

Synthetic Sanitary Napkins: A Silent Health Threat For Women

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Abstract: The issue of women hygiene products that are becoming a serious environmental issue is due to the non-biodegradable raw materials which is used in manufacturing process. In this paper an attempt is made to understand two different kinds of sanitary napkins which are Synthetic Sanitary napkins and Organic Sanitary napkins and the raw material used in the manufacturing process. This paper will focus on the alternative provided by the organic napkins which will help to replace the existing raw materials used in synthetic sanitary pads for the betterment of the society. The objective of this paper is to analyze the level of awareness of women regarding the environmental effects of sanitary napkins and also to study the cultural beliefs and restriction which are faced by women during menstruation. The paper uses primary data to analyze the women preference between synthetic and organic sanitary napkins and their impact on environment. It has been found that the firms using eco-friendly raw materials cause a positive externality, whereas the latter cause a negative external effect.

Keywords – Sanitary napkins, Synthetic, Organic, Environment degradation, Cultural beliefs and restriction.

1. INTRODUCTION

The issue of women hygiene products that are becoming a serious environmental issue is due to the non-biodegradable raw materials which is used in manufacturing process. In this paper an attempt is made to understand two different kinds of sanitary napkins which are Synthetic Sanitary napkins and Organic Sanitary napkins and the raw material used in the manufacturing process. This paper will focus on the alternative provided by the organic napkins which will help to replace the existing raw materials used in synthetic sanitary pads for the betterment of the society. The objective of this paper is to analyze the level of awareness of women regarding the environmental effects of sanitary napkins and also to study the cultural beliefs and restriction which are faced by women during menstruation. The paper uses primary data to analyze the women preference between synthetic and organic sanitary napkins and their impact on environment. It has been found that the firms using eco-friendly raw materials cause a positive externality, whereas the latter cause a negative external effect.

I. OBJECTIVES

1. To analyze the awareness of women regarding the environmental effects of sanitary napkins
2. To study the cultural beliefs and restrictions faced by women during menstruation

II. METHODOLOGY

In this research paper qualitative methodology is been used to determine the impact of sanitary napkins on the environment. Here snowball sampling method which is a non-probability sampling method where research participants recruit other participants for the study is been used. The sample size taken in the paper is 60 and the primary data collection tool is Questionnaire. With the help of secondary data a comparison is made between the two firms: whisper- producing synthetic sanitary pads and Carmesi- producing organic sanitary pads to show the impact on environment degradation

2 LITERATURE REVIEW

The Disposable menstrual pads was introduced by Benjamin Franklin which gets available around 1888. It is rightly said that all the women in the world goes through periods every month for approximately 35 years of her life on an average where all the women uses around 16,000 sanitary pads in her life. Sanitary Napkins was introduced in 1970s which contain harmful chemicals for women such as chlorine and use artificial fragrances which contains plastic in it. With release of the Bollywood movie 'Padman' use of sanitary pads and its importance has come into light and steps are taken out to make these products available at an affordable rate to the women or even free in many school and offices. Moreover, campaigns are organized to spread the awareness to people about menstrual hygiene among the rural women in India. While on the other hand waste generation of disposable sanitary products has also been increased nowadays. According to NHFS 2015-16, 47% of rural and 77% of urban women has replaced cloth with sanitary pads. According to the studies almost all the synthetic sanitary pads have their negative effects on health such as rashes and itchiness. Synthetic pads itself contains harmful chemicals in it which have a negative impact on the women's health. Most of the women have very little awareness about the materials which is used in it. Synthetic pads may also contain high concentrations of dioxins and furans which are also linked with cancer and disorders. According to the research, about 113,000 tons of menstrual waste is generated annually in the country and the taboos and superstitions surrounding menstruation has made it challenging to install safe disposal methods of these menstrual products. The raw material which is used you make sanitary napkins are generally plastic and chemical components which are often hazardous to health not only but also to the environment as an average sanitary pad after disposal would stay in the environment for 500 years before it starts to degrade therefore it is very crucial that the right means of disposal is adopted to prevent environmental stress on land and water.

There are different layers in sanitary pads which comprises of multilayered structure in which each layer have specific function to perform. It consists of three main layers the top sheet, absorbent core and barrier sheet. Top sheet consist of thermoplastic fibres, hydrophilic absorbent fibre which help to absorb the fluid and transfer fluid quickly from top sheet to secondary sheet. Absorbent

core which is between the top sheet and barrier sheet main consist of wood pulp main function is to absorbed liquid into a jelly like state so that it would not retract back. Barrier sheet is made up of polythylene main function is to seals the fluid from staining or leakages. Few components of sanitary pad will disintegrate and be attacked by the bacteria in a public or private sewage disposal system but polyethylene or polymeric films used as a barrier sheet remain intact as this polymer are inert and are not broken down by bacteria and thus pollutes the environment. Therefore, there is a need to provide alternative by the organic napkins which will help to replace the existing raw materials used in synthetic sanitary napkins so as to protect the environment. In organic sanitary napkins the top sheet is made up of organic cotton which is non- irritant, skin friendly and also have retention properties. It is cultivated from non-treated Genetically Modified (GMO) seed and is grown using method and materials which have low impact on environment. In Absorbent core the raw material which is used in organic sanitary napkin is Bamboo fibre which absorbs and wicks water 3-4 times better than the cotton and reduces odor as the fiber is filled with multiple micro holes and micro gaps. Bamboo does not require any chemical treatment to smoothen it and it is the anti- microbial agent that is bamboo kun naturally present in it. While sometimes jute and banana fibre is also used because it is eco- friendly, bio-degradable and have no negative impact on the environment. In barrier sheet the plastic material i.e. polyethylene and polyurethane should be replaced by bio-based plastic from starch. The nonabsorbent fibres such as polypropylene and ethylene are obtained from petroleum resources which are high carbon footprint and non-biodegradable. An alternate sustainable replacement of petroleum based fibre is the PLA (Poly Lactic Acid) which is non- toxic, anti- bacterial and biodegradable in nature.

3. SECONDARY DATA ANALYSIS

3.1 WHISPER VS CARMESI

To make our comparison easy we have taken an example of synthetic sanitary napkins- whisper and the organic sanitary napkin- carmesi. P&G Hygiene and Health is the leading industry in the women hygiene products. All the feminine hygiene products are manufactured under the brand name of “whisper” while carmesi is nature derived, rash resistant, eco- friendly and incredibly thin. The table below draws an attention between the two pads on the basis of price, customer serving, market share, availability, fibre, sales forecast, growth, revenue, customer review, competitors, total funding, founded, status, employees working and customer based.

Basis	Whisper	Carmesi
Founded	1989	2016
Price	Rs185 (pack of 30)	Rs699 (pack of 30)
Customer serving	18000/month	4000/month
Market share	50.4%	10%
Availability at chemist	Yes	No
Fibre	High carbon footprints	Low carbon footprints
Sales Forecast (2024)	INR45.9 billion	INR 15 billion
Growth Rate	21% every month	30% every month
Revenue/loss (2017-18)	RS 2455 crores	Rs 3444 crores
Customer review		
Competitors	Stayfree	GlamEgo
Total funding	\$60m	\$500k
Status	Private	Private
Estimated employee	51	10
Customer based	Above 1 lakh	50,000

The above table shows that whisper was founded in the year 1989 while Carmesi was founded in 2016 therefore whisper is currently serving around 18000 per month while Carmesi on the other hand is serving 4000 per month. The price of whisper is RS 185 and that of Carmesi is RS 699 (pack of 30) while whisper have a huge market share that is 50.4% while Carmesi only have 10% share in the market. Since whisper is the synthetic sanitary napkin there is contains high carbon footprints while carmesi which is organic sanitary napkin consist of low carbon footprints. The growth rate of whisper is 21% every month while that of carmesi is 30% every month but the sales forecast of whisper is INR 45.9 billion and of carmesi is INR15 billion this might be because of people are preferring to use synthetic sanitary napkins which is available at low cost and people are not aware about the problems which is associated with it. According to the study it is important to make people aware of the problems that is associated with whisper and why they should switch from synthetic sanitary napkins to organic sanitary napkins.

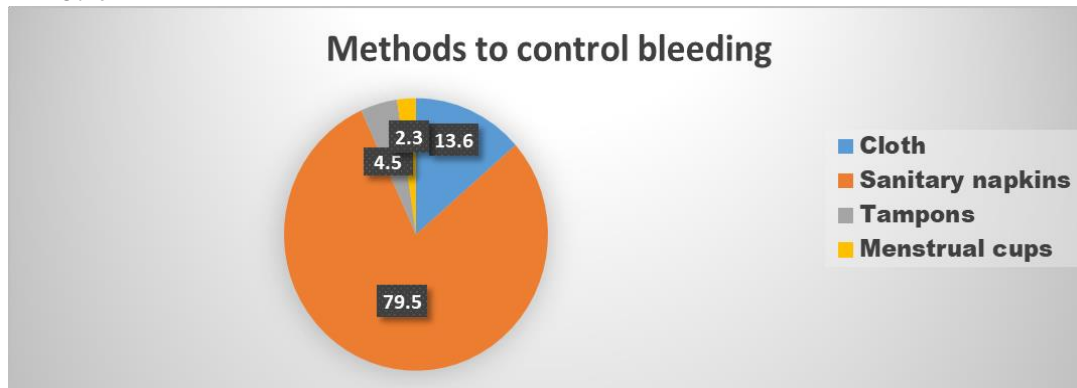
4. PRIMARY DATA ANALYSIS

The findings in this paper have been supported by a primary survey conducted in Delhi. The method used for sampling is snowball sampling which is a type of non-probability sampling. The women population is chosen under the age group of 15-60 in Delhi. The questionnaire has been attached as Annexure 1. The survey was conducted in order to understand the awareness of women

regarding the environmental effects of sanitary napkins and the cultural beliefs and restrictions which women face during menstruation. It further questions their preference and willingness to transit from synthetic sanitary napkins to organic sanitary napkins. The questions involved knowing whether or not the respondent has knowledge about the environmental effects that sanitary napkins have synthetic as well as organic. If they know the ill effects, it was further asked if they would rather use organic sanitary napkins in order to promote a positive effect on the environment.

Q-1- What do you use to control the bleeding during your menstrual cycle?

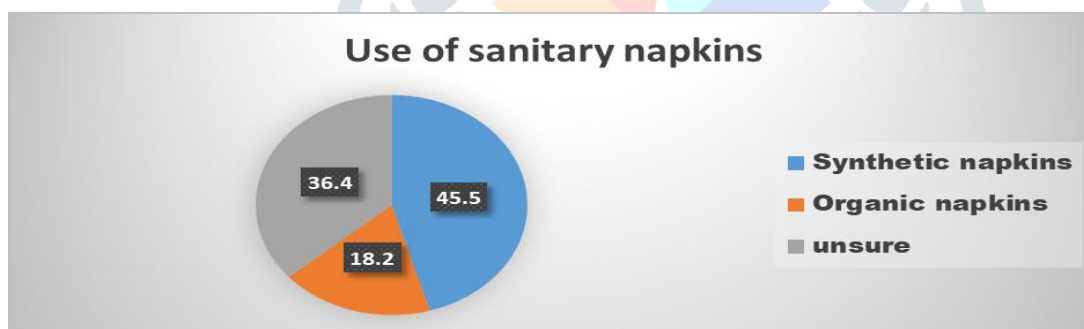
- Cloth
- Sanitary napkins
- Tampons
- Menstrual cups
- Other



The above table depicts that 79.5% of the women use sanitary napkins to control bleeding during their menstrual cycle while 13.6% still use cloth, 4.5% uses tampons and only 2.3% of the women of my study uses menstrual cups.

Q-2- If you use sanitary napkins then which one would you prefer?

- Synthetic Napkin
- Organic Napkin
- Unsure



The above table show that 45.5% of the women of my study prefer to use synthetic napkins, 18.2% prefer organic sanitary napkins while 36.4 are unsure of the napkin that they use during their menstruation cycle.

Q-3 if you use synthetic napkins then which brand would you prefer?

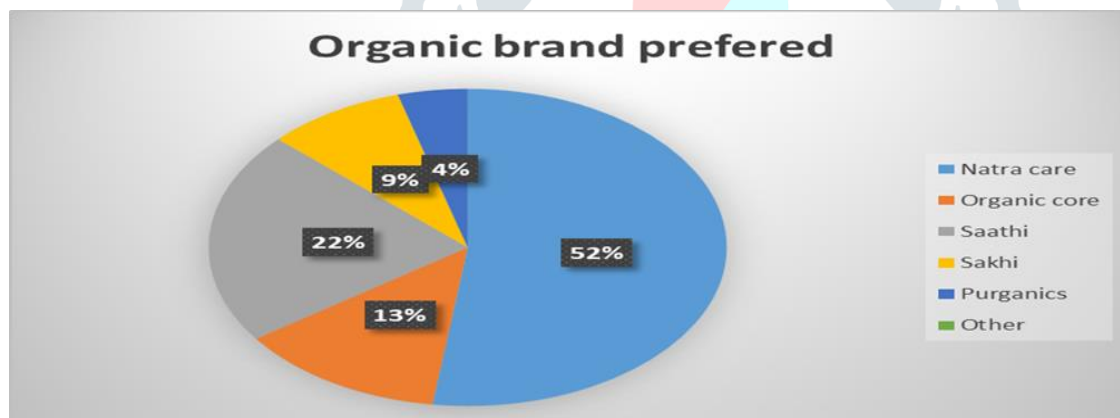
- Whisper
- Stay free
- Carmesi
- Nua
- Other



The above pie chart shows that 66% of the women prefer whisper during their menstruation while 21% of them prefer Stayfree, 8% prefer Carmesi, 3% prefer Nua and only 2% of the women prefer other brands.

Q-4 if you use Organic napkins then which brand would you prefer?

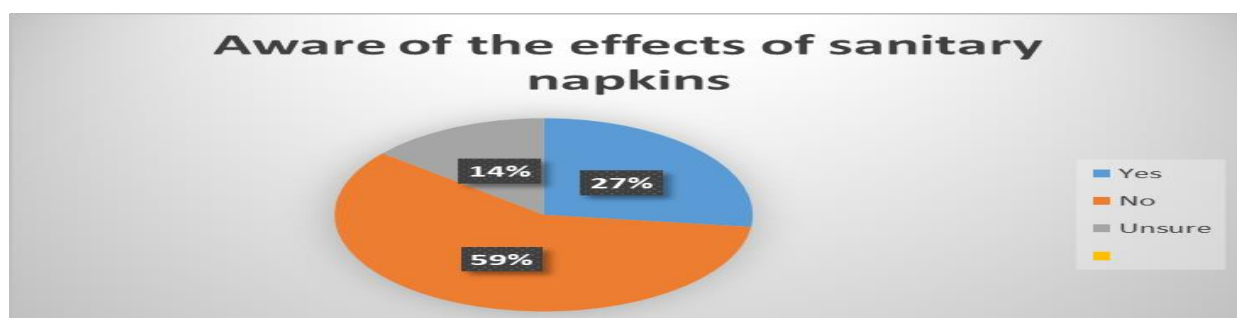
- Natra care
- Organic code
- Saathi
- Sakhi
- Purganics
- Other



The above pie chart reveals that 22% use sathi, 13% of them use organic core, 9% use sakhi while 4% use purganics during their cycle.

Q-5 Are you aware of the effects of Sanitary napkins?

- Yes
- No
- Unsure

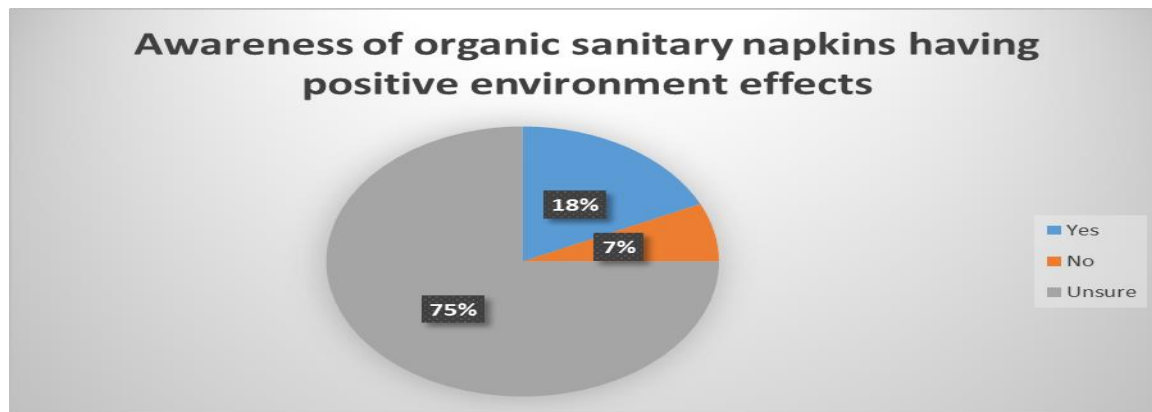


The above pie chart shows that 59% of the women are not aware of the effects of sanitary napkins that may affect environment and their health also while on the other hand only 14% of the women are aware of the effects that have on environment while

27% of the women are unsure about it.

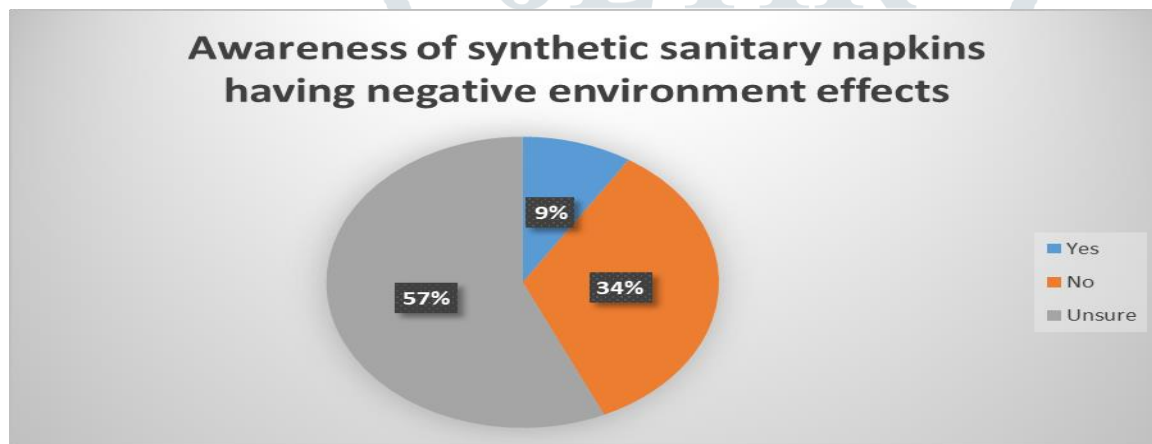
Q-6 Do you know that Organic Sanitary Napkins have a positive environmental effects?

- Yes
- No
- Unsure



Q-7 Do you know that Synthetic sanitary napkins have a negative environmental effects?

- Yes
- No
- Unsure



The pie chart shows that 34% of the women are not aware of the effects that synthetic sanitary napkins have on the environment while 57% of them are unsure about it and only 9% of the study knows the effect that they have.

Q-8 Do you use Disposal of Sanitary Napkins in Non eco friendly way?

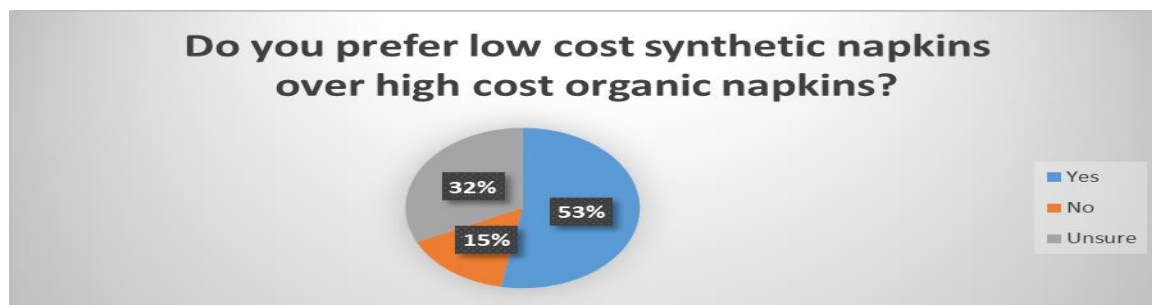
- Yes
- No
- Unsure



The pie chart shows that 41% of the study are unsure whether their disposal of sanitary napkins is in friendly or eco-friendly way while on the other hand 34% do not dispose in non-eco-friendly way while 25% of the women dispose it in non-eco-friendly way.

Q-9 Do you prefer lower cost synthetic napkin over high cost organic napkins?

- Yes
- No
- Unsure



The pie chart reveals that 53% of the women said that they will prefer low cost synthetic napkins over high cost organic napkins while 32% of them are unsure about it and only 15% of them will not prefer it.

Q-10 Do you find organic sanitary napkins easily in stores or chemist?

- Yes
- No
- Unsure



The above pie shows that 57% of the women does not find organic sanitary napkins in stores or chemist while 27% of them are unsure about it and 16% of the women reveals that they can easily purchase organic sanitary napkins in stores.

Q-11 which method you opt to purchase Organic napkins?

- Online
- Market
- Both



The pie chart shows that 62% of women generally purchase organic sanitary napkins online, while 3% of them purchase from market and 35% of them purchase from both online and market.

Q-12 Are you willing to purchase organic napkins than synthetic napkins in terms of cost and location?

- Yes
- No
- Unsure



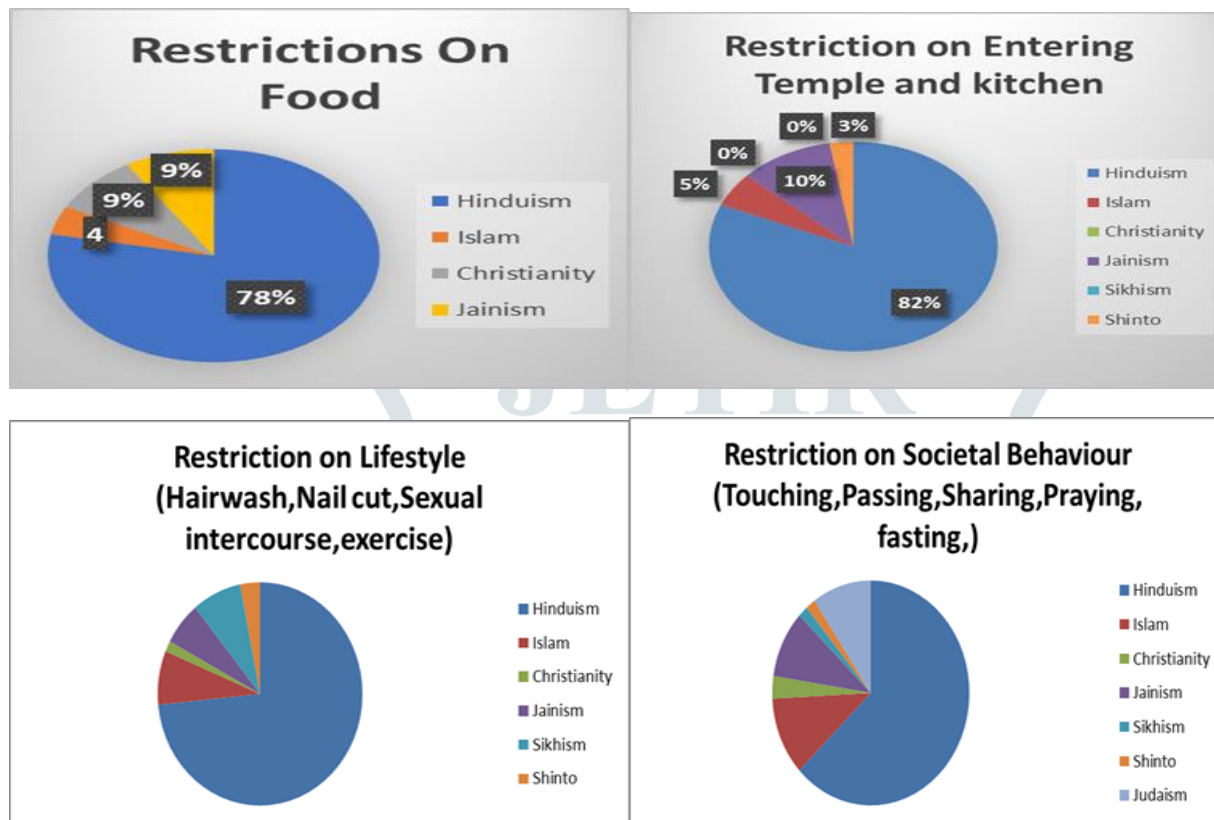
This is the question to check whether women will purchase organic napkins than synthetic sanitary napkins in terms of cost and location or not to see their preference. It reveals that 55% of the women denied to purchase while 32% of them are unsure about their decision and only 13% of them are willing to purchase organic napkins.

Section B- This section Studies the behavior of individual during menstruation:

In India, Menstruation is a phenomenon which is unique to girls where they are surrounded by myths and taboos which have an impact on girl's and women's emotional state, mental state, health as well as their lifestyle. In many parts of the world it is still considered to be dirty and impure. Many people also believed that during menstruation body emits some smell which turns preserved food as bad. In Hinduism, women as well as girls during their menstrual cycle still face restriction in their daily lives such as not entering the puja room and kitchen is the main restriction. They are also restricted from touching holy books as well as offering prayers. Moreover it is also believed that the food they prepare or handle get contaminated during the menstruation and are also restricted to touch sour food like pickle also. In Judaism, women during their menstrual cycle is called as "Niddah" which means they are banned from certain actions until she immerses herself in 'Mikvah' which means ritual bath and should avoid sexual intercourse and even touching or passing things to each other. Most Christians do not follow any regulation related to menstruation but in western cultures they considered the women as dangerous as well as they also face social restriction. Basically in Orthodox Church in Christianity, women's are prohibited to share their thoughts and feeling during their menstrual cycle. They also believe that women during this period should stay in hut and do not have any contact to men moreover, prohibited from church services. The Islamic law treats menstruation as impure and unclean for religious function only. The problem faced by women in Islam is not to pray or fast during Ramadan, not allowed to enter any mosque or shrine. Moreover, she is exempted from sexual intercourse for seven full days and from daily prayers and fasting even if she wants to. They are supposed to go for a pilgrimage (trips) and are prohibited during tawaf during menstruation.

Religion> Problem	Hinduism	Judaism	Christian	Islam	Jainism	Buddhism	Shinto	Sikhism
Avoid exercise								
Food restriction such as Ice in drinks, fried food, cooked fish, alcohol								
Avoid entering in temple								
avoid entering in kitchen								
don't cut nails								
avoid washing hair								
avoid sexual intercourse								
avoid touching or passing things to each other								
avoid sharing thoughts or feeling								
mandatory to go for trips								

avoid wearing or touching flowers								
avoid touching holly books								
avoid prayers								
avoid fasting								
sleep outside the home								



The above table depicts that Hindu religion face more restriction on food with 78% of women while the least restriction is faced by Islam with 4%. Next pie chart draws attention towards the restrictions faced by women such as restriction on entering temple and kitchen where still maximum percentage of Hindu women face such kind of restrictions in the economy. The third pie chart shows the restriction faced by women on lifestyle such as Hairwash, nail cut, sexual intercourse, exercise where women of religion Hinduism face the maximum kind of restrictions. The fourth pie chart reveals the restriction on societal behavior such as touching, passing, sharing, praying, fasting etc. are maximum faced by Hinduism only.

5. CONCLUSION

Nature has encompassed every solution within itself. With more and more use of natural fibre in hygiene product will make it eco-friendly. Use of natural fibre in sanitary pad will reduce the cost of the product will lower accessible to low income group women. As the product is biodegradable, prevent non-biodegradable waste generation. We as a technologist have to find a sustainable way so that we endow a better world for the next generation. Moreover, on the part of government, there must be support given to the new techniques producing organic sanitary pads which are biodegradable like Saathi, heyday etc. and some restriction must be out on the use of synthetic sanitary pads. Secondly, Government must segregate menstrual waste from household waste and decompose them with different techniques and method instead of burring them in landfills. Either they must be included under bio-chemical waste or separate category must be formed under CPCB.

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