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Promoting Sexual Health and Pregnancy Prevention to Young Thai Women:

A Digital Media Approach to Public Education

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Abstract

Over recent years, adolescent birth rates in Thailand have been on the rise. The contributing factors include lack of comprehensive sexual education, Internet access to misguided sexually explicit content, social stigmas regarding contraception, gender inequality, and lack of communication between teens and elders. Our team aims to change risky sexual behavior by designing informational digital media resources about safe sexual practices using Human Centered Design techniques. We will determine the content and mode of dissemination by surveying teens and holding focus groups. Our literature review of effective sexual education and social marketing techniques used elsewhere will provide a basis for our model. The School of Global Studies at Thammasat University sponsors this project.

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1 Introduction

For most people, pregnancy is a joyful occasion that merits celebration of new life, but this is not the case for all. Some women are physically and financially incapable of motherhood. Teenage mothers are more likely to experience these problems than older mothers (Thaithae & Thato, 2011). Accounting for 11% of all annual births, 15 million girls under the age of 19 give birth every year with 1 million of these being girls younger than 15 (*Young people and family planning: Teenage pregnancy,* 2008). Babies born to young mothers have a higher risk of birth defects, low birth weight, preterm birth, and a 50% higher risk of infant mortality (Termpittayapaisith & Peek, 2013). Young mothers take on great risks when giving birth as well. UNICEF reports that the leading cause of death for women aged 15 to 19 are complications relating to pregnancy (*Young people and family planning: Teenage pregnancy,* 2008). We define the terms pregnancy, teen, and Thai teen pregnancy in Appendix A.

Besides health risks during pregnancy, young mothers face other negative consequences after giving birth. Raising a child can restrict the young mother's ability to reach her full educational potential, often limiting opportunities that are more readily available to those with higher education.

According to a 2011 report from the Thai Senate Standing Committee on Public Health, one of the leading causes of teen pregnancy in Thailand is a lack of comprehensive sexual education (Termpittayapaisith & Peek, 2013). In Thailand, factors contributing to teen pregnancy include a non-comprehensive sexual education curriculum, a lack of parental guidance, social stigmas regarding contraception, gender inequality, and misguided information shared via digital media. (Termpittayapaisith & Peek, 2013). While these factors are all important in contributing to

Thailand's high teen pregnancy rates, our project addresses the factors of sexual education and culture regarding sexual stigmas.

Our team plans to provide detailed designs for digital sexual education tools targeting teenagers. The majority of the content will be focused on proper usage of contraception methods, negotiation techniques for girls in sexual situations and healthy discourse between teenage sexual partners. In order to accomplish this goal we have three objectives:

1. To identify essential content to include in a digital media resource that will encourage healthy sexual Thai teen behavior
2. To determine the most desirable resource for Thai teens
3. To develop models of digital programs that incorporate our knowledge of essential content, popularity of social media platforms, and cultural acceptance.

First, we will administer surveys and hold focus groups to gain more knowledge of the issue of teen pregnancy specifically in Thailand. We plan to administer short surveys in popular teenage hangouts like the mall regarding sexual education, social media usage, and sources of sexual health information. We will hold several different focus groups, dividing groups based on gender. This will allow us to gain a better understanding of which aspects of sexual education programs are effective, and which aspects are lacking in terms of content or teaching methods. Second, we plan to learn about the different types of social media used in Thailand, so that our own digital deliverable is relevant, useful, and socially marketable in the Thai context. Third, we will synthesize our findings on what teens would like to see in a website, with their gaps in information based on classroom observation, in accordance with Thai culture regarding sex, to develop a prototype of a website. This website will be linked from social media platforms we

discover to be popular. We will also create a design for a mobile application, with similar information to the website, so teens can access the information on their phones.

2 Background

In order to understand the issue of teenage pregnancy, we researched the at-risk demographic, the consequences, current prevention initiatives and campaigns, the contributing factors, and effective methods of prevention. These topics will be discussed in this section in both a global and Thai perspective.

2.1 History and Statistics of Teenage Pregnancy: A Global and Thai Perspective

Teen Pregnancy is a global issue. In certain areas of the world teens are at greater risk of becoming pregnant than others. For example,

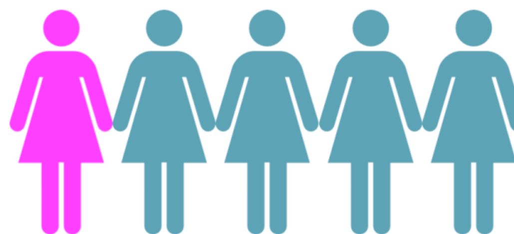

Figure 1: Prevalence of Teenage Pregnancy in Developing Countries (1)

teenage girls are more likely to become pregnant if they come from a poorer socio-economic background than from an affluent one. As shown in Figure 1, about 1 in 5 girls in developing countries become pregnant before turning 19 and 70,000 young women die from complications related to those pregnancies every year (Williamson & Blum, 2013).

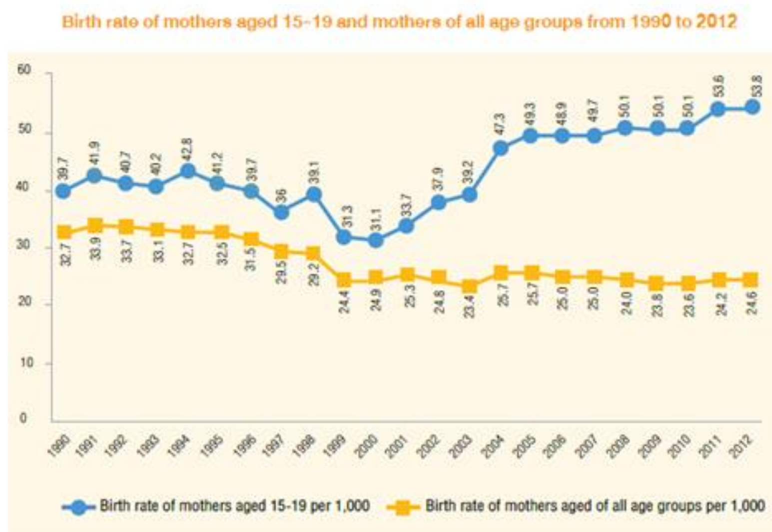

Figure 2: Thailand's Adolescent Birth Rate vs. Total Birth Rate (2)

In Thailand, birth rates have fallen over the last decade, yet the rate of teen pregnancy has been rising, shown in Figure 2 (Termpittayapaisith & Peek, 2013). Recent statistics released by the United Nations Population Fund show that 355 women under the age of 20 give birth in Thailand every day--10 of whom are under the age of 15--and that 32% of these pregnancies are unintended, shown in Figure 3 (Termpittayapaisith & Peek, 2013).

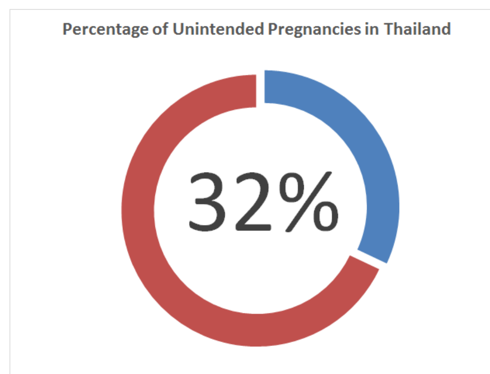

Figure 3: Percentage of Unintended Pregnancies in Thailand (2)

Research shows that girls at this age are unprepared for motherhood (Termpittayapaisith & Peek, 2013). Despite the rising teenage birth rates in Thailand, the overall birth rates are declining. Between 2000 and 2013, adolescent birth rates have risen 73% from 31.1 to 53.8 per 1000. As can be seen in Figure 4, this is high compared to the Asia-Pacific region's average of 35 per 1,000, and the world average of 50 per 1,000 (Termpittayapaisith & Peek, 2013; Loaiza & Liang, 2013). Additionally, "the number of births to girls under the age of 15 has more than doubled in 12 years," (Termpittayapaisith & Peek, 2013).

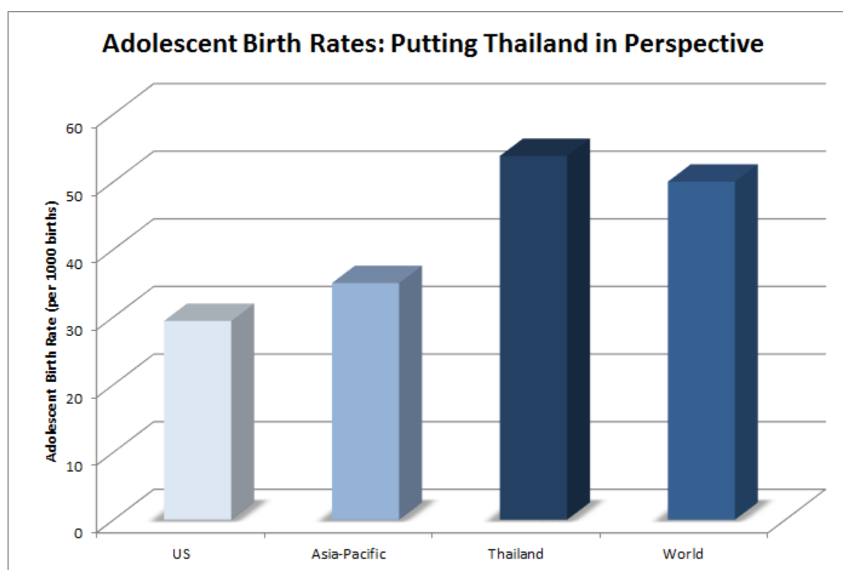

Figure 4: Adolescent Birth Rates: Putting Thailand in Perspective (2,3)

2.2 Characteristics of the At Risk Population

While girls of any demographic could become pregnant, trends and statistics have indicated higher prevalence of teen pregnancies within certain socio-economic backgrounds. Although it is not a causal relationship, Figure 5 displays the higher rate of teen pregnancy among students or housewives compared to laborers or farmers (Thaithae & Thato, 2011). Teen pregnancy is also more common among girls who are less educated or come from lower income families. There are also instances of teen pregnancy in populations with more affluent

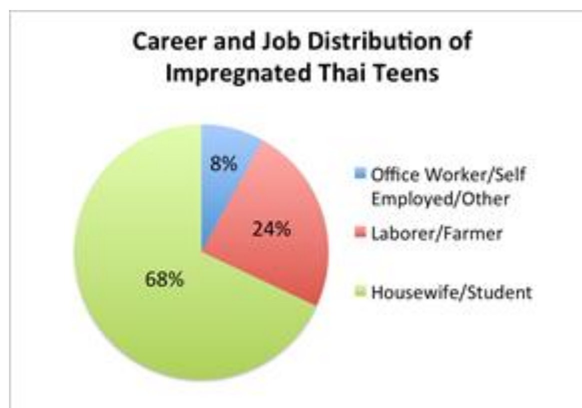

Figure 6: Career and Job Distribution of Impregnated Thai Teens (4)

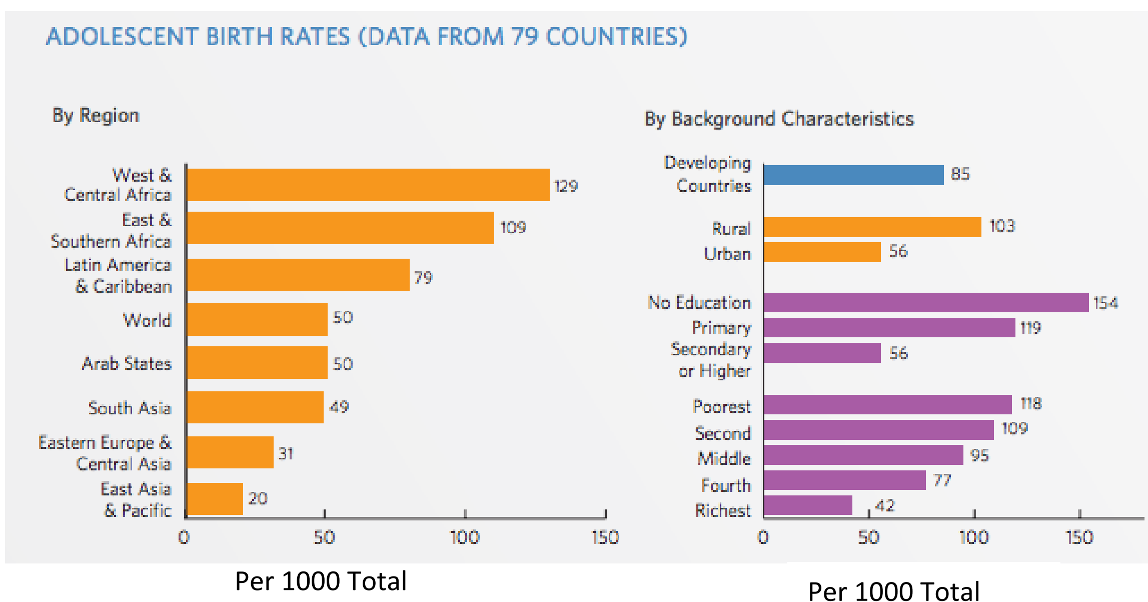

Figure 5: Adolescent Birth Rates (Data from 79 Countries) (1)

financial situations, suggesting that factors other than socioeconomic background contribute to teen pregnancy.

Figure 6 shows where teenage pregnancy is most prevalent, as well as some background characteristics of pregnant teens around the world.

2.3 Consequences of Teen Pregnancy

Teen pregnancy can have many negative effects on a family's well-being. This section explores the risks associated with teenage pregnancy and childbirth.

2.3.1 Health Risks

There are many health concerns for mother and child in an adolescent pregnancy. Young mothers are at higher risk of getting eclampsia, anemia, postpartum hemorrhaging, perpetual endometritis, cervical cancer and heart disease than older mothers (Thaithae & Thato, 2011; (Olausson, Haglund, Weitoft, & Cnattingius, 2004). In a population-based cohort study, researchers examined a population of 460,343 Swedish women and found that mothers 18-19 years old at first birth had a 50% increase in risk of premature death compared to mothers 20-24 years old, while those 17 years old or younger had a 70% risk increase (Olausson, Haglund, Weitoft, & Cnattingius, 2004).

Babies of teenage mothers are also at high risk for health deficiencies. These babies are more likely to have low birth weight, be born premature, or be stillbirths. These issues can be partly attributed to a lack of prenatal care, since teenagers feel embarrassed or do not have the resources to seek medical help (Eden, 2006). Low birth weight in babies born to teen moms is attributed to the fact that the mothers are often still growing and maturing themselves; they cannot gain enough weight during pregnancy to support themselves and a baby (Eden, 2006). Babies of adolescent Thai mothers are 50% more likely to be stillborn or die soon after death than babies born to mothers aged 20 to 24 (Thaithae & Thato, 2011).

Mothers who choose not to carry their pregnancies to term turn to abortions. The UNFPA estimates that over 130,000 girls under the age of 19 years old abort unwanted pregnancies each year (Termpittayapaisith & Peek, 2013). However, abortions are currently illegal in Thailand, unless the mother's health is at risk or the pregnancy was caused by rape. In a study performed in Chiang Mai with 1,750 young adults of both genders, two thirds responded that they had experienced or caused a terminated pregnancy by either ingesting illegal abortifacients or receiving a procedure at an illegal clinic (Tangmunkongvorakul, Banwell, Carmichael, Utomo, & Sleigh, 2011). These abortifacients and procedures are not regulated by the government to ensure their safety, and thus, threaten the health of the young mothers that use them.

2.3.2 Economic Consequences

Teenage pregnancy severely hinders a young girl's ability to reach her full economic potential, which has negative ramifications for the girl's financial stability and the nation's economy. Pregnant students often drop out of school due to the financial burden of childbearing. The results of a study done on 1,354 teen moms aged 19 and younger in Bangkok can be seen in Figure 7 (Thaithae & Thato, 2011). This figure tells us that the younger the teen is at time of pregnancy, the less likely she is to continue her education. The resulting lack of education among teen mothers disqualifies

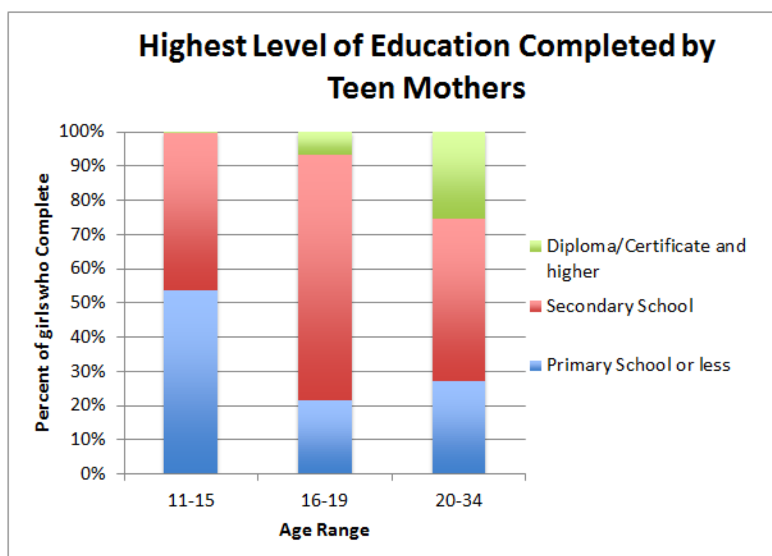

Figure 7: Highest Level of Education Completed by Teen Mothers (4)

them from achieving higher-paying jobs, causing many of them to be unemployed, in low income jobs, or living on welfare.

In the United States, close to half of teen mothers never earn their high school diploma, and 30% never earn their GED (*Kids having kids : Economic costs and social consequences of teen pregnancy (2nd edition)*2012). This lack of education leads to a low average income of under $6,500 annually. Teen moms also spend a third of their first 15 years of parenthood dependent on government assistance (*Kids having kids : Economic costs and social consequences of teen pregnancy (2nd edition)* 2012). The need for government assistance is financially draining on taxpayers by costing them money on healthcare and welfare for both the mother and child (Termpittayapaisith & Peek, 2013). In the United States, the average annual cost to taxpayers for teen pregnancy is close to $7.3 billion, or $1,445 per teenage mother (*Kids having kids : Economic costs and social consequences of teen pregnancy (2nd edition)* 2012).

Teen mothers who drop out of school perpetuate a cycle of poverty, which is financially damaging to the family and hinders Thailand's economic growth (Termpittayapaisith & Peek, 2013). These financial consequences put the baby in a position to grow up in an environment much like that of their mothers, where there is a higher probability of getting pregnant as a teenager, and beginning the cycle of poverty all over again (*Young People and Family Planning: Teenage Pregnancy.*2008; Bissell, 2000).

2.4 Current Initiatives to Prevent Teen Pregnancy

Thailand has some safeguards against teen pregnancy. This includes universal health care, available contraception, and preventative campaigns such as Stop Teen Mom (stopteenmom.com).

2.4.1 Health Care

Health care is universal and free in Thailand, but Thai teens have limited access to reproductive health services (Thailand: Health and Medical Health Care System; Termpittayapaisith & Peek, 2013). Reproductive health services can be expensive and the hours of business can be inconvenient for use, but contraceptives are available by either over the counter purchase or a prescription (Termpittayapaisith & Peek, 2013).

2.4.2 Existing Campaigns to Prevent Teen Pregnancy

There is currently a website campaign for preventing teenage pregnancy, called “Stop Teen Mom” (stopteenmom.com). This site is in Thai, and appears to be targeted at teens. There is a video embedded in the website, which depicts the Stop Teen Mom campaign travelling to schools, and engaging the students in safe sexual behavior games and activities. It shows the Stop Teen Mom spokespeople delivering presentations and hosting interactive activities at schools. The video also reports many statistics about teenage pregnancy, to make the Thai population aware of the growing issue.

2.5 Contributing Factors of Teen Pregnancy

Many factors contribute to teen pregnancy. In Thailand teen pregnancy can be attributed to lack of communication between parents and children, religious restrictions, relationship dynamics, societal pressures to marry at a young age, ineffective sexual education, poverty and increased social_media usage (Termpittayapaisith & Peek, 2013). In the following sections, our team will expand on these contributing factors.

2.5.1 Lack of Communication between Parents and Teens

According to a qualitative study done by Chiang Mai University, there are a few reasons why Thai parents fail to have meaningful conversations with their children about sex. Parents believe their kids will receive information at school from teachers and health officials, meaning they do not have to initiate the conversation themselves (Fongkaew et al., 2012). Some parents are concerned that their children are too young and a discussion about sex would be inappropriate (Fongkaew et al., 2012). Thai girls are taught that promiscuity and interest in sexuality is morally wrong, which is consistent with Buddhist belief, a religion that 95% of the population follows (Numrich, 2009). Thai elders strongly advise abstinence to Thai youth, especially to young women. However, factors that include peer pressure, higher access to sexually explicit digital media, and lower socioeconomic status influence girls to participate in sexual behavior against their elders' wishes. If a teen girl does become pregnant, Buddhists believe abortions to be abominable life-destroying acts (Tangmunkongvorakul, Banwell, Carmichael, Dwisetyani Utomo, & Sleigh, 2007). From this religious standpoint which many elders perpetuate, adolescent pregnancy is shameful.

2.5.2 Contraception

Though many types of contraception are available in stores or hospitals in Thailand, they are not necessarily available to Thai teenagers. Due to social norms, peers and adults believe that a female teenager purchasing birth control is promiscuous, and would be in trouble with her parents if they became aware of her activities (Termpittayapaisith & Peek, 2013). The majority of Thai campaigns for pregnancy prevention through contraception are currently targeted towards married couples (Tangmunkongvorakul, Banwell, Carmichael, Utomo, & Sleigh, 2011).

Semi-permanent methods of birth control such as IUDs and birth control shots are uncommon among single Thai youth (Termpittayapaisith & Peek, 2013). These norms are an indication of how Thai society regards promiscuity with contempt.

In addition to societal pressures that dissuade Thai teens from purchasing contraception, Thai teens are also unaware of the importance of proper usage of contraception (Tangmunkongvorakul et al., 2007). For this reason, there is a higher probability of misuse. Semi-permanent methods such as the ring or the patch are more effective because they are more difficult to misuse due to decreased chance of human error (Termpittayapaisith & Peek, 2013). Unfortunately, these methods are expensive without a prescription meaning most teens cannot seek out the semi-permanent methods without consulting a doctor (Termpittayapaisith & Peek, 2013). Due to gender inequality in Thai culture, women are liable for their own sexual health, meaning that they take on the full responisbility of preventing pregnancy (Tangmunkongvorakul et al., 2011).

2.5.3 Gender Roles

Traditional male dominating gender roles are prevalent in Thai culture. In most heterosexual relationships, men have the final word on most decisions, including decisions relating to sex (Termpittayapaisith & Peek, 2013). This uneven relationship dynamic can make it difficult for women to negotiate when they have sex and which methods of contraception to use with their male partners.

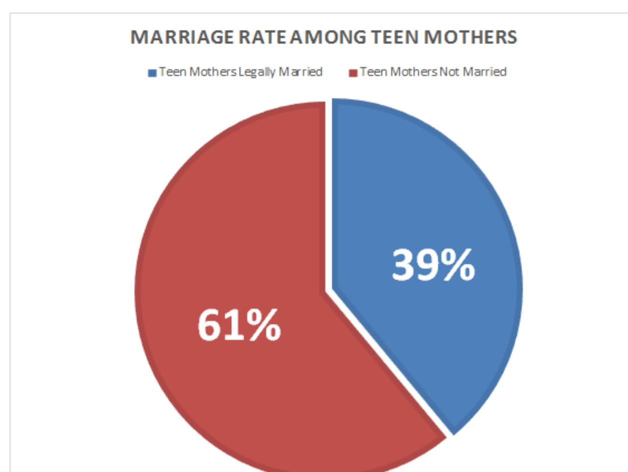

Figure 8: Marriage Rate among Teen Mothers (2)

These cultural norms do not empower women to take ownership of their own sex lives.

In Thailand, the legal age to give consent to participate in sexual activity is 15 years old. Thai women can legally marry at the age of 17, but only 39% of mothers aged 15-19 are legally married, as shown in Figure 8 (Termpittayapaisith & Peek, 2013). This statistic makes it clear that a majority of teen pregnancies are not coming from married couples.

2.5.4 Ineffective Sexual Education and Communication

Sexual education was not formally incorporated into Thailand's Compulsory Education Curriculum until 2001 (Smith, Kippax, Aggleton, & Tyrer, 2003). Existing programs within schools are poorly established and inconsistent in terms of curricula and teaching methods (Kay, Jones, & Jantaraweragul, 2010). These programs are also limited in the types of audiences they can reach, since sexual education is only offered to secondary school students or older. One study states that 28% of pregnant Thai teens never make it to secondary school, and thus, never receive any sexual education at all (Thaithae & Thato, 2011).

Sex education is often taught in parallel with biology and science in Thai classrooms (Smith, Kippax, Aggleton, & Tyrer, 2003). This shared time slot with biology means that there is not enough time to cover material effectively (Smith, Kippax, Aggleton, & Tyrer, 2003). Additionally, teachers tend to focus solely on the anatomical aspects of sex, so students receive only the basic knowledge of how their bodies function. This strict focus on the education of the biology of sex stems from modest Thai culture where acknowledging sexual behavior is considered indecent. This cultural block leads to lack of communication between teens and health educators, like parents and teachers (Vuttanont, Greenhalgh, Griffin, & Boynton, 2006). Thus, students are frequently unaware of the social and personal implications of sexual behavior.

Due to this lack of communication, teens often search for answers through less reliable sources including the media and their peers. The information that adolescents gain through these outlets is often misguided or inaccurate and can lead them to making uninformed decisions that could possibly endanger their sexual health.

2.5.5 Social Media Usage and Teenage Pregnancy

As more information becomes available online, and electronic devices for viewing the internet become cheaper, more teens and children have access to explicit content on the internet. This includes pornography, blogs about having sex, and a whole array of exposure to sexual activity. According to a study done by Chiang Mai University, parents in Thailand fear that digital media is negatively influencing their kid's sexual behavior and contributing to the rising fertility rates of teenage (Fongkaew et al., 2012). When asked about the internet's influence on children's sexual activity, one Thai mom said "Media, such as pornographic books or CDs, and the Internet. When children see them, they may follow what they have seen" (Fongkaew et al., 2012).

A less-studied contributing factor of high teen pregnancy rates is the increase in digital media resulting from the modernization of Thailand. Psychologists fear that the several hours a day spent on a computer or cell phone, are leading to developmental problems in Thai children (Kiatrungrit & Hongsanguansri, 2014). A study done in the US found that increased access to digital media can be correlated with a higher probability of pursuing sexual activity, specifically regarding sexually related posts and images (Bleakley, Hennessy, Fishbein, & Jordan, 2008). Our team intends to utilize the ubiquity of digital media for our own purpose of promoting safe sexual behavior. We will present accurate and useful information that fosters a positive change in sexual behavior of Thai teenagers.

2.6 Effective Methods of Pregnancy Prevention

Dissemination of knowledge regarding safe sexual practices is not sufficient to prevent teenage pregnancy. A resource aiming to diminish teenage pregnancy rates can reduce sexually risky behaviors in the target population through solutions focusing on human-centered design in resources accessible to teens (*Human centered design toolkit.*). In this section, we will describe one method that has been effective in social marketing, a marketing strategy that influences behavioral change for the greater social good (Kotler & Zaltman, 1971).

2.6.1 Changing Risky Behavior

The principal objective in developing any social media campaign to a high-risk behavior population is to promote positive change in this behavior. The three key elements to change behavior are disseminating information, building behavioral skills, and providing motivation (Fisher & Fisher, 1992; Jemmott, Jemmott, Fong, & Morales, 2010). An HIV/STD risk-reduction intervention program in America called “Be Proud! Be Responsible!” succeeded in its goal of increasing condom usage among African American teens with the incorporation of these elements into the program (Jemmott et al., 2010). The program provided comprehensive information about the etiology, detection, transmission, and prevention of STDs, including HIV. The program explicitly states that the most effective behavior skill to prevent infection is abstinence, but that if teens do have sexual intercourse, they should use condoms. The program also emphasizes positive messages to motivate teenagers to put these risk-reducing behaviors into practice. The main messages encourage adolescents to be proud of and to act responsibly for the sake of themselves, their family, and their community, and to contemplate their future goals

and how risky sexual behavior could impede their ability to achieve those goals (Jemmott et al., 2010). This type of risk-reduction program has proven to be effective not only in community-based programs such as “Be Proud! Be Responsible!” but also in classroom settings.

2.6.2 Characteristics of Effective Sexual Health Programs

In a comprehensive public health study, researchers looked at 34 previously evaluated sexual education programs currently being implemented in schools in the U.S. The programs were varied in their focus; some emphasized HIV/AIDS prevention, some highlighted contraception use, and others focused on abstinence only. The researchers chose to study school-based programs because schools are the only institutions that children and teenagers attend regularly. The researchers reanalyzed the success of each of the programs in terms of their ability to lower the instances of certain sexually risky behaviors. Success was based on evidence that the programs significantly reduced sexually risky behaviors by delaying the onset of sex, lowering the frequency of intercourse, reducing the number of sexual partners, and increasing the use of condoms or other contraception methods (Kirby, 1997).

Researchers found evidence that supports that abstinence-only programs, or programs that teach abstinence but not contraception use, were not effective in delaying the onset of sex (Kirby, 1997). The researchers discovered that, of the 34 programs evaluated, four of the programs had a substantial positive impact on changing behavior. After reviewing these four programs, researchers found that they all shared common characteristics, which may be linked to their success (Kirby, 1997). The full list can be found in Appendix B, but some important characteristics of successful sexual education programs include delivering fundamental information regarding risks of unprotected sex and how to avoid unprotected sex, and focusing on decreasing sexual behaviors that lead to unintended pregnancy or contraction of STDs.

Researchers have clarified that while these programs are deemed effective, the important ideas of the programs must be a part of a larger system of informing teenagers about safe-sex practices, because the programs only reach teens who are in school.

Kirby has outlined several other important methods of teaching sexual education. Sexual education is a mature lesson topic, and it is extremely important that these educational materials are age and culture appropriate. For children who have not yet gone through puberty, it is more appropriate to stress delaying the onset of sexual intercourse before they become sexually mature (Kirby, 1997). For high school students who face much greater social pressures to have sex if they have not had sex already, it is more appropriate for teachers to advise against engaging in unprotected sex. Teachers should display the severe consequences of risky behaviors, and provide resources to aid teens in avoiding risky behaviors (Kirby, 1997). While different cultures require different kinds of sexual education, some aspects of these programs are universal.

The Netherland's public schools' sexual education initiatives specifically target balancing gender power, managing romantic relationships, teaching about sexually transmitted disease, and coping with pressures to have sex (Adamson et al., 2001). Some areas of the world have been more successful than others in lowering teen pregnancy rates. Some countries in northern Europe have lowered teen pregnancy rates substantially over the past several decades. The Netherlands, Sweden, and Switzerland have some of the lowest rates of teenage pregnancy in the world--all having rates of 7 out of 1000 girls ages 15-19 becoming pregnant every year (Adamson, Brown, Micklewright, & Wright, 2001). These countries have very low rates of teens giving birth, along with low rates of teenage abortion, indicating that very few teenagers are becoming pregnant. In

the Netherlands, 6.2 out of 1000 abortions are from teenagers, and 4 out of 1000 pregnancies are from teenagers (Adamson et al., 2001).

Though the Netherlands and Thailand differ substantially in their governments, culture, socio-economics, and education programs, the aspects that make these programs effective can be utilized for the creation of our team's digital media teenage pregnancy prevention campaign in Thailand.

2.6.3 Educating Youth through Digital Media and Social Marketing

An effective way of educating young people about changing risky behaviors is through entertainment (Keller & Brown, 2002). This technique is known as prosocial entertainment, or edu-tainment. It builds on Albert Bandura's Social Learning Theory, which says that it is important for people to learn social behaviors by observation of others, especially in situations where failure can produce "fatal consequence" (Bandura, 1969).

Teenagers can use digital media to observe the mistakes of others who exhibit risky behaviors. This can encourage teens to improve their own behaviors. According to ZocialInc, an analytical company for reporting data on social media usage in Asian countries, Thais spend an average of 3.7 hours a day on social media (Pongvitayapanu, 2014). The most popular platforms are Facebook, Twitter, Instagram, Pantip, YouTube, ask.fm, LINE, and Foursquare. ZocialInc reports that mobile platforms are becoming more popular (Pongvitayapanu, 2014).

Television can also influence teenage behavior. In 2003, a survey was conducted on adolescents who had just viewed an episode of Friends where a condom had failed and a pregnancy resulted. The teens who had watched the episode were more likely to realize the efficacy of condoms, not only because of the educational value of the episode, but because the episode sparked conversations among teens and their parents in the United States (Collins,

Elliott, Berry, Kanouse, & Hunter, 2003). While sex can be glorified on television, these plots can also serve as an example to viewers to model some characters' positive behaviors.

Behavior-modifying information can be delivered through social marketing. Social marketing utilizes the same strategies as commercial marketing but for the purpose of selling an idea rather than a product. The "product" of social marketing is the set of benefits resulting from the change in behavior (*Selling Healthy Lifestyles: Using Social Marketing to Promote Change and Prevent Disease,* 2004). Successful social marketing campaigns prompt the target audience to believe that they are at risk, understand the dangers of certain behaviors, and sincerely want to avoid those behaviors. Studies indicate that people rarely oppose social pressures (*Selling Healthy Lifestyles: Using Social Marketing to Promote Change and Prevent Disease,* 2004). Programs are most successful when they promote behavioral change in a manner that is socially acceptable and easy for the digital media user to implement.

2.6.4 Social Marketing as a Solution for Risky Teen Behavior

Social marketing has been used to encourage healthy habits in teens. According to empirical research on programs that affect people directly, healthy behavior should be promoted as a list of viable solutions, rather than a command to follow one best solution (Pechmann, 2002). According to Rachel Stoler, an expert on social marketing from the Franklin Regional Council of Governments (FRCOG), there have been techniques that the FRCOG has found to have varying levels of efficacy for changing behavior through social marketing. FRCOG has determined that positive reinforcement is more successful than negative reinforcement since scare tactics will resonate with viewers strongly for only a short period of time (R. Stoler, personal communication, December 9, 2014). It is important to empower the audience with a clear action item that can be accomplished as well as depicting people and scenarios that the

audience can relate to and want to emulate. Catchy slogans like “Thai Teens Protect Their Friends” could have this positive message that empowers the audience to make the necessary behavioral changes. Stoler recommends that these slogans be very short and easy to remember, passing the “drive by” test as teens are scrolling through social media. She recommends having a focus group organize and sort the messages in terms of what they believe is the most emotionally impacting, informative, and catchy.

2.7 Summary

This background chapter reviews the statistics of teen pregnancy in Thailand and around the world, the current initiatives to prevent pregnancy in Thailand, the contributing factors of teen pregnancy, the health and economic consequences of teen pregnancy, and effective methods of pregnancy prevention via sexual education classes and digital/social marketing. We identified the contributing factors of teen pregnancy to include lack of communication between parents and teens, religious beliefs, culture of contraception usage, gender roles in society and in relationships, ineffective sexual education, and social media. The prevalence of teen pregnancy in Thailand has been increasing, indicating a need for reform. Our project focuses on educating Thai teens about safe sexual practices, using methods we will outline in the next chapter.

3 Methodology

The previous chapter shows that there are numerous factors that contribute to Thailand's high teen pregnancy rates. These teen pregnancy rates will not decrease without a behavioral change among teens, particularly regarding their sexual decision making. In order to produce a safe-sex digital media resource, our team intends to implement human-centered design. Human-centered design (HCD) is not a goal or outcome, but a cognitive process that allows individuals or groups to create new solutions for a particular problem (*Human centered design toolkit.*). The first step of the HCD process is identifying a human-based design challenge that requires a solution. Our challenge is to produce designs of digital media solutions geared toward Thai teenagers. The second step, known as the "Hear" step, is to observe the target audience, learn their behaviors, and determine what they want, need, and desire in a solution. In order to lower teen pregnancy rates in Thailand, we must understand the factors that perpetuate sexually risky behavior and what types of communication will encourage teens to curb those behaviors. The third step is the "Create" step, in which we synthesize the gathered information to create viable solution prototypes. This is the most abstract part of the process, as it involves creating insightful and tangible solutions from the ideas of many individuals. The final step of HCD, the "Deliver" step, is where we need to look into the feasibility and viability of the solution, with respect to time constraints, financial sustainability, and measured impact of the solution.

We can summarize our goals with the following objectives:

1. To identify essential content to include in a digital media resource that will encourage healthy sexual Thai teen behavior.
2. To determine an effective way to target Thai teens using social media.

3. To develop models of digital programs that incorporate our knowledge of essential content, popularity of social media platforms, and cultural acceptance.

3.1 Identifying Content to Encourage Healthy Sexual Behavior through Digital Media

In order to accomplish our first objective, we researched the issue of teen pregnancy in a Thai context. Our findings are covered in the background section. We plan to conduct surveys and focus groups to determine which information will be effective in changing risky teen behavior.

3.1.1 Individual Surveys

Individual surveys will be useful for gaining an understanding of the behaviors and reasoning of Thai teens. We want to use surveys to understand how Thai teens use social media, and how frequently they use it. We also want to know what Thai teens use as sources for sexual health-related information and how well-informed they feel about safe sex. The survey form containing these questions is located in Appendix C. Learning this information will help us structure our discussion topics for the focus groups we will later conduct.

We plan to administer these surveys in public areas such as the mall. The participants will be random Thai teenagers in these public areas. We will have two student investigators--one Chulalongkorn student and one WPI student--approach a potential participant and ask him or her if he or she would be willing to fill out the survey after giving a brief description of the study and letting the teen read the survey.

We plan to only have participants interact with two student investigators at a time so we do not overwhelm them. It is important to make sure the participant fills out the survey alone

because the influence of others can change how a participant answers the questions. For example, if we offer a survey to a teenage girl in front of her parents, she might give us more socially acceptable answers to evade embarrassment or punishment. Privacy and security of responses are essential parts of the survey process and will be ensured by keeping the completed surveys in a locked box.

Human-centered design research techniques stress the importance of starting with straightforward "warm-up" questions that the participants can answer about themselves before digging deeper into their behaviors (*Human centered design toolkit.*). We will start with questions related to social media and age; more thought-provoking questions about adolescents' sexual education experiences will follow.

3.1.2 Focus Groups

Focus groups are a valuable way to quickly learn about a target audience. In our case, this audience is Thai teenagers, and we hope to gain a better understanding of their risk behaviors, especially related to sex. We will hold several focus groups throughout the course of our project to gather information related to Thai teen sexual education and digital media usage. Each subsequent focus group we conduct will build on information and ideas generated from the previous focus groups. Our goal is to have each focus group manifest as an hour-long discussion with 5 to 10 participants, mediated by the student investigators. These participants will be selected in a public place, or gathered through the aid of our sponsor at Thammasat University.

There are a number of useful techniques for conducting a successful focus group such as mediation in a semi-structured manner. Having too much structure within a focus group could result in omission of valuable, undiscussed information from the participants. On the other hand, without enough structure the focus group will be inefficient and stray off topic. It is also

important to consider how the presence of certain members could potentially affect the way participants behave and respond within the group (*Human centered design toolkit.*). For instance, teens may not speak freely in a group including parents, teachers, and other authority figures. Therefore, we will keep the focus groups relaxed and comfortable by only having our team, the Chulalongkorn students, and Thai teens in the room. We will also consider whether males and females should be included in the same focus group. In Thai culture, males dominate relationships and females may not feel comfortable speaking openly about their sexual experiences in front of men. The *Human Centered Design Toolkit* also suggests meeting on neutral ground, sitting at the same level as the participants, and dressing according to the social status of the participants in order to make them feel most comfortable and not in a position of inferiority (*Human-centered design toolkit.*).

To further ensure we begin the discussion in a comfortable environment, we will allow the student investigators and participants to introduce themselves and complete a brief icebreaker exercise. After giving the participants a short overview of the problem of teenage pregnancy and our goals for the discussion, we plan to follow the recommendations of the *Human Centered Design Toolkit* and open with specific questions. These warm-up questions should be direct and easy to answer. We plan to ask questions during this time as supplied by the results recorded previously from our surveys. These questions will help us gain a better understanding of the participants' experience with any existing campaigns to reduce teen pregnancy, and their degree of social media usage along with other topics to be determined based on the mall surveys. We will follow with deeper questions relating to their views on adolescent pregnancy and their interest in a digital media solution. The goal is to observe as much qualitative data as possible, leaving minimal room for interpretation. This focus group discussion will give us more

information about what should be included in the digital resource designs we generate and through what media we should implement the information.

We plan to record all of this on an audio recording device, with the consent of the focus group participants. They will all be asked to fill out a consent form prior to participation in the focus group and if they do not sign the consent form, they will not participate in the study. We expect some of the dialogue between Thai teens to be spoken in Thai, and acknowledge that we will need to translate this at a later time.

3.1.3 Contingency Plan

We do not expect full cooperation from everyone we talk to because of the sensitivity surrounding this topic in Thailand. In the event that nobody consents to the survey or participates in the focus groups, we will ask our sponsoring organization, The School of Global Studies at Thammasat University, to aid us in finding a new pool of participants. If we choose to survey Thammasat University students as a back-up, we understand that they are a narrow demographic, and they may not be the ideal population to take a sample from. However, we still believe we can acquire useful information from them about the social pressures they experienced during high school, and the ways they access and use social media.

3.2 To Determine a Desirable Digital Resource for Thai Teens

In order to create an effective educational social media resource, we first need to know which social media platforms are popular, and how they are used. To discover which social media platform to focus on, we will ask teens at the mall using the same survey where we ask them about their sexual education experiences. The survey question related to social media is: which social media platform do you use the most? We will use the results from this question to

generate a plan for a second focus group. The goal of this second focus group is to figure out which messages and designs Thai teens would find the most appealing in a social media campaign.

For whichever platform we find to be the most popular in our mall survey, we will develop some appropriate messages to post on that platform of social media. For example, if we discover Twitter is the most widely-used social media platform, we may create short messages. If we discover Facebook is more widely used, we may create images or videos to get our messages across. The messages we develop will employ the qualities we learned from Rachel Stoler; they will be short, catchy, inclusive, and empowering. We plan to print these messages on separate pieces of paper, and conduct what is called a "queue sort" during a new focus group. We will ask the focus group participants to sort the sheets of paper in order of "most appealing" to "least appealing" and to cross off any messages they find highly offensive. We will use whichever messages they find the most appealing as a basis to come up with even more messages. We will then conduct at least one more round of this type of focus group, with more refined and relevant messages to be sorted in another queue sort. In these focus groups, we will also be showing the participants different designs and color schemes for our messages, to figure out which ones are the most popular. The information we learn from these focus groups will be crucial for our digital media designs.

3.3 To Develop Models of Digital Programs that Incorporate our Gathered Knowledge

From our surveys, content focus groups, and design focus groups, we hope to discover what kind of information teens are lacking, and the ways we can distribute this information in a

popular fashion. We will use our analysis of this data to develop a design for a social media campaign, a website, and a mobile application.

3.3.1 Analysis of Data

We plan to analyze our qualitative data using "coding." We will have highlighters of different colors to represent different topics of ideas. For example, we could use a pink highlighter for any responses related to searching about sex using the internet. Once we have coded all the surveys and notes from the focus groups, we will generate large lists of the ideas that fall under each category. From there, we will refine our lists into sub-lists. If the same idea appears frequently, we will use it in our deliverables. Our deliverables consist of a social media campaign with the messages and designs that received positive feedback in the focus groups, a website prototype with information regarding safe sex, and an app design with similar information to that of the website. All three of these deliverables will draw on our findings from the surveys and focus groups.

3.3.2 Social Media Campaign

We will design a social media campaign to encourage healthy teen behaviors, using strategies learned from social marketing expert Rachel Stoler. Our initial campaign outline with various messages and images will employ this synthesized information. We intend to create a series of short powerful messages that stick with our viewers, such as as "Thai Teens Protect Their Friends." In addition to providing powerful messages, we will suggest methods for reaching expanded target audiences. For example, on Facebook there are several options to "boost" a post and obtain more views from a specific demographic.

3.3.3 Website

One of the deliverables of this project will be a website prototype that can serve as an educational resource for Thai teens. We will display content on the website prototype using graphics and formatting that we found to be most aesthetically and functionally pleasing to Thai youth. We will choose what information is posted based on what we found to be lacking from Thai sexual education programs and what we found to be effective in changing negative behavior. Information on the website will also be provided with consideration of Thai culture, so as not to offend anyone who will view the content on the website. We will develop the prototype of this website using a template on Google Sites under the URL https://sites.google.com/site/safesexualpractices/.

3.3.4 Mobile Application

Our team also plans to create a design for a mobile application, relying on information from the focus group's opinion on aesthetic, personalization capabilities, intuitive user interface, and informational content. For the sponsor, we plan to create four "screenshot" posters of the app that showcase its design and informational content. This will serve as an example of the main interface and the format in which the information will be presented. Each screenshot will have a description of its content and interactive components. All of the information that we wish to include will be organized and included in a separate document for our sponsor.

3.4 Summary

This project will require our team to generate data on Thai teen behaviors and Thai teen attitudes towards digital media design elements and aesthetic. We will accomplish this task

through focus groups and surveys which we will conduct on site. Our team will then use this information, along with components of human-centered design and social marketing, to deliver a design of a digital sexual education tool to our sponsor at Thammasat University.

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5 Appendices

5.1 Appendix A: Definitions

In this paper, pregnancy is defined as the implantation of a fertilized egg in the lining of a woman's uterus.

The terms "adolescents", "youth", "teenagers", and "teens" are all used interchangeably throughout the text. Our team defines these terms as girls who fall in the age range of 13-19.

Thai teen pregnancy defines all pregnancies that have occurred within the geographical borders of Thailand to female Thai citizens between the ages of 13-19.

5.2 Appendix B: Characteristics of Effective Sexual Education Programs in the United States

1. Focused on decreasing sexual behaviors that lead to unintended pregnancy or contraction of STDs.
2. Implemented behavioral goals, teaching methods, and materials that were appropriate to the age, sexual experience, and culture of the students.
3. Were based on theoretical approaches that are proven to be effective in changing risky behaviors.
4. Lasted a sufficient amount of time to adequately complete different activities.
5. Employed a variety of teaching methods designed to encourage participation and allow students make the information personal.
6. Delivered fundamental information regarding risks of unprotected sex and how to avoid it.
7. Included activities that dealt with social pressures and how they affect sexual behavior.
8. Provided activities that had students role play scenarios involving communication, negotiation, and refusal skills.
9. Provided training for teachers and peers who believed in the program they were implementing.

5.3 Appendix C: Survey Questions

1. How old are you?
   ______

2. What platform of social media do you use most often? (Check the best fit)
   Facebook
   Twitter
   Instagram
   Pantip
   Whatsapp
   Other:

3. What would you rank as the top 5 most popular mobile applications among teenagers?
   1.
   2.
   3.
   4.
   5.

4. Have you ever used an app relating to sexual health? (Circle one)
   Yes No I don't remember
5. Would you be interested in using an app relating to sexual health if one was available to you?
   Yes No I'm not sure
6. Have you ever researched sexual health on the internet?
   Yes No I don't remember
7. How informed do you believe you are about safe sexual practices? (Circle one)
   1 (Uninformed) 2 3 4 5 6 7 8 9 10(Very Informed)
8. How much sexual education have you received in school? (Circle one)
   1 (None) 2 3 4 5 6 7 8 9 10 (Thorough)
9. Do your parents ever discuss safe sex with you? (Circle one)
   Never Sometimes Often