How can design for well-being lower the taboo of **menstruation** in India

**graduation report** by Petra Salaric

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“About 85% of girls and women in India follow one or more restrictions connected to periods. Can you imagine what it does to self esteem and self confidence to a young girl? The psychological trauma it inflicts and affects her personality, her academic performance, and every single aspect of growing up during her early formative years.”

Aditi Gupta, founder of Menstrupedia
TEDxGatewayWomen | May 2015
It is a Monday morning and the school bell rang for a lunch break.

Priya and her friends, Sonali and Aayushi, got up and headed towards the school garden, towards the mango tree, where they always spend their lunch breaks.

As they were walking down the hallway, out of a sudden a couple of boys from the class start running around the girls. One of the boys starts pointing fingers at Priya and yelling how she has something on her bottom. “Do you need diapers, Priya?”

Aayushi and Sonali take a look and instantly grab Priya’s hand to take her to their teacher. The teacher, Ms Patel, calls Priya’s house and informs her mother that Priya will be coming home. She said how Priya started “chumming”. Priya doesn’t understand what “chumming” means, but Ms Patel says that she should discuss it with her mother, and to get herself ready to go home.

As she gets home, her mother and elder sister, Tavishi, tell her to take a shower and get changed. When she got out, Tavishi took her by the hand to the nearby shop. They approach the counter rather carefully, and Tavishi, with a sort of discomfort and hesitance, speaks to the salesman. Priya couldn’t really understand what Tavishi asked for as she said it in a lower voice and rather mumbling. The salesman looked around the shop before he grabbed a packet underneath the counter. With a bit of a quick-handling, he wrapped the packet in a newspaper and then into a black bag before giving the bag to Tavishi. Priya recognizes the black bag as she sometimes sees people in the streets with it, but she never knew what it really was. She was quite curious about what the packet was. Was it something odd or dangerous, because why would otherwise salesman wrap it up like that?

As Tavishi and Priya arrived home, it seems how her mother was waiting a bit nervously on the sofa. Mother tells the girls to sit down quickly as their father will be coming soon.

The behaviour of her mother and sister make Priya think that something scary is happening and she is already feeling nervous out of the entire secrecy.

“it is about what happened this morning, Priya. Now every month it will be happening to you. You have to use what your sister bought and throw it in the bin outside. Do not put it into the garbage can as it will get spoiled. And you cannot go to the kitchen while you are on your period, do you understand? Do not speak to people about it. It is your thing to handle. And stay away from boys. You cannot play anymore with your friends these days, too. This is how we do it.”

There were so many questions in Priya’s head that she wanted to ask but couldn’t quite form them. What is period? Why can’t she hang out with her friends anymore? Why are her mother and sister so nervous? Suddenly her father walks into the house, and Tavishi and her mother stop the talk. Priya rushed into the bathroom with the black bag. She unwraps the packet. It is titled Whisper. Sanitary pads. What is a sanitary pad? How was she supposed to use it? What should she do with it? There are no instructions there.

She rushes to her room and hopes to search on the internet and figure out what is exactly going on. It seems like everyone knew what was happening. The teacher, her mother, her sister, even the salesman, but her. What has happened to her that made everyone so secretive, so silent, so nervous?

After some search she came to find out what was happening to her - she was menstruating.
figure 1. Girls anticipate a training session on menstrual hygiene in Maharashtra India (Goldberg, 2018.)
Executive Summary

In India, there is an existing taboo of menstruation which has an impact on the well-being of women in different ways - from education, economics, health, religion to different personal aspects (Chapter 3.1.). Many activities are happening in India towards improving the situation around menstruation (Chapter 2.2.) - from governmental activities and plans, provision of sanitary pads in the rural areas, organization of educational sessions in schools, to famous actors using media to spread awareness on these issues.

However, there is a need to create a change in the mindset and the behaviour of society to accept the made efforts.

This graduation project is an extension of an elective course of Design for Emerging Markets in the winter semester of 2018 at TU Delft. In the elective course, I got to understand the size of the problem and how there are many ways the problem can be approached. That is why I have decided to continue to tackle this problem in my graduation, too. During my graduation project, I have conducted research in India to get close to the problem and emerge myself into the context in order to design for it (phase 3). During my trip, I have interviewed experts in the field - from NGOs, designers, entrepreneurs to gynaecologists, in order to understand how this problem has been approached from different angles (Chapter 5.1.)

As the topic of menstruation is a sensitive one in India, I came to realize how one must work from a comfortable and safe space of people to create a change, which brought me to the family context (Chapter 3.2.). During my project, I have conducted tests with 9 families to understand what is the behaviour people have in their homes and how does the conversation go around this topic (Chapter 7).

Through research, I came to find how pre-menstruating girls are not informed on the subject until they get their first period, which causes them to experience shock, fear and anxiety when they start menstruating. Men are often excluded in the discussion around menstruation, and in the family, the discussion is often occurring between the girl and her mother.

However, through research, I came to find a correlation between the positive attitude in girls towards menstruation and their freedom of conversation on menstruation with both parents. That is why this project has focused on enabling discussion in a family home between all members prior to the girl’s first menstruation.

Even though the problem around menstruation in India is a complex one, enabling discussion can be that one step towards the desired behaviour change to enhance the well-being of the girl.

Gamification came as a solution as it can bring all family members together through an engaging and fun activity (Chapter 4.1.). Creating an engaging activity can help in subtly bringing to the surface the otherwise stigmatized topic, and the fun aspect of the game helps in creating a positive atmosphere which makes the discussion more enjoyable.

After testing 4 different game principles, the outcome design is a pairing type of card game, Mix-A-Body-Match (Chapter 8). As the entire aim is to create funny pairs, the game doesn’t require prior knowledge on the subject, which allows both the pre-menstruating girl and male members of the family to get involved into the game-playing with ease. The game comes with a booklet that contains the rules to the game and explains the content on the cards. The booklet also provides information on puberty and menstruation for the family to learn more. The game intents to normalize menstruation by presenting it as a part of puberty and a normal aspect of growing up. It serves as an ice-breaker. The game creates a positive atmosphere in the home through laughter, and in that way creates the way for the discussion to appear.
This project has been a life-changing journey which I am grateful to have taken. But it wouldn't have happened if I didn't have such support.

To my India advisory board for the support and encouragement and without who I couldn't have organized my life in India in the first place.

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To all of you, and to those I haven't mentioned, thank you for this experience. It wouldn't have been a beautiful one without you!

Petra
MENSTRUATION/PERIOD
A cyclical discharging of blood, secretions, and tissue debris from the uterus that recurs in nonpregnant breeding-age primate females at approximately monthly intervals and that is considered to represent a readjustment of the uterus to the nonpregnant state following proliferative changes accompanying the preceding ovulation (Merriam Webster)

TABOO
A subject, word, or action that is avoided for religious or social reasons (Cambridge dictionary)
A social or religious custom prohibiting or restricting a particular practice or forbidding association with a particular person, place, or thing. (Oxford dictionary)

STIGMA
A strong feeling of disapproval that most people in a society have about something, especially when this is unfair (Cambridge)
A mark of disgrace associated with a particular circumstance, quality, or person. (Oxford)

MYTH
A widely held but false belief or idea. (Oxford)
A popular belief or tradition that has grown up around something or someone (Merriam Webster)

MENARCHE
The first occurrence of menstruation. (Oxford)
The beginning of the menstrual function (Merriam Webster)

WELL-BEING
the state of being happy, healthy, or prosperous (Merriam-Webster)

MHM
Menstrual hygiene management

WASH
Water, Sanitation, Hygiene
In this report used in context where menstruation is dealed from the aspects of providing water for proper menstrual hygiene management, sanitation is referred to the building of separate toilets and hygiene in the aspect of hygiene practices, specifically for the purposes of proper menstrual hygiene.

SBA/SBM
Swachh Bharat Abhiyan (SBA) or Swachh Bharat Mission (SBM) ("Clean India Mission") is a nation-wide campaign in India for the period 2014 to 2019 that aims to clean up the streets, roads and infrastructure of India's cities, towns, and rural areas. Menstrual Hygiene Management comes under the SBM and the MDWS(Ministry of Drinking Water and Sanitation) has issued guidelines for the state government, administration institutes, education system and teachers, engineering and technical companies.
PHASE 1
The taboo in India

PHASE 2
To enable the discussion

PHASE 3
Getting into the context

PHASE 4
Mix-a-Body-Match
This report presents the 20 weeks master project done at the Design for Interaction programme at the Faculty of Industrial Engineering, TU Delft. The project consists of research done both in Netherlands and India, where the field research and testing were conducted. The project is structured into 4 general phases which will be explained here and by which you will be guided throughout the report.

The report starts with the inspiration to the project and an elective course of Design for Emerging markets from which, the project has been taken to a graduation project. In phase 1 - The taboo in India, the taboo of menstruation and its effect on the well-being of women is introduced, along with the historical development of the taboo and the current context around it.

How this graduation project aims to tackle the taboo has been explained in phase 2 - To enable the discussion. The phase starts by creating a focus within the problem of the taboo of menstruation which this project wishes to tackle (chapter 3.1. and 3.2.) and who it all concerns (chapter 3.2.). In this phase, the goal of the project (chapter 3.3.) and the approach are described (chapter 4). The phase finishes with the first design ideas which were used to present in the interviews with experts in Mumbai (chapter 4.4.).

The entire 2 and a half month trip in India is presented in phase 3 - Getting into the context of India. This phase starts with the conducted interviews in Mumbai with different experts (chapter 5.2.) to get an understanding of how the taboo has been approached so far. Chapter 6. describes the process of building of the designs, from the inspirations to feedback from Sukhibhava as well as the 4 created designs. The testing of the 4 designs is described in chapter 7, with the findings of each test, the new focus and conclusions.

Phase 4 - Mix-a-Body-Match presents the conclusion of the research and the chosen direction. The phase explains the fit of the direction and the process of the form-giving to the design. The phase finishes with the evaluation of the design and recommendations for the future.

Each phase in the report starts with the spread where steps are shown along with the questions which were to be answered. The steps that are numbered refer to the chapter where they are described.
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GETTING INSPIRED

the Post

the D4EM

THE MENSTRUATING WOMAN IN INDIA

interviews with experts
desk research
literature review

THE GAME APPROACH

The family focus
THE TABOO IN INDIA

Phase 1 serves as an introduction to the project. It starts with the inspiration for the project, to the deep dive into the taboo of menstruation and the context of India.
Recently I finished writing my Bachelor’s thesis about the portrayal of Menstruation in media and society - a real taboo topic. So taboo in fact, that the coordinator of my German university not only refused to help me but actively discouraged me from formulating this topic in a way to find a supervisor. (She told me that I would never find a professor who would approve this topic. To paraphrase w...
See more

figure 2. the Facebook post that was the inspiration for this project (Own ill., 2018.)
GETTING INSPIRED

chapter 1

This chapter explains the start of the project - where did the inspiration for the project come from, and what have I learned at the course of Design for the Emerging Markets.
figure 3. 3 concepts made at the course of Design for Emerging Markets, starting from top to bottom: 1) Manbox - a gift given from mother to son at the time when girls start menstruating 2) tampon box designed to be given from a boy to a girl, 3) Menstruation forum - an online platform to discuss menstruation (Illustration from Design for Emerging Markets, 2018)
1.1. It all started with a Facebook post

In September of 2018 I read a post on Facebook shared by my previous boss (figure 2). It spoke about a journey of a student from Germany on which she went in order to graduate on the topic of the stigma of menstruation in the western media. The post made me aware of how little I knew about the topic and that woke in me a sense of responsibility, I felt I needed to do something about it, as a woman and as a designer.

When I enrolled the course of Design for the Emerging Markets at TU Delft I thought - this is my chance to learn more about this problematic topic and all that it comprised. Prof Diehl, the professor of the course, who later became the chair of this project, proposed a couple of topics, but none of them touched me personally. Luckily, I was able to create a project of my own and, together with the group we formed, we decided to focus on the context of India. We chose India for different reasons - a huge country with rich culture and a very diverse society which provided us with many aspects and target groups to focus on - from the rural and underprivileged conditions to urban and wealthy ones. One more reason for the focus on the Indian context was the accessibility, as we had many students of Indian origin at our university, whom we could interview for our project purposes.

We conducted literature research, desk research and interviews with 9 Indian students - 5 women and 4 men.

Through research we got the overview of how menstruation affects different aspects of life of women in India. We got to understand different myths and practices, and various health issues that women faced due to problems around menstruation. Through interviews and research we realized that in order to tackle the problem of menstruation in India, we needed to involve men. India is a patriarchal country and men have a great influence on the lives of women but they lack knowledge of menstruation in order to understand and support women. Moreover, menstruation is seen as a private issue and it is not to be discussed.

That is why our designs focused on opening the discussion between men and women on the aspect of menstruation in order to enhance the well-being of women in India.

As a solution to our problem / focus we developed 3 different concepts with 3 approaches that can be seen in the figure 3.

The insights I gained in the course were so enriching and interesting that I found many fruitful grounds to build a graduation project on. I saw it also as a chance to develop myself as a designer and to test my learnings and experience working in a complex context.

Finally, the topic got me so mesmerized that I wanted to act on it as a woman and use my tools as a designer in order to challenge the issue.

“Seeing that men perceive it that way and that it is alright it is ok - made me think it is ok”

quote of the participant that served as an inspiration for the design focus
figure 4. The artwork by Aniket Mirta that was seen controversial as putting the bloody lotus on a sanitary pad (Ghosh, 2018.)
After getting a glimpse of the problem in the course of Design for Emerging markets, it was important to get a holistic view of the problem. This chapter gives an overview of the problematics of the taboo of menstruation. The aim was to understand how the taboo was created, what it all entails and what is the effect of the taboo and the created stigma on the lives of women.

As the problem is culture specific, it was important to understand the culture and how is the society shaped, and what is the position of women in the Indian society.
Figure 5. Bold advertisements for Essity’s feminine hygiene products show blood-red liquid on a pad instead of the traditional blue liquid. (Bonfanti, F., 2017)
2.1. The historical overview of menstruation

“‘For centuries women have endured shame, ridicule and embarrassment and been deprived of education and positions of power because of the cycle.’”

Alexandra Pope, Red School movement

The stigma and the taboo surrounding menstruation have been around for a long time. Pliny the Elder, the ancient roman author and philosopher wrote: “Contact with the monthly flux of women turns new wine sour, crops touched by it become barren, grafts die, seed in gardens are dried up, the fruit of trees fall off, the edge of steel and the gleam of ivory are dulled, hives of bees die, even bronze and iron are at once seized by rust, and horrible smell fills the air; to taste it drives dogs mad and infects their bites with an incurable poison.”

The beliefs that a menstruating woman is “unclean” could even be found written in the Bible and Quran. Sadly, only a bit more than 100 years back there were first signs of anything around menstruation changing.

Changes around menstruation are somehow correlated to the production of menstrual products. The first product was a sanitary pad which came to the market in 1888. The nurses during the WWI discovered the cell cotton which was a good blood absorbent, which lead to the development of sanitary pad by the brand Kotex.

Few years later, in the 1930s, Tampax introduced the first tampon. The menstrual cup has been in the market ever since 1930s, but only recently it has become popular.

With the hippie movement, the reusable sanitary pads were created, which has been taken as the best menstrual hygiene product on the market since. However, many women were not familiar with the inventions or the products as much because of the stigma and the taboo that lead to the ban on advertising menstrual products, which was only removed in the 1970s.

The perpetuating shame and silence around the menstruation can be understood from the following article from the Ladies Home Journal in 1928 (figure 7). “In order that Modess may be obtained in a crowded store without embarrassment or discussion, Johnson & Johnson devised the Silent Purchase Coupon presented below. Simply cut it out and hand it to the sales person. You will receive one box of Modess. Could anything be easier?” (Weiss-Wolf, 2017.)

But the stigma around menstruation and the created silence had serious consequences. In the 1980s, Procter & Gamble put out to the market a super absorbent tampon, with the slogan “It even absorbs the worry!” The invention led to a total of over 100 deaths and around 3000 reported cases.

From 1989, tampon boxes involve warnings on the usage, however, to this day, the FDA (Food And Drug Administration) still does not require for the manufacturers to disclose the ingredients in tampons and pads.


But since then, the biggest changes have been made over the last decade. In the entire 20th century, the New York Times used the word menstruation in total of 415 times, even 167 in the year of 2015 alone. (Weiss-Wolf, 2017.)

The year of 2016 was referred to as the “year of the period”. Cosmopolitan magazine named the year of 2016 as the year in which “Periods went public”, while the end of the year was proclaimed an era of “Period Power”. On April 29 of the same year Newsweek, come out with the cover presenting a tampon with the headline “There Will Be Blood (Get Over It). The period Stigma is Hurting the Economy, Schools and the Environment” (Weiss-Wolf, 2017).

The social media has often been used as a strong medium to point to the taboo and create awareness. Many activities have taken place such as #embraceyourperiod, #endperiodshaming, #justtampon in order to create awareness of the stigma surrounding menstruation.

Celebrities were also active in this aspect. In the March of 2015, an artist Kiran Gandhi ran the London marathon while free bleeding. Although it received strong criticism, it also received ovations for pointing out the existing stigma in the society (figure 8).

Instagram poet Rupi Kaur had her pictures which involved menstrual blood removed from social media even 3 times. With online criticism of the actions of social media for supporting the taboo and stigma, the images have later been allowed.

The authorities have also started to recognize the issue. Many
countries today are removing the so-called Tampon Tax trying to make menstrual care more affordable to those in need. However, these measures have been taken only in a small part of the world, and do not necessarily solve the problem (Jericho, 2018).

There is still no global estimate of the percentage of women and girls who are not able to fully manage their periods, but small-scale research studies do show that a big percentage of women and girls in developing countries have difficulties accessing proper information, resources and a disposal system (PSI 2016).

Menstrual stigma and discomfort can inhibit women from moving freely and accessing needed services, according to the United Nations Population Fund. Not accessing menstrual products limits the opportunities of girls, as well. It affects their education and in the end can stop their economic contribution. If we look at certain countries where this is the case, we have more than half of a population which cannot contribute to the country economy. Rwanda, for example, has a loss of 115 million dollars annually to the national GDP due to the workdays missed due to menstruation. The problem is that menstrual care is not seen as health care. Menstrual products protect women from facing medical conditions. Certain critical situations such as menstrual hygiene and management in jails or for the homeless hasn’t even received any attention yet, even though these situations are life-threatening (Weiss-Wolf, 2017).

Menstruation is seen as a restriction, inferiority segment and finally a danger to women’s health. In the tribal times it brought women superiority, as it was believed that menstrual blood could connect women to Gods, but with the strong lead of men in the world it became a tool to put women down. Politically, menstruation was a reason to present women capable or less capable of a certain action (Karen Houppert, journalist). Many studies sponsored by government in the US in the last century have tried to use menstruation to present women less capable of education or work in comparison to men (Fabianova, 2009).

Today, there is still a requirement for greater actions from politics. President Barack Obama himself stated that the measures concerning menstruation were not addressed because there was a lack of women at the decision-making table (Weiss-Wolf, 2017). Whether or not that is true, the small history of menstruation proves how much more work is left in this field.

CONCLUSION

Menstruation is a globally stigmatized topic. The history of actions concerning menstruation is a very short one and is mostly orientated on the production of menstrual products. Menstruation has been given greater attention only in the recent years and mostly due to the rise of social media. The governments are removing the “tampon tax” in order to make menstrual products more available to women, but the problems seen in the developing countries are greater and require more efforts from different directions.

So how has it come to that? Where have the taboo and stigma even started? Many tie the menstrual taboo and stigma to religious practices, and in the next chapter the overview of the menstruation in different religions is introduced.
2.2. Menstruation and religions

Menstruation is seen through the aspects of fertility and motherhood, and distinctly associated with womanhood, which in itself creates distinction from men. Therefore, menstruation has always played a role in the way a woman has been perceived in the society and throughout different cultures (Sridhar, 2016).

Religion and rigid religious and traditional practices are seen by many as the roots of the existing attitudes and stigma on menstruation. Each religion has certain practices and restrictions to the daily functioning and specifically on the relationships of women with others. In order to see the differences between religions and to find overlaps, here is a quick overview of each religion.

CHRISTIANITY

Genesis 3:16. As punishment for succumbing to temptation and eating the forbidden fruit, Eve and her descendants are explicitly burdened with the suffering of childbearing.

Even though Christians have less extreme practices than other religions, they have a history of taboos. The menstruating woman was believed to be dangerous and women faced social restrictions. British Medical Journal, in 1878 claimed that a menstruating woman would cause bacon to putrefy (Guterman et al., 2007).

Even though most Christians do not follow specific rituals or practices related to menstruation, Russian Orthodox Christians have to follow menstrual taboos. Menstruating women cannot attend church services, cannot have any contact with men or touch raw or fresh food. In some places women have to seclude to a menstruating hut during the time of her period, too (Guterman et al., 2007).

As in other religions, Christian menstruating women should avoid intercourse during menstruation (Bhartiya, 2013).

JUDAISM

Leviticus 15:19 and 24 "If a woman has an emission, and her emission in her flesh is blood, she shall be seven days in her (menstrual) separation, and anyone who touches her shall be tamei (interpreted as ritually unclean commonly by people) until evening...And if any man lie with her at all and her (menstrual) separation will be upon him, he will be tamei for seven days...."

Jewish code of law, Halakha, with it's strict rules dictates every aspect of the daily lives of the Jews. It prohibits physical contact between partners during the bleeding days and 7 days thereafter. The entire period of time, from the start of menstruation to the end of the end of seven clean days, when the women bathes herself in the ritual bath, is called the 'Niddah period; or the ritually unclean period (Bhartiya, 2013). The woman becomes again 'ritually clean' through the ritual bath called Mikvah. The "Laws of Family Purity" have been created due to the view of menstrual blood being considered as "ritually unclean" (Guterman, 2007).

ISLAM

The Quran, 2:222 “They ask you about menstruation. Say, 'It is an impurity, so keep away from women during it and do not approach them until they are cleansed; when they are cleansed you may approach them as God has ordained...”

The Islamic laws sees menstruating women unclean for religious functions only. Just as Orthodox Christians, women may not enter any shrine or mosque, or perform religious performances. During Ramadan, a menstruating woman cannot fast or pray. They also are not allowed to touch or recite the Quran. As in any other religion, they are not allowed to conduct sexual intercourse for seven full days, starting with the beginning of the bleeding. Like Jews, the menstruating woman must complete the ritual of washing in order to become clean again. Only after washing can she perform prayers and enter the mosque again(Guterman et al., 2007.)

BUDDHIMS

Buddhism is the only religion which views menstruation as “a natural physical excretion that women have to go through on a monthly basis, nothing more or less”.

But through years, Hindu beliefs have been transferred and in filtered into the Buddhist culture. As like in other religions, women are not allowed to take part in practices or rituals, cannot have contact with priests and they must avoid temples.
It is believed that women lose Qi, the life force or spiritual energy that is a part of everything that exists, during their menstruation. Only by having their body controlled they can prove to be able to become enlightened (Guterman et al., 2007).

OTHER

There are religions and belief systems that celebrate menstruation. In the South of India, Bali, Bangladesh, and in South Africa there are ceremonies which celebrate menstruation, with families and friends included. Today it has also become modern to celebrate menstruation in some American families, as well (Weiss-Wolf, 2017).

CONCLUSION

Religions overlap in the following aspects: they see menstruating women as impure, they all restrict intercourse during the period, they exclude women from religious services, and can enforce isolation.

This graduation project focuses on the context of India. In the next chapter the overview of Hinduism and its effect on menstruation, along with other factors of the context of India, is presented.
Phase 1: The taboo in India

- Misconception/misinterpretation of the Vedas
- Tradition and passed on practices
- Patriarchy
- Gender & relationships
- Hierarchy & family ties
- Lack of education
- Society view & stigma

*Figure 10: The constraints on menstruation in India (Own Ill., 2019.)*
2.2. The Indian Context

Menstruation is not an openly discussed topic in most of the world

Thakur et al., 2014.

During the course of Design for Emerging Markets, we were shocked to learn of the problems which menstruation can cause for women. But by digging deeper into the topic we discovered other underlying issues that can influence the current state, such as the taboo and the created stigma which have often been disregarded as a point of focus for creating a change (Lieberman, 2018).

Such negative image of menstruation has been created in the society for centuries through various influences - religions, myths created though the lack of knowledge and fear, as well as rigid traditional upbringing. Just an example of the extent of the existing taboo and stigma is the fact that more than 5000 euphemisms for menstruation exist in India today (Druet, 2017). It is referred to as the curse, the 3 day disease, or being “down” (taken from interviews). It has numerous negative connotations, but the most common one is that it is seen as unclean or dirty (Omidvar & Begum, 2011).

In my research, I tried to get to know as much as possible and understand all the aspects that can affect the taboo and the stigma that surrounds menstruation. So far I have found the following constraints which are presented in the figure 10. These constraints were collected and defined through desk research and literature research and later confirmed by experts and participants. In the following pages the literature and desk research is presented.
MENSTRUATION AND HINDUISM

Indian women face more difficulties during their menstruation than the women of the western world. During the work in the course of Design for Emerging Markets we came to find many myths and taboo practices that women in India are expected to follow. However, it was also presented that the practices were originally intended to keep women safe during the period of menstruation. Therefore, it was necessary to find the roots of the problems.

One of the important findings which comes out of the thorough reading of Hindu scriptures is that menstruation is seen as 'Aschaucha' and women who have received their periods have entered a temporary period (three days to be precise) of ritual impurity. Though, the rough meaning of Aschaucha is uncleanliness, impurity, etc. the full meaning of the term goes beyond the normal assumptions associated with these terms. To fully understand the term and the way it is connected to menstruation, we must first understand the Hindu view of the concept of an Individual and the concept of Shaucha (purity) and Ashaucha (impurity) associated with such individual.

Hinduism perceives an Individual as a having five layers of individuality. In other words, each person has five bodies that act as five sheaths ('Pancha-Koshas') that cover his/her innermost Self (Atman). In day to day life, a person is mostly active at his physical body, mind. And as menstruation removes any impurity correlated with the 'flow of Raja.' Raja represents the flow of excess Rajasic energy, i.e. Prana Shakti. Our blood carries Prana-shakti throughout our physical body. Rajas represents thoughts and emotions, like anger, frustration, uneasiness, irritation, mood-swings, etc. to which women through their menstruation get more exposed to.

Aschaucha, however, is as much about impurity as it represents competency to perform an action, specifically a religious action. When it comes to menstruation, Aschaucha does not only represent an unhygienic conditions at a physical level, but is also noted by the heightened Rajasic state of the menstruating women in her physical, her vital and mental sheaths. This specific Rajasic state then makes: and how this heightened Rajasic state makes:

1) Certain actions unsuitable for menstruating women
2) Menstruating women unsuitable for certain actions.

But these restrictions are not only meant for women. Men as well can be associated with Aschaucha under certain conditions (ex. death of relatives). Therefore, when referring to menstruation as Ashaucha, it is not degrading for women nor presenting them inferior to men. Menstruation is a temporary state of impurity that actually purifies women and makes them remain ever pure.

An important and often overlooked part of the Hindu scriptures is the one where menstruation is seen as a process of austerity(Tapas) and self-purification. This notion is very important, because without understanding this, one would most likely end up with a distorted view regarding the Hindu conception of menstruation.

In other words, the aim of tapas is not only to help the individual to free himself/herself from some of the Adharmas committed in the past, but it helps the individual to detach and gain control over his/her senses and support towards the ultimate Moksha. Thus, menstruation allows women to practice austerity and obtain self-purification by developing detachment and better control over the mind and the senses to free women from Adharmas.

Hindu scriptures even recognize the process of menstruation itself as a process of austerity and self-purification. The reasoning behind segregation of menstruating women is that menstruation is seen as a Tapas in itself, and Tapas is always best when practiced in solitude. Shaucha or Purification, as mentioned, is not restricted to the physical body, but also to the vital body and the mind. And as menstruation removes any impurity correlated with each of the layers of Individuality, it therefore purifies the body by removing the menstrual fluid with blood, cervical mucus, secretions and endometrial tissue, etc. Therefore, menstruation despite associated with Aschaucha, is as well a self-purifying process.

Men are not able to undergo this self-purifying process as they do.

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1 SHAUCHA
literally means purity, cleanliness and clearness. It refers to purity of mind, speech and body. (source: wikipedia)

2 ASHAUCHA
opposite to Shaucha, it is a state of impurity, dirtiness, foulness. source: wisdomilib

3 PANCHA-KOSHAS
(Sanskrit pancha - five, kosh - sheath) the five sheaths or layers around the human soul, Atman. (the food sheath, breath sheath, the mind sheath, the intellect sheath, the bliss sheath). (source: yogapedia)

4 ATMAN
(Sanskrit: ‘self,” “breath”) is a Sanskrit word that means inner self or soul source: wikipedia
not menstruate. Instead, the scriptures suggest a variety of rules and ritual practices (like Samsara’s, Mantra Japa, Sandhopsana) for men to attain purity and to free themselves from the Adharmic actions.

“But women need not perform any of these spiritual activities to attain purity. They become pure simply by undergoing menstruation. What comes by special effort to men, comes as part of a natural process to women.”

Sridhar, 2016

This unique aspect of menstruation and the privilege it provides exclusively for women is regularly pointed out in the Hindu scriptures. Chandamaharoshana-tantra states: “A man should regard every substance discharged from a woman’s body as pure and should be willing to touch it and ingest it if requested to do so.”

In other words, menstruation, though brings women to the temporary impurity (Ashaucha), does not make them impure.

Hindu scriptures bring a clear notion that menstruation is a privilege that helps women to remain pure in their body, mind and speech. The whole process is viewed as highly sacred and purifying in nature. Hinduism harmoniously incorporates various elements of Ashaucha, austerity, purification, rest, sacredness and celebration into the menstruation process and practices, and facilitates women to attain overall well-being.

PRACTICES

1. No sexual intercourse: Sexual intercourse is restricted during menstruation as for one, it can lead to inter-uterine death or a form of deformity of a child. And secondly, even if the contraceptives are used, there is no way to prevent the imbalance in the Doshas11 that results from the sexual intercourse during menstruation. Furthermore, as menstruation is seen as an austere moment and a process of self-purification, Brahmacharya (celibacy) must be practiced.

2. No running, exercises, and household activities: Menstruation should be a period of rest as it is a time of heightened Rajas and of sensitivie psycological condition. Therefore, avoidance of all physically tiring activities is strongly suggested. According to the Ayurvedic texts, excess physical activity can result in the imbalance of Doshas and can create adverse consequences on the health of women.

3. No bathing, combing, application of collyrium, body anointment and other self-adorning activities: These activities should be avoided during menstruation as one, austerity in itself demands that all sense-engaging activities like combing, application of collyrium, body anointment and massage, make-up, etc. are given up. Secondly, these activities could bring imbalance of Doshas and their repeated practice could have an adverse affect on the health of a woman.

4. Segregation: Although no Hindu text explicitly speaks about any segregation of women, we find examples such as menstruating huts for women in villages, being practiced. Certain doctrines of menstruation practices prescribed in texts require a certain degree of segregation to be implemented. Menstruating women are advised some degree of segregation during monthly periods as menstruation is both a period of rest and of austerity.

5. Restrictions related to food: During menstruation, the women’s digestive fire called as Jathara-Agni is very weak, and the condition is called as ‘Agni-mandya.’ The purpose of these restrictions is to protect the health of the menstruating women.

6. Restrictions related to performance of religious and spiritual activities, including visiting temples: The main reason behind this practice is the fact that menstruating women have entered a...
temporary phase of ritual Ashaucha with their menstruation. That makes them unsuitable to perform religious rituals. As well, Vashishta Dharma Sutras (5.6) ask menstruating women to “not touch fire”, which correlates to the practice of not cooking food, as well as not performing fire-ritual-worship during periods.

Hindu society may view women with a notion of temporary impurity (Aschachua) during their menstruation, but it is also a society which celebrates menstruation - celebration of the menarche, or Ritu Kala Samskara. This is a highly localized ceremony that is celebrated across India based on local customs and traditions.

Another celebration is the yearly festival of the menstruation of the Goddess Kamakhya in Assam. The sacredness of menstruation is also reinforced in the Tantric practice like Yoni Puja, which is not only carried out on the woman, but on her Yoni as well. Yoni is perceived as a symbol of Cosmic Yoni from which the entire universe has emerged. Menstrual blood is considered pure and sacred and plays a very important role in these rituals.

This entire chapter is taken from Sridhar (2016.) Views of Menstruation in Religions and Cultures around the world

CONCLUSION
This chapter has shown the positive view of menstruation that Hindu tradition holds. The old Vedic scriptures not only hold essence in protecting women, but they celebrate menstruation as a sacred time. These practices have been distored through years by mechanically following without understanding the meaning behind it, and today holds strong negative connotation.

How these practices have turned into myths can be read in the next chapter.

DHARMA
means 'duty', 'virtue', 'morality', even 'religion' and it refers to the power which upholds the universe and society. source: bbc.co.uk

ADHARMA
Adharma is the Sanskrit antonym of dharma. It means "that which is not in accord with the dharma". Connotations include discord, disharmony, unnaturalness, wrongness, evil, immorality, wickedness, and vice. source: wikipedia

MOKSHA
the transcendent state attained as a result of being released from the cycle of rebirth (the law of karma).

DOSHA
The doshas are biological energies found throughout the human body and mind. They govern all physical and mental processes and provide every living being with an individual blueprint for health and fulfillment. 3 doshas, vatta, pitta, kapha. source: eattasteheal
Figure 11. Man leaning on the wall of the temple in Assam with the representation of the goddess Kamakhya (Sood, 2019.)

Figure 12. Goddess Kamakhya in the form of Yoni (Sanskrit for vagina) (IndianSpice, 2016.)
The previous chapter described the practices concerning menstruation that have been carried out through Vedas. Such practices, whose intention was to protect the well-being of women, have today been distorted and presented as ‘forbidden practices/superstitions’ (Sridhar, 2016). While such practices vary across regions and families, here is a list of the collected taboo practices: (taken from FSG 2016, Guterman, 2007 and interviews)

- no entrance to the kitchen
- using of separate utensils
- sometimes prohibition of attendance to special events such as birthdays or weddings
- no entrance to the temple or the pooja room
- no touching of a specific foods, such as pickles
- no touching the flower Tulsi
- obligation to carry salt - helps fighting the evil
- obligation to carry a knife to combat the devil that might attack during menstruation
- no combing of hair
- carry a handkerchief when going out in the night
- restriction on using water sources and bathing in rivers and streams (Naulas)
- obligation to use specific clothes (often dirty or worn-out clothes)
- no touching of babies
- sleeping on the floor in the house, in a separate room, or outside the house
- no touching of the walls of the house

The practice that receives the biggest media attention is the segregation practice, and specifically in the menstrual huts. This practice, although nowadays more frequent in Nepal, can be seen even today in certain rural parts of India. During segregation, women are put in poor conditions, without water or electricity, which can sometimes lead to death (Shelton, 2019).

Menstrual practices had been followed blindly (taken from interviews), and passed from generation to generation, often leading to a cycle of poor hygiene (Majumdar, 2014). Mothers and grandmothers in the family had a specific influence in passing these practices and had a lead in the joint families (more on it in the chapter Hierarchy, patriarchy and family ties).

The most notorious misconception, which contributes to these practices, is that menstrual blood is seen as impure, which outcasts women from daily life activities and connections with others. The negative view of menstruation and public opposition to discussion on the subject, makes girls to hide their periods in the best way they can (Allen, Kaestle & Goldberg, 2011).

**CONCLUSION**

Women in India face many restrictions during their periods. There are many practices that women follow during their periods that have been created through years and are passed on from generation to generation. The practices vary through families and regions, and can vary from small iterations to daily routine to life threatening poor conditions such as the ones of menstrual huts.

Those practices and the secrecy around menstruation that forces women to hide their menstruation can lead to serious health issues, which is presented in the next chapter.
MENSTRUAL HEALTH IN INDIA

Even though menstruation is a natural process it has been linked to numerous misconceptions and practices, as has been mentioned in the previous chapter. Misconceptions and myth practices can lead to adverse health outcomes (Omidvar & Begum, 2011).

Some aspects of bad practices connected to menstrual health in India create serious problems. One of them is the poor menstrual hygiene related to product usage. Almost 88% of women and girls in India use homemade alternatives, such as an old cloth, rags, hay, sand or ash instead of regular sanitary products (USAID, 2014).

The most often used product in India is a piece of cloth (taken from interviews). The cloth is often used without proper washing, and sometimes is even shared between two or three women in the household (Majumdar, 2014).

Women rarely dry their cloths in the sunlight due to the taboos concerning menstruation (Majumdar, 2014). However, this repeated practice can lead to creation of micro-organisms and result in vaginal infections or sometimes even death. Poor personal hygiene results in gynaecological problems, and the ones that occur during menstruation have been reported very often (Omidvar & Begum, 2011).

The second problem with menstrual health are the poor conditions in which women conduct their hygiene and bad sanitation. There are 636 million Indians who lack toilets (Anand, 2014), and over 72% of rural people relieve themselves behind bushes, in fields, or by roadsides (Mondal, 2016). Due to the lack of toilets in their homes or public space, many women are forced to openly defecate and deal with their menstrual needs in public spaces. Besides the impact this causes to their health and dignity, there is an increased threat of sexual harassment, rape and other forms of violence (FSG 2016).

But the societal behaviour and the attitude towards menstruation has a cost, too. It has been shown that shame attached to the menstrual cycle can cause women not to report their issues on time, which can lead to infections, and sometimes even death (Majumdar, 2014.).

Discussion on the subject of menstruation has been a taboo even among planners and has managed to attract the attention of the Ministry of Health only in 2011 (Majumdar, 2014). Through the “Clean India” programme over the past decade there has been many efforts to build sanitation infrastructure from the side of the Indian government, donors and NGOs (FSG 2016).

However, the sanitation network that was built is often not used due to the existing behaviour, practices, social norms, and attitudes towards menstruation. Women fear leaving any track of blood if there is not enough water in the system. For example, 91% of girls in communities in Gujarat report staying away from flowing water during menstruation. (FSG 2016).

“It is the culture of silence and ignorance around the issue of menstruation that is behind unsafe menstrual hygiene practices,”

Anshu Gupta, founder of Goonj, the Delhi-based social enterprise addressing menstrual hygiene

Another aspect is education. To have proper practices to conduct safe menstrual hygiene management, women should have the knowledge of it. Girls rarely know about menstruation before their first period, causing their first experience to be a traumatic one (FSG, 2016). There is a negative view on certain products such as menstrual cups and tampons due to societal beliefs that a girl can lose her virginity (PSI, 2016). Women and girls may have a greater risk of infection if they don’t know how to properly use a product and conduct safe menstrual hygiene. That is why it is crucial to have proper education system to ensure menstrual health.

CONCLUSION

Women health is exposed to many risks due to various aspects around menstrual health like unsafe usage of menstrual products, lack of facilities and bad sanitation. Some of these issues are trying to be tackled by Government programmes, but the beliefs and the shame connected to menstruation can also cause great consequences to the health of women. Another aspect is the lack of proper education in order to ensure proper menstrual practices. This especially affects young girls as they often have no knowledge on menstruation prior to their menarche.

How the education system affects menstruation is described in the next chapter.
THE LACK OF EDUCATION

Cultural taboos can restrict students learning on topics of critical importance (Sorcar, Strauber, Loyalka, Kumar & Goldman, 2017.). When it comes to a question of well-being, such measures can be dangerous, as seen in the previous chapter.

Many studies have shown how about 70% girls have no knowledge of menstruation prior to their menstrarche(Misra, Upadhay, Sharma, Krishnan & Gupta, 2013), causing their first experience of a period to often be a traumatic one. A majority of them (62%) were unaware of the reason(s) for menstruation, (Misra et al., 2013), or had wrong information(Juyal, Kandapal, Semwal & Negi, 2012).

Most girls do not have constant access to education on the topics of puberty and menstruation, mostly since the Government does not hold a strict regulation on these subjects. Even when there is an existing program in schools, teachers find the topic embarrassing to discuss in a classroom; they are rarely trained, and consequently, they rarely teach it. (FSG, 2016). Even 80% of teachers believe that menstrual blood is impure (Reuters, 2018). One of the stronger cases of such incidence was when a professor in Chennai shamed a student, which led her to commit suicide (Reuters, 2017). From interviews with experts, I found that the beliefs of teachers on menstruation could be so negative that in some situations students were even asked to staple the section on menstruation to prohibit them from opening the content. Schools mostly outsource the education to NGOs who work in this field (FSG, 2016).

In both in-school and out-of-school programs, the curriculum focuses more on the practical aspects of managing menstruation (e.g., product use) while it rarely includes biological aspects and ignores psycho-social changes. From the later interviews with experts, I found that any correlation to sex is seen as a strong taboo and holds strong opposition in society. Menstruation is closely linked to reproductive health and therefore is considered a taboo subject in India along with sex-education. This is the reason why teaching focuses solely on practical elements of MHM rather than providing holistic education on menstruation (FSG, 2016).

Another reason why girls are unprepared for their menstruation is the time of education. On average, first periods occur around the age of twelve, but it is not unusual for a nine or ten-year-olds to receive their menarche nowadays. The reasons for this shift could come from environmental toxins, to childhood obesity or even family stress (Weiss-Wolf, 2017). However, education occurs in the grade of 8 and 9, indicating the necessary shift to be made in the educational system, to prepare girls to deal with the coming menarche.

Since many girls in India do not have access to proper education, they seek advice from older women. From studies, but also from the conducted interviews, I found that mothers were very often the first source of information on menstruation. The problem is that even 70% of mothers consider menstruation to be dirty (FSG, 2016). The perpetuation of cultural norms that stigmatize menstruation is a complex cultural process and restrictions are often enforced by women themselves (Mahon, Tripathy & Singh, 2015). Moreover, very often the information that mothers can give to daughters is limited. Many feel that their mothers are unable to meet their needs when it comes to supporting in the aspects of menstruation (Allen et al., 2011).

Studies showed that the information received on menstruation was considered inadequate. Inadequate information means that they had either received very little information that had any practical value or that they were misinformed. (Thakur et al., 2014)

CONCLUSION

When it comes to societal view it is unfortunate to find that the education on the subject on puberty and menstruation is lacking for the half of the population. To this date, there are rare occasions of education on menstruation of both boys and girls. None of the interviewed male members received education on menstruation in their schools. Co-ed puberty curricula, however, could generate understanding between boys and girls and encourage them to adopt respectful interpersonal behaviours (Mahon et al., 2015). Comprehensive education on puberty and menstruation in an enormous, complex, culturally layered society of India, burdened with so many rigid taboos related to the topic, is of outstanding importance. Education on all levels could lead to gradual but certain change in perception and solving of the problem.
GENDER INEQUALITY

Women and girls make up half of India’s population. Yet, gender inequality still remains a serious issue in India as it influences women and girls’ education, health, and workforce participation (FSG, 2016).

Even though the state of gender inequality and its impact on women and girls differs significantly across states and regions in India, the data shows clear differences between genders: literacy rates for women (55%) are significantly worse than those for men (78%); 47% of adolescent girls in India are underweight and women in India earn 56% of what their male colleagues earn for performing the same work. In 2015 United National Development Program’s Human Development Report, India ranks 130th out of 155 countries in the Gender Inequality Index (GII), trailing behind lesser developed Asian countries such as Bangladesh and Pakistan which rank 111th and 121st, respectively (Kishor & Gupta, 2009).

“Although India is a political democracy, notions of complete equality are seldom evident in daily life.”


Discriminatory gender social norms are rooted in the beliefs and perceptions of what it means to be male and female. Those beliefs support the perception of women as inferior to men. In India, the discrimination against women starts at birth, with child mortality being 61% higher for girls than boys (FSG, 2016.). The strong preference for boys resulted in the enforcement of a law in 1994, which makes it illegal to reveal the sex of the unborn child. Still, a US-based NGO Invisible Girl Project estimates that five to seven million sex-selective abortions are still carried out in India every year(Huizhong, 2017).

“They would see a daughter as a liability. A daughter means you have to spend. Sons are called blank checks.”

Huizhong, 2017.

It is expected of a girl to help with domestic chores, to learn to undertake household responsibilities, and to get prepared for marriage. Any alternative roles are rarely seen for girls, which accounts for lower opportunities given to girls to receive education beyond the primary level. This results in early marriages of girls. Almost 50% of young women aged 20–24 were married as children, i.e., before the age of 18, whereas such rates for men were significantly lower 10%. Early marriage is more common in rural areas than in urban areas and is more common in poorer households.

Unequal power relations between men and women result in women’s and girls’ voices not being heard in decision-making within households, communities, and development programmes (FSG 2016).

Gender inequality affecting the view of women can also be connected to the social view of menstruation. Many status differences in Indian society are expressed in terms of purity and pollution, where purity is connected to those in power and of higher caste, and pollution to those of lower caste and often in poverty (Jacobson, 2004). As mentioned earlier (in chapter 2.2., section Hinduism and religion), menstruation is seen as impure, and therefore women in India are forever viewed inferior to men. With menarche, restrictions enter the life of girls which affect their mobility and agency. Cultural norms that surround menstruation stem from the existing gender inequality and compromise women’s ability to manage menstruation hygienically and with dignity. The discriminations are not related to level of income or education, but are prevalent (FSG, 2016).

CONCLUSION

The gender inequality in India affects women’s lives from birth, as a boy child is favoured over a girl child. Women’s chances to be successful in the society are significantly lower than men’s. Women should accept their place in home, take care of the household, and accept that they are not supposed to get educated or realize their potential. Such gender discrimination can be directly tied to the way menstruation is seen. Purity is an important aspect of the position in society and with menstruation being societally seen as impure, women are automatically inferior to men.

The inequality and the inferior position of women is also placed inside the family home. How girls are affected by the family ties and what is her relation to men is further explained in the following chapter.
HIERARCHY, PATRIARCHY & FAMILY TIES

Through interviews in the elective course I realized how important the family is for the life of Indians, and how strong the influence of family ties can be on Indian women. They impact the life of women and consequently their periods.

An Indian family is organized according to the hierarchy. In an Indian family it is taught to accept the authority of those above them in hierarchy. Men are dominating, and they outrank women of similar age, and the senior relatives outrank the junior relatives. The head of the family is the eldest male, while his wife looks after her daughters-in-law, where the youngest is on the bottom of the authority (Jacobson, 2014).

“You are brought up like that. If you see your mother from a young age willingly sit in a corner every month saying she is impure and do not touch me..(of course you will think like that).”

taken from an interview

One of the aspects pervading Indian life is social interdependence. People with birth are connected to groups —families, clans, sub-castes, castes, and religious communities—to which they feel deeply connected. The joint family is highly valued and often consists of several generations that live, work, eat and worship together. After marriage a wife usually moves into the husband’s home, where she resides along with his many relatives. The transition can be a difficult one, for many young wives (Jacobson, 2004), especially since, in the marital home, a young wife stands at the bottom of both the gender and generational hierarchy of the family (Allendorf, 2013).

Indian families often share resources and affect decision making across households, especially when they live nearby (Allendorf, 2013). Today, many Indians live in nuclear families (a couple with their unmarried children), but still keep a strong network of kinship ties by residing often in the neighbours of their relatives (Jacobson, 2004). Thus, even women living in a nuclear family can be affected by the patrilocal extended family (Allendorf, 2013.).

Castes existed for centuries, but in the modern era they were severely criticized and underwent significant change. They are now legally and socially unacceptable and it is against the law to openly promote any caste’s superiority or inferiority. However, although illegal, their influence is still felt in everyday life, however unpronounced and invisible.

Castes membership is achieved by birth. Castes are ranked, named, and endogamous groups. There are rules to be followed when a member of a caste and it touches the marriage, the diet, the dress code. Within castes, explicit standards are maintained. Rules of marriage, diet, dress, occupation, and other behaviours are imposed, often by a caste council (panchayat). Infringements can be punished by fines and temporary or permanent out-casting.

In the rural areas, the lower caste still suffers from the effects of this system, through landlessness, unemployment, and discriminatory practices. In the cities, however, the traditional behaviour around castes and the system is fading rapidly. Intercaste marriages are occurring more and more, and the previous correlations between castes and certain occupations are disappearing. Traditional caste hierarchies are weak in the cities, but the ties are still important, especially since many jobs are made through personal connections, family and friends.

“Joint families are valued also as a benefit for the economic status and for a greater quality of life. Studies tried to prove the benefit of such family structures, however there is a need for further research of the impact the patrilocal families can have on the mental health of young women, especially the effect of stress and possible depression. Moreover, daughters-in-law usually lack the power over family decisions and their own mobility, which can affect the mental health of a woman (Allendorf, 2013).”

When it comes to menstrual health or the topic of menstruation in families, it is a subject that is not discussed, as I found in interviews. Parents often rely on schools providing education on the subject, but as seen in the previous chapter, this results in gaps in knowledge. Women in families pass on the old practices, which are often not adequate, but girls usually just leave the topic with no further questions (taken from interviews). Some young women feel uncomfortable asserting their needs out of a desire to be obedient (Allendorf, 2013).

It is also hard to start a conversation on menstruation in family due to myths, prejudices and a general reluctance to discuss the subject between genders (Allendorf, 2013). This discomfort can even prevent girls from using facilities during their menstruation. “How can I wash blood in the toilet? The drain that leads out is not covered. My father and brothers are in the courtyard” (Mahon et al., 2015).

Most men do not know about the normal physiology of menstru-
ation, such as the menstrual cycle. A study conducted in Uttar has shown that only 22% percent of the participants know when is the fertile period in the menstrual cycle of a woman (Mahon et al., 2015). It is important to teach boys about menstruation as it affects their understanding of biology and reproduction and affects the social and cultural ideologies of gendered relationships (Allen et al., 2011).

India is a patriarchal society where men have greater power in decision-making and therefore could contribute to the improvement of the position of women and the change in perception of menstruation if they got involved (Mahon et al., 2015.).

Getting men on board and teaching them about menstruation could change the way girls view themselves, as well. A study conducted in Uttar Pradesh, which focused on educating boys and men on menstruation, proved to reduce shame and embarrassment and increase positive views in girls about themselves. (Mahon et al., 2015.)

CONCLUSION

In the patriarchal society of India, the woman is affected by family ties in which she is positioned at the bottom. The joint families, still numerous and valued in India, on one hand have a great economic benefit but, on the other, could have an impact on the mental health of women. Even when living in a nuclear family, the importance of kinships can affect the freedom of women. With menstruation in family, women feel uncomfortable to assert their needs and therefore follow what they are told. Men are not educated on the subject and therefore cannot fully support women. But to enhance the well-being of girls, men should be involved and should be taught on the subject as they hold the decision-making power in the house.
CURRENT ACTIONS

After going deeper into the context of India, it was important also to find out how the situation concerning menstruation had been dealt with so far.

In the recent years there were attempts to solve the issue of menstruation and menstrual hygiene.

Arunachalam Muruganantham, known as India’s menstrual man, has been a pioneer in bringing the taboo of menstruation out in the open. Named as one of the Time’s 100 most influential people of 2014, so far he has devoted around 20 years of his life to combat the period problem in India. Mr. Muruganantham was famed for inventing a low-cost sanitary napkin production machine after seeing what his newlywed wife had to go through during her periods. His story and the obstacles towards his success portray the society stand with menstrual issues. Since his invention he sold his machine to villages while also providing jobs for underprivileged women (Jalan, 2018).

Mr. Muruganantham’s story became widely known in the year of 2018 with the movie "Padman", starring India’s famous actor Akshay Kumar. As found out from the interviews at the course of Design for the Emerging Markets, Bollywood has a strong effect. The statement has been proven correct with this movie at least - it has been banned in Pakistan for “ruining Islamic traditions, history and culture" (Lodhi, 2018). It has stirred a lot of opposition, but also a lot of reactions and thoughts.

Another action in the media which has been combating the taboos is the awarded commercial for a sanitary pad brand Whisper, called “Touch the pickle”. The funny commercial which won the Cannes Grand Prix for the gender equality, encourages young girls and women to proudly let go of the taboos and myth practices.

The most recent action on menstruation has been the Oscar winner, the short documentary movie “Period.End of Sentence". Despite being criticized for exposure and discomfort it brought to girls in the movie (Joseph, 2019), the documentary brought global attention to the stigma and relating issues many women in India and neighbouring countries go through.

In the fight against the taboo of menstruation in India, it is hard not to mention Menstrupedia. Menstrupedia - a friendly guide to healthy periods is a comic book that aims to educate people on menstruation. The organization aims to destroy the myths and to educate on the biological process. The comic book has been used today in over 6000 schools and by 120 NGOs reaching over 250,000 girls. Menstrupedia also holds a website and a series of blogs and a YouTube channel where people can check information which is scientifically supervised.

Figure 15. Arunanchalam Murunganatham with the low-cost sanitary napkin production machine (OhFact, 2016.)

Many NGOs also create public events to spread awareness around the taboo. One of the such is the Menstrual Hygiene Day, organized by the global organization called Wash United. Menstrual Hygiene Day, the 28th May, is celebrated around the globe in over 70 countries. The event includes exhibitions, workshops, educational events, concerts, product donations and more. It is a platform to connect people globally and virtually, but also to offer women safe space to get freely engaged into the subject that concerns their health.

Indian government has addressed the issue around menstruation and has created activities to tackle the issue under the SBM programme (“Clean India”). The programme recognized the situation around menstruation as a part of sanitation and waste and addresses it mostly in the WASH sector. The programme intends to educate women, specifically young girls, and provide proper water and hygiene sanitation infrastructure, menstrual products and access to safe disposal.

Another more recent action by the government is the removal of the additional tax on the production of sanitary napkins in June 2018, which resulted in creating a larger market. Many NGOs are working on bringing menstrual products to those in need - those who either do not live in big cities or cannot afford sanitary napkins. Organizations include GiveHer5, Goonj, Saral Designs, Aakar Innovations, Binti and many others. According to India's National Family Health Survey, more than 40% of Indian women aged 15 to 24 do not have access to sanitary products during their period (Iyengar, 2018). Many of these organizations, along with other NGOs, provide menstrual hygiene management education in schools and at public activities, to educate girls on how to properly use the products and manage their periods safely.

However, there has been a calling for another direction and actions to tackle more underlying problems when battling for the menstrual health. Many studies have shown that just putting
products on the shelves and promoting them is not enough (Psi.org, 2018). A lot of attention was paid to supplying products, while more efforts should be directed to the underlying problems such as stigma and the lack of education (Lieberman, 2018). Because of shame and discomfort, many people in India are reluctant to talk about menstruation and ask questions.

“It is an issue that has been under the WASH sector leadership for many years, but the sector alone cannot address the gender-based discrimination and stigma issues that continue to perpetuate.”

Lisa Schechtman, the director of policy and advocacy at the NGO WaterAid America.

At the high political forum which took place at the United Nations in July 2018, the development sector was criticized for “wanting quick fixes”. Inga Winkler, a lecturer at human rights at Columbia University, stated that “reality is so much more complex and without addressing that we will not see real change” (Lieberman, 2018).

That is why I have decided to focus on the aspect of the taboo of menstruation and its effect on the well-being of women in my project.
2.3. Conclusion

After getting inspired and getting an overview of the problem of menstruation in the course of Design for the Emerging Markets, there was a need to have a deeper understanding of the context of India and its effect on women and their menstruation in order to create a design intervention to enable discussion in the family.

Firstly, in order to understand the context of India fully, I wanted to understand how it differs from the rest of the world. I created a historic overview of menstruation perception (chapter 2.1.) and the position of menstruation in the major religions (chapter 2.2.). It was clear that there was an existing stigma and taboo around menstruation worldwide, and only recently has it received attention, especially with the help of the media. All major religions view women as dirty and impure, and restrict them from entering temples, prohibit intercourses and so on.

To design for India, I wanted to understand where the taboo of menstruation came from. Even though many blame Hinduism for the position of menstruation in India today, I found that it was actually the false understanding of the Hindu writings at stake. The intention of those practices was only the protection of women and their well-being (page 34). The view of “impurity” or “dirty” was only the misinterpretation of the writings, where actually it is said, to quote, “women are forever pure” and menstruation was portrayed as “sacred”.

The taboo practices were mechanically followed for years without understanding their purpose. This created many health issues for girls (page 39), as the practices were often unhygienic and could cause infections. The stigma and the taboo were not helping as the shame they caused left girls hiding their menstruation.

Very often girls were not properly educated (page 40) on how to conduct proper menstrual hygiene. Families left the education on menstruation to be done by the schools to avoid the discomfort of discussion. This was worsened by the Government which had no strict regulations about the education on menstruation and the teachers were free to decide on the way and the amount they wished to teach. Teachers often had negative views on menstruation themselves, which affected the experience of girls, too. This led girls to ask their mothers who then passed on the old myth practices.

Men, on the other hand, were not taught about menstruation. In the interviews we found that boys had only got some information about menstruation from their partners, and the extent of it also depended on how much parents wished to share. Menstruation is taught to be a private event and not to be discussed, especially not with men. However, the low knowledge level of menstruation among men had a great effect on the well-being of women. In the elective course we found that India was a patriarchal country with certain behaviours around menstruation which were specific to the Indian society.

Therefore, it was important to understand the structure and functioning of the Indian society to understand the position that women in India held. There is a clear gender inequality in India and it affects women in many ways (page 41). Until puberty, women are equal to men, but with menarche, women start facing restrictions in their lives. In a family, women are on the bottom of the hierarchy and expected to follow the practices and behaviours ordered by the elderly family members, especially when living in a joint family (page 42). This specifically refers to menstrual practices and taboos. Men are the leaders in the family, often breadwinners, which means they have direct influence over the way women conduct their menstruation.

Lastly, it was important to see how the situation around menstruation was approached in India (page 44). Many NGOs and the Government efforts are trying to deal with this issue from the aspect of education and provision of sanitary pads. For a long time the issue had been under the WASH sector, but only recently the underlying issues such as shame, ignorance and the taboo have been recognized. A lot of efforts were put in breaking the silence and creating awareness through the usage of media, specifically.

..and what now?

After getting an entire picture around menstruation in India, the question was what can I do about this problem and what do I wish to focus on and how can I approach this problem. It is hard to break the system, and one graduation project cannot succeed in it either.

But it can create a discussion. And creating the discussion can be the small and the first step towards taking menstruation out of the light of stigma and taboo to enhance the well-being of girls.

The project focus and the taken approach is presented in the next chapter.
phase 2 To enable the discussion

1st Design Ideas

The family focus

THE GAME APPROACH

The menstruating woman in India

literature review
desk research
interviews with experts
After understanding the problem, the question was *how to approach the problem* and *what aspect to focus on*. The phase 2 - To enable the discussion, presents the focus this graduation project took. In this phase, presented are the design goal, the stakeholders, the research questions and the chosen approach to the problem.
Figure 17. An Indian family eating together (Bahri, 2017.)
THE FAMILY FOCUS

chapter 3

This chapter concludes on the effects of the taboo of menstruation on the well-being of women. The focus of this project is also presented with the target group. The chapter also describes who is all involved (the stakeholders) and concludes with the aim of the project.
Figure 18. Different aspects in the life of a woman in India which menstruation can affect (work, religion, economical issues, relationship with men, health, family, education, society, personal issues); (Own ill., 2018.)
3.1. The well-being of women

Menarche introduces girls to the cultural baggage of secrecy and shame, where they must hide and control the messiness that surrounds the evidence of their womanhood

Allen et al., 2011.

There are many difficulties women can face during their periods - from practical issues, relational experiences, and social issues to environmental issues, among some.

In the course of Design for the Emerging Markets, we found the following aspects of the life of women on which menstruation had an effect (figure 6). During my interviews, the visualization proved to synthesize most of them. The design might not influence all of these aspects at once, but could contribute to the way a woman would deal with those issues.

The current practices have an everyday effect on the life of women. Depending on the part of India in which they lived, it could be more severe to less severe (Kishor & Gupta, 2009).

The view on menstruating women was that they were dirty and impure, which influenced their daily activities and interactions with others. According to a 2016 analysis conducted by the Tata Institute of Social Sciences (TISS), only one in eight girls surveyed faced no restrictions at all during their periods (Eijk, Sivakami, Thakkar, et al., 2016).

“All the products in the world don’t address a lack of toilets and adequate sanitation or a community environment that doesn’t support or empower girls as they navigate puberty and periods.”


8 out of 10 girls surveyed by TISS said they weren’t allowed to enter religious shrines when they were menstruating; 5 in 10 girls said they could not touch people or food in the kitchen; and 2 in 10 said they were asked to sleep in a separate room. (Eijk et al., 2016). In certain parts, they were excluded from using water and sanitation facilities (FSG, 2016), soap, privacy, space and time to conduct their menses with dignity and in a proper hygienic matter (Sommer et al., 2016).

Such conditions to conduct menses affected not only their health but also their education and work (Weiss-Wolf 2017). Girls from all over India, between the age group of 12 and 18, missed at least five days of school every month during their menstrual cycle due to the lack of separate toilets (FSG, 2016), and even 23% of girls in India dropped out of school when they began menstruating (Garg & Anand, 2015).

It is important to deal with stigma, as discomfort with stigmatized topics can influence the quality of life by keeping certain aspects in the dark (IDEO, 2010).

There are very little efforts that give attention to the psychological effect of the taboo. There is a need to educate girls and prepare them for the psychological needs they might experience in life because of their menstruation (FSG, 2016.). There is a clear need for a more widespread education on menstruation and proper menstrual hygiene, but also for the awareness initiatives (Changoiwala, 2017) to bring around change on the subject.

The first step to putting these efforts in action is to have open and free of shame discussions around menstruation (Bhattacharjee, 2017) which involve both men and boys for the changes to appear in the entire society.
Figure 19. The stakeholders (Own ill., 2019.)
3.2. The project focus

Every day there is more than 800 million people menstruating (Weiss-Wolf, 2017), and still menstruation is not an openly discussed subject. The silence creates embarrassment and shame for girls, especially for those who haven’t started their period. In India, this number is about 113 million. (MDWS, 2015)

The subject around menstruation in India is complex, and the situation calls for a behaviour change (Lieberman, 2018). It would help, even if “the mind-sets just alter slightly” says Twin kle Khanna (Suri, 2018).

From the interviews in the elective course of Design for the Emerging Markets, we discovered that the behaviours and practices around menstruation are passed on. Adults are hard to influence with the set views and behaviours which have been created by generations and generations of followed practices. Creating an intervention in such conditions can bring opposition and suspicion (Weiss-Wolf, 2017). That is why this project focuses on younger generations as they are easier to influence since they are still in the age of forming. The focus became girls in puberty and their well-being.

“A boy’s entrance to adulthood (e.g., first ejaculation) is socially invisible, “but its invisibility reflects freedom rather than constraint” (Diorio & Munro, p. 360).”

Allen et al., 2011.

During the first menstruation, girls experience many negative emotions, most dominant ones being: shock (25%), fear (30%), anxiety (69%), guilt (22%), and frustration (22%) (FSG, 2016).

The way the girl sees menstruation and how she conducts her periods influences the way she conducts her life, as has been mentioned in the previous chapters. It can influence her health, her education, and her overall well-being.

The efforts on lowering the stigma and the taboo have so far been mostly in schools where girls interacted with friends, and mostly even of the same gender. For this project, I realized that for the behaviour change to happen, the design intervention needs to occur within a space of security and comfort. That is why I decided to make a space focus within the family home.

The reason for a family home lies in the fact that the family ties are important and have an impact on the behaviour of people, as has been mentioned in chapter 2.2. Families have a great impact on the lives of girls, and especially when it comes to menstruation. With a strong hierarchy and the need for obedience, girls tend to follow the practices they had been told by their elder female family members without questioning. However, these passed on practices are often very questionable, even unhygienic ones.

Male members, who have a great influence on women’s lives in the patriarchal context of India, are not educated on menstruation. Because of the public view of menstruation as women’s issue and for them to deal with, they do not get involved in the subject of menstruation either, out of a sign of respect to their privacy.

I thought that it would be beneficial for the girls and families interviewed, as well as for the project itself, to create the design intervention on menstruation within the family home, in such a way that it would affect the entire family at the same time. I believed that discussing the topic at the girl’s family home, with all the family members included, could not only reduce stress but bring comfort to the girl. I also thought this could contribute to her confidence and permanently lower the effect of the stigma and taboo outside of the house on her as well.

THE STAKEHOLDERS
There are a couple of stakeholders who are involved in girls’ experience of menstruation (figure 19). Here I have analysed how they influence the well-being of the girl.

EDUCATION
A school ambient has 2 situations for the girl, one is on the educational aspect and the second one is the relational aspect.

As mentioned in chapter 2.2., section the Lack of Education, girls have been getting their periods earlier in the recent years (Weiss-Wolf, 2017), but the educational system has not adapted to that shift. The subject is taught in grades of 8 and 9, which leaves the girls unprepared for their menarche. Besides, the curriculum is not mandated by the government and often teachers, affected by the taboos and stigmas provide inadequate and vague information to girls, leaving them with gaps in knowledge (Kishor & Gupta, 2009).

Another aspect that girls deal with at school is often shaming because of menstruation. Many girls feel fearful while menstruating as there is a feeling they are watched (Allen et al, 2011) and
the design should enable discussion between father and daughter

the fathers first encounter with menstruation is through his wife

- the father learns about his daughters experience through the mother
- the daughter needs to ask for money for the pads - stress

- the first connection for menstruation (interviews & research)
- the first source of myths and taboos
- the father learns about his daughters experience through the mother
- the daughter needs to ask for money for the pads - stress

- don’t know about menstruation unless learning by themselves
- no proper education in schools
- the feeling of left out and as it is not their place to ask
- due to low knowledge on the subject they do not ask the female members

- curious about menstruation

in order to be an obedient child, the daughter follows the myths

- stress
- shame
- anxiety
- discomfort

the conversation happens between the female members of the family

Figure 20. The visualization of the family and relationships around menstruation (Own ill., 2019.)
not rare are the mocking due to leakage on their skirts. The fear of being teased by boys affects girls’ self-esteem (Mahon et al., 2015).

**FRIENDS**

Friends can be a source of support to a menstruating girl and have been stated as the second or the third source of information for girls with menstruation (Omidvar & Begum, 2011).

Male friends can shame girls on menstruation, but it has been shown that that was due to their lack of knowledge, lack of understanding and lack of information (Mahon et al., 2015). However, boy's lack of knowledge on menstruation and general discomfort to start the conversation on the topic girls have also used as an exit card in certain situations (Allen et al., 2011). This all adds to a general standpoint that the discussion on menstruation should not to be made between genders.

**SOCIETY**

There is a stigma in the Indian society around menstruation, primarily because of seeing menstruation as impure as well as women who are menstruating. This view of impurity, taking its roots from the caste system and religion (chapter 2.2.), is one of many cases of religion being mechanically followed without understanding the bigger picture of it (Sridhar, 2016). The Indian society and the rigid religious ties are such that the practices haven't been questioned for centuries, but followed (taken from interviews). The societal view on menstruation unfortunately directly affects the behaviours and the opinion of the girls. Sadly, the general view on menstruation is that it is women's thing and should not be publicly discussed (Guterman et al., 2007).

**FAMILY**

Menstruation is also not a subject of discussion in family (taken from interviews). The discussion only appears between family members and the mother is the first connection for girls in menstruation (Thakur et al., 2014). Mothers and other female members of the family are also the ones who pass on the myths to girls (Majumdar, 2014), and girls, trying to be obedient, often follow those practices (taken from interviews).

Fathers don’t know about menstruation and learn about the practice through their partners. The experience of their daughters they get to know through the mother. The boys in the family are curious and they wish to know about menstruation, but they feel it is not their place to ask. Also, they are afraid they would get scolded if they do (taken from interviews).

Involving the male members of the family into discussion can relieve menstruation from the taboo, the darkness of ignorance and out of the cultural system and beliefs (Garg & Anand, 2015). Also, teaching boys about menstruation and making them understand the experiences of women is an investment in the future of the society. What boys get to learn can impact their attitude and relationship to women, their intimate relationships and reproductive decision making (Allen et al., 2011). This is even more important in India, in which patriarchal society men have an even greater effect on the lives of women as the decision makers of the house (Allendorf, 2013). If men start supporting women and creating a comfortable atmosphere for them, the well-being of women can get influenced for the better.

**THE TARGET GROUP**

The target group of this project was a middle or mid-high class family in an urban area. I chose this specific group for practical reasons i.e., for the ease of conducting the tests. Mid class or mid-high class family had a higher probability of fluency in English, which allowed me to conduct the tests myself and without a translator. The same reasoning was for the choice of an urban area instead of rural areas.

I chose nuclear family instead of joint families to avoid an influence of the elderly on the answers of the youngsters. The target for the families was to have a daughter of the ages from 9 to 18 as they are the years of the start of the menarche to the end of puberty.
The target relationship

dughter - father

Why is this important?

because men often don't get to discuss about it - so if they do, it can create a big shift in the view on menstruation!

Game

To ensure they are comfortable and the discussion is easy, light and fun

The family has to feel comfortable to ensure they are comfortable

because men often don't get to know about it

Why is this important?

Girls want to be prepared and feel connected to the first period

Girls should be prepared and feel connected to the first period

The family has to feel comfortable

There is no feeling of secrecy or shame

The first connection of the daughter and the father about menstruation is made prior to her experience and can enable the conversation to be more natural in the future

The daughter and the father get to learn together about the period

So there is no hush-hush or secrecy

This way, the entire family gets to encounter the aspects of menstruation including the brother and the father who usually don't get to know about it

The target relationship

daughter - father

The girl

This can enable the conversation to happen more naturally in the future

Phase 2: To enable the discussion

premenstrual girl

This way the first connection of the daughter and the father about menstruation is made prior to her experience and can enable the conversation to be more natural in the future.
The family focus

The premenstrual girl

- girls should be prepared to avoid the bad feelings and stress connected to the 1st period
- girls want for the menstruation to be seen as natural and biological

WHY IS THIS IMPORTANT?
- the girl can get comfort from discussing on an important experience she is going through inside her family house
- breaking the silence - breaking the stigma around it
- seeing it as natural!

FROM THE TESTS - the girl’s whose fathers have seen it completely biological, have seen it biological and natural too, without any taboo
- that is why it is important to create discussion between the whole family!!

WHY IS THIS IMPORTANT?
- the girl can get comfort from discussing on an important experience she is going through inside her family house
- breaking the silence - breaking the stigma around it
- seeing it as natural!

HOME
- family believes that the school is doing the proper education on the subject
- the family doesn’t openly discuss the topic among themselves

SCHOOL
- poor education
- happens in the 8th and 9th grade but girls get their periods sooner (even from 6th)

only mother-daughter after the daughter gets the period

how to get the family to talk about it?

she should receive information about it

all together

poor education

- happens in the 8th and 9th grade but girls get their periods sooner (even from 6th)

only mother-daughter after the daughter gets the period

how to get the family to talk about it?

FROM THE TESTS - the girl’s whose fathers have seen it completely biological, have seen it biological and natural too, without any taboo
- that is why it is important to create discussion between the whole family!!

The family focus
the design

Figure 21. the direction of the project (Own ill., 2019.)
3.3. The 3 aims

...**HOW?** By enabling an easier discussion between the daughter and the father (the design requirement)

...**to enhance the well-being of girls** by creating menstruation positive atmosphere in her home (**The aim of THE PROJECT**)

...in order **to create comfortable atmosphere for the discussion on menstruation in the home** (**The aim of THE DESIGN**)

**The aim of THE RESEARCH**.... is to investigate the effect of the taboo of menstruation in the house and the relationships of family members around the menstruation

The family setting is a setting of security. In order to improve the wellbeing of women, the taboo should be approached from a place where women feel safe and comfortable.

It is hard to change the mindest of the elder generations as they have already set mindset, behaviour and practices. Therefore, the focus is made on the younger generations. The young girl in India can experience a lot of stress and negative emotions as priorly mentioned. Therefore it is important for her to receive the necessary knowledge and support to deal with her menstruation. That is why the role of men is important. The experience of the young boy in the family and his relationships with the female members can tailor the relationship he is going to have in his future family.

This project is set into 3 aims where each one is set as a building material for the other one. Through the research which was done with literature and desk research as well as the interviews and tests, the findings were used to create the design in order to achieve the final aim, the aim of the project.
Figure 22. The period game (Gilsanaz & Murphy, 2019.)
After understanding the problem and creating a design goal, the question was how to approach the problem. This chapter presents how the taboo is approached in the project, what were the research questions and what was the direction taken to tackle the problem. The chapter finishes with the first ideas which were created prior to the trip to India.
Figure 23. The benefits of gamification for the discussion on menstruation (Own ill., 2019.)
4.1. Why gamification

“You can’t educate people without entertaining” Twinkle Khana, (Suri, 2018)

Menstruation is not a subject we speak about in the family (taken from interviews). Menstruation can create a lot of opposition. Even talking about menstruation and an effort to bring one’s awareness to it, can be seen as an act against religion (taken from interviews with companies).

The first idea to use gamification was intended solely as the material for conducting interviews, such as using a simple card set to test the knowledge of biology of menstruation. It was through the elective course of Experience and Persuasion that gamification was seen as a good tool for behaviour change.

Gamification can be used for providing certain information in a subtle and engaging way. The engaging and interactive aspect of the game can distract from the taboo and the stigma. Gamification can also be used for reducing stigmas (Sorcar et al., 2017). A new behaviour can be tailored through a repetitive exposure of certain information. For example, providing a game which involves speaking out or describing certain body parts can help in normalization and acceptance of the same. Games are interactive and can make people aware of their actions, as well as their behaviour towards the subjects.

Gamification also seemed fit for the purpose of this project as it is inclusive and therefore can bring together all the family members. As menstruation is often a topic of only the female members of the family, gamification can change that. In a natural way while playing games, the subject of menstruation can become a subject of discussion for all the family members.

Not only can it engage the family members to discuss it together, it can make the discussion easier. Games can offer a different tone to the subject. When designing for taboos and stigmas, the world famous design agency, IDEO, points out how it is important to bring a new way for people to engage with the topic, but at the same time to allow the freedom to decide how close or distant they wish to be from it (IDEO, 2010). Gamification can turn an uncomfortable and awkward discussion into a fun competition. The overview of the benefits can be seen in the figure 23.
- the parents have a tool to use for teaching about menstruation and puberty to their children - at the same time, they can also learn about it themselves

- the game involves male members in the family - they get to learn about the experiences of their female members

- the girl can get comfort from discussing on an important experience she is going through inside her family house - she can get relevant information on it in case the education is not adequate

- the daughter can feel more comfortable discussing or asking questions to her father after the game

- the brother gets to ask questions which he wants and gets to learn about it without feeling uncomfortable

- the mother gets another perspective on menstruation which can make her reflect and question the old practices she was taught during her upbringing

- the sister gets to receive information on the topic if it is lacking from education

Figure 24. The effect of gamification on each family member (Own ill., 2019.)
4.2. The impact of gamification on each family member

Gamification also holds a different purpose for each family member. (Figure 7)

Firstly, it has an effect on the **male members** as it gives them information on the subject. There is no proper and structured education on the subject of menstruation for men in India (taken from interviews). Not educating men also gives an image that it is a secretive subject but also a subject which is not the one for them to be involved in or to discuss. They mostly get to learn about menstruation through the experiences of their partners, and that is subjected to partner’s willingness and the amount they share.

**Boys** are very interested in the subject but feel uncomfortable to ask as if that is not their place to ask. This ends up with the male members unable to support the female members of the family due to the lack or limited understanding of their experiences (From tests and interviews).

**Mothers** are often the passers of the myths and the old practices. (FSG, 2016.). These practices are passed on from generation to generation and are often not questioned but solely stuck with (taken from interviews). The game can be useful to influence the mothers by giving other perspectives and also the knowledge on biology and correct and healthy practise.

Some of the parents wish to have the discussion on menstruation in order to teach their daughters, but find it too uncomfortable. This action is then left to the school, which represents home as a place where menstruation should not be spoken about. **The game** can bring that discussion - it can **serve as a tool for parents** to talk about menstruation with their children.

As for the **daughters**, the impact is different depending on the age. If the daughter is pre-menarche age (before the first period), this game can be useful in order to reduce the first shock and anxiety and bring the sense of calmness for the coming event. If the girl is post-menarche, the game can be used to learn more about the healthy practices and menstrual hygiene.

But most of all, **the game can serve as the first step to encourage the discussion in the family**, the ice breaker. After that, the girl can feel more comfortable to ask when she needs help or if she has questions, and she can turn to both parents.
4.3. The research questions

The research questions on the family household and the relationships in order to find the design space.

<table>
<thead>
<tr>
<th>BEHAVIOUR</th>
<th>How do men and women feel when talking about menstruation?</th>
<th>How are relationships in the family formed around menstruation?</th>
<th>What is the impact of the father when it comes to menstruation?</th>
</tr>
</thead>
<tbody>
<tr>
<td>KNOWLEDGE</td>
<td>What is the knowledge men and women receive on menstruation?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WELL-BEING</td>
<td>What are the aspects of well-being affected by the taboo?</td>
<td>What is their awareness around the existing taboos and their effect on women?</td>
<td>What do they wish for to change when it comes to menstruation and why?</td>
</tr>
<tr>
<td>DESIGN</td>
<td>How can design make people feel comfortable to talk about menstruation?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The aim of the research was to get an understanding of the view and behaviour towards menstruation within the family, the attitude of each member; to understand the size of the taboo and its impact on women, from her side and her family’s.

Understanding the behaviour within the family, I will get to understand the design space for the product; most importantly, how can the language be formed in the product, how to present the terms, (Sorcar et al., 2017), what sort of engagement do the girls feel most comfortable with, and to which extent can the taboos be exposed without getting opposition.

And finally, understand and specify the parts of women’s well-being being affected by the existing taboo in order to design for it.
4.4. Research through design (RtD)

The process used in this project is research through design (figure 25).

In RtD, design actions serve as a way to gain knowledge (Stappers & Giaccardi, 2014). The goal of the research time in India wasn’t just to generate the design but also to understand the context. Therefore, the products used for the testing were actually prototypes that served to question the experience of the design but also served to understand the taboo in the context.

The aim was to get honest reactions to the stigma and the taboo. RtD allows engagement into interactions through the design. Some of the interactions might have not been possible before, but the new design made them possible (Stappers & Giaccardi, 2014).

Therefore in order to get true answers and honest behaviour, the interaction with the game could provide rich information, and more essentially, the behaviour of people, further than the interviews could. That is why the tests were made in a way that they started with the game playing after which the interviews followed.

The important thing about stigma and the taboo is that it is rooted in the society, even though people might not be aware of it. That is where RtD process helped, as it brought the behaviours to the surface, and made people aware of their own actions and thoughts.

The games that were tested were designed with different types of interaction, differently provided information and different openness of the subject. The RtD process showed the behaviours and what was making people feel comfortable, or uncomfortable, which helped later to come up with the right design.

![Figure 25. Visualization of the research through design process (Own ill., 2019.)](image-url)
Figure 26. Visualization of the intent of the design (Own ill., 2019.)
4.5. The first design ideas

The first generated ideas were on how to educate the entire family on menstruation and how to create the understanding in the male members of the experiences of women. The forms and techniques used are the ones that are widely spread - the board game and the memory game, and storytelling. The education was created through the usage of informative booklets. The idea behind the booklet was to provide family members with information in the safety of their privacy, even after the game playing. Through the course of Design for Emerging Markets we found that people would check the information online, when they see that none was around, specifically male members. The understanding of the experience of menstruation was more intended for the brother/son. This idea came from the course of the Design for Emerging Markets, where we saw the importance of the role of the boy in the family when dealing with taboo in the society. The specific focus on the boy was made with the future in mind as one day he would have his own family and would have influence on the well-being of his wife and daughter.

1. BOARD GAME
The first idea was to use the style of board game as it is a familiar standard and can therefore ensure acceptance of the family. Design wise, it gives a lot of space for experimentation and can involve players in different ways - to cover different topics, to involve card questions, different paths within the board, and the usage of a booklet. With the board game the complexity of playing can vary, from a simple one to a more developed one. It also allows space and time for mastery in knowledge and game playing, making it interesting in different ways to players.

2. MEMORY GAME
The next idea was to use memory card set due to its compact size and ease of transferability. The other benefit of the memory game is that it is not time limited and can be played as long as the family wishes to, unlike the board game which has a created path which insinuates the duration of game playing. This way, the players have the control. The Memory Game was also combined with usage of booklets, with the booklet of questions and the booklet of answers.

3. STORY BOOK FOR THE BROther
The storytelling technique is an often used one in India, which can enhance the acceptance of the product. The idea came from a concept at the Design for Emerging Markets and the importance of the brother in the family, specifically with the future in mind. This concept was not used later, as the intention was to engage all family members at the same to create a discussion.
HOW HAS THE PROBLEM BEEN APPROACHED

1st Design Ideas

2nd design ideas

Work with Sukhbihava

4 DESIGNS

evaluation
iteration
content creation

The tests 1,2,3,4

The tests 7,8,9

Test 5

reflection
interviews
testing of the games

reflection
interviews
testing of the games

New focus

4 designs v2

4 designs v1

evaluation
interaction analysis
content creation

CHOSEN DIRECTION
MIX-A
BODY-MATCH

TESTING
GETTING INTO THE CONTEXT

After deciding on the approach and forming the research questions, the time was to get to the context. This phase presents all the steps made during my visit to India. The aim was to get as close as possible to the problem, understand it and experience it firsthand.

This phase is spread into 3 chapters - *Getting into the context* where the interviews with experts in Mumbai were made, *The 4 designs*, where the build up to the designs is explained, and finally the *Testing* of the 4 designs, where the tests with 9 families are presented together with the takeaways.
Figure 28. Research locations of the project in India (Own ill., 2019.)
In order to design for a problem and for a certain context, it is important to know how the problem had been approached. In this chapter, the conducted interviews with experts from Mumbai and Bangalore are presented. The aim was to hear their experiences with participants and their efforts. The first design ideas were also presented in order to receive feedback.
Figure 29. The interview with Dr. Priya Vora (above image) and with Livinguard/GiveHer (below image) (Own vis., 2019.)
5.1. How has the problem been approached

The first part of the research in India were the interviews with expert companies. The experts came from different fields but were in some way all involved in the work on menstruation. The interviews helped me to get deeper into the context through their experiences and to learn about the existing practices in the field.

THE SETUP OF INTERVIEWS

The interviews helped me to get to know better about all the activities they had done, their approaches and theories as well as their goals. Through the interviews, I also got to know about the taboo and its manifestations in the urban areas through personal stories and experiences. Also, I got to know about their experiences with their work, especially about how work on menstruation could provoke many oppositions. Finally, I received advice on the first design ideas. The images of the tests and the questions can be seen in Appendix 2. Aside from the companies working specifically on menstruation and the issues regarding menstruation, I interviewed the local gynaecologist and the manager of the New Delhi School of Design as well. Dr Priya Vora gave me the insights on the education conducted at schools, as well as her personal experiences with patients when it came to menstruation. The founding member of the Design Village helped me see the local practices in design concerning stigmas and taboos, as well as the products and practices that were favoured.

THE EXPERTS

Tata Trust, Mumbai, educational programmes on sanitary napkins in rural areas
Aakar Innovations, Mumbai, production of sanitary napkins and education on menstrual health
Livinguard / Giveher5, Mumbai, production of sanitary panties + donation company
Saral Designs, Mumbai, production of sanitary napkins
dr. Priya Vora, Mumbai, gynecologist
The Design Village, New Delhi, Interdisciplinary, Industry-Centric Institute
Boondh, Bangalore, production of menstrual cups, education and awareness work
Reap Benefit, Bangalore, production of menstrual cups, education and awareness work
The Fields of View, Bangalore, production of menstrual cups, education and awareness work

THE FINDINGS

The findings from the experts are organized based on the behaviour of people, the taboo, the well-being and the knowledge and are presented on the following pages.
**BEHAVIOUR**

Even today I know that my period doesn’t make me dirty, but my mom tells me it is not about what you think it’s about what the person to whose wedding you are going to thinks, or to a funeral and what are their wishes. So if you are fine with it and doing it on your own time it is ok and I am not stopping you from praying but if other people will have an issue with it just respect it. It becomes difficult because who is right and who is wrong in this scenario.

Livinguard

I think that in urban areas people really need to question things. .. People just don’t know. I feel there is so much need to just go out there and question people as to why are we doing what we are doing.

Tata Trust

And I believe it is a lot about questioning. A lot of people around us, our friends, they are very, ignorant about reality and about this topic.

Tata Trust

I don’t mind not getting involved but when you are discussing with people it more depends on with the sensitivity of the people on discussing it.

Livinguard

“This is how it always happens and I do not know when..this is how our culture so this is how it happens and we cannot change our tradition. And we have gone through it so you are supposed to go through it.”

Saral Designs

I think it has to do with broadly cultural thing. Obedience is – the parents praise you if you are following what you are told. You do that and you are considered as an ideal child.

Saral Designs

**THE TABOO**

I think purity and impurity has not been written in scriptures but that most of it has been made because of patriarchy.

Saral Designs

So we actually have cases when mothers brought their daughter in law and she is like ‘you teach her, she is in that age and she really needs to know. But I am going. But you teach her it is important for her.’

Tata Trust

In urban areas it can be as bad if the families are conservative. It can be very difficult because we went to a conscious school and we spoke about how traditionally back thousands of years ago it was physically demanding and women couldn’t do it. So to give them the break women should be alone and rest. They were said don’t eat pickles so you don’t have water detention. And they got passed on generation to generation and it became a rule than actual freedom. So what we consider dirty and impure is really just a perversion of what was done in case of safe caring woman’s health and wellbeing.

Livinguard

But I think overall a realization is how men need to understand a period, a girl never can ask her father about the opinion because it is hard; the father needs to understand about the period in order to ask him. And that she doesn’t have to lie about it.

Livinguard

In order to enable discussion with fathers, they need to learn first. Should the games be educative?

AHA! moments

If children just follow what parents tell them(in this case the mother), it is then very important to educate the parents so they can pass on the right practices.
WELL-BEING

Biggest one in India is that no matter how rich or pure you are you cannot go to temples and even for funerals.
Livinguard

The big problem is a temple thing. And my mother says just don’t tell anyone but that is just...not addressing the thing. And the men find it dirty. But women find it dirty too. And that is a bigger problem. It has multiple levels.
New Delhi School of Design

The current behaviour is completely bad. Normalcy is not just a societal change but also the change the woman needs to accept herself.
Tata Trust

On the personal level I would say that I want the society to be open about it. I started having conversations about sexuality and menstruation with my male friends and they started opening up. And that is what I want as that will help them understand their families.
Saral Designs

It is not dirty, it is talking about biology. Its something to sit and talks with your father so that he becomes more sensitive to how normal it is then there will not be giggling in class.
Livinguard

KNOWLEDGE

But a lot of my friends weren’t taught anything. Just the basics. .... In other schools you tend to have the splitting of the class.
And boys teach only about the penis and girls about the vagina and then bring them together. So you have boys pointing and laughing. And they are probably not paying attention to the days of the cycle or what exactly is going on. So when you ask a boy how often you get the period and he is told like “oh once a year?” We learned about sperm and everything so why can’t they learn about female?
Livinguard

Education awareness of the problems(is the solution). It should be seen as a part of growing up, a part of productive phase, you should make person aware of that.
dr.Priya Vora

First part is education. There is also this comic book, but there is also this TV show that brought in menstruation, and there is Padman. It can be a game which so normally comes in. The more normal it becomes to say menstruation or period.
Livinguard

Good way is to use the game. The repetition of the word menstruation could help? How can I include that in the games and make it comfortable?

If people should see menstruation as normal and natural, the should it be presented as that? As a part of growing up, as puberty?
Time to see that competitiveness come out of each brother and sister. Time to get personal.

ALL OR NOTHING AT ALL

START

STOP

CRAMPS just chill for one round

CRAMPS make yourself some chai

CRAMPS take it easy this time
After the research in Mumbai came Bangalore and the collaboration with Sukhbihava. In this chapter is explained the making of the 4 designs, which are build out of the inputs from experts in Mumbai, and the collaboration with Sukhbihava and inspirations from the desk research.
6.1. Ideas after interviews in Mumbai

After the interviews with experts in Mumbai, more ideas came to me and enriched the already existing ones. One was about the exploration of the storytelling technique, and another was about using the interesting topic of taboos to make people question the followed practices.

1. ME & MY FAMILY

Family has always had a very important role in the life of Indians, as mentioned in the chapter 2.2. The Indian context. The idea was to involve all of the family members in my interviews, since many still live in joint families or are closely connected to them. Furthermore, the storytelling technique had an impact and, specifically, in the aspect of presenting and percieving menstruation as a perfectly normal part of life of a girl, it fits. It can cover all periods of life from puberty, to pregnancy, to menopause. And relatedness can encourage and enhance understanding and compassion. I planned to have cards to write names of family members to enhance relatedness and involve fun fact cards with flipovers.

2. TABOO ME NOT

I wanted to use taboos and myths to make people question the followed practices. With a bit of ambiguity, I believed it could create interest in players. The dynamics of playing was something like black jack. But soon this idea was discarded, as I realized it could very easily create opposition in some families as it could be seen as an attack on their religion. This could only work with few and only open minded families.
6.2. Inspirations

On the next pages you will find examples that inspired me to generate new designs. I looked into what had been happening in India, from game designs to confronting the taboo of menstruation. I also took a look into worldwide actions on game design around menstruation and challenging taboos and stigmas.
INDIA

First was a look on how has menstruation been dealt with in India. The already mentioned Menstrupedia (page 44) has been taken into account, specifically in the style and storytelling. And then further, with gamification and actions on how in the context the issue has been approached.

**Figure 30. Extracts from Menstrupedia**

**MENSTRUPEDIA**
by Aditi Gupta and Tuhin Paul

Menstrupedia comic is a guide to educate people around the world on menstruation. Menstrupedia aims to help people understand the process of puberty in women and men. It seeks to destroy myths around menstruation and to normalise the biological process.

- learning curve
- culture-specific
- engaging with visuals and storytelling

- not suitable for a group
- not a game
MUSICAL TOILETS

Goal of the Game:
Participants understand the importance of toilet use and commit to always using a toilet.

PLAY

1. Place toilet sheets for each player in a line.

2. The facilitator sings, and the players dance round the toilet sheet in a circle.

3. The facilitator removes one toilet sheet while singing the song. For example, 4 toilet sheets should be on the floor when there are 5 players. After few seconds

4. As soon as the song stops, the players must immediately squat on a toilet sheet. One player will not be able to find a toilet sheet and is eliminated.

HAMARA ACTION KIT
by Wash United

The handbook with games and other activities, as well as instructions on how to create the game materials using locally available materials. Action Kit to promote toilet use and hand-washing with soap in schools and in families and communities.

- easily accessible
- suitable for a group
- interactive
- applicable for India
- simplicity - usage of simple tools and materials

- involves a facilitator

Figure 31. Hamara Action Kit (WashUnited, 2018.)
“The humour helped people, mainly men, overcome their discomfort at the idea that it had something to do with menstruation.”

Ray Murray
PROJECT TITLI
by IIT students from Delhi

A set of 3 games for young girls and women to spread awareness about periods in a fun, engaging manner. The module focuses on the basics of menstrual hygiene, such as how often sanitary napkins must be changed and how they should be disposed.

+ suitable for a group
  - interactive
  - learning curve
  - culturally-specific

- the game is complex - 3 parts of the game - jigsaw, roulette and a memory game
  - a physical example is not present on internet so cannot make a proper evaluation

Figure 33. Sessions of Project Titli (Own visual, 2019.)
WORLDWIDE

For inspiration there was a look on the worldwide actions when approaching stigma and taboo aside from approaching the topic of menstruation.

PERIOD GAME
by Daniela Gilsanz and Ryan Murphy

A board game to learn about period to normalize the topic of menstruation. The game was intended for public, but also for use in schools.

- usage of humour in the game
- competitiveness - to keep attention of the players
- the aesthetics - simple design

- not culturally appropriate
- some content is too explicit - the figurines as well as the middle set of the ovaries

Figure 34. Period game (Sprankles, 2016.)
The 4 designs

TAMPON RUN
by Sophie Houser and Andrea Gonzalez during a Girls Who Code summer program in 2014

A game that aims to de-stigmatize menstruation by letting players shoot tampons (not guns) at their enemies.

- usage of humour in the game
- engaging
- provocative - enemies are misogynists

- no learning
- not physical
- not suitable for a group
‘INTIMATE WORDS’ by Always

Commercial and a project by Always, to create a book where the words for female reproductive organs was made for Indigenous women of Zapotec, where a big number of women die out of cervical cancer. The commercial won the Cannes Lions Health Awards Grand.

- forming a language/tool in order to approach the target group
- culturally-specific

- one-way interaction
- culture-specific and not applicable for the context of India
- not suitable for a group

‘HEY, LET’S TALK: MENTAL HEALTH CARD GAME’ by Interact for Health and ArtWorks

A card game which goal is to eliminate stigma around discussion on mental health.

- discussion on a taboo
- personal experiences = building empathy
- light and friendly design
- suitable for a group
- conversation starter

- no learning
- personal based - no direct knowledge

AHA! moments

Could involving personal experiences within family creating better understanding and lower the stigma inside the family house?

How to create a language or way of discussing in family to make it more comfortable to discuss menstruation? Is the game a way to go?
Conclusion

To create the design intervention I took a look into the way menstruation and taboos have been dealt with in India. There were a few design actions, and the most widely known was the comic book Menstrupedia (pages 44 and 84). Around the world, there were few known design actions aimed to fight stigma and taboo concerning menstruation and in general. The most recent and awarded design, the Period Game, thoroughly educates on the subject, but due to its explicit usage of content (for example with the ovaries) it was hard to imagine it being suitable for the context of India.

Moreover, there had been no design yet which is specifically targeted for the use at family home!

For my design I have taken the following from the inspirations:

- **'HEY, LET'S TALK: MENTAL HEALTH CARD GAME'** by Interact for Health and ArtWorks
  - design making the topic light
  - conversation starter

- **'INTIMATE WORDS'** by Always
  - creating a language to enable the conversation

- **DARSHAN DIVERSION** by Padmini Ray Murray, Joel Johnson, and KV Ketan for the Global Game Jam
  - putting a taboo into the light of unacceptability through humour

- **PERIOD GAME** by Daniela Gilsanz and Ryan Murphy
  - mastery
  - beautiful design
Figure 38. The follow up session with Sukbhihava in an urban slum (above) and the brainstorming session (below) (Own visual, 2019.)
6.3. Feedback from Sukhibhava

My work with Sukhibhava helped me understand what the design should be and what the interaction should be like, how to fine-tune the specific tone of the game and what after effect to expect, as well as what level of information was right for people to get.

It was important for me to understand and carefully approach this subject, always having in mind how families were going to receive me. As a European, I needed to learn how to make the product culturally acceptable for the Indian families. I was aware that “careful balancing of the interaction and the content within the games and how they created the interaction with the families ensures adoption” (Sorcar et al., 2017). In the collaboration with Sukhibhava I also got to understand more about the importance of the aspects of design for the inclusion of men. In search for relatedness, the idea of presenting the topic through puberty, which arouse already in the conversation with experts (chapter 5), came as a possible direction, and is further explained in the next chapter. The important aspect that came as well were the 2 interactions which game created.

THE 2 INTERACTIONS WITH THE GAMES AND FAMILY

Through collaboration with Sukhibhava it became clear that it was important to have in mind what sort of interactions the game brought. 2 types of interactions happened - one was the interaction within the game, while playing of the game. And, the second one was the interaction among family members, i.e. the interaction the game inflicted on them. These different interactions were explored through designs.
Figure 39. Visualization of the changed intent of the design (Own ill., 2019.)

- **TO BE DECIDED**
- **IRRELEVANT**
- **the WAY of USAGE**
  - a game or information provider
- **the APPROACHABILITY**
  - through puberty
- **the SITUATION of the usage**
  - the moment the product is going to be used
- **the ROLES/USERS**
  - make it clear it is a game for the family
- **the CAPTIVATING design**
  - using gamification
- **the way of ACQUISITION**
  - at school or online
- **the TONE of the design**
  - make it humourous
Throughout the preparations it was of huge importance for me to find the way to make people comfortable and create a positive atmosphere concerning the topic of menstruation. Through collaboration with Sukhibhava and general conversations with people while getting to know their experiences, it became clear that the usage of humour in the design as well as diverging from the focus on menstruation to puberty, were the best tools to make the games more approachable and acceptable to people.

Finally, the aim was to find the way to include menstruation in the games without putting too big a focus on it. This way the involvement of all family members could be attained. That was why none of the games were stated as games on menstruation, but rather as games on puberty, growing up or even as “uncomfortable games”. All of the designs included subjects such as biology and puberty, and portrayed the changes that occur both in boys and girls. Here the intention was to present menstruation as a natural and accompanying part of puberty changes, along with the others that the girls share with boys. I believed that that would contribute to presenting menstruation as a perfectly normal and natural process of human development. Equal to, for example, menopause, a state a mother goes through, and which also started with menstruation and puberty, which the girl of the family is currently going through.

**HUMOUR**

I believe that humour is a powerful tool. It can be used as an ice-breaker to talk about something that is initially uncomfortable. It can be used as a way to reframe the stigma (Van der Lande & Vegter, 2015). Menstruation is just such a topic, and humour can help in making it easier to deal with. Families in India rarely discuss puberty, and the private parts are a topic never spoken about (taken from interviews). Humour can help in bringing up the most uncomfortable subject and laughter will make the situation lighter, even normalize it. Dr Ivan Brown from the University of Toronto, who works on special education, states the benefits of using humour when combating stigma: "Humour gives us the opportunity to explore things beyond our usual mindset. Most problems will disappear or become less problematic, when there is something to laugh about (...)" (Van der Lande & Vegter, 2015).

**PUBERTY**

Since menstruation is not an openly discussed topic, bringing the subject up can also create some anxiety in girls. Girls often feel shy and even ashamed of their menstruation (page 55). From interviews with expert companies I have found that, unlike boys, girls tend not to raise their hands or respond to questions as eagerly when discussing menstruation. Therefore, the approach to the topic with design should be made very carefully.

Moreover, there is a high chance that the male members of the family would not wish to join in. Besides the fact that the topic is seen as women's issue, men might feel discouraged to get involved as their knowledge on the topic is low.
Time to see that competitiveness come out of each brother and sister. Time to get personal.

ALL OR NOTHING

CRAMPS

just chill
for one round

CRAMPS

make yourself some chai

CRAMPS

take it easy this time

educative

conversation-starter

ice-breaker
6.4. The 4 designs

4 games were designed to be tested in families. They all vary in ways the game is played, the tone and the following aspects:

- **the ability of mastery in knowledge** was added after attending a gamification event “How Slack, Kickstarter & Duolingo used Game Thinking to create breakthrough hits” with Amy Jo Kim at We Work Mumbai; ability of mastery in knowledge has been proven to keep focus and interest in a game, which would help when it comes to a stigmatized topic of menstruation

- somewhat contradictory advice was given from the game and design studio, Fields of view from Bangalore, which created games for the social sector; their advice was to **solely focus on the game playing**, rather than educating, or to quote “just let them play”

The first direction of mastery in knowledge inspired **two educational games** - the Puberty Flute and the Memory Game.

The second direction, with more focus on game playing, supports the ideas of the other two games - the Giggles and the Mix-A-Body-Match. The Giggles and the Mix-A-Body-Match were intended to bring different forms of game playing than the ones that were currently in India. **The Giggles serves as a conversation starter** and **the Mix-A-Body-Match as an ice-breaker** to the topic of menstruation.

The created four games differ in the **following characteristics**:

1) the principles of game playing  
2) educational vs ice-breaker/conversation-starter  
3) the tone  
4) the ability of mastery(in the game or knowledge)

The reason for creating four different concepts was to get the insights and to find best practices from the four different concepts and combine them to **create the best atmosphere in the family home around menstruation**. It was important to me to understand: a) which principle of game playing is the most enjoyable, b) whether it was necessary to educate or making an ice-breaker/conversation-starter was a better way to bring the subject, c) what was the accepted tone, d) and what was the accepted openness of the material and the content, e) what was the required ability of mastery in the game to keep the focus and interest of the family members.

The following topics that the games covered were chosen in consultation with experts in Mumbai, and further checked with Sukhibhava: Biology, Hygiene practices, Food, Products and usage, Growing up (menopause and development), Myths and Taboos. The topics were seen as relevant in bringing the holistic image of menstruation.

However, after consultation with Sukhibhava, the **topic of myths and taboos were left out**. The reason for this came after getting more familiarized with the work of Sukhibhava and experiencing their work in the field. The important part of the approach to the taboos was through direct contact and conversations with the participants, an action which was hard to make when creating a physical game. However, through education and exposure to menstruation, the taboo could be simultaneously affected and lowered.

**The aesthetics** of the games were made with **the style of India** in mind. Through interviews, I got to find out that it was preferred to express the content visually rather than putting it in words. Also, the colours were intended to make the design seem bright and cheerful and gender-neutral, to be inviting also for boys. During the tests, there was specific attention to the reaction to icons to see how they were accepted and understood.

The designs can be found in the Appendix 3.
THE PUBERTY FLUTE

The name of the game comes from the slang term Puberty Flute which means "the awkward cracking of the voice in puberty." The Puberty Flute was the first design idea and was inspired by the popular principle of a board game, such as Monopoly. The familiarity of Monopoly was used to increase the acceptance of the game, and competitiveness of a game such as Monopoly would assure attention and interest required for the game playing. Moreover, the board game allows mastery in knowledge and game playing. Design-wise, it provides a lot of space for iteration and experimentation if needed throughout the testing.

WHAT DOES THE GAME CONSIST OF?
The game consists of the board, the deck of cards with questions for each team, the booklet, the figurines and a dice. The cards have different categories: When the puberty hits (about puberty changes), Taboo me not (to question the beliefs or specific practices), "Tell a story" time (for sharing personal or known experiences), That hard biology (the anatomy of the bodies and the reproductive organs). The fields on the board: cramps (=skipping a round), arrows (=to go back), a blue spot with a question mark (= to draw a card), all or nothing at all (=draw a card and if answering the question wrong you go back to the start).

HOW IS IT PLAYED?
The game is played by two teams. Each team has its own deck with a designated spot on the board. Each round has the Truth Keeper, the person who checks into the booklet whether the questions were answered correctly. In case the team doesn’t know the answer, the opponent team can try to answer and move one spot ahead. The game’s goal is to reach the end first.

WHAT WAS THE DESIRED IMPACT?
The competitive game would keep the focus of the users and could distract the attention of players from the nature of the topic that is normally not discussed within the family. The game was designed in a way as to provide a balance of competitiveness, challenge but also of providing knowledge. Children would receive important information on the topics of puberty, menstruation and health in a fun way but also within the comfort of a home atmosphere. The parents would have a relaxed way to discuss and give information to their children on an otherwise uncomfortable topic for them to discuss with their children.

The initial idea was for the game to be played individually, but the idea developped into creating two teams, as not all family members might have the knowledge required to play the game (specifically the father or the son). Creating pairs would remove the discomfort or shame when not knowing the answer, or bring relief if both members did not know. Moreover, it could be an easy tool to use to teach the members on the topic while playing. The role of the Truth Keeper was initially designed for the father, as was presumed he would take the role as a head of the family. With the role of the Truth Keeper, in an indirect way, the father could learn about the menstruation, which could increase his comfort with the topic and bring the understanding of the experience of his daughter and wife and create more empathy and care.

The first idea of using humour came with the Puberty Flute by forming humorous questions on the cards and within the booklet. The funny tone the questions brought could ease the topic and remove the seriousness of the stigma and the taboo. More on humour usage in the following chapters.
THE MEMORY GAME

Unlike The Puberty Flute, the Memory game leaves the autonomy to players to decide how much time they wish to spend playing the game. The game, though it has no humorous aspect like the Puberty Flute, has visuals. The game was created with the context of India in mind and it is preferred to have the content presented visually rather than to be put in words. The mastery in knowledge here is required.

WHAT DOES THE GAME CONSIST OF?
The game consists of the board, the deck of cards, the book of Q&A and the dice. The booklet of Q&A consists of a list of questions for each icon and the answers to the questions.

HOW IS IT PLAYED?
There are no teams in the Memory Game, the players play individually but there is the Truth Keeper, like in the Puberty Flute. The players place the cards with the backs of the cards facing up. Each player is allowed to open two cards, one after another and make sure all the other players see the content on the cards. When the player finds a match he rolls a dice. The Truth Keeper then searches for the section of the visual in the Book of Q&A and asks the player the question related to the rolled number. In case the player doesn’t know the answer he returns the visual facing down again and another player plays. The only time the pair is removed from the pile is when all of the questions in the Book of Q&A under the visual are answered correctly.

WHAT WAS THE DESIRED IMPACT?
The mastery and progress in knowledge are made obvious to the player - as each item has a certain number of questions, the removal of the card means they have mastered the knowledge on that subject. This is intended to contribute to the interest and engagement of the players. The game can be played fast and there is more adrenalin to it than in the Puberty Flute. Also, it is more engaging as it requires attention and focus to remember where each card is placed.
The necessity of education on menstruation with the well-being of women as the goal, was in the roots of creating the Memory Game and The Puberty Flute and that is why both games were on a higher educative level than the Giggles. With the stigma and the lower education level on the subject of menstruation, there was a fear that playing games which require knowledge on the subject could lead in the wrong direction and produce additional discomfort among players who do not know the answers.

The Giggles was created with the aim of making the first step in bringing the terminology into the household and make the members speak them out. Continuous wording of the terms related to menstruation could be the ice-breaker and slowly create a more relaxed atmosphere about with the topic in order to allow possible discussion.

**WHAT DOES THE GAME CONSIST OF?**

The game consists of a deck of cards with the content which is a mix of words and drawings on the subject of puberty and menstruation. Initially, the game consisted of content which was described with only words, but later it was turned to a mix of visuals and words, to make it more fitting and approachable to the context of India.

**HOW IS IT PLAYED?**

The game is played in teams. Each player needs to describe as much cards as possible to his teammate. Initially, each content has given instruction on how to describe it (by words, by acting, by drawing) within 1 minute. Later, the time restriction drops to 30 seconds which brings more adrenalin to the game. The way of describing is left to the player to choose, but it cannot be then changed per item. If the content is guessed the players keep the card. Otherwise, the card is put back to the pile.

**WHAT WAS THE DESIRED IMPACT?**

The aim was to make the game very expressive and highly engaging in order to challenge the stigma. The inspiration for Giggles came in search of a different approach and concept of game playing from what had previously been available in India or in the neighbouring countries. Most of the games which are aimed towards breaking of the taboo in these areas have a very delicate and sensitive approach. Techniques such as storytelling are aiming for relatedness and empathy in order to create compassion and understanding to break the taboo.

Giggles, on the other hand, is created in such a way as not to shy away from the discomfort. By doing so the existence and the size of the taboo comes to the light and is confronted. The first name of the game was “the uncomfortable game” and the slogan was “the game that is going to make your family sweat.” The boldness of this game was aimed to bring the interest that sometimes certain discomforts can create.

However, after the discussions with the team from The Fields of view, the name was turned into Giggles which is defined as “The uncomfortable laughs.” This way there is a friendlier tone to the discomfort of the game to avoid additional opposition to the already existing stigma.

When thinking of the context of India, this game could be shocking. But the game is intentionally aiming for a certain dosage of shock and discomfort. It wants to be different from what people in India have encountered. The important aspect of the game is the principle of transformative learning. The decision to take this approach was made in collaboration with Sukhibhava as a way to bring behaviour change. Transformative learning is often used in the sociocultural category where the gender comes in. The process of transformative learning in itself holds moments of disorientation and shock, but it also involves the reflection moment which is needed in order to break the stigma.
THE MIX-A-BODY-MATCH

The principle of game playing of the Mix-A-Body-Match is a pairing game like Cards Against Humanity and Apples and Pears. The first idea of using a game such as Mix-A-Body-Match was to conduct research on the topic with families - to enable easier discussion with participants on menstruation and through the pairing game to understand their knowledge (or lack of it) on the body and biology.

WHAT DOES THE GAME CONSIST OF?
There are 2 decks of cards (one for the Round King, and the other for the rest of the players). The cards contain subjects on puberty and menstruation, but also other content which is aimed to create a laughable effect (such as the eyes, sun and flower to make it more fun and creative).

HOW IS IT PLAYED?
The game can be played by a number of players. There is a Round King who is changed after each round. There are two decks of cards in the game - a blue deck and a pink deck. The Round King holds the blue deck and the pink deck is equally spread among the players. The game begins by the Round King placing a blue deck card in front of the players. The players respond by placing a card of their choice facing down. The aim is to respond with a card which would create the funniest combination. The Round King turns them facing up and chooses the card he finds to create the funniest combination. The remaining cards are returned to the players. The aim is to get rid of the cards.

WHAT WAS THE DESIRED IMPACT?
The game Mix-A-Body-Match, like Giggles, diverges from the aspect of education but deals with the taboo and stigma differently. The main idea of the Mix-Body-Match is to make people laugh. In Mix-A-Body-Match players use the content of menstruation as a material for entertainment.

Based on the principle of Cards Against Humanity, which is aimed to make ridicule and nonsense pairings to make people laugh, here players make creations such as a man with a hat, where the hat is actually a pad. By making people laugh and creating funny and foolish creations, the players are exposed to the content of menstruation, puberty and stigma without any direct focus on it. Exposure to the topic is very subtle and natural.

This strong humorous aspect makes Mix-A-Body-Match the one with the lightest and the most humorous tone out of all 4 designs. As it only depends on the creativity of the user, the game can be played again and again. The benefit of this game is that it is purely visual and can, therefore, be used in different areas of India, from cities to villages, as it does not hold the constraint of language adaptation.

The game was initially intended for more traditional or conservative families. Those families are the ones which hold the strong stigma and taboos of menstruation. It is hard to imagine such families to discuss menstruation, but it is a simple exposure and a humorous pairing like in Mix-A-Body-Match that can be the first step in their opening to the subject.
“It is a sign of fertility. So how can something out of which you are born be bad?”

“

father test 8
This chapter presents the testings of the 4 designs. In the each test the answers of families are grouped into understanding of the taboo and the evaluation of the designs. All of the findings are later presented as answers to the initial research questions. With the tests the new focus of the project was made, which is presented in the chapter 6.4. The chapter closes with the conclusion for the final direction.
Figure 40. Materials used at testings (Own visual, 2019.)
7.1. The test structure

The testings were made in a way that the design was tested and interviewed to see the acceptance of each concept, how the games create the behaviour within the family. The interviews were used to see the effect of the game on each family member but to also get information on the taboo of menstruation in India.

The testing starts by getting the data of the participants. The reasoning for this was the same as for the online questionnaire, to see the effect of education, age and gender on the view and behaviour around menstruation.

After getting the data of the participants the games were tested. The rules of the each game were instructed prior to the playing of each game. The testing of the games was approximately 20 minutes for each game.

The interviews were then made with each participant of the family individually. The questions were set into the evaluation of the design and into personal view and experiences around menstruation. The important part was to understand the upbringing of the parents and its effect on them and their relationship with their children. Attention was made on the male-female relationships, between mother-son and father-daughter. Finally it came to the questions of their views of menstruation in India, through the taboos, myths, practices and the education on menstruation in schools.

For female members of the family there was also the Carol Ryffs questionnaire of the psychological well-being. This was used in order to see how does menstruation affect the psychological well-being and whether there is a correlation between the taboo of menstruation and the psychological well-being of women.

The selection of questions was made from the original questionnaire in order not to lengthen the entire testing. The selection of the questions was based on the appropriation of the age and the context of India.

The follow up interviews were intended to be made a week after the testing again individually with each family member, however, due to the holiday season in India, they were made when best suited for the family, which varied between 4 days after the test or up to 2 weeks after. The questions are based on the evaluation of the aim of the project, and the evaluation of the design. On the aim of the project there were questions on whether the participants reflected on the testing, how do they feel about menstruation after the game playing, whether they have discussed and initiated discussion on the topic, how do they feel about discussing with family members now (specifically for girls). And as for the evaluation of the design to see the interest for further interaction with the games. Which one made the strongest impact, whether they enjoyed the games, whether they would play them again or recommend them to someone, whether they would buy the games.

The entire tests lasted for approximately 2.5 hours and the tests were conducted in the house of the family for the original setting.

The questionnaires can be found in the Appendix 3.

THE MATERIAL
For the test, the material that was used can be seen on the picture on the left. The way the games were played can be seen at the chapter 6.4.

THE PARTICIPANTS
The test samples were families with at least one daughter of the age of 11-18 years old. It was necessary for at least one family member to be fluent in English in order to conduct the test. The participants were recruited through personal contacts. The participants come from mid to mid-high class families.
7.2. The test overviews 1

**KEY FINDINGS**

**the taboo in the family**
Even though it is important to note that the family is a very open one, the taboo is still there to a certain degree and proves the impact of the culture and the society on the behaviour.
1) the men feel left out of the topic of menstruation
2) the boy wants to know about the subject but feel how it is not his place to ask
3) women do not involve men into the discussion and often keep it to themselves
4) there is a jealous feeling in boys as they cannot have something private of their own like women have menstruation
5) talking about the topic brought a bit of discomfort but also relief that the topic is “cracked” and out there now
6) girl feels positive about her menstruation - as she knows her father sees it as a natural thing

**the taboo in the society**
1) women want for it to be seen as a natural thing

**the design**
1) The female members prefer the Memory game as it was interactive and at the same time they learned the most about the topic.
2) The male members like the most the Mix-a-Body-Match as it was very fun and funny and brought positive atmosphere.
3) the icons should be clearer and more culturally specific
4) the mother liked the booklet as it was informative
5) game was an easy way to talk about menstruation

**EVALUATION**

**reflection**
"As the games were played together, for sure there would be a different dynamics." mother
The daughter and the son state how they would feel easier to discuss in the family. The game was the first interaction for the boy to the topic, and now he feels better to discuss it in the family. The daughter states how before she hasn't discussed the topic with her father, but “because it has been spoken in a nice way and in a fun way, now I feel it will be easier to approach.”

**further interaction**
The mother wouldn’t play again the game, but would own one game and later pass it on to other families with children. The daughter and the son would play again.

**design**
“It is a very easy way, very casual, and normal way to share information. Nothing secret about it, and in that way it makes it easy.” mother

‘You saw, we were all together and all laughing. Here we are all together. It has the best atmosphere. “

father on Mix-A-Body-Match

**NOTES ON PARTICIPANTS**
The children of this family attend a special school, Montesorri inspired. For the follow up, the father wasn’t present.

**TESTING FAMILY 1**

Figure 41. The family playing the Puberty Flute (Own visual, 2019.)

The men are excluded from the topic - how to include them? Would it bring discomfort? It is important to create good atmosphere.
KEY FINDINGS

the taboo
The father wasn’t much involved in the testing as he saw it more suitable for the family members. The family lives in a joint family with a grandmother and therefore the menstrual practices are done in respect to her.
1) the menstrual practices are followed by the opinions of the eldest in the family (the grandmother)
2) because the father sees menstruation as a natural topic, the daughter feels comfortable to express herself on menstruation.
3) the taboo practices do not have to do with education, but they come from home
4) discussion on the topic depends on the surrounding and how they are open to it.
5) the change starts with education and with the parents and children together.

the taboo in the society
1) women want for it to be seen as a natural thing

the design
1) The female members prefer the Memory game as it was interactive and at the same time they learned the most about the topic.
2) the mother liked the booklet as it was informative

EVALUATION

reflection
The family hasn’t reflected much, but the daughter has been surprised by the games. “I didn’t think you could make menstruation into a game, and not that awkward.” daughter

discussion
The mother has discussed with her friends on the testing which lead to a conversation on the situation around menstruation in India.

in the family
The family hasn’t discussed about it in the family as they were open to the subject even earlier.

further interaction
The parents see the game as an educative tool on the period, and to create space for discussion on the topic. “This is something to play so that kids feel more comfortable to talk with us (parents) about puberty.” mother
They wouldn’t play the game again nor would they have it in the house as their daughter is already grown up. The daughter would play the games again as she sees it as a way to learn even more about herself. She would bring the games to school in order to bring discussion on menstruation.

design
“This was new to me...I think it’s a good start for children like 6 or 9 or 10.” (father on Mix-a-Body-Match)
“This is the only game I could play with my younger cousins. Because they could understand these.” (daughter on Mix-a-Body-Match)
TESTING FAMILY 3

NOTES ON PARTICIPANTS
The family has one more daughter which wasn’t present due to studies in another city.

KEY FINDINGS

the taboo in the family
1) even though the family is highly educated and sees menstruation as a natural thing, they never discuss it
2) the girl feels uncomfortable to talk about menstruation as she was the first one to receive it in her class
3) women do not involve men into the discussion and often keep it to themselves

the taboo in the society
1) the taboo practices do not have to do with education, but with the upbringing
2) education should involve men in order to remove the artificial view on relationships
3) the changes should come from home - all parents come from superstitious families
4) women want for it to be seen as a natural thing

the design
1) The female members prefer the Memory game as it was interactive and at the same time they learned the most about the topic
2) the mother liked the booklet as it was informative
3) Giggles is only suitable for very open families
4) Mix-a-Body-Match is fun and brings good atmosphere and can best serve as an ice-breaker

EVALUATION

reflection
“The tests made us realize it is good to openly talk about this. The tests force you to think and get things on surface.” (mother) The girl came and brought the book on biology as she wanted to show how she was reading about menstruation after the test.

discussion
The father has discussed the topic with a friend and they have concluded how the situation around menstruation is not a good thing, and especially the conservative attitude of men. For men menstruation is like a mistery.
KEY FINDINGS

the taboo in the family
1) the boy wants to know about the subject but finds menstruation as something that is a women's thing
2) women follow certain practices as that is how they learned it
3) because the father sees menstruation as a natural topic, the daughter feels comfortable to express herself on menstruation

the taboo in the society
1) education should involve men in order to support women
2) women want for it to be seen as a natural thing

the design
1) the girl and the boy preffered the Giggles as it was very interactive
2) the mother liked the booklet as it was informative
3) the mother liked the Memory game the most as it was very educative
4) the father preferred the Mix-a-Body-Match the best as it was fun and brought the best atmosphere

EVALUATION

reflection
The son was happy that he went through the test as he got to understand what women go through and how men should act.

discussion
No discussion occurred in the family, they were very busy with personal things in order to discuss.

in the family
The general belief is how the discussion will be much easier now as they had games on the topic. The daughter states how she doesn't feel anything different, but her brother senses how she somehow acts more comfortable.

further interaction
All of the family members would like to play the games again. The father wishes to own the game and share with friends, as he believes people should become comfortable with the topic.
DISCUSSION OR EDUCATION

The aim of the project is to create comfort in the family to talk about menstruation in order to enhance the well-being of girls. In order to ease the discussion, instinctively it came as an idea to bring education on menstruation as a part of the game playing. However, in some families, the taboo has such a strong effect that talking about menstruation is extremely difficult and holds strong opposition. That is why another direction was added where the aim for the game is to serve as an ice breaker. The games were made to serve as that first step, to solely bring the terms into the household.

THE TESTING

The initial target group was the middle urban class. One of the reasonings for this target group was the probable openness to the topic. After discussion with the experts in the field and through desk research it was found how the only affect to the openness towards the topic is the mindset of the person. The class and education can have an influence the openness, but is not a guiding factor. Even though the sample of my tests have been the open-minded families, the highest educated family ended up having the lowest conversation on the topic.

In order to test a difference in the experience of menstruation when it comes to well-being, I stepped out of the initial target group into a lower class to test the effects of the taboo of menstruation on the well-being of girls in different living conditions, environment and education conditions to see the difference and have a wider spector of the experience of menstruation in the region of Bangalore, Karnataka.
CLOSE-MINDED FAMILIES

old practices and myths; negative emotions in girls; no discussion

taboo and stigma

OPEN MINDED FAMILIES

a bit of discomfort on the discussion among family; no negative feelings in girls

get more information on menstruation

an ice-breaker

design requirements

Figure 45. Visualization of the family and mindset towards menstruation (Own visual, 2019.)
TESTING OF THE DESIGN MIX-A-BODY-MATCH

The other aspect to the testing in lower income families is to test the game Mix-a-Body-Match. As seen from the visual on the previous page, Mix-a-Body-Match supports what is the design requirement of the close-minded groups of families.

The game has received the biggest support from the interviewed companies for 2 reasons:

1. **the game is purely visual**
   - there is no language barrier in comparison to other games which allows the game to be played in different areas of India and can include different households no matter their education level

2. **the game can be used as the ice-breaker for the strong conservative families**
   - when it comes to the conservative or close-minded families, there is a need to make the first step - to make bring the families close to the content, make them speak out about it, where Mix-a-Body-Match can help
   - also from the test it has been proven to be favoured from the men side and from the side of those who feel uncomfortable to talk about it as it doesn't require knowledge on the subject unlike other games

THE TEST STRUCTURE FOR THE LOWER INCOME

The tests with the lower class will be made by playing only the Mix-a-Body-Match.

The test will be run in the family household with one of the Sukhibhava trainers due to the language barrier and the requirement of the local language, Kanada. Hopefully, my mentor from Sukhibhava, Bhuvana, will be there too in order to check whether the trainer is asking the questions right, to help the trainer if needed and to be a support as she is familiar with the project and the questions.

Like the previous tests, it starts by getting the data of the participants. This will later help to analyze and make the comparison of the data with other tests through education, gender and age differences.

The game will be tested of minimum of 20 min. In case there is a big difference in reaction of the participants, the reluctance or the joy of playing, the test of the games will be cancelled or prolonged.

The interviews will be made with each participant of the family. The questions can be found in the Appendix 3. For female members of the family there was also the Carol Ryffs questionnaire of the psychological well-being. This was used in order to see how does menstruation affect the psychological well-being.

The selection of questions was made from the original questionnaire in order not to shorten the entire testing. The choices of the questions were made based on the appropriation of the age and the context of India.
KEY FINDINGS

the taboo in the family
1) the boy wants to know about the subject but finds menstruation as something that is a women's thing
2) women follow certain practices as that is how they learned it
3) the family does not discuss menstruation
4) women do not involve men into the discussion and often keep it to themselves
5) the mother wants for her daughter to know about it - but she can’t talk to him about it - he should learn in school

the taboo in the society
1) the society would see it badly if you discuss menstruation
2) men should know about menstruation
3) the schools should educate boys
4) women want for it to be seen as a natural thing

the design
1) the family enjoyed playing the game
2) they were uncomfortable with the content as it was between genders

"It is like a secret, you cannot talk together, it’s a private thing."
the mother

"The men should not involve it that - that’s how the culture is."
the mother

NOTES ON PARTICIPANTS
The father of the family wasn’t present for this test and there was no follow up due to the discomfort of the participants. The translator, who was a personal connection of the participants, was also used in this test.

ADAPTATION TO THE TESTS

The Puberty Flute wasn’t played from this test onwards for a couple of reasons. The tests were very long and with a lot of information already received from interviews and previous tests, there was a need to get more focused in a specific direction. Since the other games were specific in different matters (Mix-a-Body-Match as a creative game without any specific focus on menstruation, Giggles as a very interactive game and for more open-minded families) and Memory Game shares the educative part with Puberty flute but was more favoured, the Puberty Flute was left out from the testing. However, by the end of the game playing, the Puberty Flute was still explained to the participants to receive a feedback on it and to be compared with other games.

Figure 46. The testing in the urban slum (Own visual, 2019.)
KEY FINDINGS

the taboo in the family
1) women follow traditional practices but for the reasons to protect women
2) because the father sees menstruation as a natural topic, the daughters feel comfortable to express themselves on menstruation

the taboo in the society
1) education is the key to change as people are not educated on menstruation
2) women want for it to be seen as a natural thing

the design
1) the women of the family preferred the Memory Game as it was very educative
2) the father preferred the Mix-a-Body-Match the best as it was fun and brought the best atmosphere

EVALUATION

reflection
The girls feel more comfortable about the entire subject as they know more now.

discussion
No further discussion about the subject was made within the family. The mother spoke with her sister and friends on the situation in India around menstruation, and how people should be more open on the subject. The elder daughter shared about the experience of the test with her friends. The father initiated a discussion about the test and the taboo of menstruation in his office with his colleagues.

in the family
The family was very open about sharing everything so there has been no change in sharing. But they believe that the daughters will feel even more free to share the experiences with their father.

further interaction
The family wouldn’t buy the games. The daughters would play all the games again.

Figure 47. The family playing the Memory Game (Own visual, 2019.)
THE NEEDS/WANTS

- for menstruation to be seen as normal and biological
- not be seen as dirty or impure

“there is no need to talk about it all the time, but there should be no hush hush too. it is natural”

THE OBSERVATIONS

- the attitude is affected by the speaking of the men!
- when the father sees menstruation as a natural thing, the girls feel more confident and have a positive view and attitude towards menstruation

this is said by girls who feel comfortable to talk about it in the house

Figure 48. Visualization of the new focus (Own ill., 2019.)
7.4. The new focus

The tests have confirmed the desk and literature research findings that all of the first contact when it comes to menstruation is their mothers, but only the girls who have a good relationship with their fathers on the subject have the most positive attitude towards menstruation. Even though the families I have tested with have been quite open for discussion on the topic and the well-being and attitude of the girls has been fairly positive, there was still a slight discomfort for the tests if the father hasn’t initiated the conversations with the daughter on the topic of menstruation.

This brought me to an important factor for designing - to ensure that the design also fits the requirements of the father in order to create a good atmosphere in the house and enable an open discussion within the entire family.

The last tests included premenstrual girls. I find out how the taboo and the bad view on menstruation only starts when the girl starts menstruating, as the school and the family do not wish to “burdain the girl” prior to the menarche. This causes nervousness in the girl, as she feels that menstruation is something to be scared of or could go wrong. It was observed that all the girls had experienced different reaction to first menstrual period like scared, shy, sad (Udgiri, Angadi, Patil & Sorganvi, 2010).

Majority of girls had negative reaction to menarche and this might be reflection of taboos and prejudices in society about menstruation and also highlighted the fact that girls had no previous knowledge about menstruation. (Udgiri et al., 2010).

So there is a need to create awareness and encourage hygienic practices during menstrual period and more attempt should be made to bring the adolescent girls out of traditional beliefs, misconceptions and restrictions regarding menstruation (Udgiri et al., 2010).

That is why in my design I wish to focus on the pre-menstruating girls.

The design requirements for the pre-menstruating girl are also in line as with the ones for the father - the design should be light, easy and fun. The design should be less on education and more on enabling the discussion. This way the family has a push on discussion but leaves them freedom on how deep or on topic they wish to be. This is the opposite to the families where girls are already menstruating and the requirement is to fulfill the gaps in knowledge on the topic.

- an easy or relaxed experience vs. a serious one
- an easy/light tone of topic vs. an uncomfortable & secrecy tone
- an easy tool for creating a discussion vs. no discussion
7.5. The test overviews 2

TESTING FAMILY 7

KEY FINDINGS

the taboo in the family
1) because the father sees menstruation as a natural topic, the daughters feel comfortable
2) the pre-menstruating girls are nervous about menstruation and they want to be prepared

the taboo in the society
1) the role of a father is important as it is a patriarchal country
2) it is viewed not to be spoken about
3) women want for it to be seen as a natural thing
4) the taboo practices do not have to do with education, but with the upbringing
5) the boy wants to know about the subject but feel how it is not his place to ask

the design
1) the women of the family preferred the Memory Game as it was very educative
2) the father preferred the Mix-a-Body-Match the best as it was fun and brought the best atmosphere
3) the games are good to be played before menstruation and with all family members so they don’t see it as a taboo
4) the mother liked the booklet as it was informative

EVALUATION

reflection
“We could learn more about our body and to be alert. I liked it that we did it through a game.” younger daughter

discussion
The parents haven’t discussed it with anyone much as they were busy with personal issues. The daughters haven’t discussed with anyone nor among themselves. They haven’t met any of their friends yet due to the holiday season.

in the family
The family sees it as a normal thing and they don’t have trouble discussing it. The elder girl is very comfortable about expressing her opinion, while the younger daughter feels shy as she doesn’t know about the subject.

further interaction
The daughters would play the games again. The family would buy the games, and then pass on to others. The parents on the other hand would recommend it further, but it also depends on who as it is a sensitive subject.

design
They believe that the games are a great way to bring attention to people on the subject as it makes them comfortable, is interactive and engaging. They believe that the schools should have such games as then the children would learn a lot and through a fun activity, too. They see it also as an important aspect to be played in the family, to break the taboo.

“It is good way to introduce it, and so they don’t see it as a taboo. If the family is introducing it in a fun way then the younger ones will benefit.”
the father

“Having both genders knowing equally well and the right things about it is the way to break silence.”
the father
KEY FINDINGS

the taboo in the family
1) because the father sees menstruation as a natural topic, the daughters feel comfortable
2) the pre-menstruating girls are nervous about menstruation and they want to be prepared
3) the girl stopped with sports with menstruation
4) the husband learned about menstruation through marriage
5) the premenstruating girl is not aware of the taboos and myth practices in India

the taboo in the society
1) the taboo practices do not have to do with education, but with the upbringing
2) girls want for it to be seen as a natural thing

the design
1) the premenstruating girl preferred the Mix-a-Body-Match
2) the elder daughter and mother preferred the Memory Game
3) the games are good to be played before menstruation and with all family members so they don’t see it as a taboo

EVALUATION

reflection
"Now I know if I have to, I can speak to them”
the premenstruating girl

discussion
The test has brought more comfort to the discussion, but they haven’t discussed much in the family as they are very busy.

in the family
The games made the daughters feel more comfortable in the family and to talk with the father.

further interaction
The family would play the games again but they wouldn’t buy them.
The recommendation to others depends on the openness of the person.

“The timing made it very interactive and fun.”
the elder daughter on Giggles

“I think it was more fun, here you have to more open up, speak and explain. Which I feel is a whole purpose.”
the father on Giggles
KEY FINDINGS
the taboo in the society
1) the taboo practices do not have to do with education, but with the upbringing
2) the change starts with education
3) the role of a man in the family is high
4) the menstrual practices are followed by the opinions of the eldest in the family (the grandmother)

the design
1) the family is very open and they preferred Giggles
2) through games the premenstruating girl realized she needs to learn more
3) icons weren’t understandable

“...Freedom and lack of freedom happens at home. And menstruation and puberty changes that happen with them are the first opportunity to set them free.”
father

“One thing is education and spreading awareness. So communication and education. Like with the games - it made it a very fun thing to talk about.”
the elderly daughter
7.6. The overview of the findings

**BEHAVIOUR**

**1. How do men and women feel when talking about menstruation?**

There is discomfort when talking about menstruation in the family around all members due to the tradition and the society.

**2. How are relationships in the family formed around menstruation?**

The family leaves education on menstruation to the school. (taken from interviews with experts)

Female members of the family talk about menstruation. Men feel left out and are not involved in the discussion, even though they wish to provide women with support, but do not know how.

**3. What is the impact of the father when it comes to menstruation?**

The girls who talk freely with their fathers or can express themselves about period in front of their fathers appear most confident and comfortable about their periods.

If you ask anyone why they are ashamed of it, noone has an answer. Everyone has a mother, or a sister or a friend, so how is it a taboo?

father test 8

The first thing would be to educate the parents. They are the ones who make the taboo. Even if the school wants to be open, lets say it is run by open minded people, the lot of parents would be uncomfortable.

mother test 3

Even we consider ourselves more open, but still...it is not that we are shy, but ourselves we would not discuss it all together.

father test 3

Women don’t think and they do to the same to the next generation.

mother test 3

I wanted to know more but I never had a courage to ask. As I saw that they were feeling uncomfortable to talk about it, so I didn’t. And I knew they would say something like I will know when I get married.

father test 6

I don’t talk with my son about it. I don’t share it with him, but I want for him to know about it, so he can later take care of his wife. But we don’t share it - it is like a secret, you cannot talk together, it’s a private thing. Even my husband doesn’t know. I just say I am not feeling well.

mother test 5

Mother’s never used to say anything, not because they don’t want to tell, not because of a taboo, it is just because it is not spoken. It was the way it has been dealt.

mother test 8

The role of a man in India is high. It is unfortunate. The impact of a father is very high. Whether she has the opportunities and needs. If a father ends up being a conservative asshole, then the girl is screwed unless she marries better. The girl should have either the father who is encouraging, or hands off but allowing for the daughter to have what she needs. The problem is because a lot of women themselves don’t feel empowered to say a lot of things, or do a lot of things and the society doesn’t help.

mother test 9
Here is an overview of the findings from the tests. The research questions are answered along with the quotes.

**KNOWLEDGE**

1. What is the knowledge men and women receive on menstruation?

Men are not educated on menstruation in schools nor in homes. First contact with menstruation is through their partners. The women learn about practices through the older women of the family. Today girls in schools learn about menstruation, but the amount of information depends on the teacher.

*It should start in a young age, as they are very impressionable.*

father test 8

*He will learn by himself when he gets the girlfriend or the wife. It's fine. I feel like there is no need.*

mother test 4

*Noone ever told us, we didn’t know about it. We knew that there was something happening but we didn’t know the reason why.*

father test 4

*Follow some practices, but not all. Carry salt maybe? Don’t know, I have just been brought up with that culture.*

mother test 4

*Because I didn’t have it (education on menstruation), I feel like my perception of girls was artificial, and a lot of discomfort. We don’t interact so freely, we don’t interact like normal people. So it is important to be in coed. So men earlier get exposed to women’s experiences.*

father test 3

*60% of people are not educated and not comfortable with menstruation. They should shift their mentality. Education is the key. We need practical education (…) The theory is not enough.*

father test 6

*As I grew up I was taught how it is negative, not to be spoken about, people don’t want to talk about it. Even though I went in a coed school, teachers don’t want to talk about it.*

father test 7

*We belong to a generation where we didn’t have independent thoughts. Nobody told me things before. Brahman community, we are very traditional in rituals. It is important to know why things are happening and what should be there.*

mother test 8

*The men should know everything, to understand there are certain things which are different for women. This difference should create more respect towards women. So when she goes through things, they should be there to support them. More and more families are turning nuclear, so more the reason they should know. All of the bad things that are happening in the family between men and a women is because the man doesn’t know. The practices we made I actually like, but they took a turn.*

mother test 8

*I always questioned. And especially in my daughters school - the boys are sent out. No, they should sit. Some people are conservative, so what? The school should deal with it. They should be doing that.*

mother test 9
WELL-BEING

1. What are the aspects of well-being affected by the taboo?

The strongest aspects that are affected is their religion due to the taboo. But it can be more severe but I haven't yet tested with those families. Girls are shy and can feel anxious when it comes to menstruation. Women have accepted it and live with it without much thought.

2. What is their awareness around the existing taboos and their effect on women?

Many were surprised when they saw the extracts from the news. Pre-menstruating girls especially are not aware of any taboos and myths. The other girls have not gone through any taboos and myths themselves, but have shared stories of the experiences of their classmates.

3. What do they wish for to change when it comes to menstruation and why?

Women want for the menstruation to be seen as a normal thing. Men should help women through their discomfort - support them in work and house; work is not geared for this. women have to adjust, they can’t even tell their boss.

It is not a disease. But if we don’t deal with it, it will become an emotional disease.

It affects the way the women think.

I really want for it to be a normal thing to talk about. Like when you have to carry a tampon, you don’t have to wave around with it, but it should be a normal thing like wearing a toothbrush or a comb.

There is no need to talk about it all the time, but there should be no hush hush too. It is natural.

I believe for us to feel better, everyone should know. We don’t need to talk about it, it is not necessary. But it is a feeling in the society that should be changed.

If men make sure not to make women uncomfortable and are actually helpful when they are on period - they can help them. Being with my husband who doesn’t believe at all at all these practices, and he doesn’t see women lower or anything, it has been so much easier and destressing.

We should support that, not make fun of it. It should be a natural thing.
DESIGN

1. How can design make people feel comfortable to talk about menstruation?

The game served as a natural tool for creating conversation. The girls got to learn about their body and what is happening to them, and the fun and interactive aspect got them engaged. Also, the games were very different than what they are generally used to see when it comes to menstruation.

I would never think it would be a game like that, and playing with the family was very fun. I didn't think it would happen.

dauhter test 1

I never thought there could be games on menstruation. I would like to give these games to the board games in schools. To produce more diversity. I think this would add to the collection.

dauhter test 2

Fun and informative. It is a very easy way to share information. It was very normal, nothing very secretive about it. It makes it easy.

mother test 1

It also made me think about why we didn’t discuss with our son. I saw how he is interested in it, and ready. Now I want to talk to him.

mother test 1

It (the game playing) happened together, so it will have different dynamics.

mother test 1

This was the best way to learn about menstruation. Suppose if children like me, I didn’t understand a few words but in other way would be tougher. The games are the best way to learn, because they are easier than explaining...like in school. And also, it was with my family, because I am open and free and ask but if I was in class, I would get shy to do so.

the premenstruating daughter test 8

It was a less awkward way of speaking the same thing, but not going through the cons of having the conversation.

the elder daughter test 8

“It opens up without any complication I was happy because she (the daughter) felt more easy.”

the father test 1

Now that this game has happened, I know my daughters would come and ask him (the father). They needed a chance.

the mother test 7
HOW HAS THE PROBLEM BEEN APPROACHED

2nd design ideas

- Sukhbihava

4 DESIGNS

Work with Sukhbihava

NEW FOCUS

India - urban area
WHO: family members focus is the pre-menstruating girl

HOW: enabling discussion in the family by focusing on the design requirements of fathers

Transformative learning

present as puberty and use humour

Test 5

4 designs v2

Test 1, 2, 3, 4

The tests

7, 8, 9

The tests

education on menstruation in schools by NGOs

understanding the context of India

girls are uncomfortable to talk about it

boys want to know

girls don’t talk about menstruation in front of boys

girls prefer games to learn about menstruation and men the ones that are just to be fun

education does not impact the taboo

girls feel good about menstruation if their fathers see it as natural

society view impacts the behaviour

wishes for menstruation to be viewed as natural

India - new focus

behave in the field

topics for the content

storytelling

design

content material

how to approach men

to educate or to just ice-break?

existing techniques

2 types of interaction - with the game and within the family

design

4 designs v1

4 designs

India

New Focus

India - urban area
WHO: family members focus is the pre-menstruating girl

HOW: enabling discussion in the family by focusing on the design requirements of fathers

Design direction - ice breaker; subtle, usage of humor and presenting as puberty

Test 5

4 designs v2

content material

how to approach men

to educate or to just ice-break?

existing techniques

2 types of interaction - with the game and within the family

design

4 designs v1

4 designs

India

New Focus

India - urban area
WHO: family members focus is the pre-menstruating girl

HOW: enabling discussion in the family by focusing on the design requirements of fathers

Design direction - ice breaker; subtle, usage of humor and presenting as puberty

Test 5

4 designs v2

content material

how to approach men

to educate or to just ice-break?

existing techniques

2 types of interaction - with the game and within the family

design

4 designs v1

4 designs

India

New Focus

India - urban area
WHO: family members focus is the pre-menstruating girl

HOW: enabling discussion in the family by focusing on the design requirements of fathers

Design direction - ice breaker; subtle, usage of humor and presenting as puberty

Test 5

4 designs v2

content material

how to approach men

to educate or to just ice-break?

existing techniques

2 types of interaction - with the game and within the family

design

4 designs v1

4 designs

India
7.7. Conclusion

This phase helped me to understand the context of India better and to find out how the design should be to enable discussion in the family.

Families believe that menstruation should be seen as a normal, but some families are either hesitant to talk about it or have not done yet that step. *Men want to learn about menstruation* but feel uncomfortable to ask as it is “women’s thing”. In the families where fathers see menstruation as a normal thing and/or have discussed with their daughters, *daughters have a best outlook on menstruation* and seem confident and comfortable about it. *Pre-menstruating girls are often not informed on menstruation* or are unaware of the taboos and myths in India.

This has brought me to focus on the well-being of pre-menstruating girls and their relationship with fathers. The design should serve as an ice-breaker and a conversation starter.

In order to go around the taboo and stigma, the *games were presented as games on puberty*. To create a comfortable atmosphere in the family and to ease the discussion on the topic, the *games involved humorous aspects*. This has helped as it made people enjoy the game playing, and it has presented menstruation in the positive light, unlike the usual negative and uncomfortable setting. The taboos were excluded in order to avoid possible opposition from the family, as it could be seen as an act against religion.

During the testing there were no changes made to the design. The design was built on many insights from desk and literature research and from the advice of the companies. There were changes in the ideas before the testing, but due to the limited time, the focus was on the tests and interviews.

The important aspect was to also understand how the family would use it, if it weren’t for the testing. From the interviews with game companies, Reap Benefit and Fields of view, and later confirmed in the interviews, the games would probably be used for just one time all together. It was important therefore to understand how do I wish to make people feel, and what would create the biggest effect.

In the test it has been shown how female members prefer the educative games as it makes them learn more about themselves (this was specifically the Memory Game), while male members prefer the ones in which they had the most fun (in the Mix-a-Body-Match). The *premenstruating girls feel nervous* as they realized how little they know about the topic. They didn’t have a clear preference on the games, but it was understandable how it was needed to create a comfortable atmosphere in the family with the game. Also, to ensure that the male members of the family, specifically the father, will be involved in the game playing, it was necessary for the *game to fit the requirements of the fathers*. And that is why the chosen direction was the principle of the pairing game, the Mix-A-Body-Match.
With the return to Netherlands came the time to finalize the project. After the conducted interviews and tests with the families, there was a clear direction to go with. After choosing to go ahead with the concept of the Mix-a-Body-Match, it was time to create the game suitable for the context. In this phase, the formgiving process is presented and the made design.

Finally, the conclusion is presented, with the recommendations, limitations and it closes with the personal reflection.
Figure 52. Collage of the visual inspirations (Own visual, 2019.)
In this chapter you will find why the direction of Mix-a-Body-Match has been taken and how the final design has been built. The chapter finishes with the evaluation of the Mix-a-Body-Match based on the needs and requirements, and its contribution to the problem of menstruation based on the already mentioned constrained.
design intervention brings to ...

**CURRENT BEHAVIOUR**
- Premenstruating girl's fear
- Anxiety
- Secrecy
- Family
- No open discussion
- Secrecy
- Men exclusion

**THE BARRIERS**
- Punctuated on practice
- Religion
- Gender & relationships
- Stigma
- Society
- Lack of education
- Tradition
- Patriarchy
- Hierarchy & family ties

**DESIRED BEHAVIOUR**
- Premenstruating girl's security
- Comfort
- Family
- Comfort
- Natural feeling
- Discussion

**TRIGGERS**
- Design should be a conversation starter

**ABILITIES**
- Design should create a positive atmosphere; it should be low in threshold and engaging to keep the focus and involvement

**MOTIVATORS**
- Design should make the users feel comfortable about themselves and about the topic and break the silence in the family

Figure 53. Redefined triggers, abilities and motivators (Own ill., 2019.)
8.1. Why Mix-a-Body-Match?

With the final 3 tests made in India, the new focus was identified - the pre-menstruating girl and her relationship with her father. With the new focus, the new requirements were also identified.

Menstruation had always been seen in India as a serious and complex topic, which would always be followed by uncomfortable conversations (taken from interviews). All female participants in tests expressed their wish and need for girls to free themselves from this feeling of discomfort and to be able to present menstruation as a natural thing. They did not want the topic of menstruation to be seen as a taboo, or dirty and impure. The new focus helped us identify the need for the interaction to be made easy and light, and this was expressed by both female and male members.

The girls and mothers preferred educative games, specifically the Memory Game, as they found that it as a way to learn more about menstruation. However, during the testing the pre-menstruating girls realized how much more there was to learn about menstruation, and that made them feel a bit nervous. It was clear how important for the well-being of the girls was that their first encounter with menstruation was positive, and for that encounter to occur soon enough before their menarche (Saltz, 2019). They, like the male members of the family, had the most fun with the Mix-a-Body-Match.

The tests showed that the male members preferred the Mix-a-Body-Match to other games. It created the best atmosphere, it was fun, but moreover, it presented menstruation as an easy topic. It didn’t seem like yet another educative game, but as something they can all enjoy together.

Since the aim was to encourage discussion in the family, it was important that the male members be involved as well. Therefore the design requirements also had to fit the needs of the fathers, if we wanted them to be involved in the discussion.

I found Mix-A-Body-Match was the direction to go with. It created the best atmosphere and the fun notes removed menstruation as a taboo topic. Therefore, it was this direction that was of crucial importance for the research since it was obvious that families in India faced huge problems removing the burden of the taboo.

In the following chapters, the building of the game as well as the final evaluation of the game are explained.
1. creating **series of patterns** for the categories

2. **simple pattern creation** - floral or geometrical

3. **layeredness**, **bordering** of the content

4. **bold colours** and **vibrant design**

5. **culturally specific design** - presentation of people and style specific

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*Figure 54. Relevant aspects to be included in the design creation (Own ill., 2019.)*
8.2. Exploration of the form

India is a country of colours and patterns, and finding the right colour and pattern combination can make the product more approachable for people. Customizing certain aspects of design to the culture can increase trust in the user (Sorcar et al., 2017.), and when working on a stigmatized topic and in a sensitive context, it should be approached extremely carefully. I intended to make the product that will make people more open, more comfortable to talk about the subject of menstruation. Therefore, it was necessary to create a visual that will be natural to the family, and not seem as an imported material.

On the left page(figure 54.) the aspects of explorations are presented that were found relevant for the visual part of the design when designing for the context of India.

The explorations were made through the patterns, the colour combinations and the visual characters/content of the cards.

In the next chapters, these explorations are further explained.

Physical explorations of the size of the cards were also made. The initial size of the cards was thought to be too small and uncomfortable to hold. But I also wanted to explore what it looks like when printed in a smaller or larger format and what it looks like when the pairs are made. This was taken into consideration when the final design was tested.
Phase 4 "Mix A-Body-Match"
8.3. Exploration of the patterns and colours

It was pointed out during the tests how some of the visuals were a bit abstract, and how certain content should be more culturally appropriate. For example, involving a cloth pad could be more applicable than a tampon due to the broader usage. As well, colour combinations and pattern combinations on the backside of the cards, though they seemed inviting, were not as relevant to the ones in India.

That is why I decided to explore the patterns first. After I had made different types of patterns, I tried to find colour shades and combinations which reflected the ones I saw during my stay in India. This I made by exploring saree colour combinations (figure 56). The combinations were later discussed and commented on with Indian students and final combinations were created with their help.

The explorations of the form can be found in the Appendix 4.

Figure 55. The pattern exploration & the final pattern and colours (Own design, 2019.)
Figure 56. The colour exploration from saree (FabIndia, 2019.)
Figure 57. In the first row are presented some of the first designs, and the rest presents the current designs (Own design, 2019.)
8.4. Exploration of the content

The relevant aspects of Mix-a-Body-Match included the content other than puberty and menstruation, to make it more approachable for people. As already mentioned, the topic of puberty and menstruation had always been seen as a very serious one and was followed with a negative tone.

The cards Mix-a-Body-Match are spread into 3 categories: puberty, menstruation, and “other”. The “other” category contains topics not related to puberty or menstruation. By adding other objects such as a flower, sun, or legs to pair with content of puberty and menstruation, I managed to introduce fun and amusing interaction into the process.

The content that should be put into the design was decided upon in consultation with Sukhibhava, during the stay in Bangalore.

At first, the content which was presented to participants was found to be very ambiguous. Therefore, it was obvious the graphic style needed to be adjusted to the styles they were accustomed to in India.

After exploring the visual style (page 135) I noticed more bold colours should have been used. Also, I felt that humanizing and creating the characters more familiar to the context can enhance adaption, as mentioned (Sorcar et al., 2017). This I have done with experimenting with certain aspects which I found very specific for India, such as experimenting with the eye shapes, the curves of the body, and by removing the borders from shapes (figure 57).

The inclusion of the “other” category was checked as well - for example, the flower that was used was a Marigold flower which is very often seen in the streets in India; the flip flops that are on the cards are a very often used with a distinctive white and blue colour; and the moustache that is drawn is a very familiar moustache form in India.

The content I chose was later discussed with Indian students at TU Delft and lastly checked with the Boondh organization.

The explorations of the content can be found in the Appendix 4.
Growth of muscles
When boys and girls reach puberty, an increase in hormone production spurs a rapid growth spurt. The growth spurt accounts for about 20 percent of the full adult height in both sexes. Teens will gain approximately 50 percent of their ideal adult weight during puberty, including an increase in lean muscle mass. The skeletal system will continue to increase into adulthood for males. Lean muscle mass will increase for females after puberty, giving way to increased body fat. Muscle mass increases. Males increase their muscle mass about 50% more than females. Increased protein is also formed in non-muscular parts of the body.

Voice
Boys experience voice change during puberty, and the change can happen anywhere between the ages of 10 and 18. Typically, voice change begins somewhere around age 12 or 13, or during the middle school years, which can make the experience a bit embarrassing for the child. The larynx enlarges during puberty, inducing swelling in a cracking voice, but gradually evolving into a deeper, typically adult masculine voice. 

Figure 58. From and left to right: the main page of the booklet, the content on the cards, the chapter about boys, and then intro to the booklet (Own design, 2019.)
8.5. Creation of the booklet

Besides the cards, the final design of Mix-a-Body-Match also includes the booklet, which was a concept adopted from the Memory Game and the Puberty Flute.

This was decided after I had received a lot of favourable comments on the booklet during the testing. Female members, specifically, enjoyed using the booklet and saw it as a great source of information about what they would be going through. As well, from the course of Design for Emerging Markets, we found how male members tend to search on the internet to find about menstruation. This way, they can use the booklet provided with the game.

The Mix-a-Body-Match booklet, however, is different from the original Memory Game and Puberty Flute booklet. It contains the information on how to play the game and has a short explanation of the content on the cards.

Aside from the content, there are chapters in the booklet where more can be learned, but unlike in the Memory Game and in the Puberty Flute, the booklet is not a necessary part of the game. This way, the autonomy was given to the user on how much they wished to indulge in the topic, which is important when working with sensitive topics like menstruation (IDEO, 2010).

Also, there are 3 categories - what happens to both boys and girls, just to boys and just to girls. This was again an act of trying to “normalize” the topic of menstruation by presenting it as a natural part in the process of growing up of a girl.

The material of the both booklets can be found in the Appendix 4.
3. BUILD A STORY

2. STORYTELLING SPRINT

1. STORYTELLING COMPETITION

0. ORIGINAL INTERACTION

...
8.6. Exploration of the interactions

The idea was to try different types of interactions to find what the best one to use with the game is. It was necessary to find which game playing comes natural for the content, but also which game playing fits the best the intended age group of the girl.

I decided to combine the often used technique of storytelling in India with the timing aspect of the game playing, which proved in the tests to be successful in creating engagement and focus of the players.

3 interactions were created, along with the already existing principle of playing Mix-a-body-match.

0. ORIGINAL INTERACTION (from 9 years upwards)
1. You first choose the Round King in this round. The Round King is in charge of his deck, and the rest of the cards are spread equally to all of the other players.
2. The game starts with the Round King putting down one card from his deck in the middle, with the card facing up and for all of the players to see.
3. The other players choose a card from their deck for which they believe would create the funniest combination with the card from the Round King. The players place their cards facing down, one by one.
4. The Round King then turns the cards facing up and examines the cards and chooses the one he finds to make the funniest combination and places on the side. The remaining cards are returned to their players.
5. The game continues with the Round King placing another card in the middle.

1. STORYTELLING COMPETITION STYLE
1. You first choose who will be the Round King in this round. The Round King is in charge of his deck, and the rest of the cards are spread equally to all of the other players.
2. The game starts with the Round King putting down one card from his deck in the middle, with the card facing up and for all of the players to see.
3. The other players choose a card from their deck for which they believe would create the funniest combination with the card from the Round King. The players place their cards facing down, one by one.
4. The Round King then turns the cards facing up and examines the cards and chooses the one he finds to make the funniest combination and places on the side. The remaining cards are returned to their players.
5. The game continues with the Round King placing another card in the middle.

2. STORYTELLING SPRINT
1. You first choose who will be the Round King in this round. The Round King is in charge of his deck, and the rest of the cards are spread equally to all of the other players.
2. The players are not allowed to see their cards. They have their own pile in front of them with the cards facing down.
3. The game starts with the Round King putting down one card from his deck in the middle, with the card facing up and for all of the players to see.
4. The other players count together to 5 before they try to place the first card from their own pile on the top of the Round King's.
5. The player whose card is the first one on the top of the Round King's has to defend his card.
6. The Round King chooses whether the combination is worthy or not. In case the Round King is convinced, the combination is taken on the side, and the rest of the cards are returned to the players and the game continues.
7. In case the Round King is not convinced, the next player of the choice of the Round King has a chance to defend his card within 10 seconds.
8. In case none of the stories are convincing to the Round King, the Round King takes back the card and chooses another card to continue the game.

3. BUILD A STORY (no Round King in this one)
1. The Round King's deck is on the side and the rest of the cards are spread equally to the players.
2. The game starts by one player putting one card from his pile down and creating the first sentence about the character.
3. The next player puts another card, repeats the first sentence of the first player and adding another sentence of his to it and that's how the game continues.
4. The players can choose to take the card from the Blue Deck and putting it into the middle instead of putting down their own card.
5. In case the player forgets the previously built sentencee, he is out of the game.

Aim: to create the story and build people/creatures/objects... basically to play with your creativity. At the same time, you need to be attentive to what is happening and remember what your playmates have been saying.

Rules: the player can only add one simple sentence.
8.7. Testing of the four interactions

The ideal situation would have been to test the game as intended, by families in India. However, to evaluate the final design I had to make do with what was possible and available.

In the Netherlands the test was conducted with an Indian family. The age of the daughters fit the target group. The father wasn’t present during the testing, but considering that the aim of this round of test was to find the best fitting interaction for the game, the test was still contributing and relevant.

The NGO Boondh from Bangalore offered to do the testing themselves and provide the feedback on the game. The testing also allowed them to investigate how the game could fit for their field work. As experts in the field, the testing helped me with the analysis of the content material and of the interactions. Their feedback helped me rate the reactions of the users, and the appropriateness of the material for the context.

THE NETHERLANDS

The test was made at the home of the participants, and with the mother and two daughters, aged 8 and 11.

The initial interaction seemed smooth and very easy to conduct. The storytelling competition seemed unnecessary after the initial interaction, as the explaining of the pair came already quite naturally in the first conducted interaction.

To build a story interaction seemed a bit demanding to conduct, especially for the youngest daughter. The storytelling sprint seemed the most entertaining for both the mother and the girls. The principle of the game playing was not hard to follow therefore it was fit for the youngest daughter. The time limit brought competitiveness and made it most engaging. With the engagement the excitement grew and also the creativity with the storytelling.

It was obvious that the card set for the Round King required more work and testing as it was seen as quite repetitive and not as interesting for the Round King player, even though the combinations ended up in entertainment.

AHA! moments

How if there is not just one way to play the game? What if the users can choose how to play the game? What if there is couple of ways for them to play?

Figure 59. The family testing the build a story concept (Own vis., 2019)
INDIA

The tests were made by 3 employees from Boondh. Boondh conducts education sessions mostly in the rural areas of India, and usually in larger groups of participants. The comments that they gave on the games came both from their experience of working in the field and in the aspect of menstruation. The comments they gave were about the cards and about the interaction.

On the interaction, Boondh reported that they found the storytelling competition and sprint more suitable for children and for the effectiveness to be achieved. Building the story they found to be most enjoyable, but they could predict that the repetitiveness of the interaction with this concept not to be suitable for the elderly age group. They found the games to serve as a good ice breakers, but that did not start the conversation per se.

As for the cards, the repetitiveness was also mentioned. Certain aspects of cards, such as the body parts, seemed repetitive. This could be improved by including the Indian apparel, such as kurts, shals etc. Another important addition would be to include a stronger level of inclusiveness in the cards, such as different body shapes and skin colour, which are very much present in a country such as India. More explorations in the category of other is suggested, for e.g. more visuals of food, or animals etc. More testing would be good with the variety of content on the aspect of menstruation and puberty, such as different portrayals of breasts, vagina, penis and etc. in order to find the best way to make the subject natural, acceptable or normal. Also, more products that people use or start to use when they hit puberty, like the razor which is already included. Some aspects shouldn’t be left just as separate and should be presented more explicit, such as the armpit hair.

CONCLUSION

The storytelling seemed useful in certain game plays, especially when it included the time limit. The storytelling concept interactions seemed to be the best fit for the younger generations, specifically the storytelling sprint which was very engaging, both for the parent and children. It was also the favourite one by Boondh, as it was the best in enabling discussion.

During the test in the family in Netherlands, the idea came to include different types of interactions with the game, since the card set allows that freedom. This way, the game gives more possibilities to the families to play the game in the way they wish to.

Boondh made it clear that more work needs to be done with the cards. More explorations of the content on the cards and more testing is required. The repetitiveness of the cards of the Round King was mentioned both by Boondh and the family. More variations should be made in the deck for the Round King.

Figure 60. The testing of the Mix-A-Body-Match in the Boondh NGO (Own vis., 2019)
phase 4 "Mix-A-Body-Match"
8.8. Final design

Here is presented the outcome design of this project. The overall design has intended to be as inviting and colourful and to set far away from the uncomfortable and secrecy atmosphere that currently surrounds the topic of menstruation and puberty.

The product is a box which holds the card decks and the booklet.

In Appendix 4 is shown the creation of the final product.

**Box**

The entire box is covered in different colourful patterns to match the style of India.

The division of the cards is also done in colours, contributing to the inviting and colourful design.

The box makes the entire product compact and easily transportable and storable.

**Cards**

The total of 75 cards is separated into the Round King’s deck and the deck for the rest of the players.

The Round King’s deck is clearly divided from the deck for the rest of the players.

The size of the cards is compact for both adults and the children to hold.

**Booklet**

The booklet in the product is used to give instructions on the game, information on the content on the cards and the further information on puberty for family members to read in their privacy.
Figure 59. How does the game get into the house (Own ill., 2019.)
8.9. How does it get to the house?

Through the interviews with experts and desk research, I found out how the education on menstruation is happening mostly from the NGOs (chapter 2. Indian context - The lack of education). Later through the work with Sukhihava I got to see the tools they use for their education. In one of the interviews I found out one example where the school has also invited families to teach them on the topic along with their children.

Through discussion with expert companies on game design, it has been told how games like Mix-a-Body-Match are usually played only once. Through interviews I have also found how the parents are not as eager to get involved in such game playing more than on one occasion. They see it as a way to break the silence on menstruation and inform the children how they can discuss the topic with them if they want to.

The idea was how the NGOs will get the games themselves through funding and donations. The NGOs would then give the games to girls to take home and play with their families. The girls then return the games to the NGOs in school and get further education on the topic from the NGOs.
**WHAT**
- a pairing game with content on puberty
- a game on a principle of Cards Against Humanity and Apples&Pears

**HOW**
- the NGOs who give education on menstruation in schools acquire the product through funding and give girls in schools to take home and play with their families
- the entire family plays together the game

**WHY**
- by having the topic introduced for the first time in the house, the girl doesn’t see it as a taboo, but as a normal topic to be spoken with everyone
- the game creates a positive atmosphere and a normal subject you can even have fun with
  - Mix-a-Body-Match creates a positive atmosphere as it is makes players to be creative and forming funny combinations with a content which is regarded as a taboo

**WHEN**
- the NGOs give the games to girls as a sensitizer for the upcoming class on menstruation and puberty

**WHO**
- the pre-menstruating girl brings the game home
- family members play the game all together

*Figure 61. The analysis of the Mix-A-Body-Match (Own ill., 2019)*
8.10. Evaluation

Based on the needs and the research question

The problem around menstruation in India is that it is a taboo – it is not to be mentioned in the family and that consequently affects the well-being of female children. **The goal of this project was to enable discussion in the family home by creating a positive atmosphere.**

In the following text the design was evaluated based on the requirements(page 117) to make it easy and natural and the research question(page 68).

**REQUIREMENT 1: TO MAKE IT EASY**

The chosen direction, Mix-a-Body-Match, was picked as it had the lowest barrier of all the other design directions. Mix-a-Body-Match **doesn't require prior knowledge** which allowed participants of the youngest age to be involved (the pre-menstruating girl), but it also **didn't intimidate male members** who are usually not educated on the topic. **The game made participants creative and imaginative.** It involved them into the game by forcing them to be creative and imaginative and to use the content which is otherwise stigmatized. Moreover, the game influences players to turn the taboo into a humorous content. The power of humour in stigmatized topics has been explained on the page 95.

With a game there was no forced discussion, but the discussion occurred naturally through the game, by describing the content. It turned the focus on discussion and put it as a side part of gameplaying, which eased the conversation. **The game became a tool for discussion.**

**REQUIREMENT 2: TO MAKE IT NATURAL**

In order to make it entertaining, and even surprising and less serious, additional content is included (page 101). By using other content apart from puberty, **the game has put menstruation on the same level of discussion as other mundane objects**, such as flip flops, funny eyes etc. The game presented menstruation as something that is not avoided or hidden.

By portraying an otherwise non discussed topic in the family home (puberty and menstruation), through the game and with other daily topics, it **removed the aura of stigma and “normalized” the topic.** Even more than that - it showed that menstruation can be turned into humour. To paraphrase Dr. Ivan Brown, from the Toronto University, who works on the stigma with disabilities, “When it comes to stigmas, only when are we able to accept the taboos and stigmas and be comfortable with them, can we laugh about them” (Van der Lande & Vegter, 2015).

The booklet puts menstruation as an **occurring aspect of growing up**, which happens to girls in puberty. It “normalized the subject”, mentioned menstruation as any other effect of puberty, equal to boy’s beard growing. It portrays menstruation as a biological phase, not as a taboo.

**Evaluation based on research question:**

**DESIGN: How can design make people feel comfortable to talk about menstruation?**

As can be seen in the findings from the test on the pages 122-125, the games brought a different perspective on the topic of menstruation and the discussion around it. Conversations on menstruation usually do not occur in the family. Conversations on menstruation are uncomfortable, but with the help of the games **conversations came naturally and easily.** The humorous aspects of the game and the laughter **eased the topic and allowed for easier conversation.**

The first moments of the game playing were sometimes uncomfortable but with time families loosened and got involved and sometimes were even reluctant to stop the game. **Certain aspects of the game - competitiveness or timing and humour, made the family involved in the game and enjoy it, even though it was on menstruation.** With the game, **the discussion around menstruation came consequently as a part of the game.**

Through interviews I have also found out that “cracking” the topic **made family members more connected** and that in the future discussing the topic wouldn’t be uncomfortable anymore, since it had already been brought up.
misconception/misinterpretation of the Vedas

tradition and passed on practices

hierarchy & family ties

society view & stigma

lack of education

patriarchy

gender & relationships

Figure 62. The effect of the Mix-A-Body-Match on the constraints of menstruation (Own ill., 2019)
Based on the contribution of Mix-a-Body-Match to the problem of menstruation in India

STRENGTHS
The problem around menstruation in India is big and the behaviour change that is needed to solve it will take time. But discussions are the first step towards the behaviour change. This project aims at bringing families to the table, enable discussions about something that is normally not discussed and break the silence in the family home.

The specific focus here is on enabling the discussion between the father and the daughter which normally very rarely happens (taken through interviews and desk research), but this project proved that open discussions have the potential of enhancing the well-being of the girl.

When we think back to the already presented visual on the page 32, of the problem of constraints around the menstruation, this project focuses on the aspect of hierarchy and family ties.

The importance of the family ties on the behaviour of people has been explained in the chapter 2.2. Furthermore, when thinking about discussing menstruation, many experience high levels of discomfort. It is therefore important to work from the aspects of safety and comfort, which represents a family home.

Moreover, menstruation is in this way affecting the family ties as the conversation is usually done only between the mother and the daughter (pages 55, 56), and with this project, men are involved. This project affects other constraints as well, but in different intensities:

- Through the game, people are directly confronted with the stigma within the family house
- By discussing menstruation out in the open, menstruation can be “normalized” and stigma subsequently lowered
- By becoming normalized the set views and relationships around menstruation can be questioned

- The game provides certain information and therefore educates people (specifically male members of the family who often do not learn about the topic)
- Through engagement, the understanding of the topic and the experience of women can be enhanced in the male members
- By including all of the family members, the traditionally hierarchical and patriarchal roles around menstruation are being affected
- Through education and engagement, people can question the passed on practices and the tradition
- If a positive view is created in the family house, the impact of the society’s view might become less important and less impactful on the girl

WEAKNESSES
The game Mix-A-Body-Match doesn’t directly open the conversation up. Other games such as the Puberty Flute or the Memory Game aim at educating the family members and therefore served as more direct discussion makers through the game.

The cards were created in such a way as to allow users to use their imagination and make the creations of their own. Individual interpretations of the content were necessary to play the game. Through the testing it was found that each player had their own views of the content. For example, the armpit hair was seen as grass, the horns were seen as branches, half of a blood drop was seen as a hat etc. In other games this wasn’t used.

This allowed the users to be imaginative with the content, but different interpretations could also take the game away from the topic of puberty. This way the discussion is left to the users to create how, when and if they wish to.

In order to ensure that the topic would enter their homes and to remove the ambiguity of the cards, the booklet was created to bring the topic into the home as well as to educate. The booklet wasn’t tested but only presented. However, the game itself does not ensure the discussion or its success. Further testing would bring answers to these questions.

Mix-A-Body-Match, however, to many families serves as an ice-breaker, allowing in a subtle way for the topic to enter into their homes. The game contributes by creating a more positive atmosphere around the subject and therefore, more comfort with the topic. This way, if they wish to have the discussion on the topic, the conversation can occur in a more positive tone.
CHOSEN DIRECTION

Mix-a-body-match v4

CONCLUSION

Testing

Formgiving

culture specific content
patterns
colour combinations
different interactions

Mix-a-body-match
After choosing the direction of Mix-a-Body-Match, the time was to form the design so it fits the context of India.

The research was made on *the visual style of India* to make the design approachable to the users. Characteristics that were found specific for India is the usage of *patterns* (specifically floral and geometrical), usage of *bold colours*, the *layering of content* and *bordering of content*. More research was also done in the form of illustrations and the portrayal of the human figure in India.

Usage of bold colours and patterns is representative of India. Testing was made with different *colour combinations and pattern combinations* to find the ones which would seem the most representative for India.

Finally, the different created interactions with the game were tested to find the best fitting one for the age group and which created the best atmosphere. For the youngest members of the family, the Storytelling sprint was the most engaging one and brought the best atmosphere to all family members. However, the strong point of Mix-A-Body-Match is its simplicity and it *enables different interactions* with the game. That is why in the final product it was decided to include different options of game playing and give the freedom of choice to the user.
The last chapter of this report concludes on the findings and the contribution of Mix-a-Body-Match to the problem of menstruation in India. It also involves the limitations that were faced during the research and how can the game and the research be improved. It finishes with the personal reflection of the journey.
9.1. Conclusion

“There is no social change without a change in people. With changes limited to the external environment; the internal world of human attitudes, skills, and values remained unchanged and therefore, none the better.”

Toyama, 2017.

Women all over the world face many issues during their menstruation. Besides the discomfort and often pain women go through during their periods, they are also affected by the taboo and the societal stigma. The situation around the menstruation has been a historically poor one, and it reflects the position women hold in the patriarchal society in comparison to men (Udgiri et al., 2010). Changes are happening recently and it could be linked to the rise of the media and the ease to spread the word. But there are many more aspects around menstruation left to be dealt with.

“Undoing thousands of years of taboo is a sensitive, long term process.”


The inspiration for a family setting came from the interviews and findings from the elective course. The interviews and the research showed that people were searching for a safe space when it comes to the taboo, and the family setting, therefore, came as a place for creating the design intervention. The aim was to encourage and enable discussions at the family home and with all family members, especially with men. India is a patriarchal country and men have a strong impact on the lives of women, but when it comes to menstruation, they are left out of the discussion.

The first step of my field research in India was to interview experts in order to learn from their experiences and to be better prepared for the sessions with families. Through interviews with expert companies it was obvious that the family had a great impact on the behaviour of the younger generations. That made it clear that the need to work in a family setting was extremely important.

“Women need to feel they can talk openly about periods to ensure that future generations feel better informed and prepared.”


The companies that were interviewed often conducted education sessions in schools. Through them I found that many families rely on education in schools to prepare their daughters for menstruation, mostly as an escape from the discomfort the conversation on menstruation could/would bring. This was shown as a dangerous practice, as noted in the chapter 2.2. Indian Context - The lack of education, where schools often did not provide proper education for girls. That is why NGOs were often the ones doing the job.

The interviews also showed that the behaviour of the family members was affected by prejudices – it was clear that the boys wanted to learn about menstruation but felt uncomfortable to ask, menstruation being the "women's issue", while girls felt shy and embarrassed to talk about it in front of their fathers.

The building of designs was made in collaboration with Sukhibhava, in Bangalore. Four different designs with different interactions,
styles and intentions were made in order to see what brought the
best interaction and had the best effect at the family home.

I found in my collaboration with Sukhibhava, that it was very
important to be careful when involving men and women into the
conversation around this topic at the same time, as this had not
been the usual practice. There had never been a programme or
action on this topic involving the entire family before. As it was
necessary to be careful with the approach and at the same time
be effective to find participant families, the entire project was
presented as games on the topic of puberty. This came to be also
an action of normalization on the topic of menstruation. Humour
was used in the designs as a tool to create a positive atmosphere
in the house and around the taboo. The taboo itself and the myths
were fully left out of the designs as the project could otherwise
be seen as an act against religion which had always been a very
important aspect of the life of the Indians.

Through tests I have found that family had a great influence on
the behaviour of the girl, specifically the father of the family.
Many families, even if they saw themselves as very open minded,
still could show certain elements of the taboo. The discussion
around menstruation usually went between the female members
of the family, excluding the male members. Menstruation was
seen as a women's issue, and men excluded themselves as a sign
of respect towards women. Boys were not taught about menstru-
ation in schools and showed great interest in learning about it,
but did not do so as they felt that would be disrespectful towards
women and their privacy.

The most relevant finding was that the girls’ relationship with
their menstruation was influenced by the opinion of the father
on menstruation. In the families where fathers saw menstruation
as a natural and biological fact, girls showed strong confidence
and positive attitude towards menstruation. The positive attitude
towards menstruation was not influenced by the educational level
or the higher caste, but could be quite the contrary. It was shown
that the highest castes were often the ones inflicting the myth
practices, due to the view of “purity”.

Through the tests, it became clear that the pre-menstruating girls
were fully excluded from the topic of menstruation and were
often not aware of the situation of menstruation in India. Also, as
the topic of menstruation at schools is covered later than girls get
their periods today, there was a great percentage of shock and bad
emotions with the occurrence of menarche.

On the other hand, fathers were excluded from the family con-
versations and experiences of their daughters, and often were not
even aware of menstruation. This was an important information
since they were often the decision-makers at the households and
therefore had direct impact on girls’ well-being.

That is why I decided to focus my design on the pre-menstruating
girls’ families, and tailor the design requirements of the games to
the needs of the fathers, in order to ensure they would participate
in the game playing.

The need of all of the female members was to present menstrua-
tion as a natural thing, and not to be seen as dirty or impure. The
usual atmosphere that follows menstruation is the uncomfortable
one and most often, just silence. This made many girls deal with
the discomforts of their menstruation by hiding it, which could
cause many severe health issues (chapter 2. The Indian Context -
Menstrual Health in India).

The concept of the pairing game, Mix-A-Body-Match, was taken
as a final one as it has created the best atmosphere in every family.
The game consists of a card set and a booklet. The booklet comes
with the rules, explanation of the content on the cards but also
gives a detailed description of the changes which occur in girls
and boys during puberty. The booklet was included into the set
since it was highly favoured in the testing and the families found
it very informative.

Mix-A-Body-Match was also shown as the best fitting concept for
the youngest generations as it did not require prior knowledge
and removed discomfort of involvement in such a topic. Moreover,
the concept was favoured by most male members as it presented
the topic of menstruation as simple, easy and light, and not the
usually uncomfortable one.

Mix-A-Body-Match was different from other 3 designed games,
also as it included other content than puberty and menstruation.
Players could get creative and imaginative with the content that
was seen as a taboo, and pair them with daily objects such as
flowers, flip flops or a ladle. The most popular combination in the
tests was the combination of eyes and half of a sanitary pad which
served as a tongue.

The humorous aspects created laughter in all of the families which
simplified and encouraged the discussion on the topic. But they
also helped to normalize the topic of menstruation as it presented
menstruation as a part of puberty, just as boys got their beards in
puberty.

The games made girls feel comfortable and more confident as they
felt they could discuss or ask about menstruation more since the
game had, “cracked” the topic in a positive atmosphere.
9.2. Discussion

The problem around menstruation in India is years old and deeply complex and the only way to mend it is through a behaviour change in the society. The phenomenon of the behaviour change cannot occur but through discussions. The aim of this graduation project was to enable discussion on menstruation at a family home in India to enhance the well-being of girls.

The taboo of menstruation in this project was approached through gamification. That is why the game Mix-a-body-Match was invented and it was intended to serve as a conversation starter by creating a positive enough atmosphere at the family home to enable discussion on the taboo subject of menstruation.

The big contribution to this project was the two and a half months long stay in India. It greatly enriched my understanding of the context and of the problem.

The desk research and the literature review gave me a picture of the depth of the problem, but the daily interactions and the personal relations brought the colour to the picture.

It was an invaluable experience which enabled me to understand and experience the complex context, and the problem which was rooted in the society, in the religion, in the behaviour of the people, and in the family and gender relationships. The experience was especially important for understanding the effect of the taboo on the well-being of women. The complex emotions people experience can only be fully understood if the way of life and the society structure is understood and that can be only made through real life personal observations.

LIMITATIONS

The research trip to India was a fruitful one as it showed clear issues around the subject of menstruation in the context of India. However, during my stay I was faced with issues and limitations which forced me to find ways to make the most of my stay.

First and foremost, the period of my stay in India was also the time of summer holidays in India which made it hard to find families that stayed in the city at the time.

Secondly, most of the families that I was able to recruit for testing came from personal relationships and did not quite represent typical families of the Karnataka area. They were very open to discussions on the topic of menstruation and were generally very open minded. Besides, some of the children also attend special schools, like Montessori, with principles of education that affected their behaviour and openness to many topics positively, menstruation being one of them.

Planning the research and testing were also made more difficult due to summer holidays. A lot of time was spent on trying to recruit families, and as well there were many last-minute cancellations that would affect the entire planning and calendar of testing.

The follow-up interviews were generally planned to be about a week after the test, but due to personal plans of the families the follow-ups were conducted when and how it was possible for the families. In some cases they were conducted two weeks later, and in some even over the phone.

The tests with lower-income families were organized spontaneously. Better organization and preparation could be made, especially with the help of the translator, as there might have been some data loss in the translation. However, it proved not to be easy to make plans with lower income families because they usually worked longer hours and it was hard to arrange for all family members to be at home at the same time.

Lastly, in an occasion I have also been warned that the fact that I was Caucasian could influence the answers of some participants, specifically, by making families try to be perceived more open-minded on the topic. Having another person on board, of the Indian origin, could bring more honest and non-biased answers. But it was hard to even imagine that a person could be found to invest as many hours to the project.
RECOMMENDATIONS

The game Mix-a-Body-Match could contribute to solving the problem of menstruation in India as it was already described in chapter 8.5. Evaluation. There are certain recommendations and future actions to complete to make the design fully fit for the market.

Firstly, **the game should be tested in representative families** of India. As mentioned at the previous page, the game wasn’t tested in the more “typical” conservative families due to mentioned limitations. Therefore, it is recommended to test the game with different participants and in different family contexts.

Secondly, only the prototype was tested with the families. How the **latest designed version**, in its intended material and with the latest updated visuals, could contribute and what atmosphere it would create at the family home, is **still to be seen after it is tested in the real context**. The last version of the design was tested with Indian families but who reside in Netherlands momentarily and their behaviours and views could be different.

Thirdly, most of the research for this project and the testing took place in Bangalore. The next step would be to **test the game in different areas of India** as the future usage of the game would probably include other areas of India as well.

Fourthly, **longer research and observation time** would be good to have to have a positive finding of the effect of the game on the behaviour of people. The research of this project lasted for two and a half months and with each family there were only 2 interactions and within a time span of only a week. There is no doubt in my mind that this game can create an impact, but to measure it, it is required to have a greater number of participants and a longer observation prior and after the interaction over a longer period of time.

Then, it would be beneficial to recruit **more people of different genders** to do the research, since I noticed that family members preferred to conduct interviews with the members of the same gender. Also, members of the same culture could be beneficial to the research as they might have a better understanding or feel to the answers or of the reactions/behaviour of the participants. Talking to people of the same culture on such sensitive topics might make the participants feel more relaxed during the interview.

Lastly, the game is an easy tool and can be easily altered. It would be interesting to **see the impact the game** can have in **other countries** and other parts of the World. As mentioned in the first chapter, the problem of menstruation is a global one and the stigma and the taboo of menstruation is omnipresent, with different intensities in different contexts. However, the Mix-a-Body-Match creates a positive atmosphere around the stigmatized topic of menstruation. By making the design culturally appropriate and specific, it can be used in different countries as well.
9.3. Personal Reflection

My first intention of starting this project was to deal with the topic that concerned me as a woman, as a designer, and as the person I am. I also wanted to have the experience of working in a developing country to create a possibility for working in another context in the future.

I was fortunate enough to experience life in a country which is a complete opposite to anything I have experienced before. But dealing with cultural differences and everything that comes with it, along with a constant background stress of a graduation project while still trying to conduct research - it has been demanding to say the least.

But it has also been an amazing journey. A life-changing one. I would have never believed that the interest in a topic would stay for so long, but that actually a passion for the project grew with time. It was in India that I realized how the project I do not consider as a graduation project. It is a project where I was able to put my entire self, to give all my energy, passion and learnings.

My biggest takeaway from the project has been on how to conduct the research. The experience taught me something that no textbook or desk research could do, and that is the essence of human interaction. The context and the topic I was working on is sensitive, and it is essential that people feel comfortable and see me as a person and not just as an observer or a researcher. In order for them to share their personal stories and experiences, it is important to create the ambience of trust. I have learned how when working, becoming a sister or a friend to people who are your focus is essential, even if meeting them half an hour ago. An experience like the one that is presented on the left page is priceless. The research interviews in India have become chai times, lunches, dinners, and the testing became game playing, laughter and evening discussions.

I have always been interested in understanding the human mind and behaviour, but when designing, nothing can match the actual interaction with the user. Listening to the experiences or observing their relationships made me understand the needs and the requirements. The fact that I am a woman also made me more emotional as I could empathize with many experiences and troubles that women shared. Needless to say that the connections I made along the way also increased my motivation for this project.

There is never a constant period of sunshine, and I have also learned a lot on the way in this project through hard moments.

During my trip, I have faced challenges daily, but would face them again. The trip shook me to the core in many ways, from the culture shock to adaptation to dealing with the “Indian standard time”, to the personal levels, such as understanding how I was taking some things for granted. It showed me things I have been oblivious to as well as it taught me how to deal better with things that come along.

I also learned that although having the passion for the project is beautiful, it is not everything. It is important to have structure, not just in work and communication of the work, but also in life. I have faced enormous stress during this project, as many graduates do, and luckily I have learned to step away from the project from time to time, to recharge my batteries and to later be able to produce something even better. And that is something that I hope to carry with me in my future quests, too :)}