# Initial Loss of Productive Days and Income Among Women Seeking Induced Abortion in Cambodia

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The study describes the loss of productive time and income related to abortion care and care-seeking among 110 women presenting at public and private sector abortion providers in Cambodia. Data were collected through women's exit interviews, and descriptive analysis was used to examine lost time and income against a number of explanatory variables, such as gestational age of pregnancy, type of abortion provider and facility, type of uterine evacuation procedure, number of health visits, and the woman's occupation. Results indicate that lost time and earnings increase with the number of visits to obtain the termination, gestational age, and selection of a private physician or non-governmental organization clinic. Lost time and earnings also vary by the woman's type of employment. The study underscores the need for safer, accessible, and more affordable abortion services in order to ensure that these services are available for all women. Even in the Cambodian context, where abortion is unrestricted during the first trimester of pregnancy, the study findings show that the process of searching for and obtaining high-quality abortion care was unnecessarily complicated and costly to women and their household members. J Midwifery Womens Health 2008;53: 123–129 © 2008 by the American College of Nurse-Midwives.

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## INTRODUCTION

In 1997, the Kingdom of Cambodia revised the abortion law to allow women to have an elective termination of pregnancy up to 12 weeks of gestation and, for pregnancies greater than 12 weeks, elective termination was permitted in the case of fetal abnormality, risk to the woman's life, or rape.[1] The new law has transformed Cambodia into one of the most progressive countries in Southeast Asia with regard to abortion rights.[2] However, progressive legislation does not automatically translate into access and availability of abortion services. For example, women seeking an abortion may still spend several days trying to access the right health care provider to perform a safe, high-quality abortion. In Cambodia, abortion is still rarely discussed, and little is known about the accessibility of elective abortion services among women in the general population.[3] Previous studies conducted in Cambodia and other South Asian countries indicate that reproductive health services are not well known, and women who do not live in a social milieu where these services are used are unlikely to know of their availability.[4,5] Many women seeking an abortion—and even some providers—still perceive abortion services as illegal, and the resulting high prices, combined with a lack of reliable information, have created a thriving economy for quasi-legal and unsafe abortion services.[6]

The World Health Organization (WHO) describes an unsafe abortion procedure as "a procedure for terminating an unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking the minimal medical standards or both."[7] In an environment where abortion is legal but safe services are not widely available, time lost from work, school, and home responsibilities because of abortion care–seeking can be substantial for women, households, and society.[8] The consumption of a woman's time while seeking any health service is an important expense in terms of the value of what she might otherwise have done with this time, such as providing care or income for herself and her household.[9] This is especially true in low-resource settings such as Cambodia, where a strong relationship exists between lost productivity and poverty, and where lost labor may result in a further loss of livelihood.[10]

Research on time lost because of pregnancy or obstetrical morbidity is rare and has been conducted mostly in developed countries.[11] These studies have not typically looked at pregnancies ending in an abortion, although it is likely that inclusion of abortion services would have further increased their estimates of societal costs of obstetric care. Three studies have examined time or productivity lost because of induced abortion. In the only study on this topic conducted in developing countries, authors compared physical restrictions (or the inability to undertake daily routine activities) for women who had abortions, and found these to be an average of 5 days for Chinese women and 3.2 days for Cuban women.[12] Within the context of public sector abortion services in Canada, Wiebe and Janssen[8] compared women's time lost because of a surgical versus a medical abortion, and estimated an average loss of work inside the home of 10 days for the surgical group and 5.3 days for the medical group. In another Canadian study,[13] the authors estimated the direct costs of the abortion, primarily covered in the Ontario single-payer health plan, and the indirect costs of time and productivity losses for women who had surgical and medical abortions. Based on their findings, a woman undergoing an early medical or surgical abortion

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lost nearly $829 Canadian dollars worth of productive time from her workplace or home.[13]

In this study, we examine women's time lost from work, within or outside the home, because of care-seeking and obtaining an elective abortion, and the subsequent loss of real or potential wages among 110 Cambodian women trying to terminate their pregnancies. This research offers insight into lost productivity related to poor abortion access in a developing country and will provide a better understanding of the time and productivity losses associated with abortion care-seeking among Cambodian women and their families.

## METHODS

This descriptive study recruited 160 women seeking elective abortions or care for complications of abortion from a purposefully selected group of public and private clinics and hospitals during a 4-week enrollment period from November 2005 to December 2005. The 50 women who presented with a dilated cervix and required treatment for abortion complications related to an ill-performed or spontaneous abortion were excluded from the analysis. Subsequently, this study examines the patterns in abortion care-seeking for the subset of 110 women who obtained an induced abortion at one of the 10 recruitment sites in urban (eight sites) or rural (two sites) Cambodia. The majority of these women (n = 97) accessed and received a pregnancy termination in a single visit. However, the remaining 13 women described a process of multiple visits made before the final successful termination at the recruitment site. In some cases, they visited multiple locations to secure advice and identify a willing and capable provider to meet their needs. Each of these 13 women sought information about their pregnancy status; how, when, and where to terminate the pregnancy; or medication to self-induce the termination. These 13 women required more than one visit, including a final visit to the recruitment site, to complete the surgical or medical evacuation of the uterine contents.

The data collection sites included three government referral hospitals and two government primary health centers; one hospital and one health center were rural sites, and the remaining three sites were urban. The private practices included two clinics run by non-governmental organizations, one clinic run by an obstetrician/gynecologist, and two midwives' clinics. Data collection sites were purposefully selected to allow for collection of data from a diverse group of women seeking care from a range of provider types, locations, and sites with variable service quality. The sites were not meant to be representative of all Cambodian facilities providing abortion services, nor were the participants intended to represent all Cambodian women seeking abortion. Ethical approval for this study was obtained from the Cambodian Ethics Committee for Health Research.

All women presenting for induced abortion were eligible for study participation. The study population was not restricted on the basis of the woman's age, gestation of pregnancy, or any other factors. Women were told that the study was voluntary and asked by the medical provider at the recruitment site if they would like to participate after their terminations had been performed. Recruitment for each of the 10 data collection sites was predetermined and defined as 20 consecutive completed interviews or the end of the 4-week study period.

The exit interview questionnaire was developed after a review of similar relevant literature, translated into Khmer, reviewed and pilot-tested in Cambodia. After their recovery period, women who had given verbal consent to participate to their medical providers were escorted to a confidential location at the health facility or another nearby private location for interviews with trained data collectors. After explaining the study and obtaining written consent, individual exit interviews were conducted in Khmer with all eligible women (range, 4–20) at each of the 10 facilities during the 4-week data collection period. Women were compensated for their time, and no woman declined to participate.

Exit interview questions related to the number and type of visits women had with all biomedical and traditional health care providers to terminate their pregnancies, and the time and wages lost by the woman or a family member from normal routine (job, household duties, or school) as a result of seeking or receiving care, or recovering for those women with multiple previous visits. Responses to questions related to the direct out-of-pocket expenses incurred seeking and obtaining care were analyzed separately.

The primary outcome measures in this study are lost productive days, individual income lost, family income lost, and total income lost. Lost productive days is the number of days lost from the woman's normal routine (either within or outside the home) to seek or receive an induced abortion, or recover from an unsuccessful uterine evacuation attempt prior to obtaining the index abortion. Individual income lost is missed wages while the woman was identifying and negotiating care from various sources, traveling, waiting, or recovering from mild morbidity in the case of multiple visits prior to the index abortion. Family income lost is missed wages of a family member while care-giving or accompanying the woman seeking abortion care. Total income lost is the sum of the individual income and the family income lost.

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All data on lost wages or income were collected in either Khmer riel or US dollars and converted to US dollars at the rate of USD $1 = 4000 KHR, the approximate exchange rate at the time of data collection in 2005. All data were entered in EpiData 3.1 (The EpiData Association, Odense, Denmark) and imported into Stata 9.0 (Stata Corp, College Station, TX) for further analysis.

## RESULTS

Table 1 provides the sociodemographic characteristics of the 110 participants who completed exit interviews. Women reported a mean age of 30.9 years, and most had been pregnant before. The majority of respondents were married. More than half did not complete primary school, and less than one-quarter had completed secondary or higher education. Most women reported pregnancies in the first trimester (less than 13 weeks' gestation). More than two-thirds of women enrolled in the study were seeking care from a private sector provider, either a private midwife, non-governmental clinic, or a private physician. The remaining women presented for care at a government hospital or health center recruitment site. More than three-quarters of all the women's abortions were performed with vacuum aspiration, the preferred technique recommended by the WHO. The remaining one-quarter had dilatation and curettage (D&C), a medical abortion, or a Covac procedure, which is a second trimester procedure not recommended by the WHO because of concerns about its safety. Most women were able to terminate their pregnancy with one visit, but 12% of the women in this study required two to three visits to access the information and care they needed. More than one-third of respondents did not work outside of the home; the remaining women were formally, informally, or self-employed.

The number of lost productive days did not differ substantially by the length of a woman's pregnancy (Table 2). The total number of respondents was 109; data on this variable was missing for one woman. Women who went to government health facilities or private midwives for their first visit appear to have spent more time seeking and receiving care than women who obtained terminations from private physicians and non-governmental organization clinics. The number of lost days also varied by the type of uterine evacuation procedure, with clients who had D&C and medical abortions reporting fewer lost days than women who received procedures using vacuum aspiration methods or the Covac procedure.

The mean productive days lost increased as the number of visits to terminate the pregnancy increased. The average time spent seeking and receiving care for women who required only one visit was 2.3 days, while women who needed three medical or pharmacy visits seeking advice or medication to terminate their pregnancies used more than 1 month (33.5 days) of productive time.

Women wage earners, such as paraprofessionals and factory workers, reported losing the least amount of time obtaining an abortion. Women in the informal sector, self-employed as market vendors, reported the greatest amount of lost productive time.

Table 3 presents lost wages or the monetarized equivalent (in US dollars) by the woman, the rest of the family, and the total household by gestational age, location and

**Table 1.** Sociodemographic Characteristics of Women Seeking an Abortion (N = 110)

| | |
|---|---|
| Mean age, yrs (SD) | 30.9 (7.7) |
| Number of previous births median (IQR) | 2 (1) |
| Marital status, n (%) | |
| Married | 91 (83) |
| Single | 19 (17) |
| Education, n (%) | |
| Less than primary school | 67 (61) |
| Completed primary school | 18 (16) |
| Completed secondary school or higher | 25 (23) |
| Trimester of current pregnancy (self-reported), n (%) | |
| First | 94 (86) |
| Second | 5 (5) |
| Missing | 11 (10) |
| Recruitment site, n (%) | |
| Private midwife | 41 (37) |
| Government hospital or health center | 36 (33) |
| NGO clinic | 18 (16) |
| Private physician | 15 (14) |
| Provider sought at first visit, n (%) | |
| Private midwife | 39 (36) |
| Government hospital or health center | 32 (29) |
| NGO clinic | 20 (18) |
| Private physician | 17 (15) |
| Pharmacist | 2 (2) |
| Type of uterine evacuation procedure, n (%) | |
| Aspiration methods | 84 (76) |
| Dilatation & curettage (D&C) | 13 (12) |
| Medical abortion* | 10 (9) |
| Covac procedure† | 3 (3) |
| Number of health visits seeking the index abortion, n (%) | |
| 1 visit | 97 (88) |
| 2 visits | 11 (11) |
| 3 visits | 2 (<1) |
| Occupation, n (%) | |
| Not employed outside home | 38 (35) |
| Agricultural laborer | 21 (21) |
| Service industry | 18 (16) |
| Informal sector | 16 (15) |
| Factory worker | 10 (9) |
| Para-professional, civil servant or military | 7 (6) |

IQR = interquartile range; NGO = non-governmental organization; SD = standard deviation.

*In some cases, patients received medication (mainly misoprostol) and then aspiration or curettage.

†This method involves inserting a condom or catheter filled with saline into the uterus while administering intravenous oxytocin to induce expulsion of uterine contents. Although no known comparative studies have been conducted, the procedure is generally considered to have high rates of complications.

**Table 2.** Productive Days Lost Because of Abortion Care-Seeking, Procedures, and Morbidity From Induced Abortion Attempts (N = 109)*

| | n | Productive Days Lost Mean (SD) |
|---|---|---|
| Trimester of current pregnancy (self-reported)† | | |
| First | 93 | 2.3 (2.7) |
| Second | 5 | 3.4 (2.3) |
| Provider sought at first visit | | |
| Private midwife | 39 | 2.4 (1.6) |
| Government hospital or health center | 32 | 1.9 (2.7) |
| Non-governmental organization clinic | 19 | 2 (1.6) |
| Private physician | 17 | 3.6 (3.9) |
| Pharmacist | 2 | 36 (33.9) |
| Type of uterine evacuation procedure | | |
| Aspiration methods | 83 | 2.5 (2.7) |
| Dilatation & curettage | 13 | 2.4 (1.5) |
| Medical abortion | 10 | 2.3 (2.3) |
| Covac procedure | 3 | 23.3 (31.8) |
| Number of health visits seeking the index abortion | | |
| 1 visit | 97 | 2.3 (2.5) |
| 2 visits | 10 | 3.5 (3.2) |
| 3 visits | 2 | 33.5 (37.5) |
| Occupation | | |
| Not employed outside home | 37 | 2.1 (2.3) |
| Agricultural laborer | 21 | 3.1 (2.8) |
| Service industry | 18 | 3.3 (4.1) |
| Informal sector | 16 | 6.1 (14.4) |
| Factory worker | 10 | 1.9 (1.9) |
| Paraprofessional | 7 | 1.0 (0) |

*N = 109 because of missing data for 1 participant.

†N = 98 because of missing data for 12 participants.

type of the woman's first visit, type of abortion procedure, number of care-seeking visits, and occupation. Women were asked to calculate lost wages or the wages required to pay someone else to manage their workload. All numbers represent the mean response of that group.

In nearly all cases, the individual income lost by the woman was greater than the losses to her family members, with the exception of women who used medical abortion, women who required two visits to terminate their pregnancies, and women who were not employed outside of the home. Although few (n = 5) women reported pregnancies in the second trimester, the mean cost of their services was much higher than the mean cost for women with first trimester pregnancies. Women who first sought care at the office of a private physician reported almost no loss of earnings. Regardless of the number of visits, women who first approached private midwives also reported minimal lost earnings, followed closely by the women who went to government facilities. Although pertaining to only two women, lost wages that began with care-seeking from pharmacists were substantially higher than amounts lost seeking care from all other types of providers.

The majority of terminations were performed with aspiration methods. The earnings lost for the households of women who received vacuum aspiration procedures, regardless of the type of provider, amounted to $5.50. D&C was performed less often but amounted to similar total monetary and labor losses. Although limited to only 10 women, medical methods of abortion resulted in the fewest days lost and the lowest total costs. The three women who reported having the riskier Covac procedure lost the most time and money ($60.83 per procedure).

Lost wages and equivalent labor for the household increased as the number of care-seeking visits increased. Lost productive time and wages showed extensive variability by type of employment. As shown in Table 3, women working as paraprofessionals had the smallest amount of lost income. The highest reports of total income lost came from women in the informal sector and factory workers.

## DISCUSSION

Induced abortion is one of the simplest and safest surgical procedures in the world when performed well by a trained health care provider in a hygienic environment. Yet the stigma that surrounds abortion prevents many women from making informed and educated choices about an unwanted pregnancy. The results of this study indicate that the amount of time and money spent accessing information and appropriate abortion care is highly variable, even in Cambodia, where abortion is technically legal and theoretically safe. Women's inability to make informed decisions because of a lack of reliable information affects not only her health but also the direct and indirect costs of her care.

More than 80% of the women seeking abortion in this study were married, more than two-thirds were employed, and most had at least two children. Yet women reported losing up to 36 days of their own productive time and giving up as much as $100 of their household income receiving appropriate abortion care in a country with a per capita gross domestic product of only $306 per year.[14] The value of lost earnings and labor affect not only the woman herself, but also her entire household when more than one-third of the population lives on less than $0.63 per day.[14] Although estimates of lost productive days remained similar when compared by gestational age, the average lost earnings related to the abortion increased five-fold for pregnancies in the second trimester. Early pregnancy detection and access to safe abortion services can be an important factor in reducing abortion costs for some Cambodian households.

The different options for abortion care selected for the study constitute a range of choices in technical expertise, fees, and access, and the impact of these choices on the women's time and money vary significantly. Previous studies on abortion in Cambodia found midwives with

**Table 3.** Earnings Lost Because of Abortion Care-Seeking, Procedures, and Morbidity From Induced Abortion Attempts (N = 110)

| | n | Mean Income Lost by Woman (in US $) | Mean Income Lost by Family Members (in US $) | Mean Total Household Income Lost (in US $) |
|---|---|---|---|---|
| Trimester of current pregnancy (self-reported)* | | | | |
| First | 94 | 2.33 | 2.08 | 4.41 |
| Second | 5 | 22.00 | 0 | 22.00 |
| Provider sought at first visit | | | | |
| Private midwife | 39 | 2.28 | 1.16 | 3.44 |
| Government hospital or health center | 32 | 1.82 | 1.75 | 3.59 |
| Non-governmental organization clinic | 20 | 10.98 | 4.09 | 15.06 |
| Private physician | 17 | 0.35 | 0 | 0.35 |
| Pharmacist | 2 | 70.00 | 30.00 | 100.00 |
| Type of uterine evacuation procedure | | | | |
| Aspiration methods | 84 | 3.77 | 1.73 | 5.50 |
| Dilatation & curettage | 13 | 4.13 | 1.37 | 5.50 |
| Medical abortion | 10 | 0 | 4.00 | 4.00 |
| Covac procedure | 3 | 47.50 | 13.33 | 60.83 |
| Number of health visits seeking the index abortion | | | | |
| 1 visit | 97 | 3.48 | 1.74 | 5.22 |
| 2 visits | 11 | 3.18 | 5.00 | 8.18 |
| 3 visits | 2 | 70.00 | 10.00 | 80.00 |
| Occupation | | | | |
| Not employed outside home | 38 | 2.15 | 2.35 | 4.49 |
| Agricultural laborer | 21 | 3.36 | 1.68 | 5.04 |
| Service industry | 18 | 2.84 | 2.78 | 5.62 |
| Informal sector | 16 | 13.69 | 2.42 | 16.11 |
| Factory worker | 10 | 8.50 | 3.00 | 11.50 |
| Paraprofessional | 7 | 0.86 | 0 | 0.86 |

*N = 99 because of missing data for 11 participants.

private practices attractive options for abortion care because of their combination of efficiency and lower costs for services.[3,6] However, in this study, women who went to a government facility lost an almost equivalent amount of household income and days from work as those who approached private midwives. In fact, government facilities seemed to offer comparable services in terms of timeliness and accessibility. Women lost more time gaining access to private physicians, but they were still selected by 34% of the patients.

Respondents rarely reported pharmacists as sources of information or care. This finding is unique to our study. Recent prospective research conducted in Cambodia found that more than one-third of 933 abortion care-seekers told their provider that they had already tried to "do something" to induce their own abortion, with drug sellers as the most common source of information.[15] In our study, both lost earnings and lost productive time were very high for the only two respondents who reported seeking care from pharmacists. In a 2002 study on abortion, traditional practitioners and pharmacists were more often consulted by women living in rural areas.[6] However, rural areas were underrepresented because of difficulties locating and establishing rapport with these quasi-legal providers, and may have resulted in fewer pharmacy consultations in this study.

Sites were selected for the study based on high abortion caseloads, willingness to participate, and assurance of client confidentiality. Many of the providers were well-known practitioners working in established private practices and non-governmental organizations in their communities. More than three-quarters of the procedures the providers performed used vacuum aspiration methods. The lost earnings and lost productive time associated with D&C and vacuum aspiration methods were only slightly different. However, the technically challenging and unsafe Covac procedure resulted in the highest number of lost productive days and lost household earnings of any procedure type. Although few second-trimester abortions were reported in this study (n = 5), even a well-performed procedure done at this gestational age carries an increased risk to the pregnant woman. Training providers to adhere to safer WHO-recommended medical abortion or dilatation and evacuation protocols (preparing the cervix with mifepristone or misoprostol, dilating and evacuating the uterus with cannulae, and forceps for second-trimester abortions[7]) may result in less expense and time loss for Cambodians.

Lost earnings for women and their families increased incrementally as their care-seeking, or number of visits, increased. These women were likely dealing with subsequent morbidity related to unsafe failed abortion attempts or lack of information about where to seek a safe abortion. Other studies in Cambodia and India point to

similar explanations for poor outcomes in abortion care-seeking; for example, traveling greater distances for treatment of complications of an unsafely performed procedure, limited hours for abortion provision, provider refusal to perform the abortion, or the high costs that drive women to seek care elsewhere.[5,6] In Cambodia, some providers do not offer elective abortion services in the government facility, but will do so in their private clinic, often charging higher prices and further delaying a woman from receiving timely abortion care.[4,6]

Our study also indicates that the woman's occupation is an important predictor of days and earnings lost. Lost productive time was generally inversely correlated with wage earnings. Women reliant on daily wages, such as those in the informal sector, service industry, or factory workers, had to pay a heavier price in terms of each missed day of work than women who worked in the home or those who had seasonal incomes or low monthly wages, such as agricultural laborers. Women in the informal sector, such as market vendors, reported the greatest amount of lost productive time (6.1 days) and lost earnings ($15.45). Women who did not work outside of the home or worked seasonally as agricultural laborers lost more time but little in household earnings. Yet the small number of women who were paraprofessionals reported losing the least amount of time and earnings than any other group, probably reflecting their purchasing power and their ability to pay more to access safe services from a private provider at their convenience.

This study is descriptive and exploratory, based on findings from a limited number of women. Results should not be considered representative of all women seeking abortion care or all abortion providers in the country. The study did not attempt to determine the safety and efficacy of each abortion procedure performed at the study recruitment sites. Therefore, little is known about further postprocedure costs or morbidity related to the index abortion, except for the 13 abortions that required multiple visits before successful pregnancy termination. Furthermore, the wage estimates related to days missed from work as a result of the abortion-seeking process are based on self-reports of the study participants and do not adhere to any average earnings rate based on Cambodian national data. The value of women's labor is also not adjusted by geographic location, because most study sites were urban or peri-urban. Finally, non-wage earners may have underestimated or overestimated the value of their labor, especially if they worked part-time, seasonally, or if their services (such as care-giving or other household labor) were difficult to evaluate in the market. Despite these limitations, our examination of lost productive time and wages is informative because these "hidden" costs almost certainly affect women's decisions and choices regarding this or subsequent abortions and increase the actual cost of her procedure.

## CONCLUSION

Low-cost health services, such as safe abortion, have associated participation costs to the household in the form of lost time, food expenditures, and transportation. Abortion costs individuals, households, and communities not only economically, but also in socially productive time. Abortion care may also be unique in that it is a topic rarely discussed freely in Cambodian society, thus many of the associated costs are unexpected by women. The findings from this study underscore the need to ensure that all women have access to affordable safe abortion services. Losses in productivity because of ill health trap people in poverty, placing a disproportionate burden on those in extreme poverty, because they have the least capacity to escape from their debt. In Cambodia, the greatest barriers to safe, affordable, and efficient abortion services are delays in the implementation and guidance about the law reform, scarcity of well-trained providers, lack of accurate information available for women, and the proliferation of unauthorized clandestine providers, who prey on women's lack of knowledge. More research is needed on the time and productivity losses associated with the abortion care-seeking process in order to fully understand the cost implications and the repercussions on women's households. Where safe abortion services are not available, even in a legal context such as Cambodia, women may pursue more drastic measures, putting their own lives in jeopardy and their household economies at risk.

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