males and females, but once again young men visit more often than young women. Clients are between the ages of 14 and 30, but 50% of pharmacists said their clients are usually over the age of

18. Forty percent of pharmacists said that both married and unmarried men and women visit their pharmacy. The men visiting are predominantly unmarried. Most of the women that visit the shops are married, and the married women are locals. Unmarried female visitors have typically traveled from outside the district to visit the shop. Another 40% of pharmacists said they couldn't tell the marital status of their clients because the younger generation of women does not follow traditional customs of putting vermilion in their hair, a symbol for marriage. Pharmacists also reiterated that the young population is difficult to work with at times. Young clients come seeking advice and information on sexual and reproductive health but are stubborn and difficult to talk to because they "think they know everything."

In both Kathmandu and Lalitpur, the majority of pharmacists (66.7% and 57.1% respectively) said people visit the pharmacy alone, while in Bhaktapur 80% said young people come to the pharmacy accompanied by another person. One pharmacist in Bhaktapur remarked that not many young people come to visit but if they do, adolescent visitors are often accompanied by their parents.

Demographic characteristics of customers who leave with EC:

50% of pharmacists said female clients typically leave the shop with this method but 33.3% said more often it was males leaving the pharmacy with EC. The majority of pharmacists (63.3%) said youth regularly leave the shop with this method, but another 27.3% said a mixture of youth and adults leave with EC. Consistent with the information that youth clients usually leave with EC, 58.3% of pharmacists said their unmarried clients leave with this method. Young, presumably unmarried people visiting the shop are in a hurry to leave

with their product. Conversely, married people who come to the shops to procure this method ask for suggestions on how to use it correctly.

Breaking this group down by district, in Kathmandu, both male and female clients were purchasing this method. Youth were leaving with EC in 100% of the pharmacies and unmarried clients were leaving from 83.3% of pharmacies with EC in tow. In fact, one pharmacist said the number of unmarried customers vastly outweighs the number of married customers looking for EC. In Lalitpur, 50% of pharmacists also named youth as the primary age demographic of EC users; however, the majority of pharmacists in this district (66.7%) said married clients leave with EC. One pharmacist in this district explained that very few unmarried individuals leave with EC due to the presence of the conservative Newar community. Unlike in Kathmandu and Lalitpur where a mix of male and female clients purchase EC, 75% of pharmacists in Bhaktapur said mostly women leave with this method In addition, 50% said their youth clientele typically leaves the shop with EC and 66.7% said this group is a combination of married and unmarried individuals. Also, a number of pharmacists, particularly in the smaller districts, noted that many of the unmarried women seeking EC are non-local or "peripheral people" coming from outside the community.

Demographic characteristics of customers who leave with MA:

54.6% of pharmacists did not specify whether their MA clients are male or female. Among those who did answer, 80% said that the customers leaving with MA are female, 44.4% of those who mentioned an age bracket said that a mix of youth and adult clientele leave with MA, and 41.7% who provided marital status of their average person leaving with MA said they are typically married individuals. We found no correlation between an MA client's gender and age, or between a client's age and marital status. However, 71.4% of people who

said women usually leave with MA also said married people are typically leaving with the method. One pharmacist said married women who do not want children come in for this method. Another said that married women from factories and small-scale industries come in requesting MA. The young, unmarried clients seeking MA are typically young women studying in secondary school or are young adults between the ages of 18 and 19 who became pregnant from having unprotected sexual intercourse. One pharmacist said that a girl studying in seventh grade requested MA from his shop.

Most pharmacists did not discuss whether or not MA clients are also leaving with a contraceptive method for future use. Those who did were divided with 50% of them claiming that MA clients do not leave with a method for future use and the other 50% saying they do. In the instances where clients are leaving with a post-abortion contraceptive method, 100% are leaving with condoms and 66.7% are also leaving with oral pills. A few pharmacists said they recommend condoms because they offer "dual-protection" presumably from pregnancy and STIs. In addition, "school children" do not like oral pills because they are difficult to take daily, therefore most of them leave with condoms instead. The one pharmacist from Lalitpur who provides MA suggests his clients take painkillers and sometimes they also leave with sanitary pads. Another pharmacist from Bhaktapur said married customers request Depo Provera when they leave the store.

Topic 3: Availability of contraceptive methods and medical abortion pills in pharmacies

Pharmacists named a number of temporary and long-acting reversible contraceptives that are available in their shops including condoms, oral pills, injectables, implants, IUCDs, and emergency contraception. None of the pharmacists mentioned the availability of medical abortion in response to this question. Condoms (86.4%) and oral contraceptives (81.8%)

were the methods most widely available among this sample. (Table 4) Injectables were also available in over fifty percent of the shops (54.6%). Many different brands of each contraceptive were mentioned across the interviews and have been outlined in Table 5.

Table 4: Availability of contraceptive methods, stratified by district in the Kathmandu Valley

Method	**Overall (N=22)**	**Kathmandu (N=10)**	**Lalitpur (N=7)**	**Bhaktapur (N=5)**
Condoms	86.4% [65.1, 97.1]	80.0% [44.4, 97.5]	85.7% [42.1, 99.6]	100.0%
Oral Pills	81.8% [59.7, 94.8]	80.0% [44.4, 97.5]	71.4% [29.0, 96.3]	100.0%
Injectables	54.6% [32.2, 75.6]	40.0% [12.2, 73.8]	42.9% [9.9, 81.6]	100.0%
Implants	13.6% [2.9, 34.9]	0.0%	28.6% [3.7, 71.0]	20.0% [0.5, 71.6]
IUCDs	22.7% [7.8, 45.4]	10.0% [0.3, 44.5]	42.9% [9.9, 81.6]	20.0% [0.5, 71.6]
EC	18.2% [5.2, 40.3]	40.0% [12.2, 73.8]	0.0%	0.0%
None	4.6% [0.1, 22.8]	10.0% [0.3, 44.5]	0.0%	0.0%

* Column percentages do not add up to 100% because participants mentioned multiple methods in a single answer.

Table 5: Contraceptive methods by brand name

Method	Brand Name
Condom	Black Cobra Dhaal Panther Kamsutra May Jodi Max Mood
Oral Contraceptives	Nilocon White Gulaf Chakki Sunaulo Gulaf Oberol L & G Dulotan & Duloton L Femilon Feminil
Injectables	Depo Provera Sangini
Implant	Jadelle Norplant
IUCD	Copper T
Emergency Contraceptive	e-CON I-pill Faminodo Unwanted

Comparing availability of contraceptive methods in pharmacies across Kathmandu, Lalitpur, and Bhaktapur

Across all three districts, condoms and oral contraceptives were the most widely available methods. (Table 4) None of the shops in Kathmandu mentioned the availability of implants as a contraceptive method, but implants were available in both Lalitpur and Bhaktapur, even if only in a few shops. Emergency contraception was only mentioned by participants in Kathmandu. However, later on in the interview when participants were asked about their knowledge and distribution practices of EC, many of the pharmacists in Lalitpur and Bhaktapur that had not mentioned this method earlier were forthcoming about having it available in their shops.

The methods most requested by young men and women are similar to the methods most widely available, suggesting that pharmacists consider the needs of their population when stocking their shops. However, if a pharmacist is unable to fulfill the requests of his customers, 66.7% said they refer the client to another pharmacy, 42.9% said they refer the client to a hospital, health post or district health office, 19.1% said if the customer is willing to wait, they procure the method from another pharmacy to make it available, and 14.3% said that they suggest an alternative method to the customer.

In Kathmandu, 80% of pharmacists said they refer clients to another shop and 30% buy the item from another store to make it available to the client. Conversely, the practice of procuring the item from another pharmacy if the client is willing to wait was uncommon in Lalitpur. Instead, an equal number of pharmacists (57.1%) said they either refer clients to another pharmacy or refer the client to any one of the following health facilities: health posts, hospitals, district health offices, government health facilities and PHCCs such as Chapagaun Primary Health Care Center. Similarly, in Bhaktapur 50% of pharmacists said they refer the client to another pharmacy and 50% said they refer the client to a health facility. Pharmacists mentioned three hospitals in Bhaktapur as referral sites including Bhaktapur Hospital, Siddhi Memorial, and Madhyapur Hospital.

Looking more closely at EC:

Originally when asked what methods they carried in the shop, 81.8% of pharmacists did not mention that they sell EC and those who openly discussed this were concentrated in Kathmandu. However, the responses garnered in other parts of the interview confirmed wider availability of EC in all three districts, including Lalitpur and Bhaktapur. When asked what brand of EC they sell, 12 out of the 18 pharmacists (66.7%) who did not initially

mention that they sell EC named a brand of EC that they carry. Among those who sold EC in their store, an equal number of pharmacies (62.5%) sold the brands Econ and I-pill. 25% of stores sold the brand Unwanted and 18.8% sold a different brand. Two pharmacists also mentioned that they only sell E-Con but that other brand options are available in the "market", although he does not elaborate on where this market is located, the products that are typically sold there, or who visits this market.

Looking more closely at MA:

At the start of the interviews, pharmacists were asked whether they carry medical abortion (MA) in the shop. This was meant to ensure that everyone interviewed would be able to provide information on their knowledge and distribution practices of MA. Unfortunately, nearly two-thirds (63.6%) of the people interviewed said they do not carry MA in the shop accounting for the lack of responses to the questions about MA later on in the interview.

Across districts, the majority of pharmacists in Lalitpur (71.4%) and Bhaktapur (80%) said they do not carry MA and most of the pharmacists (50%) who admitted to carrying it were localized in Kathmandu. (Table 6) In Lalitpur especially, pharmacists stressed the high demand for MA among customers and cited lack of trained staff as the barrier to providing this product to clients. Two shops stated that MA was previously available, but did not explain why the method is no longer being sold in the shop.

Table 6: Provision of MA stratified by district in the Kathmandu Valley

Do you carry MA?	**DISTRICT**			**TOTAL (N=22)**
	Kathmandu (N=10)	Lalitpur (N=7)	Bhaktapur (N=5)	
Yes	50.0%	28.6%	20.0%	36.4%
No	50.0%	71.4%	80.0%	63.6%
TOTAL	100.0%	100.0%	100.0%	100.0%

Two pharmacists who originally admitted to selling MA later claimed that they do not sell it and another person gave no answer to this question (Table 7). Also, two of the pharmacists who originally said they carried MA claimed that they either forgot or didn't know the name of the brand they sell. The result was that only 50.0% of the pharmacists who originally claimed to carry MA specified the brand that they carry with one pharmacist citing Medaborne and the other pharmacists naming Combipack, MMKit and Ranbaxy Tablets. Conversely, one person who originally said he does not carry MA in his shop later said he did in fact sell MA and that he carries a Nepali brand called Mistol and an Indian brand called MTP. One pharmacist said he no longer carries Mifepristone or Misoprostol pills but used to sell Epiforte.

Furthermore, three pharmacists who initially said they don't sell MA still provided estimates for the cost of the product with one stating that he works at another pharmacy so he has a "tentative idea about this medicine". Three pharmacists from Lalitpur who provided cost estimates also indicated that MVA services are available at their clinic. However, rather than quoting prices for MA, they may have provided the costs of obtaining a surgical abortion at that clinic. Because this distinction was unclear from the responses, they were excluded from the following analysis. According to the pharmacists who gave estimates (N=8), 25% said MA costs less than or equal to 500 NPR, 50% said it costs between 600-800 NPR, and another 25% said it costs 1000-2000 NPR. Since this sample is very small, we found it difficult to calculate an average cost of the method and detect any differences in cost between the three districts.

Table 7: Weighing pharmacists' original responses to carrying MA against the answers provided for what brand of MA they carry

	Medaborne	Other	I forgot/ I Don't know	Don't sell	No Answer	TOTAL
Carry MA	1 12.5% 100.0%	3 37.5% 75.0%	1 12.5% 50.0%	2 25.0% 15.4%	1 12.5% 50.0%	8 100.0% 36.4%
Don't Carry MA	0 0.0% 0.0%	1 7.1% 25.0%	1 7.1% 50.0%	11 78.6% 84.6%	1 7.1% 50.0%	14 100.0% 63.6%
TOTAL	1 4.6% 100.0%	4 18.2% 100.0%	2 9.1% 100.0%	13 59.1% 100.0%	2 9.1% 100.0%	22 100.0% 100.0%

Topic 4: Adolescents' preferences for contraceptive methods - most requested methods by males and females, most popular selling items among youth clientele, least popular selling items among youth clientele – weighed against pharmacist recommended methods.

Most requested methods by male and female adolescents

In response to which products or contraceptive methods are most requested by young male and female customers, only pharmacists in Kathmandu mentioned MA.

According to 75% of pharmacists, oral pills were the most requested product among female customers. (Table 8) Injectables, named by 40% of pharmacists, were the next most requested contraceptives in our three study areas. Fifty percent of pharmacists did not elaborate on what reason women usually give when they request contraceptive methods. However, among those who did (N=11), 45.5% said women admitted that the products were for their own use and 27.3% said women are buying the product for another person. Women often defend their contraceptive choices to the pharmacists by saying the method is

easy to use, the method protects from unsafe sex, or it "prolongs" the menstrual cycle. Many of these women eventually admit that they are purchasing the pills for family planning.

According to 95% of pharmacists, male customers usually request condoms and 53.9% said this was for the customer's own use. (Table 8) Another 38.5% of pharmacists said male customers choose methods based on their safety of use and limited side effects. After condoms, emergency contraception was cited with the greatest frequency (15%).

Consistent with the most requested items by male and female youth, when asked what types of contraception pharmacists usually suggest for people requesting it, 70% of pharmacists said they recommend temporary methods such as condoms, oral pills, and injectables. 15% recommended LARC methods such as implants and IUCDs and another 15% said they advise their clients to see a doctor. Finally, 10.0% said that nobody asks for suggestions. Pharmacists suggested oral pills, and injectables for "regular use", condoms for "occasional use", and IUCDs or implants as long-acting or spacing methods.

Comparing most requested items by female and male adolescents across Kathmandu, Lalitpur, and Bhaktapur

Women in Kathmandu, Bhaktapur, and Lalitpur overwhelmingly requested oral contraceptives claiming that they are easy to use. (Table 8) Women in Kathmandu named Nilocon and Gulaf Chakki as their brands of choice. In Kathmandu, emergency contraception was the second most requested item (55.6%) and pharmacists named E-Con and I-pill as common brands of choice. However in Lalitpur and Bhaktapur, the second most requested items were condoms (50%) and injectables (40%). In Kathmandu, many women admitted that this was for their own use, but in Lalitpur and Bhaktapur women more often said the products were for relatives or friends. In addition to visiting pharmacies to

purchase certain products, pharmacists said women also inquire about menstruation, masturbation, pregnancy, white discharge, lower abdominal pain, and "reproductive health" more generally.

Condoms were the most requested method by male customers, a pattern that was consistent across every district. (Table 8) However, the second most popular item among male customers according to pharmacist varied considerably across the three districts. In Kathmandu, emergency contraception and medical abortion were mentioned with the same frequency (12.5%) by pharmacists. Responses in Lalitpur mimicked the overall responses and 28.6% of pharmacists cited EC as the most frequently requested method after condoms. In fact, two pharmacists noted that in the last few years, an increasing number of men have come into the shops requesting emergency contraception and that number continues to rise. In Bhaktapur on the other hand, oral pills and injectables were the second most popular method (20%) after condoms, and these customers say the methods are for their wives.

Table 8: Contraceptive methods most requested by female and male youth, stratified by district in the Kathmandu Valley

Method	Overall (N=20)	Kathmandu (N=9)	Lalitpur (N=6)	Bhaktapur (N=5)
Condoms				
Female	30.0% [11.9, 54.3]	11.1% [0.3, 48.2]	50.0% [11.8, 88.2]	40.0% [5.3, 85.3]
Male	95.0% [75.1, 99.9]	87.5% [47.3, 99.7]	100.0%	100.0%
Oral Pills				
Female	75.0% [50.9, 91.3]	66.7% [29.9, 92.5]	66.7% [23.3, 95.7]	100.0%
Male	10.0% [1.2, 31.7]	0.0%	14.3% [0.4, 57.9]	20.0% [0.5, 71.6]
Injectables				
Female	40.0% [19.1, 64.0]	44.4% [13.7, 78.8]	33.3% [4.3, 77.7]	40.0% [5.3, 85.3]
Male	5.0% [0.1, 24.9]	0.0%	0.0%	20.0% [0.5, 71.6]
Implants				
Female	5.0% [0.1, 24.9]	11.1% [0.3, 48.2]	0.0%	0.0%
Male	0.0%	N/A	N/A	N/A
IUCDs				
Female	10.0% [1.2, 31.7]	11.1% [0.3, 48.2]	16.7% [0.4, 64.1]	0.0%
Male	0.0%	N/A	N/A	N/A
EC				
Female	30.0% [11.9, 54.3]	55.6% [21.2, 86.3]	16.7% [0.4, 64.1]	0.0%
Male	15.0% [3.2, 37.9]	12.5% [0.3, 52.7]	28.6% [3.7, 71.0]	
MA				
Female	10.0% [1.2, 31.7]	22.2% [2.8, 60.0]	0.0%	0.0%
Male	5.0% [0.1, 24.9]	12.5% [0.3, 52.7]	0.0%	0.0%
Other				
Female	5.0% [0.1, 24.9]	0.0%	0.0%	20.0% [0.5, 71.6]
Male	0.0%	N/A	N/A	N/A

* Column percentages do not add up to 100% because participants mentioned multiple methods in a single answer.

Once again, temporary methods were the most widely recommended contraceptive methods across all districts. In both Lalitpur and Bhaktapur, condoms were popularly suggested by pharmacists due to their availability and "dual protection" from both unwanted pregnancy and STIs. On the other hand, all of the pharmacists who recommend LARC methods were localized in Lalitpur and Bhaktapur. One pharmacist in Lalitpur endorsed the IUCD because it does not contain hormones and will work for 12 years.

Most popular and least popular selling items among adolescent customers

In addition to exploring the different product demands of male and female youth that are visiting pharmacies, participants were more broadly questioned about their most popular and least popular selling items. Across all districts, the single most popular item sold to youth was condoms (95.2%) followed by oral contraceptives (33.3%). (Table 9) None of the pharmacists mentioned implants or IUCDs as their most popular selling item suggesting that the youth clientele prefer temporary methods over long-term contraceptive methods.

In evaluating the least popular selling item among young customers, three pharmacists (13.6%) were not included because they gave no answer to the question, said they do not know which method is the least popular, or remarked that there is no such least popular method among youth. Among those who answered 62.3% said the least popular item among youth was oral contraceptives even though in previous questions it was mentioned not only as one of the most requested methods, but also one of the most popular methods. (Tables 9 & 10) Pharmacists most often attributed this to the nuisance of having to take the pill daily. Following oral contraceptives, 10.5% of pharmacists mentioned condoms, injectables, implants, or EC as the least popular method among youth. According to pharmacists, the lowest-priced methods or brands with the least advertising are unpopular among youth who worry that they are unreliable. For example, young men often do not buy the cheapest brand of condoms. Similarly, women do not buy the Sunaulo or Feminodo brands of oral contraceptives because there are few ads about them.

Comparing most popular and least popular selling items among adolescents across Kathmandu, Lalitpur, and Bhaktapur

Condoms were the best selling method in all pharmacies included in the study across Kathmandu (88.9%), Lalitpur (100%) and Bhaktapur (100%). In Kathmandu, the next best selling method was oral pills (66.7%) specifically Nilocon. On the other hand, in both Lalitpur and Bhaktapur, 28.6% and 20% of pharmacists respectively cited injectables, specifically Depo Provera, as the most popular selling item among young women second to condoms. (Table 9) In fact, one pharmacist mentioned that 70% of young women prefer Depo Provera because it works for up to 3 months. Conversely, oral pills were named the least popular method in every district. (Table 10) In Lalitpur, it was also mentioned that implants are unpopular among young women and up until recently, Copper T IUDs were also unpopular. However, the demand for them is steadily increasing.

Table 9: Most popular selling items among youth, stratified by district in the Kathmandu Valley

Method	**Overall (N=21)**	**Kathmandu (N=9)**	**Lalitpur (N=7)**	**Bhaktapur (N=5)**
Condoms	95.2% [76.2, 99.9]	88.9% [51.8, 99.7]	100.0%	100.0%
Oral Pills	33.3% [14.6, 57.0]	66.7% [29.9, 92.5]	14.3% [0.4, 57.9]	0.0%
Injectables	19.1% [5.5, 41.9]	11.1% [0.3, 48.3]	28.6% [3.7, 71.0]	20.0% [0.5, 71.6]
Implants	0.0%	0.0%	0.0%	0.0%
IUCDs	0.0%	0.0%	0.0%	0.0%
EC	4.8% [0.1, 23.8]	11.1% [0.3, 48.3]	0.0%	0.0%

* Column percentages do not add up to 100% because participants mentioned multiple methods in a single answer.

Table 10: Least popular selling items among youth, stratified by district in the Kathmandu Valley

Method	Overall (N=19)	Kathmandu (N=7)	Lalitpur (N=7)	Bhaktapur (N=5)
Condoms	10.5% [1.3, 33.1]	0.0%	28.6% [3.7, 71.0]	0/0%
Oral Pills	63.2% [38.4, 83.7]	85.7% [42.1, 99.6]	28.6% [3.7, 71.0]	80.0% [28.4, 99.5]
Injectables	10.5% [1.3, 33.1]	0.0%	14.3% [0.4, 57.9]	20.0% [0.5, 71.6]
Implants	10.5% [1.3, 33.1]	0.0%	28.6% [3.7, 71.0]	0.0%
IUCDs	0.0%	0.0%	0.0%	0.0%
EC	10.5% [1.3, 33.1]	28.6% [3.7, 71.0]	0.0%	0.0%

* Column percentages do not add up to 100% because participants mentioned multiple methods in a single answer.

Topic 5: Evaluating information that pharmacists convey to adolescent clients purchasing EC and MA, along with modes of communication that are used

EC:

Only 50% of pharmacists said they provide information about EC to customers at the time of purchase. 31.8% of pharmacists did not give customers information and 18.2% did not give an answer to this question. Among those who did answer, 54.6% of pharmacists said they usually tell the customer how to use the method including the proper dosage and timing of the pills. 54.6% said they warn the customer about the potential side effects of the method which include vomiting, headache, bleeding and dizziness. 27.3% of pharmacists also said they advise the customers against using this method regularly because "it may cause problems in the future." Unfortunately, 40.9% of pharmacists did not elaborate on how they convey this information to clients, specifically whether they use brochures, posters, leaflets or other materials. Among those who provided this detail, 38.5% inform clients about the

method through verbal communication, 30.8% provide information using brochures or leaflets, and 30.8% said they simply ask their clients to read about how to use EC in the packet that comes with the medication. Pharmacists only use posters when they are occupied and unable to speak to the customer in person, or if the customer is in a hurry and does not ask for any information at the time of purchase. In fact, one pharmacist commented that the women who have been using this method for a "long time" do not need instruction, implying that women may use EC routinely rather than for emergency cases only.

Differences in the information presented to adolescents surrounding EC, and the modes of communication employed by pharmacists in Kathmandu, Lalitpur, and Bhaktapur

Despite the incomplete knowledge of EC among pharmacists in Kathmandu, 85.7% of pharmacists in this district said they provide the customer with some information about the method at the time of purchase as compared to 57.1% of pharmacists in Lalitpur and 25% of pharmacists in Bhaktapur. In Kathmandu, the majority of pharmacists (83.3%) said they convey information to clients verbally. On the contrary, the majority of pharmacists in Lalitpur said they ask their clients to read the packet that comes with the medication (60%) or they use brochures and leaflets (40%) to convey this information to clients. One pharmacist in Lalitpur remarked that women receive all of the information about this method in the hospital so the pharmacists do not need to provide it again. The responses from Bhaktapur indicated that customers, particularly adolescents or unmarried women, do not want to be seen in the shop purchasing EC or listening to an explanation of how to use the method. They request the product and leave in a hurry, saying that they will read the brochure or leaflet themselves or that they already know how EC works.

MA:

18.2% of pharmacists said they do not provide information to customers leaving with this method either because the customers do not "need" it or do not want it. One pharmacist said he does not provide information to customers because he does not know details about how to use the method. He said that the pills are supposed to be sold with a doctor's prescription, implying that it is not the pharmacists' job to explain the method. Rather the doctor should provide information on how to safely use MA when issuing a prescription to the patient. Two pharmacists said that they do not provide information because the customers do not generally ask for information in the shop and anyone who wishes to ask questions typically waits until they can speak semi-privately to the pharmacist.

27.3% of pharmacists said they do give information about MA to the customers purchasing this method however, only half of them received training on MA. Among this group, 50% said they tell the customer how to use the method. 83.3% said they explain the possible side effects of MA including heavy bleeding, feeling faint, and general weakness. One pharmacist warns women that heavy bleeding will occur after taking the pill and advises them to avoid doing heavy work at that time. In addition to providing information on how to use the method and letting women know about potential side effects, one pharmacist encourages women to use family planning devices and EC rather than obtaining an abortion. Another pharmacist advises women to visit the hospital or consult a doctor if they experience complications from using the MA.

Among those who expressed how they impart this information to customers, 75% said they provide information verbally, 12.5% said they use brochures and leaflets, and another 12.5% said they use posters to explain how to use MA to the clients purchasing the method. 75%

of pharmacists who said they provide info specified where this interaction takes place and among those who did, 83.3% (N=5) said they do it in a private space. One pharmacist explained that maintaining privacy in a city is not as important as maintaining privacy in a village because "in a city, if someone knows it doesn't matter but in a village, it is not good for someone to know this". One pharmacist said he describes the method out in the open while customers are completing their purchases. Two people who claimed to not sell MA said they provide counseling to clients. One of these pharmacists specified that he does in fact counsel on safe abortion; however he did not receive training on MA.

Topic 6: Exploring where pharmacists refer abortion requests and post-abortion complication cases in the Kathmandu Valley

When questioned about how pharmacists respond to a client asking to complete a miscarriage or start an abortion, only 77.3% of pharmacists answered this question. One pharmacist said nobody makes this request. Another four pharmacists (18.2%) gave no answer at all, asserting that they are unqualified to answer questions about MA because they do not carry it in their shops or explaining that they are completely ignorant of abortion.

Among those who answered, 82.4% said that they advise the client to visit the nearest hospital or health facility and many encourage their clients to go to sites that are registered with the government. 29.4% of pharmacists said when clients come in asking to complete a miscarriage or start an abortion, they either perform the abortion at their establishment or they provide the client with MA. Many of them do not handle the complicated cases and instead refer these women to a health facility. 17.7% of pharmacists advise the woman to consult a doctor to complete an abortion.

Comparing referral practices of pharmacists in Kathmandu, Lalitpur, and Bhaktapur

Kathmandu: Among those who provided details of their referral practices, 87.5% said they refer the client to a health facility or hospital, 37.5% said they refer the client to a doctor and 12.5% said they perform abortion services for the client or provide her with MA. Among the pharmacists who admitted to carrying MA at the start of the interview, two said they refer anyone looking for an abortion to the nearest health facility but did not explain why they refer the clients instead of providing them with MA.

Lalitpur: Among those who answered from Lalitpur, 75% said they refer their clients to a nearby health facility or hospital, 50% said they refer their clients to a doctor, and 25% said they perform abortion services for the client or provide her with MA. Originally, 6 out of 7 pharmacists from Lalitpur asserted that MA is not available in their shops. Later on in the interview, two of them said they have safe surgical abortion services available at their establishment so if a woman comes in asking to complete an abortion, they encourage her to go the MVA route. The one pharmacist who admitted to selling MA at the start of the interview said that if a woman comes in looking to complete a miscarriage or start an abortion, he first ascertains her age and the duration of her pregnancy, asks her to consult a doctor for a prescription and then provides the client with MA upon the presentation of a prescription.

Bhaktapur: All of the pharmacists from Bhaktapur answered this question and 80% of them said they refer their clients to the nearest health facility or hospital while the other 20% said they refer the client to a doctor. Similar to Lalitpur, only one pharmacist from this district admitted to selling MA in the screener questions asked at the beginning of the interview. This pharmacist said that when a woman comes to his pharmacy asking to complete a

miscarriage or start an abortion, rather than equipping her with MA, he suggests that she visit a government listed site to obtain a safe abortion which was the same discrepancy observed in Kathmandu.

Pharmacists were asked when a woman should seek help for problems or complications. 9.1% of pharmacists interpreted this question correctly and said a woman should seek help when she has experienced heavy bleeding, when her menstruation has stopped, if she has severe pain during menstruation or if she has excess bleeding from using Depo Provera for which the pharmacist provides pain killers and if it continues, changes the contraceptive method. Instead, most pharmacists (81.8%) answered "When do women come to you seeking help?" 72.2% of pharmacists said women seeking help for complications present with heavy bleeding, 38.9% said women complain of severe pain, typically lower abdominal pain, 16.7% said women present with menstrual irregularities, 11.1% said women seeking help have high fevers, and 16.7% said women present with non-abortion-related symptoms such as vaginal itching, menopause, white discharge, or swelling of the vulva. 22.2% of pharmacists said they respond to women by giving them medicine such as Tramzine Acid, painkillers, or an injection to control the bleeding, and another 27.8% said they refer these clients to the hospital.

When asked where young women can go if they have a problem or complication specifically from using MA, 9.1% did not answer. Among those who did, 80% said they refer women to a health facility or hospital and many encouraged visiting listed sites to obtain a safe abortion. 10% said they advise women to consult a doctor and another 10% said they take care of these women at their center.

Nearly 60% of pharmacists did not specify whether the CAC sites they listed are open to receiving all women regardless of marital status, but among those who did, 77.8% said both married and unmarried people can comfortably visit the places they listed. (Table 11)

Table 11: CAC providers listed by pharmacists in Kathmandu, Lalitpur, and Bhaktapur

Kathmandu	**Lalitpur**	**Bhaktapur**
Maternity Hospital (Thapathali)	Alka Hospital	Marie Stopes International (Kaushaltar, Surya Vinayak)
Tribhuvan University Teaching Hospital (Maharajaganj)	Care and Care	Bhaktapur Hospital
Kantipur Jeevan Jyothi (Chabahil)	Kalimati	Madhyapur Hospital
Sunaulo Bhavisya Nepal (Mitrapark)	Happy Family	
Medicare International Hospital	Martie Stopes Center Satdobato	
OM Hospital & Research Center	Global Hospital	
Marie Stopes International (Chabahil, Koteswar, Putalisadak)		
Valley Maternity Hospital (not clear whether this is the same as KTM Maternity Hospital)		

ADDITIONAL DISCUSSION:

Relevant Results

Topic 1, Characteristics of Pharmacists: In the less populated districts of Lalitpur and Bhaktapur, a number of pharmacists reported that family members and friends interact with customers in their absence. This practice raises an important concern that increased training delivered to pharmacists will not necessarily be extended to an informal cadre of workers such as friends and family members. Thus, all customers, not only adolescents, will continue to be at risk of interacting with someone who does not have the adequate training or knowledge to safely dispense EC or MA.

In addition, one pharmacist reported that his wife who has a background in health often takes on female customers who feel more comfortable discussing their contraceptive choices with a woman. To explore the requests and perceived needs of adolescent females visiting pharmacies, we suggest identifying family-run businesses and conducting a focus group discussion with female pharmacy workers who interact directly with this demographic.

Topic 3, Availability of Contraceptive Methods & MA: Interview data showed that the methods most requested by young men and women were similar to the methods most widely available in pharmacies. Additional probing in this section of the interview could have yielded more information on the factors that influence which methods pharmacists stock in their shops. If in fact, pharmacists are responding to the requests of consumers, the implications of a direct supply and demand relationship could extend beyond current provision of temporary methods. Another possible explanation for this consistency across most requested and most popular selling methods is that pharmacists are persuading young people to purchase the methods most widely available, rather than the method that they

prefer to use. If this is the case, counseling the client in all available options should be emphasized along with general training on how to safely dispense these medications.

Topic 4, Contraceptive Preferences of Adolescents: While examining the contraceptive preferences of young, female customers and the reasons they typically give pharmacists at the time of purchase, nearly half of pharmacists in Kathmandu said women admit they are purchasing the products for their own use. However, women in both Lalitpur and Bhaktapur more often contended these purchases were for relatives or friends. As this information is twice removed from its original source, we cannot be sure that the customer was truthful with the pharmacist and that he in turn, was truthful with the data collectors.

The willingness of women to be open about their contraceptive purchases in Kathmandu reflects an environment of openness in the city where there is greater assurance of anonymity. In the same vein, the potential lack of disclosure in smaller districts like Lalitpur and Bhaktapur may be due to the closeness of these communities and limited potential for confidentiality when young women purchase contraceptives. However, this conceived openness in the larger district of Kathmandu sharply contrasts the relatively conservative attitudes found among pharmacists in that district. Pharmacists in Lalitpur and Bhaktapur, on the other hand, proved to have more liberal attitudes in comparison to those in the city. A follow-up study with adolescents in each of these districts will help to clarify the behaviors of this group as described by pharmacists. In addition, it may offer greater insight on the decision of young, female customers to be open with pharmacists in certain districts about the reasons behind their purchases.

Furthermore, in conducing analysis of the most popular and least popular selling contraceptive methods among youth, we found oral contraceptives to be both one of the

most popular selling item and the least popular selling item among adolescent clients. While this lack of popularity could be attributed to the difficulty of taking a pill daily, young customers' reluctance to purchase methods or brands with poor advertising suggests that youth are highly influenced by how well these products are marketed it and signals potential to influence their purchasing patterns through comprehensive media campaigns.

Topic 5, Dissemination of information regarding EC and MA: Only half of pharmacists said they provided information on EC and even fewer did so for MA. One pharmacist observed that women using EC more than once require no explanation on how to use the method. Although research has disproven the widespread notion that repeated use of EC precludes women from using other forms of contraception [52], this pattern of use is worth exploring in follow-up studies conducted with adolescents in each district, as it may provide further evidence of an unmet need for family planning or a dearth in knowledge surrounding contraceptive methods among adolescents.

Topic 6, Pharmacists' process of referring abortion and post-abortion clients: A closer look at pharmacists' practices of referring clients to nearby CAC providers revealed inconsistencies throughout the data. For example, many pharmacists who confirmed that they provide MA in their shops later commented that they refer women looking to complete a miscarriage or start an abortion to a health facility, rather than simply selling her the MA that is available in the store. None of the comments provided insight into why this is done and these results may once again be attributed to poor wording in the interview question. Specifically, pharmacists may have been responding to the phrase "a woman looking to *complete a miscarriage"* when they discussed referring these clients to health facilities rather than providing them with MA. Pharmacists may also be referring women to health facilities to

obtain the prescriptions for MA that are required for legal distribution of the drug. All in all, only two of the pharmacists who admitted to carrying MA in the shop also said they give it to the client when she is asking to complete a miscarriage or start an abortion which is less than 10% of the total number of pharmacists that were interviewed. If the pattern observed in this data mirrors the provision of MA in pharmacies across the Kathmandu Valley, the gap between availability and provision must be addressed in order for women seeking MA to actually receive the method, perhaps by streamlining the process of obtaining a prescription.

Limitations

These data were subject to several limitations. As in every international research study that uses translation, word meanings and the phrasing of questions may have changed during the translation of the original interview guide from Nepali to English. Also, although the interview responses were digitally recorded, we used the note-takers' hand-written field notes as the primary source of data for analysis, as it was the custom of the consultant. This technique may have failed to capture nuances in the responses. Additionally, in questions regarding the marital status of customers, it was difficult to gauge whether the pharmacists' answers pertained to the general clientele or whether they tailored their answers to youth who are the population of interest. This may be attributable to poor question wording in specific sections. For the majority of the interview questions this was a non-issue.

Furthermore, we assessed pharmacists' levels of knowledge of emergency contraception and medical abortion based on the inclusion of certain pieces of information in participants' responses. However, these percentages must be interpreted cautiously, as the knowledge assessment was conducted in an in-depth interview instead of a systematic survey. For example, pharmacists were not explicitly asked to discuss side effects; therefore a

pharmacist's failure to mention side effects does not necessarily reflect lack of knowledge. It simply reflects a failure to mention them in one's answer.

Also, given the stigma associated with contraceptive methods, pharmacists cannot be certain that their young customers are being truthful in their reasons for purchasing particular methods over others, or who they are purchasing these products for. Likewise, we cannot be sure that pharmacists are unaffected by this potential stigma and spoke truthfully about their adolescent clients in these interviews.

Finally, because this study was not initially designed to collect quantitative data, an appropriate sample size was not calculated for this type of analysis. Therefore, we were unable to find statistically significant correlations between our variables. The frequencies presented in this report may be misleading, as they are calculated based on a very small sample. To this extent, we were unable to conduct any meaningful comparisons on the basis of listing status or pharmacy class (public versus private, pharmacy versus clinic) since the respective groups were extremely small.

CONCLUSIONS AND RECOMMENDATIONS:

Implications of findings for future research

- Perform a more systematic assessment of pharmacists' knowledge of emergency contraception and medical abortion using a structured survey, similar to the instrument used in Ipas's research in India, with a sample of pharmacists large enough to yield statistically significant results
- Conduct focus group discussions with pharmacists in the three districts, Kathmandu, Bhaktapur, and Lalitpur in order to parse out attitudes towards adolescents accessing these methods and pharmacists' perceived barriers of communication with this cohort.
- Conduct additional research on the client experience through in-depth interviews with adolescents to explore the prevalence of over-the-counter sales of contraceptives as well as the frequency and quality of contraceptive counseling that adolescents receive at medical shops.
- Additionally, as of yet, limited research has been done on the retention of training among pharmacists. To mitigate the effects of poor information dissemination in pharmacies, Ipas and PSI trained local pharmacists to provide women with knowledge about medical abortion, referrals to abortion services, and information on the legality of abortion in Nepal since many were unaware of the change in the law. [49] Both institutions continually work to monitor the impact of these training exercises however; to date information is lacking on how well pharmacist training has been received and the appropriate level of follow-up necessary to ensure retention of information.

Recommendations:

- Pharmacists' general lack of complete information surrounding methods such as EC and MA must be addressed with additional training exercises.
- Conducting Values Clarification and Transformation (VCAT) workshops with pharmacists will give them the skills to identify if and when pre-existing beliefs about abortion are shaping their interactions with customers seeking medical abortion. [15]
- Perhaps one of the most important contributions of this research was the evidence of a clear disconnect between pharmacists and their youth clientele with pharmacists characterizing youth as "aggressive" and unwilling to accept advice or information. Whether this inability to communicate openly stems from adolescents anticipating the pharmacists will disapprove of their choices, their unwillingness to be "counseled", embarrassment, or discomfort associated with speaking to an adult about intimate life choices including the choice to purchase contraception, a clear divide exists between these two groups. In addition, qualitative research conducted in 2010 cites a lack of age and gender-appropriate providers as a barrier to adolescents utilizing sexual health services. [32] To bridge this gap, we propose the establishment of partnerships between local pharmacies and youth groups. The efficacy of peer-delivered information to adolescents is well documented, particularly in the purview of sexual and reproductive health.[50] Following this common approach to youth engagement and health education, these partnerships will allow young clients seeking counsel and contraceptives to interact with a peer educator who has received adequate training on all the methods, rather than an owner or pharmacy employee. Given the presence and strong leadership of youth groups such as the Bhaktapur

Youth Information Forum in one of our study districts, a partnership of this nature would increase the capacity of pharmacies to manage youth clients while addressing the needs of this population directly. Certain researchers caution practitioners in the application of this commonly lauded strategy due to challenges in monitoring and evaluating significant behavior change.[51] However, if the goal is simply to create a safe space within these establishments for youth to acquire information prior to using methods such as MA, this recommendation merits consideration.

Public Health Implications:

The role of pharmacists in advancing global health is shifting. Pharmacists were once purveyors of hand-mixed remedies and non-traditional medical advice. However, over time, pharmacists have evolved from apothecaries to front-line health workers. In many developing countries, pharmacists are often the only health workers that customers retain contact with. However, public health professionals have historically been unable to assign a standard definition to pharmacists' role in promoting community health. Although this group has been widely recognized for their potential to fill shortages of health workers, particularly in developing country settings, pharmacists remain underutilized and lack the proper training to perform these duties. As we found in the current study, pharmacists lack comprehensive knowledge of family planning methods, particularly EC and MA. This lack of knowledge has the potential to impact the client's experience and their health outcomes. In addition, the term "pharmacist" can refer to a group of individuals with variable levels of training. For instance, a pharmacist may be a shop owner with limited formal education, hey may be someone who was formally trained in the proper dispersal of medications, or he could be a person who falls somewhere on the spectrum in between these two extremes.

Despite large variations in levels of experience, training, and knowledge of medications, pharmacists have largely been considered a homogenous group and programming geared towards pharmacists has treated them as such.

Because their roles remain undefined and they have such variable levels of training, the process of evaluating their levels of knowledge and the quality of services they provide to clients is similarly nebulous. To date, pharmacists have received piece-meal training from a variety of sources, and a standard protocol for the evaluation of their knowledge and practices has yet to be developed. To fill this need, we propose applying Judith Bruce's well-established framework for evaluating quality of family planning services to those provided in pharmacies. This framework consists of six parts: choice of methods, information given to clients, technical competence, interpersonal relations, follow-up and continuity mechanisms, and the appropriate constellation of services.[53] Studies applying this framework in a similar context have shown that proper counseling, an integral component of the Bruce framework, can be effective in curtailing high levels of contraceptive discontinuation.[54] In the current study, we inquired about a number of these topics – the choice of contraceptives available in medical shops, the information given to clients concerning the methods they purchased, the technical competence of pharmacists which includes knowledge of family planning methods and abortion, and assurances of confidentiality and privacy when discussing methods. Thus, we essentially performed a rudimentary quality of care assessment, one that can be replicated even more systematically in the future.

This approach requires not only public health professionals but pharmacists themselves to adapt their view of pharmacists' role in the community. It also challenges us to consider how we can use the Bruce framework to ensure clients are receiving all components of quality

family planning services in a pharmacy setting. The standardization of training pharmacy staff coupled with the development of evaluation standards for health care delivered in pharmacies represent two critical steps in the professionalization of pharmacists and provide opportunities for the development of comprehensive training for this cadre of health workers.

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APPENDIX:

Introduction & Consent:

Hello. My name is _____. I am working on behalf of Ipas Nepal which is a NGO dedicated to improving access to safe abortion care for women in Nepal. I am interviewing medical shop owners and pharmacists in Kathmandu, Lalitpur, and Bhaktapur to learn about your experiences selling contraceptives and abortion pills to young people in your community. This will help Ipas to better understand your interactions with young people and to develop interventions that might assist both shopkeepers and young people. The questions will take about 45 minutes and you will be compensated for your time with a small gift. All of the answers you give will be confidential and will not be shared with anyone other than members of our research team. With your permission, this interview will be recorded so we can capture everything that is being said. Once again, you will remain completely anonymous during the interview. If you feel uncomfortable answering a question, just let me know and I will move on to the next question. You can stop the interview at any time.

Do I have permission to record this session?

If not: Is there something I can do to make you more comfortable with having this recorded? (If it's something that can be reasonably accommodated, do, if not, thank them for their time and move on or just ask screener questions?)

Great. Let's begin. Please keep in mind that this is not a test. The best answers will be those that are your most honest answers since that will help us design activities based on reality. We will not judge any of your answers.

<u>Screener Questions:</u>

1. What is your role in this pharmacy?
2. How long have you worked here for?
3. Who usually interacts with customers?
4. Do you carry medical abortion pills in this shop?

Topic 1: Getting to know clientele and assessing their needs

5. How would you describe the young people who come into this pharmacy on a daily basis?

    Probe 1: Is it mostly young men or young women that come in?

    Probe 2: How would you describe your clientele in terms of age?

    Probe 3: How would you describe the socio-economic status / education level of your clients?

    Probe 4: Do you have a sense of when they are married vs. unmarried?
6. Are youth coming with someone else to the pharmacy or alone?
7. What do young female customers usually request for reproductive health-related issues?

    Probe 1: What reason do they give?
8. What do young male customers usually request?

    Probe 1: What reason do they give?
9. What types of contraception do you usually suggest for people requesting it?

Topic 2: Taking stock of what is carried in each shop

10. Which contraceptive methods do you have available in your shop?
11. What is your most popular selling item among youth?
12. What is your least popular selling item among youth?

13. If someone comes into the store asking for a certain method and you don't have it, what do you tell them?

Topic 3: EC/MA – Knowledge and Distribution

Next I'm going to ask you a few questions about emergency contraception and medical abortion pills. Feel free to ask if you need any clarification.

EC

14. What do you know about emergency contraception? (As an emergency measure, within three/five days after they have unprotected sexual intercourse, women can take special pills to prevent pregnancy.)
15. Please describe how to use this method.
16. What is the name of the EC you sell?
17. What information do you give people when they buy this contraceptive?

    Probe 1: How are you giving this information out (orally, brochures/leaflets, posters, websites)?
18. Who commonly leaves with this method?

MA

19. If someone asks you to recommend something to complete a miscarriage or start an abortion, what do you tell them?
20. What do you know about abortion pills (often called medical abortion)?
21. How far along in pregnancy can abortion pills be used by women?
22. Please describe how to use this method.

    Probe 1: How many mifepristone pills does a woman take?

Probe 2: How many misoprostol pills does a woman take?

Probe 3: How do you tell them to take the pills?

Probe 4: How does a person know if it has worked or not?

23. Did you receive training on MA?

Probe 1: If yes, who provided you with training on MA?

24. What is the name of the medical abortion pills you sell?

25. How much does one package cost?

26. Which types of customers commonly come in for abortion pills?

27. Are they also leaving with a contraceptive method for future use?

Probe 1: If so, which method?

Topic 4: Exploring referral systems

28. When should women seek help for problems or complications? (When they've experienced heavy bleeding, severe pain, bleeding lasting more than 2 weeks, pain lasting more than 2 weeks, high fever)

29. Where can young women go if they have a problem or complication from using abortion pills?

Probe 1: Who are the nearest CAC providers in your area?

Probe 2: Can both married and unmarried young women go there?

30. What information do you give people when they buy abortion pills?

Probe 1: How are you giving this information out (orally, brochures/leaflets, posters, websites)?

Probe 2: Where do you give this information out (open or private space)?

Topic 5: Views about young people accessing contraceptives and abortion pills

31. How do you feel about young, married men accessing abortion pills?

Strongly Agree Agree Neutral Disagree Strongly Disagree

32. How do you feel about young, married women accessing abortion pills?

Strongly Agree Agree Neutral Disagree Strongly Disagree

33. How do you feel about young, unmarried men accessing abortion pills?

Strongly Agree Agree Neutral Disagree Strongly Disagree

34. How do you feel about young, unmarried women accessing abortion pills?

Strongly Agree Agree Neutral Disagree Strongly Disagree

Closing Questions:

35. What do you see as the role of pharmacy staff in supporting young people's sexual and reproductive health?
36. Would you be interested in any additional information or training to increase your knowledge of abortion with pills?

That's all of the questions I had for you today. Do you have anything else they would like to add before we conclude the discussion? Do you have any questions for me? Again, I just want to thank you so much for participating today. The information we receive from these discussions will help us make these products more accessible for young people in the Kathmandu Valley.