Eximious Health

CONSULTING. TECHNOLOGY. OPERATIONS.

DATA ANALYTICS REPORT

FOR AAROOGYA

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A. INTRODUCTION

World Health Organization has identified breast cancer as the leading cause of death due to cancer among women worldwide, surpassing cervical cancer. Every 8th woman in the West and almost every 5th woman in the Scandinavian countries are falling prey to breast cancer. However, 8 out of those 10 women diagnosed, survive, and live happily as they are treated early in the process. On the other hand, in India, late diagnosis is killing 89 out of 100 women within 5 years of diagnosis and treatment. Indians have societal and taboo barriers which makes it difficult to perform early diagnosis of breast cancer. Also, young girls in India are being targeted by a new class of Breast Cancer known as **Triple Negative Breast Cancer** which does not respond to the regular hormonal therapies. Aaroogya are attempting to change this by raising awareness among the masses about breast cancer and general health.

B. OBJECTIVES

The primary objective of the survey was to identify the existing awareness among the population about health, and breast cancer. Below re the four major objectives of the survey:

- Identify the demographic information of the population.
- Understand the lifestyle i.e. work-life balance, stress, hobbies, etc of the population.
- Identify general health-related awareness across the population.
- Identify breast-cancer awareness across the population.

C. SURVEY METHODOLOGY

The survey was conducted across 8 villages in the sugarcane belt of Western Uttar Pradesh. We conducted a total of 1759 interviews. The survey consisted of 4 categories of questions:

1. Demographic questions corresponding to age, gender, occupation, education, and number of family members.
2. Questions related to general health awareness. In this section, the respondents were asked to report their general health concerns, the frequency with which they see a doctor and for what purpose and how often they get preventive health check-up done.
3. Questions related to lifestyle. This section consisted of questions about daily food habits, smoking, alcohol consumption, exercise habits, stress causes, and their hobbies.
4. The final section consisted of questions related to breast cancer. The questions in this section assess an individual's perception towards breast cancer.

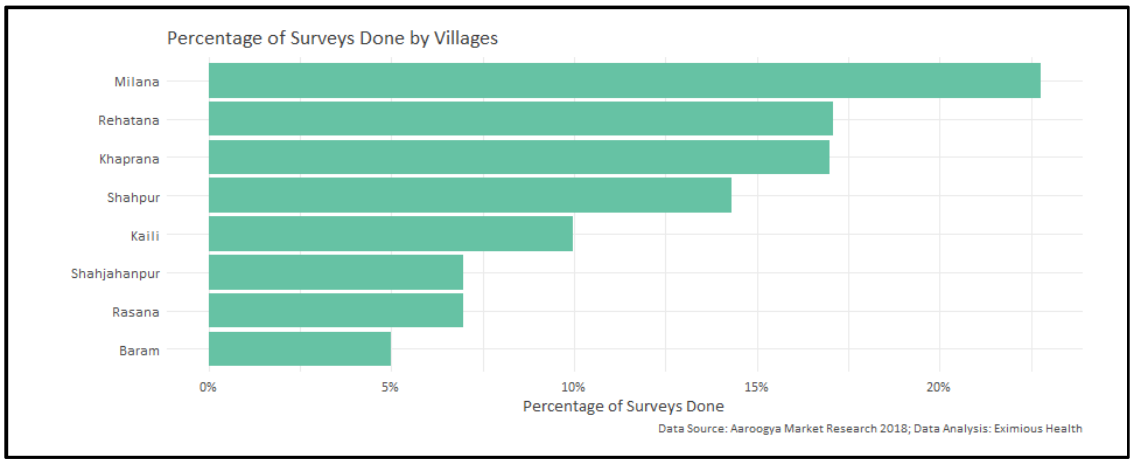


Figure 1: Village-wise survey volume

D. SURVEY FINDINGS

The survey findings have been organized into five sections.

1. SECTION 01: DEMOGRAPHICS

In this section, we will report the demographic findings from the survey.

1. AGE

38% of the respondents belong to the age group of 31-45, followed by 34% belonging to 15-30 age band. Only 6% of the respondents belong to the age group 61 - 75.

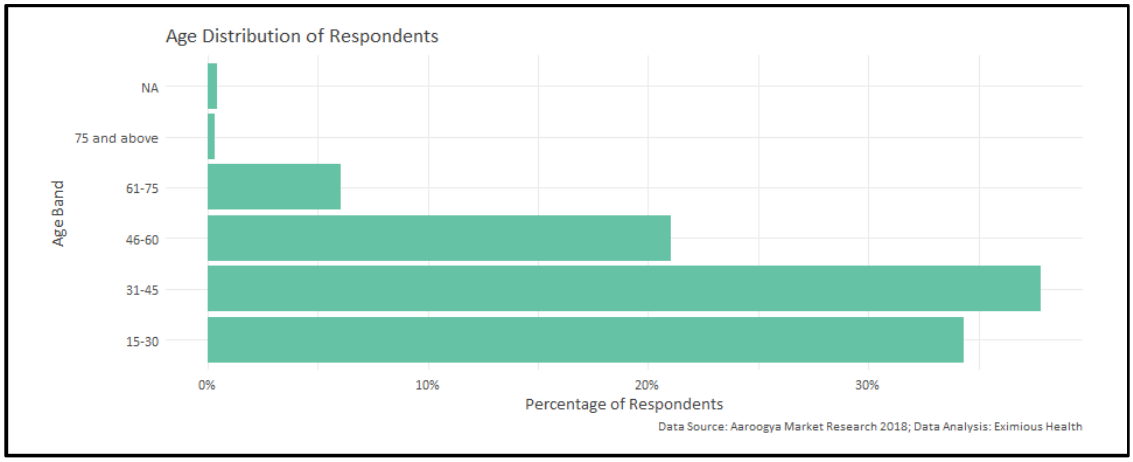


Figure 2: Age Distribution

2. GENDER DISTRIBUTION

About 74% of the respondents are female compared to 26% male respondents.

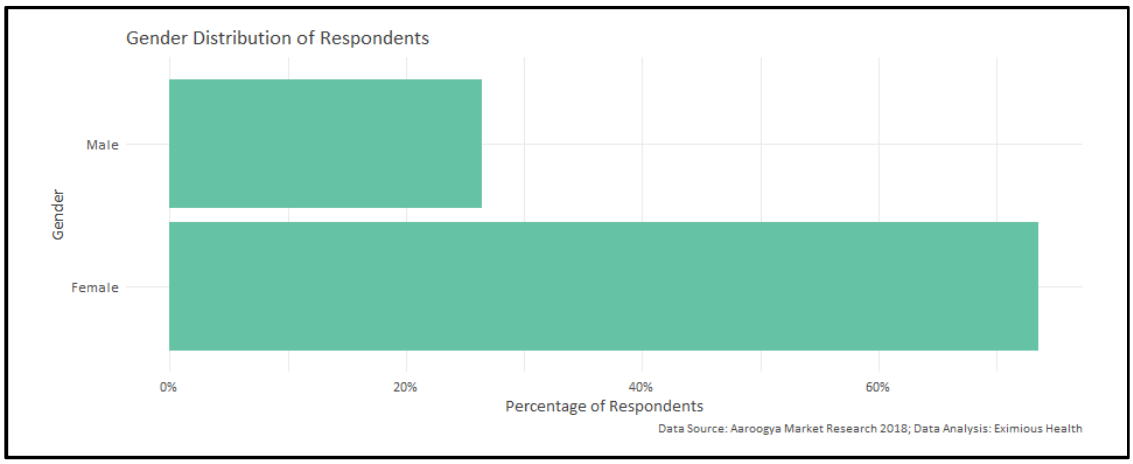


Figure 3: Gender Distribution

At the individual village level, Milana and Baram have more than average female respondents while Rasana, Shahjahanpur, and Shahpur have more than average male respondents. Milana and Baram have 86% and 83% female respondents respectively whereas Rasana, Shahjahanpur, and Shahpur have 59%, 57% and 60% female respondents respectively.

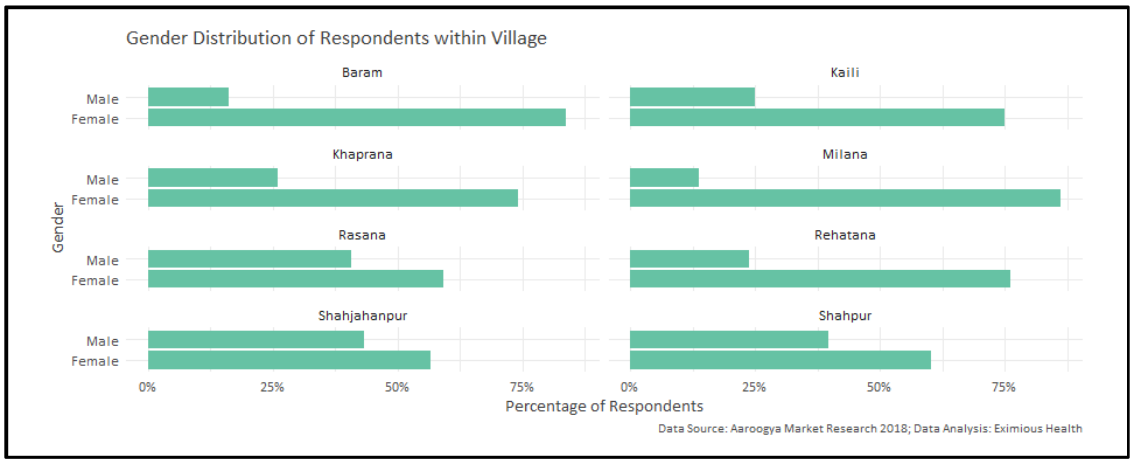


Figure 4: Gender Distribution for Villages

3. EDUCATIONAL BACKGROUND

An estimated 53% of the population are illiterate. 25% have education unto class 10th and 14% up-to class 12th. Only 5.45% have a bachelor's degree. What is surprising though, is that there are people who have master's degree.

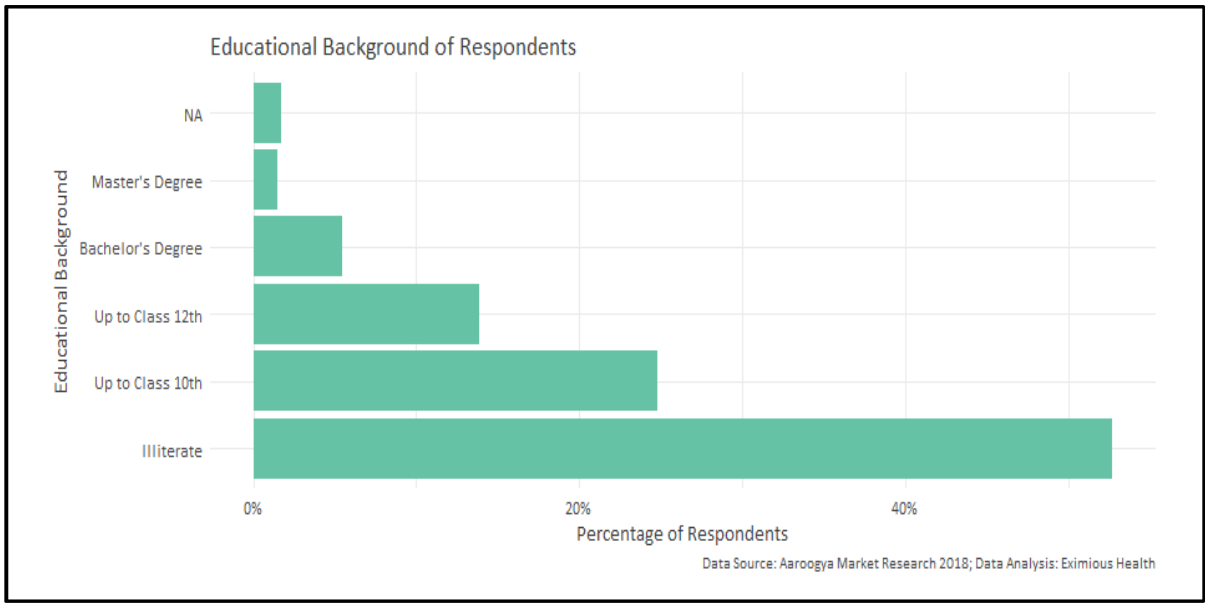


Figure 5: Educational background

Insights about education at the village level: When compared at the village level, Kaili is the most educated village among the bunch. Only an estimated 9% of population is illiterate in Kaili. Baram has the highest percentage (12%) of the population with masters degree. The top 3 villages with the highest percentage of illiterates are Shahpur (75%), Milana (67%) and Khaprana (54%) & Shahjahanpur (54%).

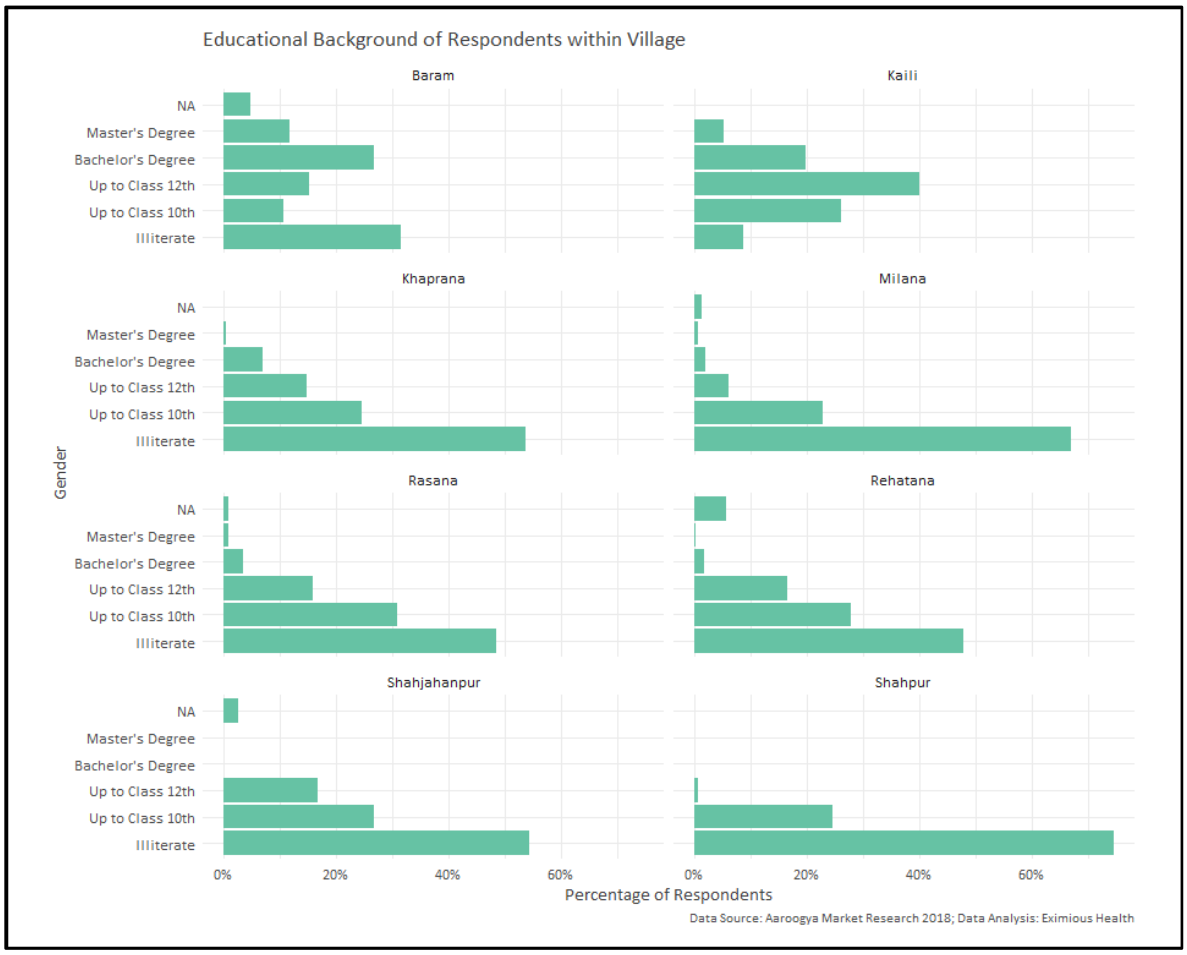


Figure 6: Educational background per village

4. HOUSEHOLD SIZE

The median household size is 6 with an inter-quartile range of 3. The distribution of household size is fairly right skewed with a long right tail.

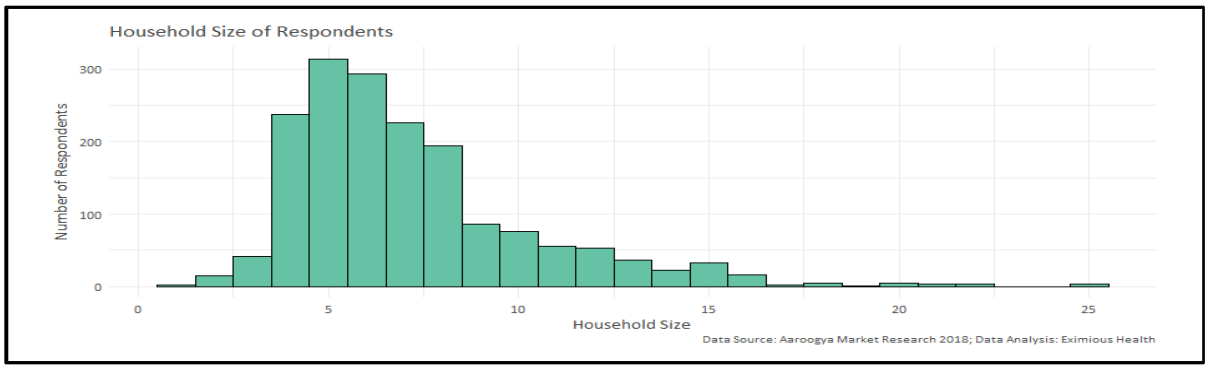


Figure 7: Household size

Milana has the highest median family size of 9 followed by Rehatana with a size of 7. Shahpur has the most different structure among the villages. It is bi-modal with peaks at 4 and 5 family members. Shahjahanpur has fairly uniform density for family sizes up-to 7 and then has a long tail with family size up-to 15.

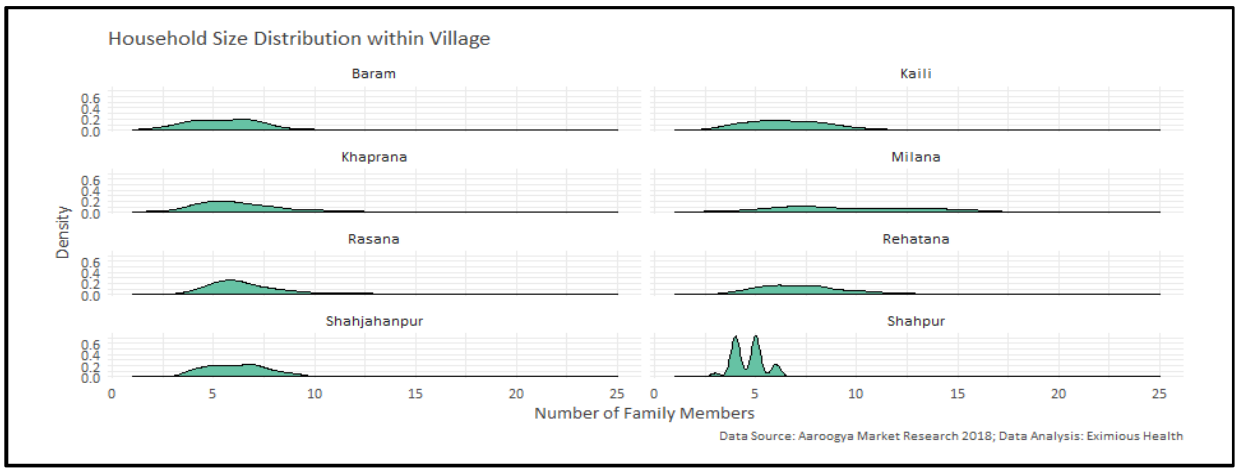


Figure 8: Household size per village

5. OCCUPATION

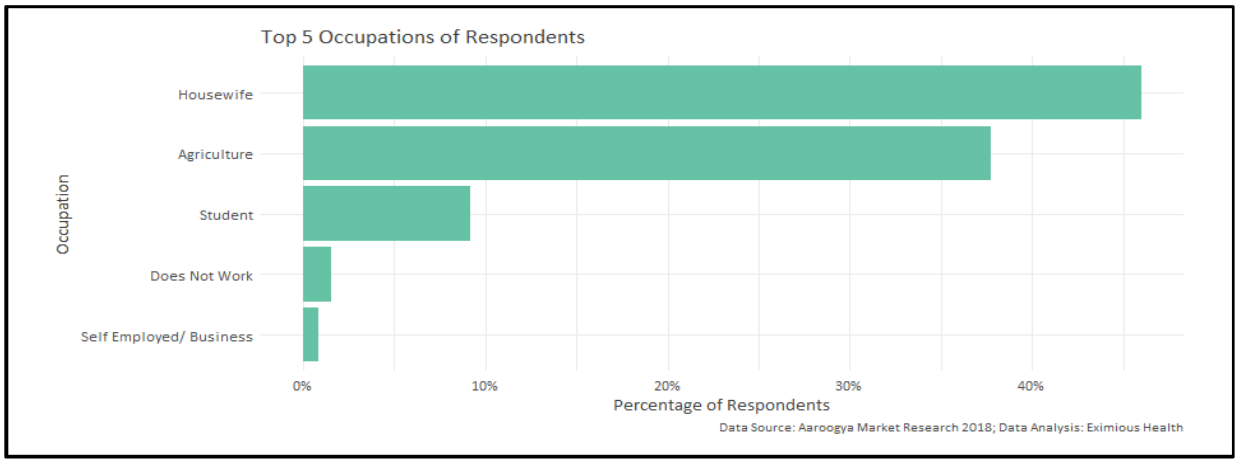
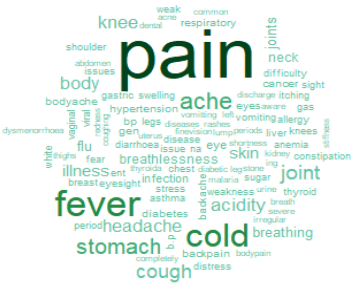


Figure 9: Occupation profile

Most of the respondents are either housewife or are primarily engaged in agricultural activities.

2. SECTION 02: GENERAL HEALTH AWARENESS

1. COMMON HEALTH ISSUES



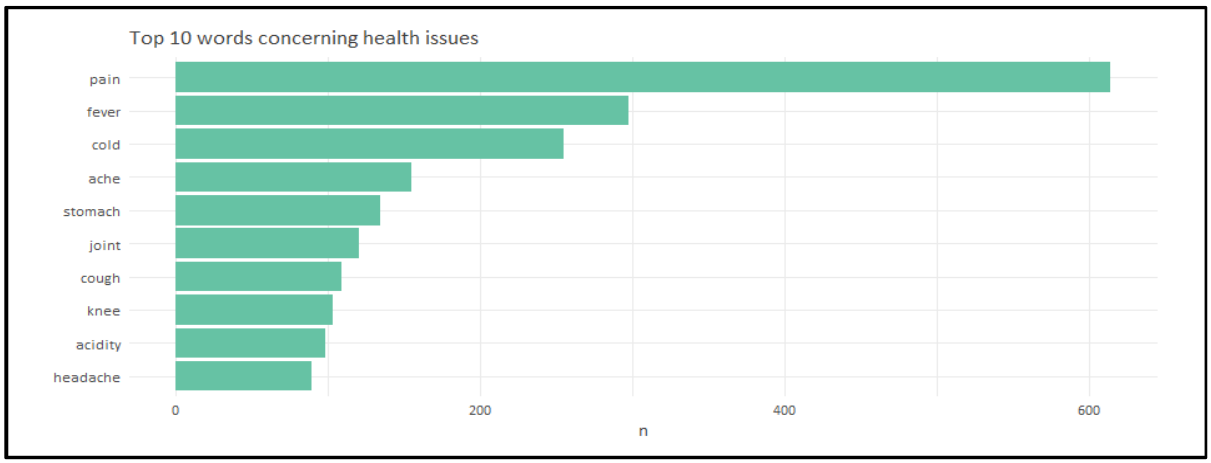


Figure 10: Top 10 words concerning health

It is clear from the above word cloud that any kind of pain, fever, cough, cold, and acidity are among the most popular health concerns.

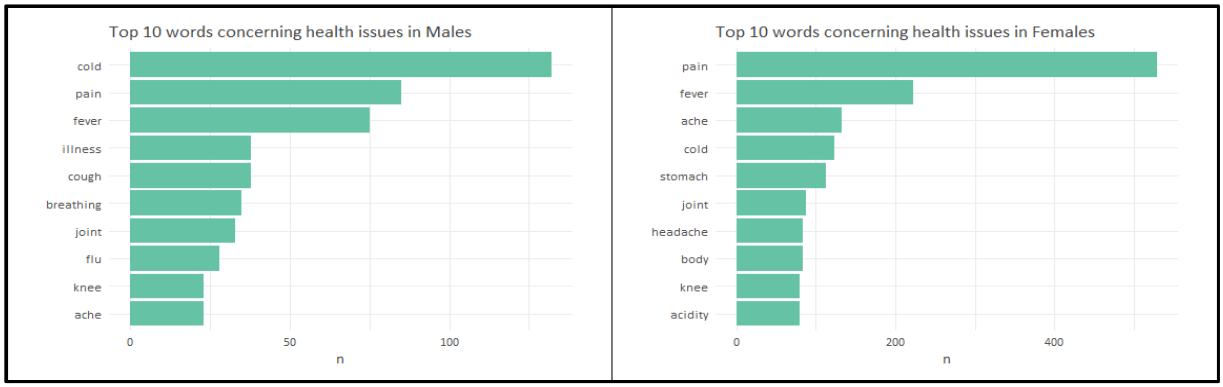


Figure 11: Top 10 words concerning health per gender

It seems from the list of top words concerning health issues that the females mostly are afflicted with are different kinds of pain i.e. headache, body ache, knee pain, joint pain etc. For males, cold, cough, flu, fever and breathing related problems take precedence.

Figure 12: Top 10 words concerning health age-band wise

For people aged between 15 and 30, the health issues seem to be trivial. They are afflicted by normal fever, cold, cough, stomach infection, acidity etc. The people aged between 31 and 45 suffer from the common ailments along with knee and joint pain. The people aged between 45 and 60 have breathlessness, cancer, and diabetes listed in top 10 words concerning health issues. For people aged above 60 years and less than 75 seem to have eye related problems too in addition to the other concerns. For people aged above 75, the common issues are reduced vision, joint stiffness and pain, hearing, breathing problems, and exertion.

Figure 13: Top 10 words concerning health village wise

- The respondents in Baram are concerned with common cold and fever, blood pressure, headache,knee pain, stomach infection and acidity. Respondents from Kaili too are concerned with similar health issues.
- The Khaprana respondents suffer from different kinds of pain and common cold, cough and flu.
- Respondents from Milana have reported to be concerned with fever, diabetes, hypertension, stomach infection, acidity, knee and joint pain.
- Respondents from Rasana are concerned with cancer too along with normal diseases. Respondents in Rehatana have eye problems listed in top 10 health concerns.
- In Shahjahanpur, respondents are concerned with respiratory and normal cough, cold and flu.
- Shahpur respondents report having trouble with breathing, skin related issues and normal cough and cold.

2. VISIT TO A DOCTOR FREQUENCY AND REASON

Figure 14: Word cloud

As can be seen from the above word cloud, there seem to be two kinds of responses: one which emphasize visiting the doctor once or twice a month or visit every 3 or 6 months and the other response is about visiting the doctor rarely. Those who visit the doctor seem to visit primarily for fever, pain, cold and viral.

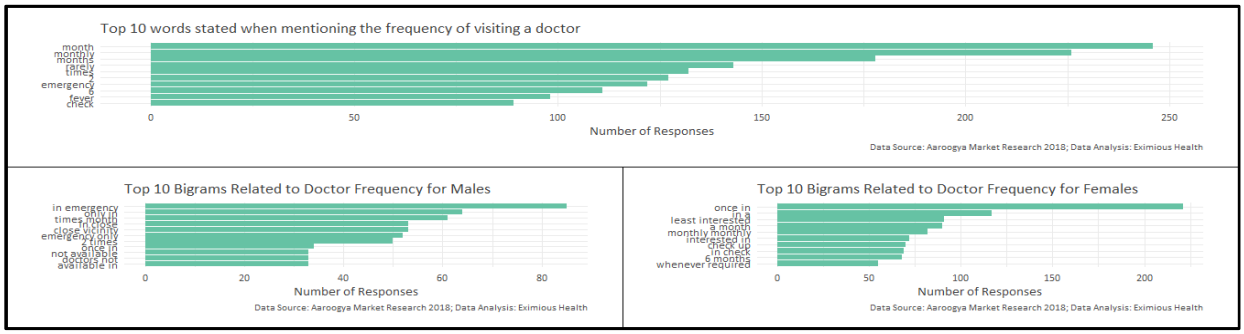


Figure 15: Word cloud

Females visit the doctor once in a month, once in 6 months or whenever required. Some of the female respondents also mentioned being least interested in check-up. Male respondents, on the other hand visit mostly in case of emergencies or 2 times a month. Also, they mentioned that doctors are not available in close vicinity.

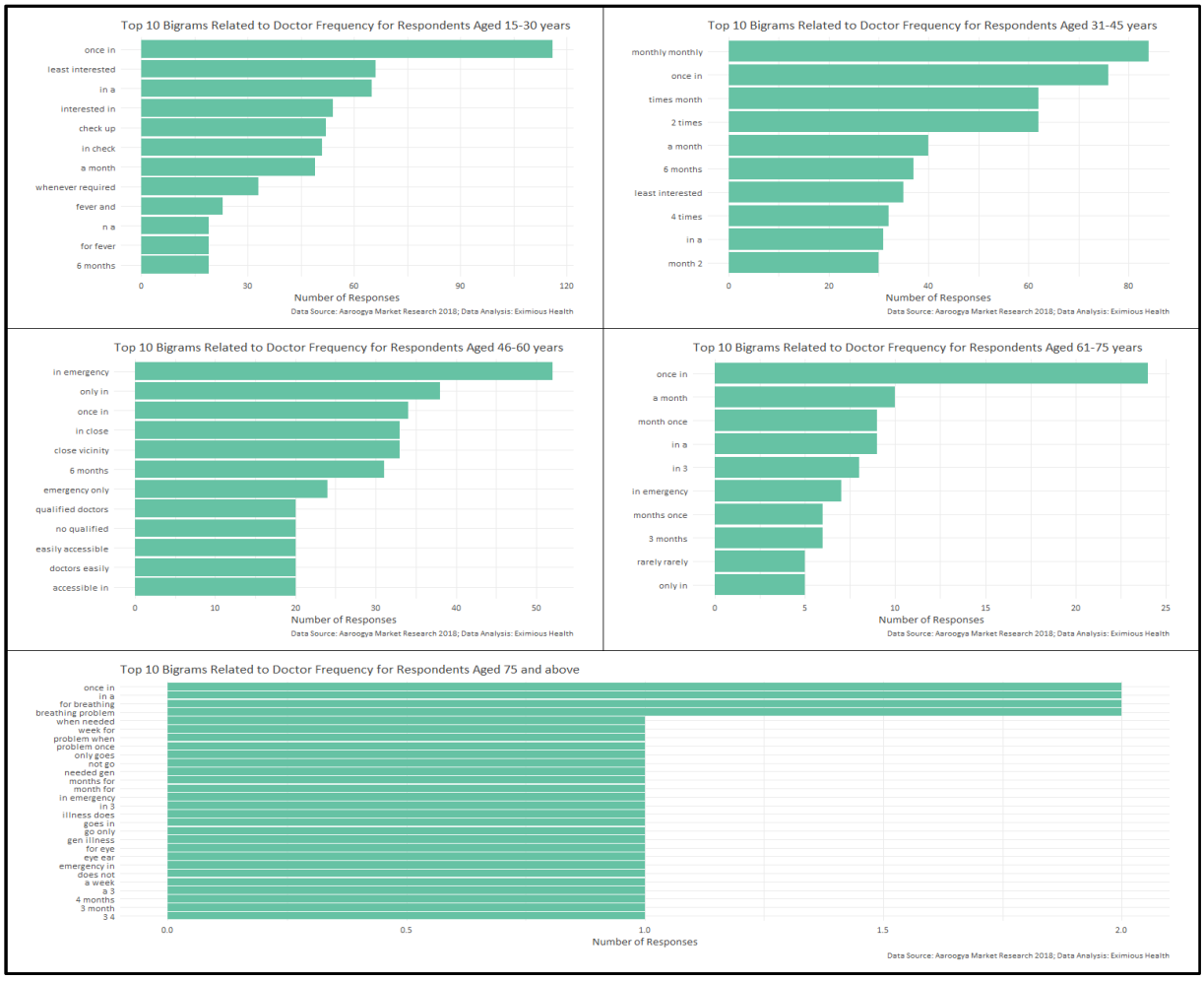


Figure 16: Bigram

- Respondents aged between 15 and 30 are least interested in check-ups. Also, they visit whenever required or in case of fever. Some of the respondents said that they visit in a month or once in 6 months.
- Respondents aged 31 - 45 years visit doctors quite a lot. They visit 2 times to 4 times a month or once in 6 months.
- Respondents aged between 46 and 60 years visit only in case of emergency or once in 6 months. They also reported that no qualified doctors are easily accessible in close vicinity.
- Respondents aged between 61 and 75 years reported visiting doctor once a month, once in 3 months or in case of emergency. Some of the respondents also reported visiting rarely.
- For people aged 75 and above, the results cannot be trusted as the number of responses is very low.

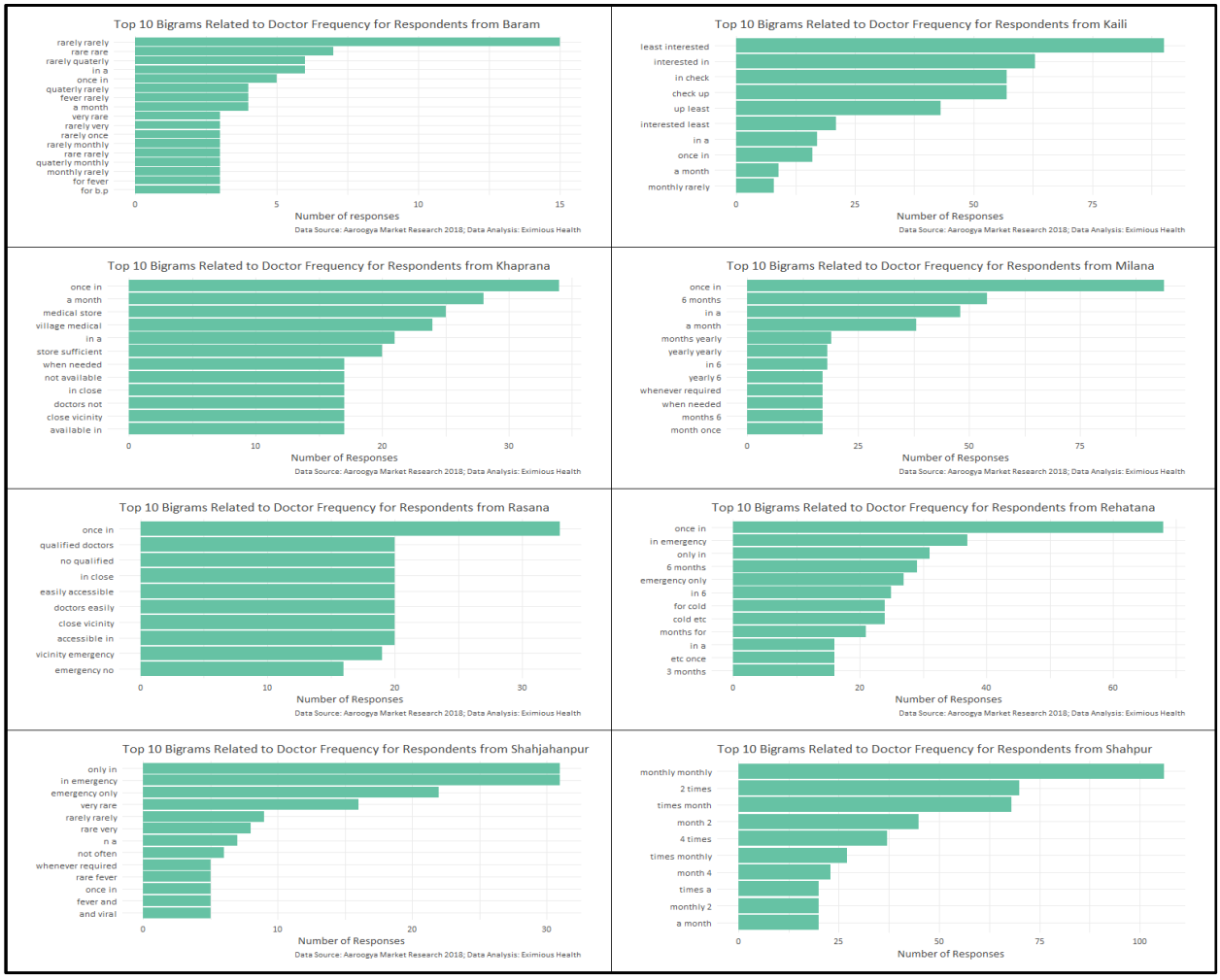


Figure 17: Bigram

- Baram respondents rarely visit a doctor. They visit mostly for fever or blood pressure related issues.
- Kaili residents said that they were least interested in check-ups and they visit a doctor rarely. Some of the respondents visit a doctor once in a month.
- The respondents from Khaprana visit a doctor once in a month or go to a medical store for over the counter medicine. They have also reported that no doctors are available in close vicinity.
- The responses from the residents in Milana vary widely. Some report visiting once a month, some once every 6 months or yearly while others have reported whenever required.
- Rasana respondents have reported having no qualified doctors easily accessible in close vicinity. They only visit a doctor in case of emergency.
- The respondents from Rehatana visit a doctor during emergency. Some of the respondents visit monthly, quarterly or in 6 months. They often visit for cold and cough.
- The respondents from Shahjahanpur visit a doctor rarely. They visit mostly in cases of emergency or whenever required. They mostly visit for fever and viral.
- The residents in Shahpur visit a doctor 2 - 4 times a month.

3. FREQUENCY OF PREVENTIVE CHECKUP

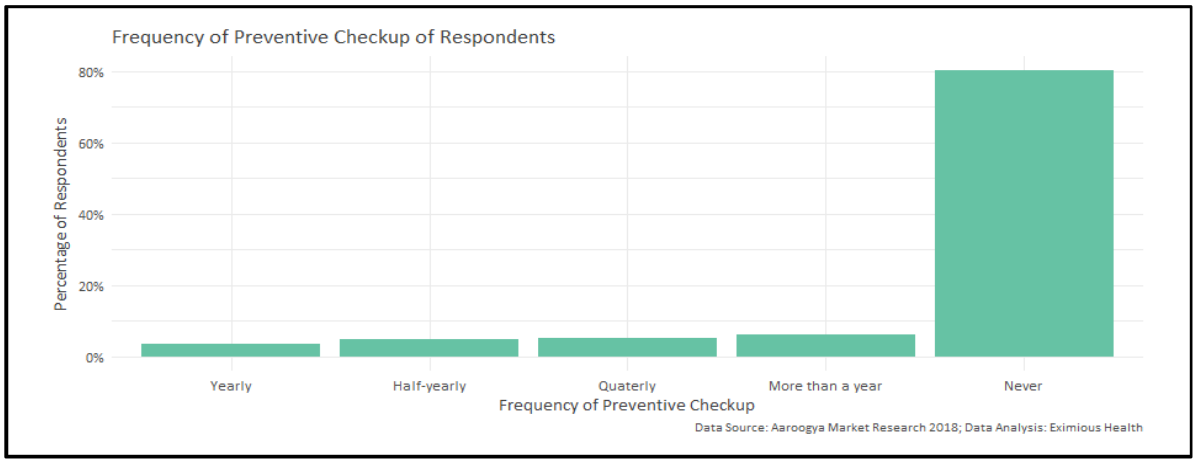


Figure 18: Frequency of preventive check-up

Not surprisingly, an estimated 80% of the population never visit a doctor for preventive check-ups. However, 5% of the population do visit a doctor for preventive check-ups every quarter or half-yearly.

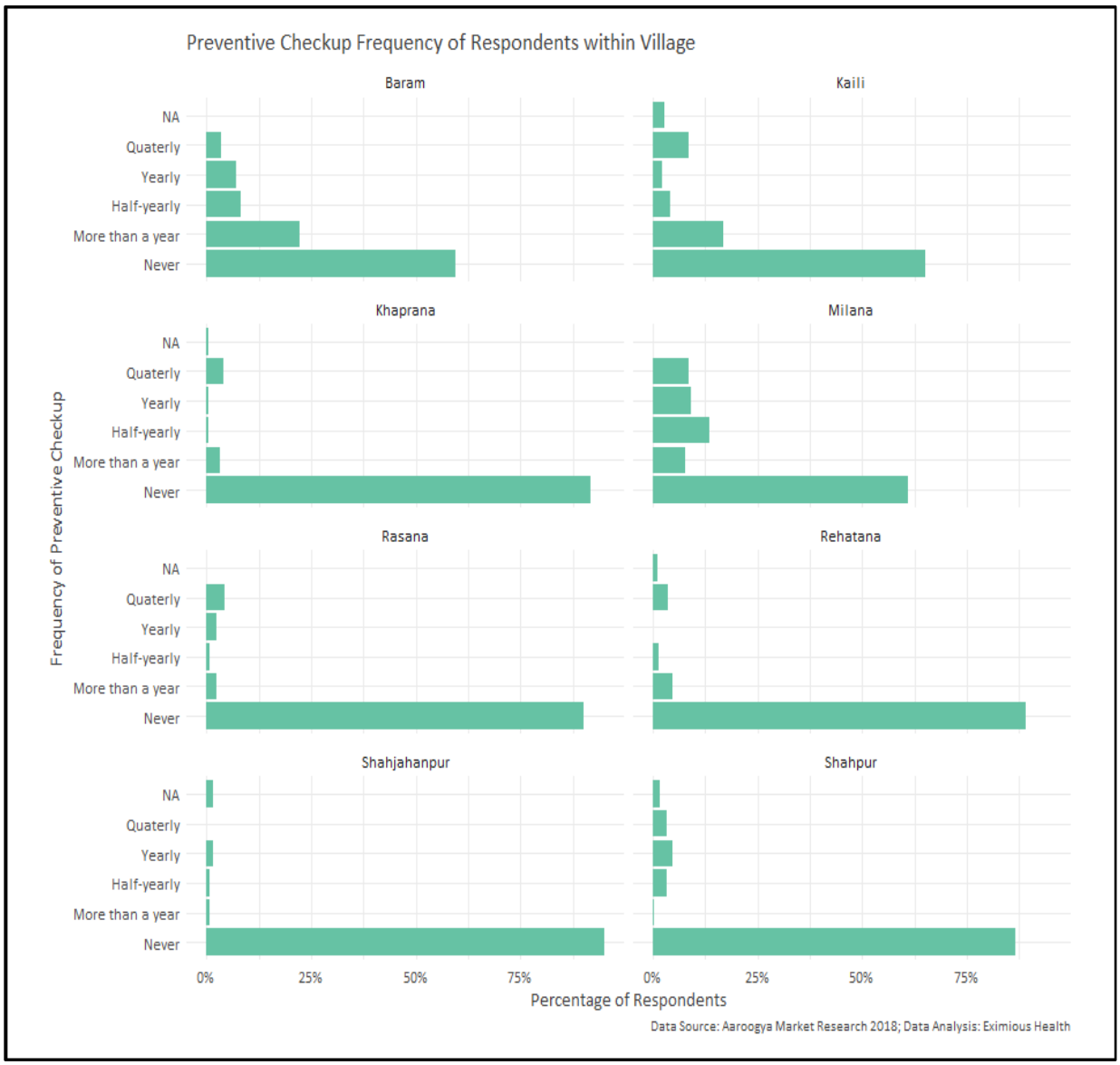


Figure 19: Frequency of preventive check-up per village

Nearly 90% of the respondents in Khaprana, Rasana, and Rehatana said that they never visit the doctor for preventive health check-up. 95% of the respondents in Shahjahanpur said that they never visit a doctor for preventive health check-up. 40% of the respondents in Baram said that they visit doctor for preventive check-up although the frequency of visit might be less. 22% of the respondents take preventive checkup after more than a year. Similar stats hold up in Kaili where 35% of the respondents have said that they go for preventive check-up.

4. LAST VISIT TO DOCTOR

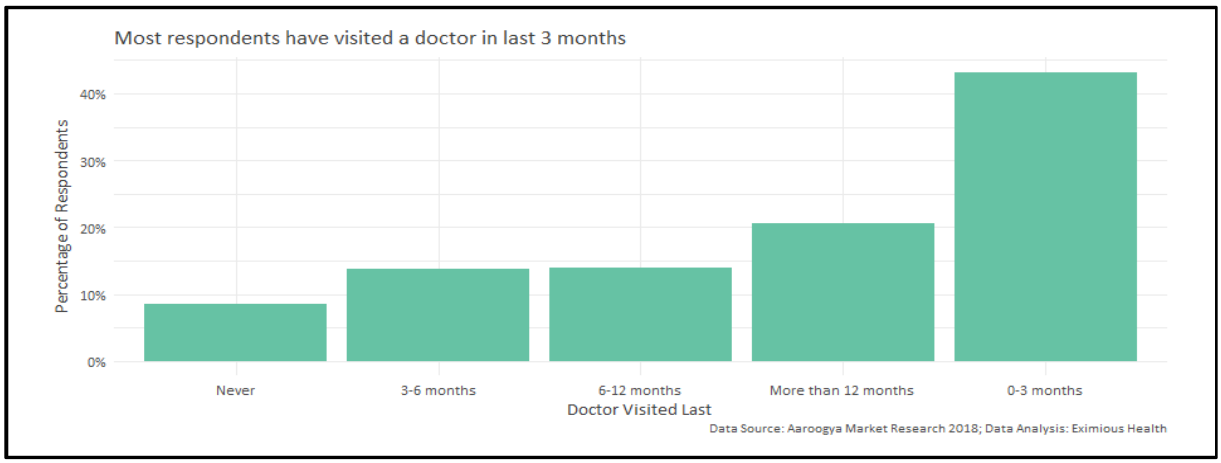


Figure 20: Last visit to doctor

Over 40% of the respondents said that they have visited a doctor in the past 3 months with 14% of the respondents admitting that they visited a doctor in 3 - 6 months or 6 - 12 months. Only 8.5% of the respondents said that they never visited a doctor.

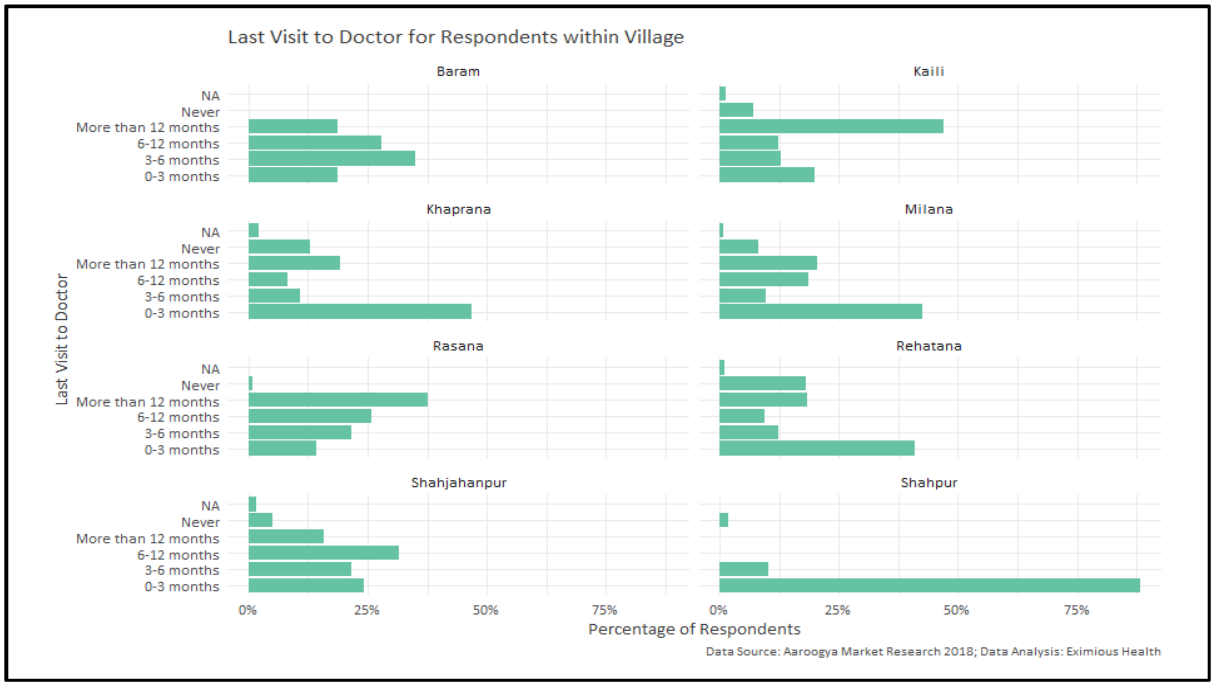


Figure 21: Last visit to doctor per village

From the above graph, it can be seen that Shahpur has the highest percentage of respondents reporting they went to the doctor in past 3 months. Baram, Kaili, Rasana and Shahjahanpur have a very low percentage of respondents reporting that they visited a doctor in the past 3 months.

5. MOST IMPORTANT DOCTORS

Figure 22: Word cloud

- General physician is the most important doctor across villages, age-groups and gender. The other two important doctors are Gynecologist and Pediatrician. However, there is a slight difference in the doctors in some of the villages and age groups.
- Kaili respondents reported a Skin specialist to be important too. In Rehatana, along with physician, Ophthalmologist and Neurologist are important. In Shahpur, Orthopedist is important.
- In the age group 31-45, an Orthopedist is important along with Physician and Gynecologist. For the people aged 75 and above, ENT Specialist and Ophthalmologist are important too along with a Physician.
- For males, the most important doctors are Physician, Orthopedics, Skin and ENT specialist. For females, the most important ones are Physician, Gynecologist, Pediatrician, Orthopedics, Eyes and Dentist.

6. CONTRACEPTIVE USE

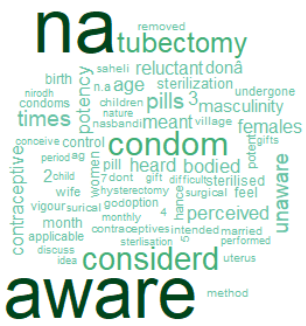


Figure 23: Word cloud

Many respondents were reluctant to respond. Condoms, Tubectomy (or surgical sterilization), Contraceptive pills are the top contraceptives used.

7. INFORMATION ABOUT CONTRACEPTIVE

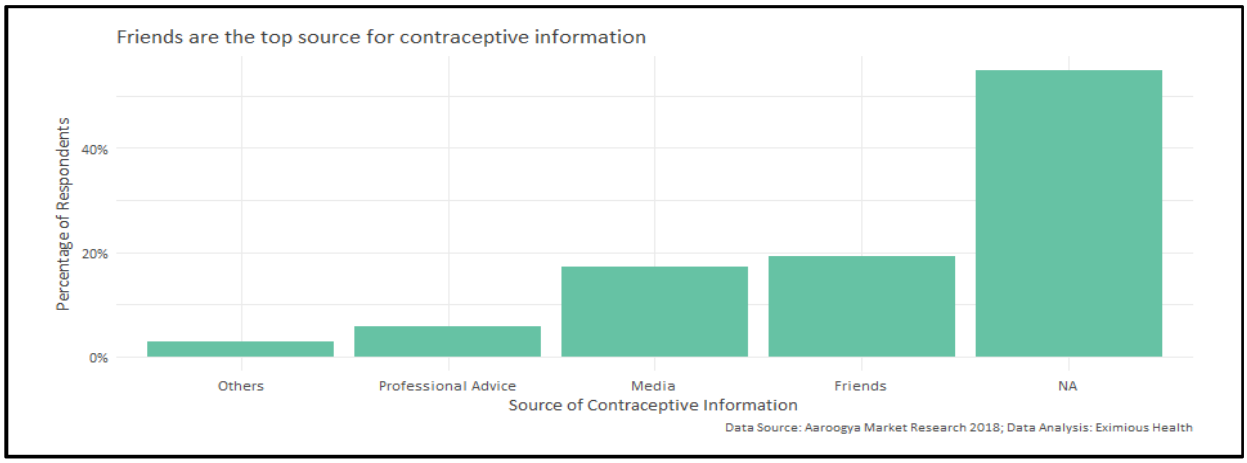


Figure 24: Contraceptive awareness

Around 55% of the respondents declined to respond. 19% of the respondents reported having heard about contraceptives from their friends. 17% attributed the information to media sources. Only 6% of the respondents seek professional advice on contraceptives.

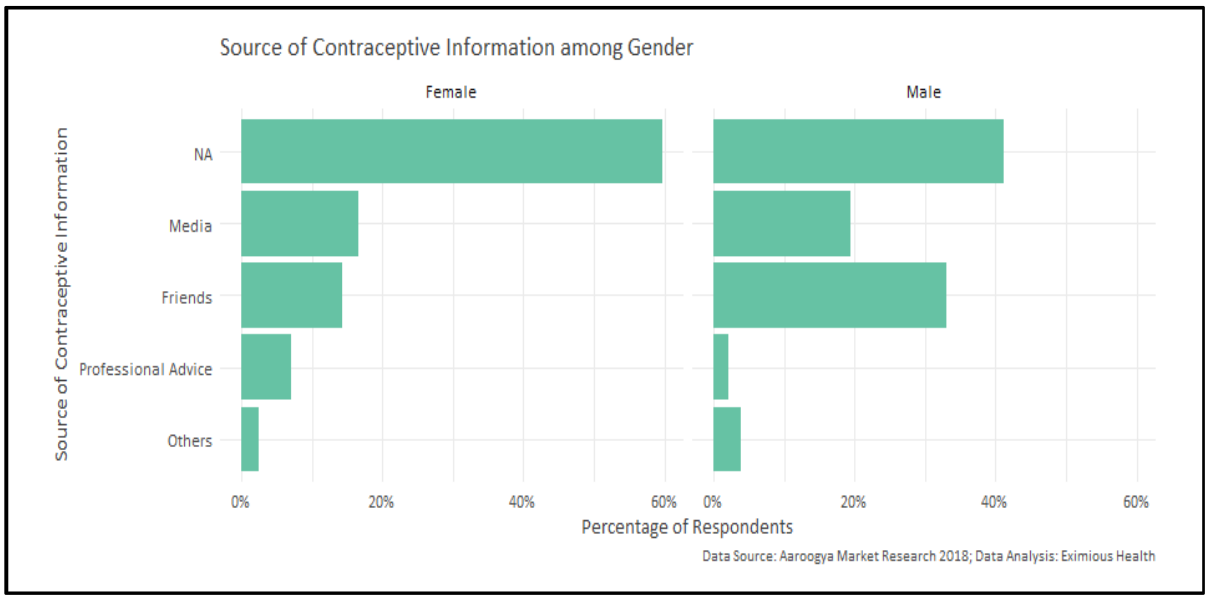


Figure 25: Source of contraceptive awareness

- Interesting trends emerge on the gender level. Females are more reluctant to respond than their male counterparts.
- Also, females are less likely to talk about contraceptives with their friends than the males as an estimated 14.25% female population received contraceptive information from friends as opposed to 33% of the male population.
- However, females are more likely to seek professional advice on contraceptives than the males. An estimated 7% of the female population sought professional advice as opposed to only 2% males who sought professional advice on contraceptives.
- This indicates that males are open to discussing these aspects with their friends rather than seek professional help whereas females are more likely to seek professional advice rather than discuss with their friends.

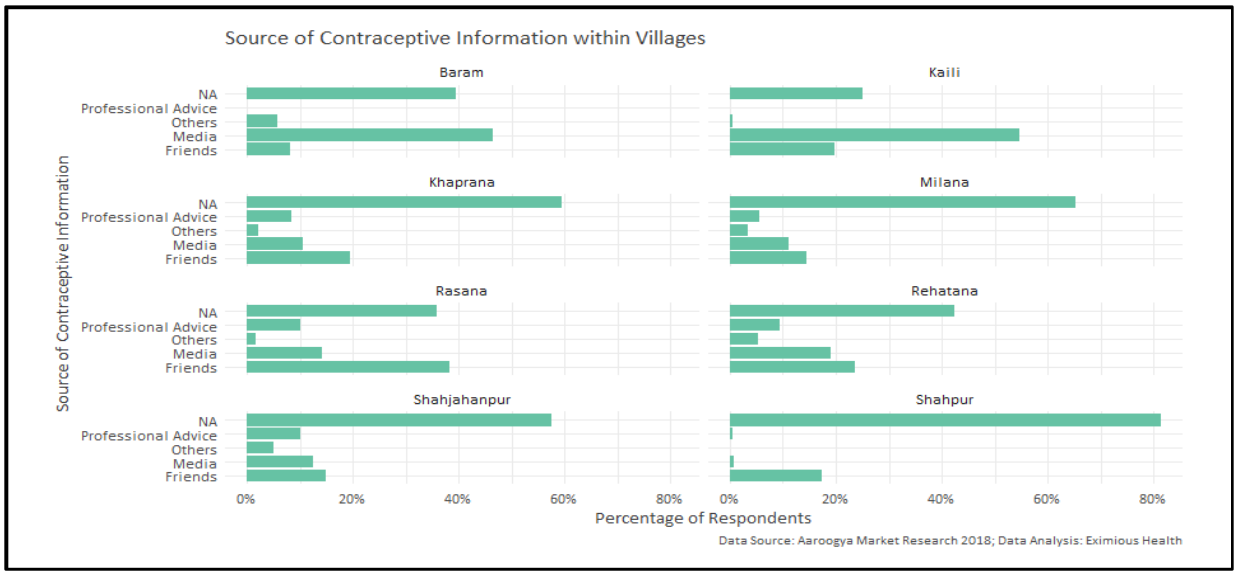


Figure 26: Source of contraceptive awareness per village

Respondents from Baram and Kaili attribute media as their top source of information on contraceptive which is different than the overall trend.

3. SECTION 03: LIFESTYLE

1. DIET

Figure 27: Word cloud

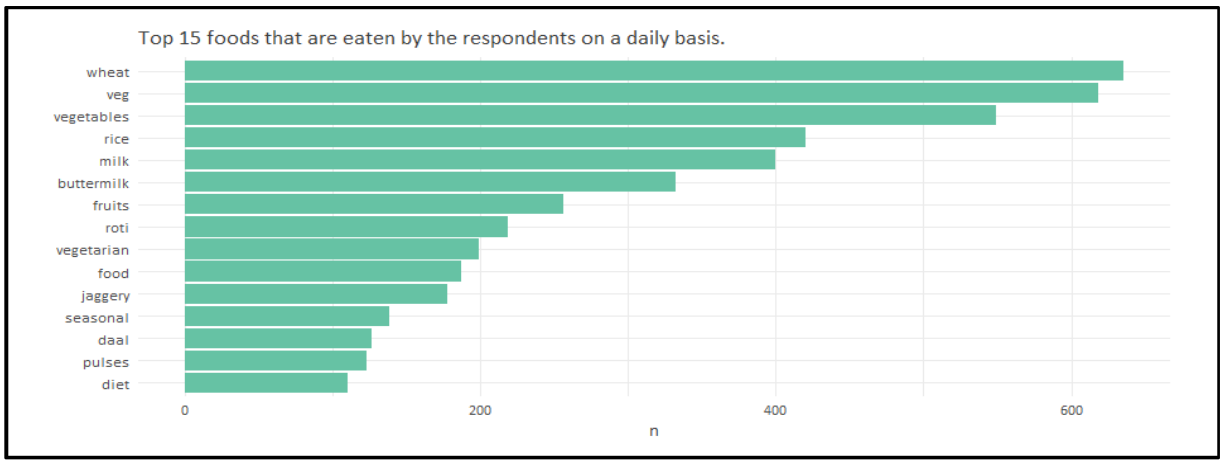


Figure 28: Top 15 foods consumed

Wheat, vegetables and rice forms the staple diet of villages across Western UP. There's a dearth of proteins and vitamins in their diet as fruits and pulses are sparingly consumed.

2. SMOKING

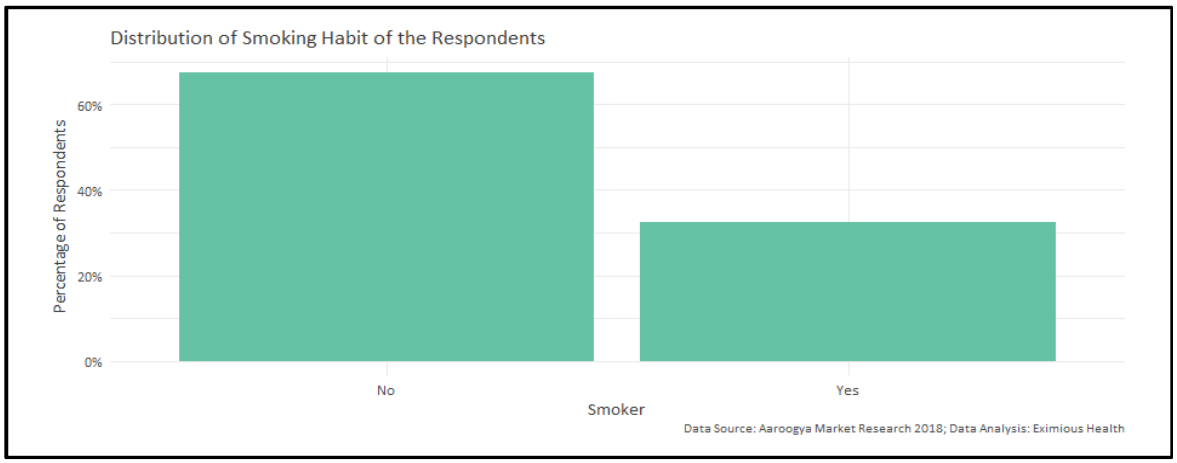


Figure 29: Smoking prevalence

An estimated 68% of the population does not smoke.

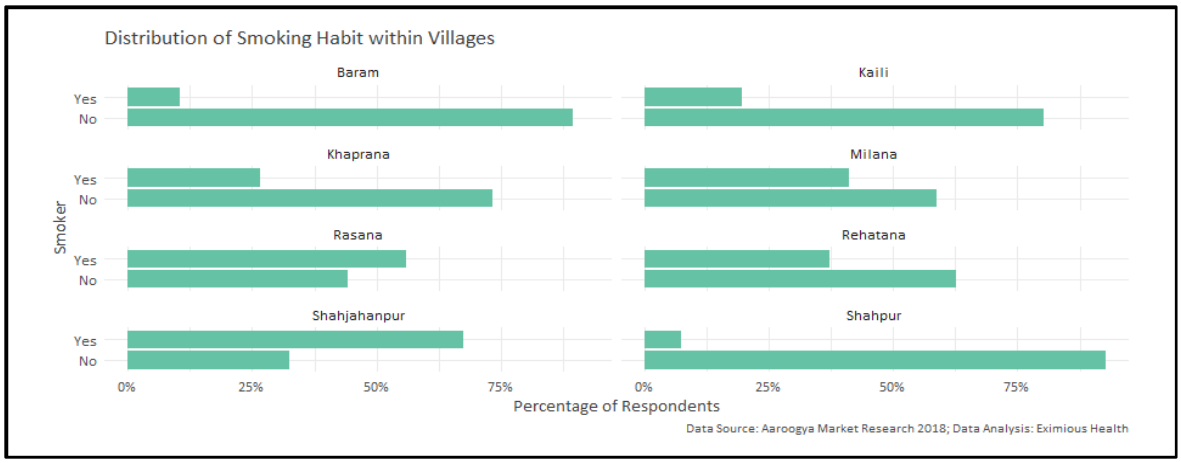


Figure 30: Smoking prevalence per village

Respondents from Rasana and Shahjahanpur have higher number of smokers than non-smokers. 68% of the respondents in Shahjahanpur and 56% of the respondents in Rasana are smokers.

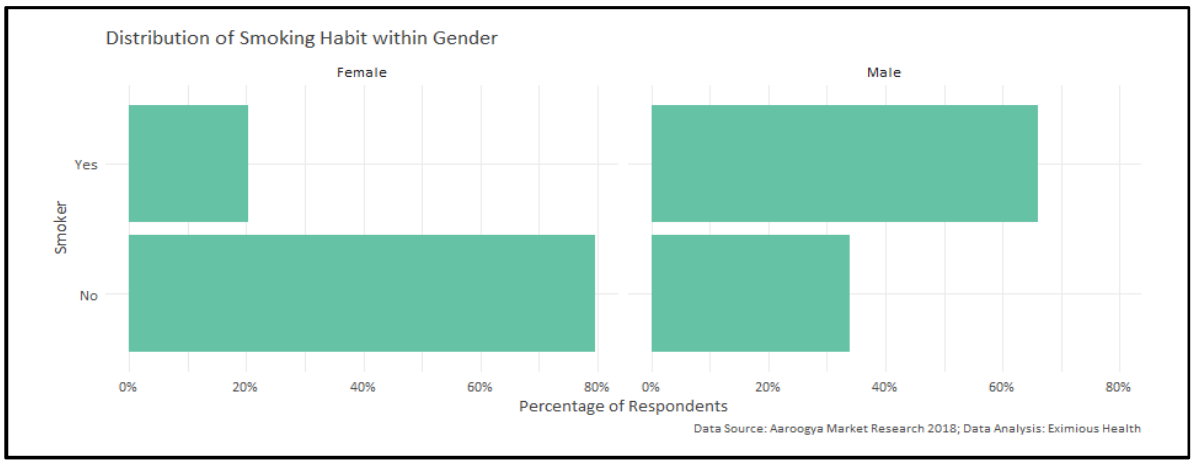


Figure 31: Smoking prevalence per village as per gender

As expected, only 20% of the females are smokers compared to 66% of the men who smoke.

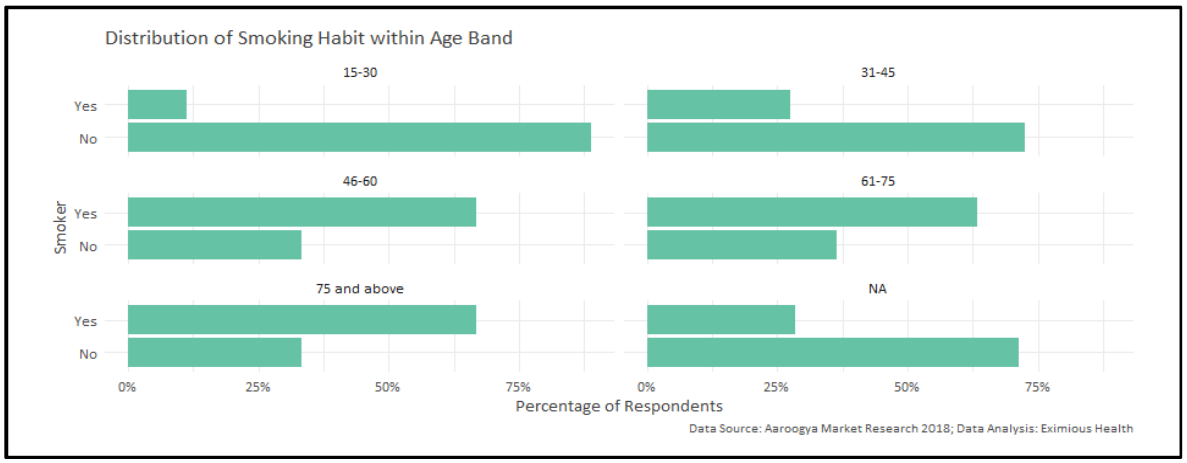


Figure 32: Smoking prevalence as per age

Interestingly, nearly two-thirds of the respondents aged above 45 are smokers.

3. DRINK

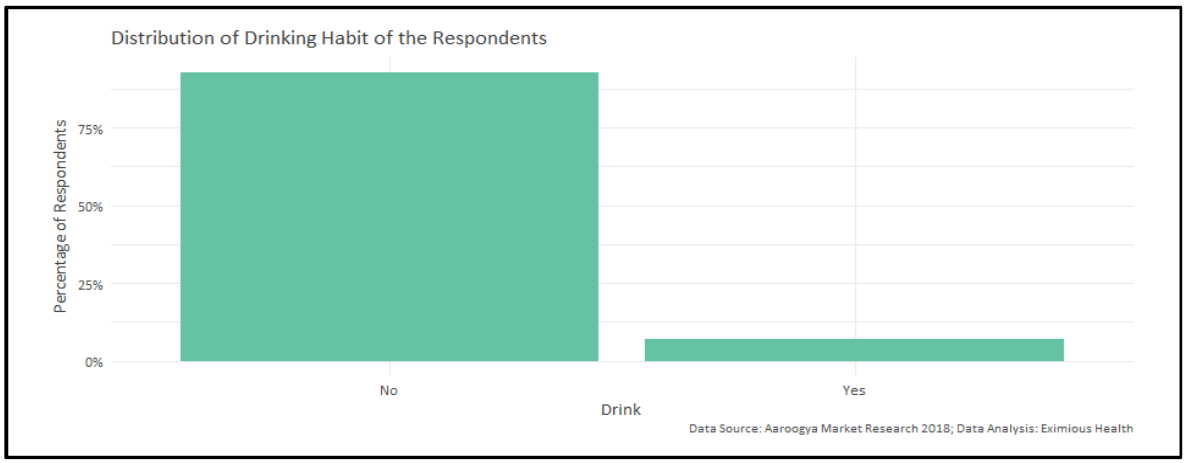


Figure 33: Drinking prevalence

Nearly 93% of the respondents said they do not consume alcohol.

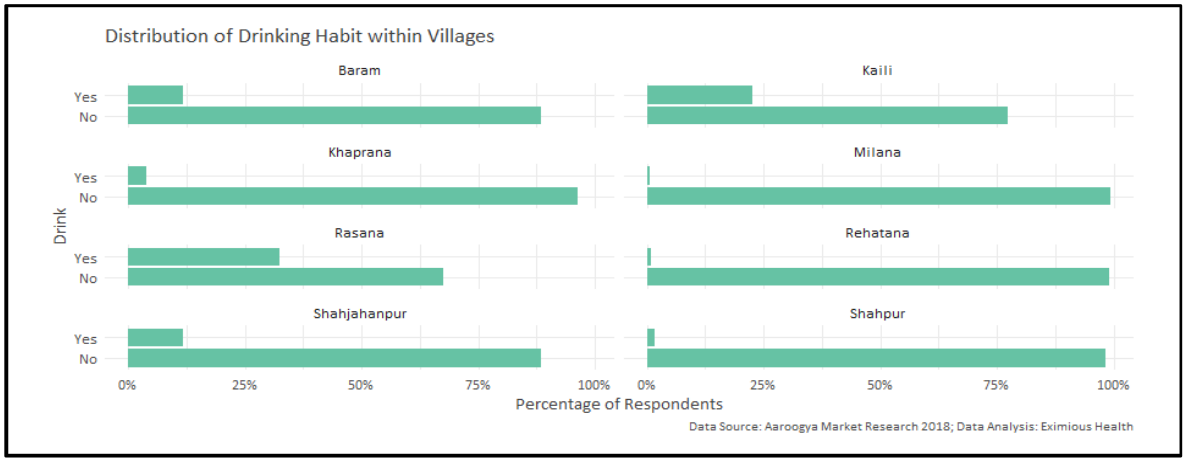


Figure 34: Drinking prevalence per village

Baram, Kaili, Rasana and Shahjahanpur have a higher number (greater than the overall baseline of these villages combined) of alcohol consumers.

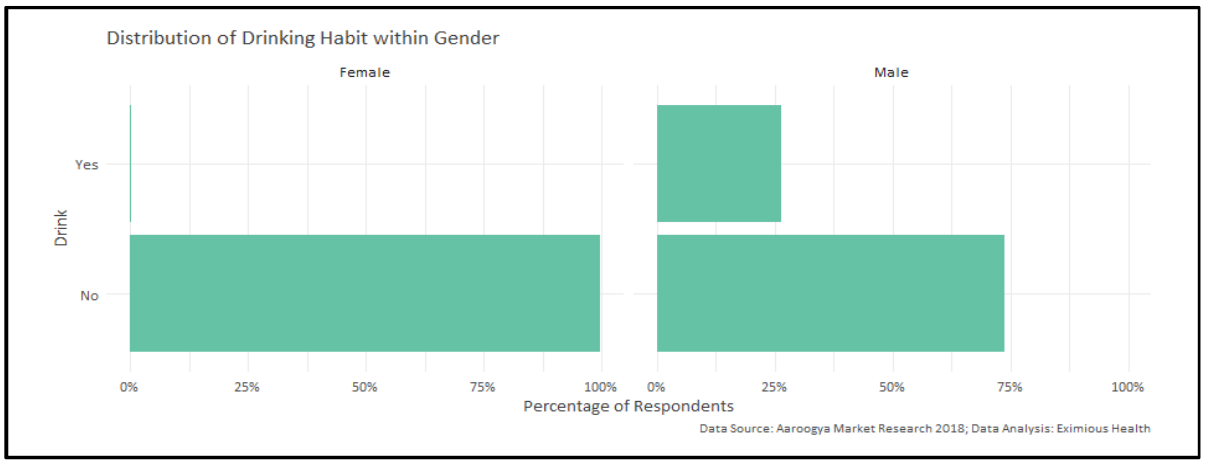


Figure 35: Drinking prevalence as per gender

Females rarely drink.

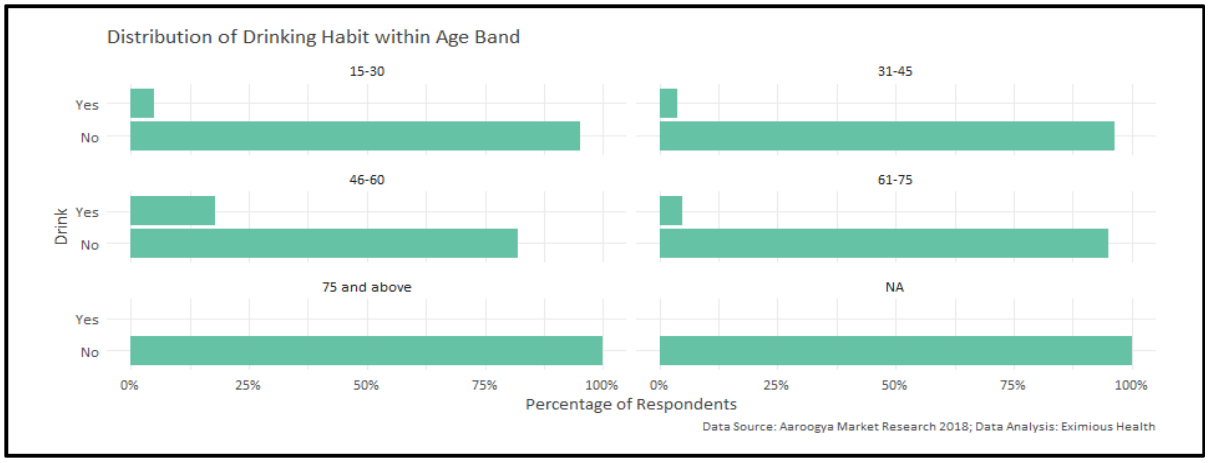


Figure 36: Drinking prevalence as per age

18% of the respondents aged between 46 and 60 consume alcohol which is the highest among all age groups.

4. WORK HOURS

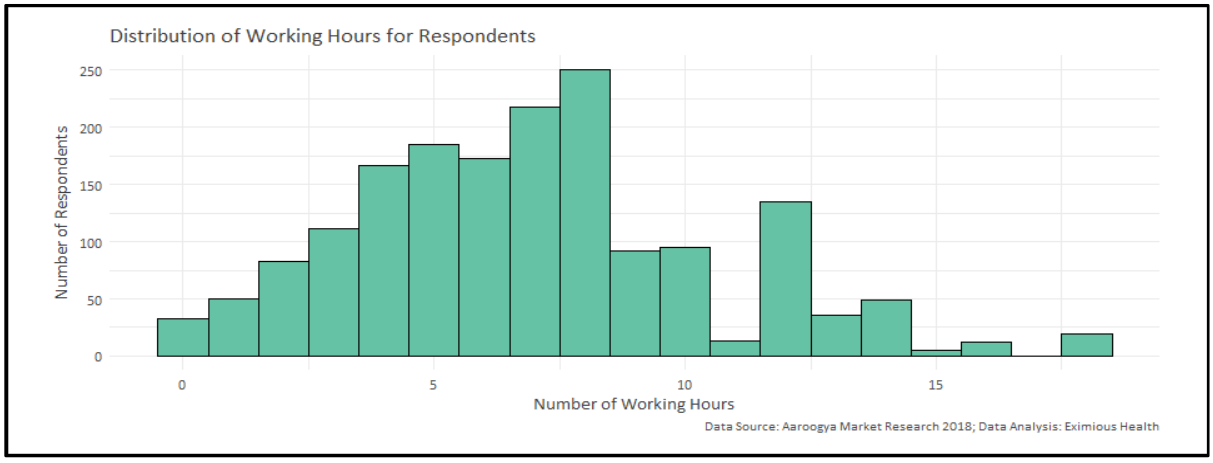


Figure 37: Work hours distribution

The median working hours is 7 with an inter-quartile range of 5.

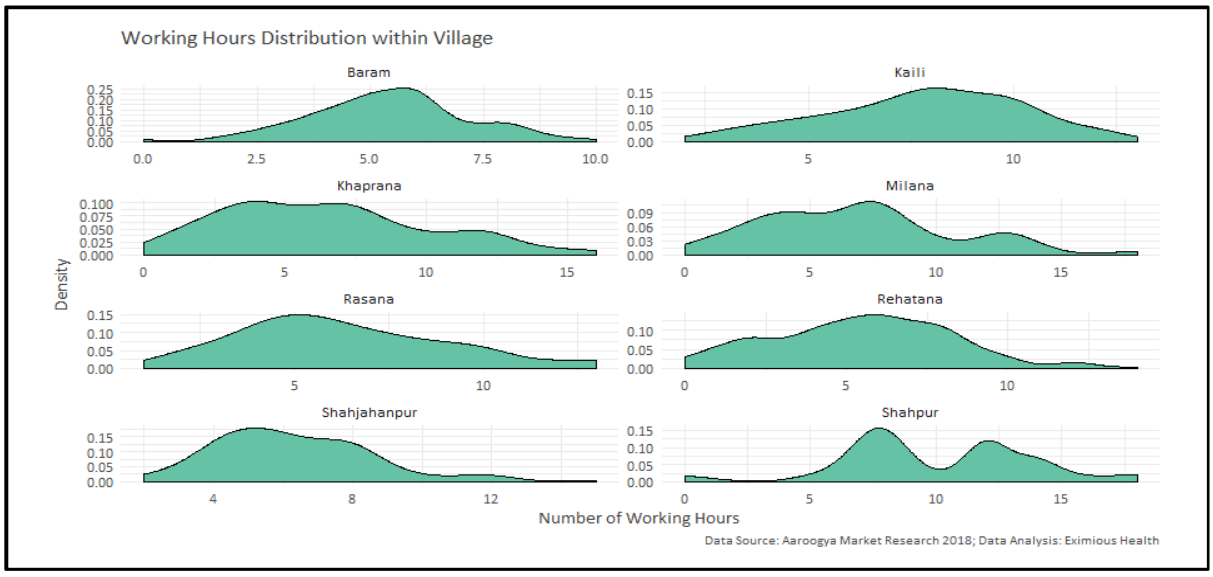


Figure 38: Work hours distribution per village

Shahpur has the highest median working hours of 9 followed by Kaili and Milana which have median working hours as 8 and 7 respectively.

5. EXERCISE

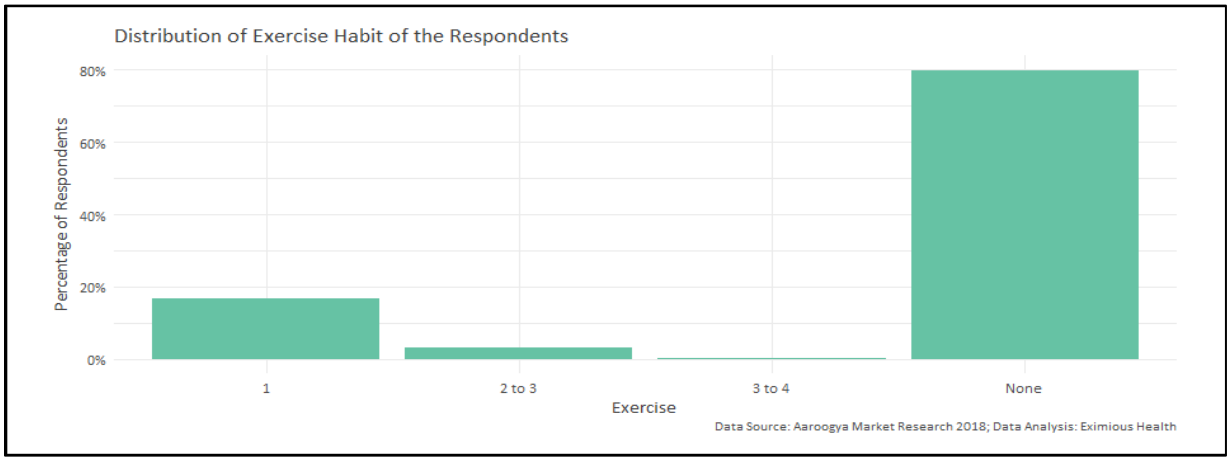


Figure 39: Exercise distribution in hours

Nearly 80% of the respondents said they perform no exercise

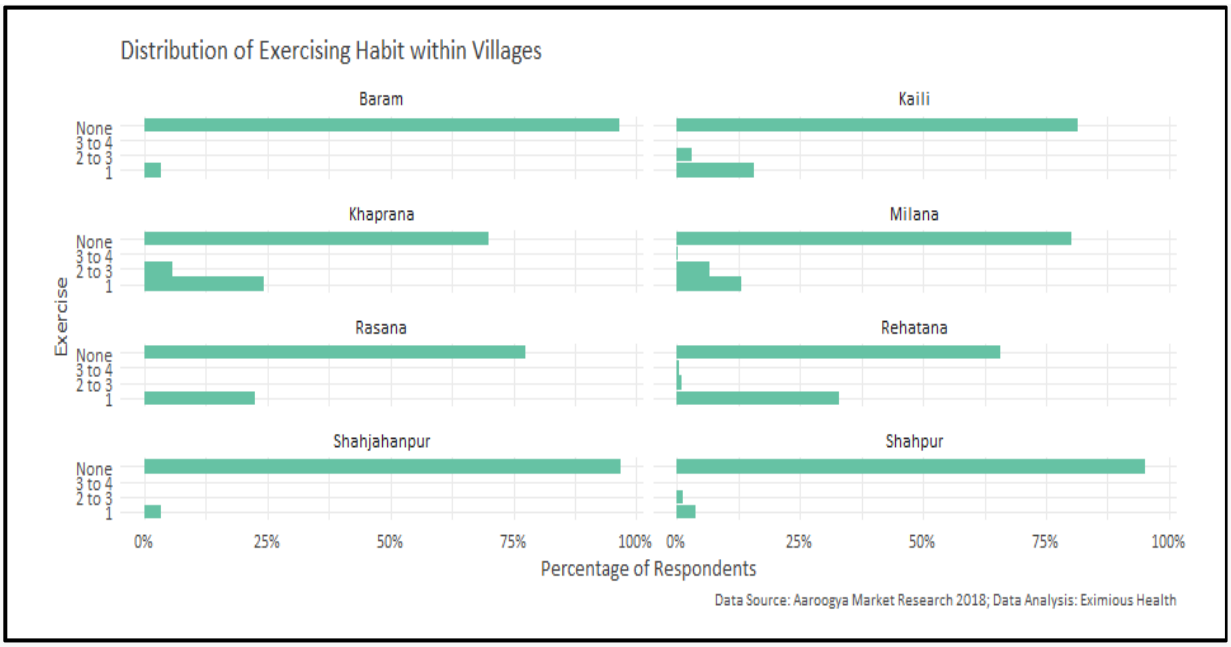


Figure 40: Exercise distribution in hours per village

All villages have quite similar exercise distribution.

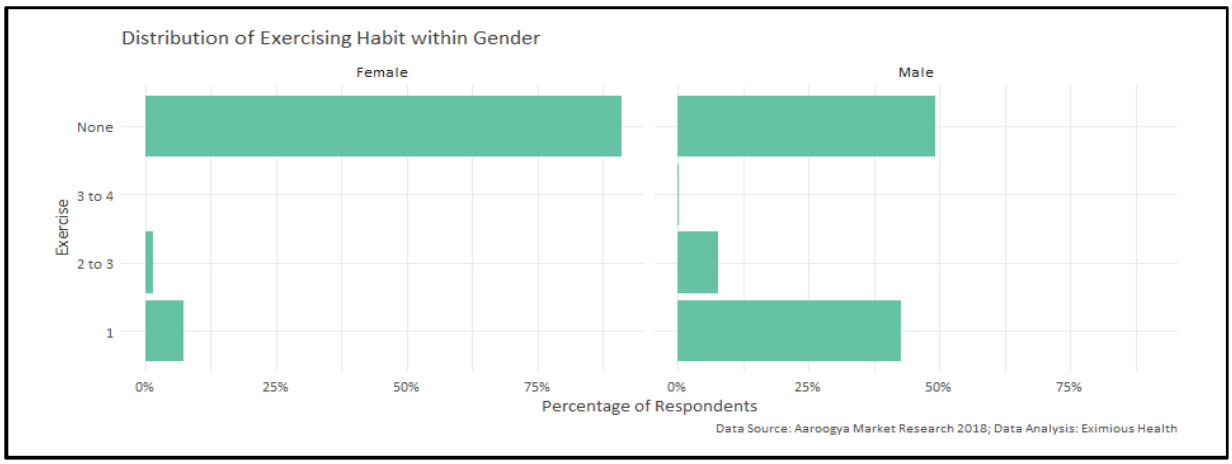


Figure 41: Exercise distribution in hours as per gender

Interestingly, 91% of females never exercise compared to 49% of males who don't exercise. 43% of males exercise for 1 hour daily compared to only 7% females who exercise 1 hour daily.

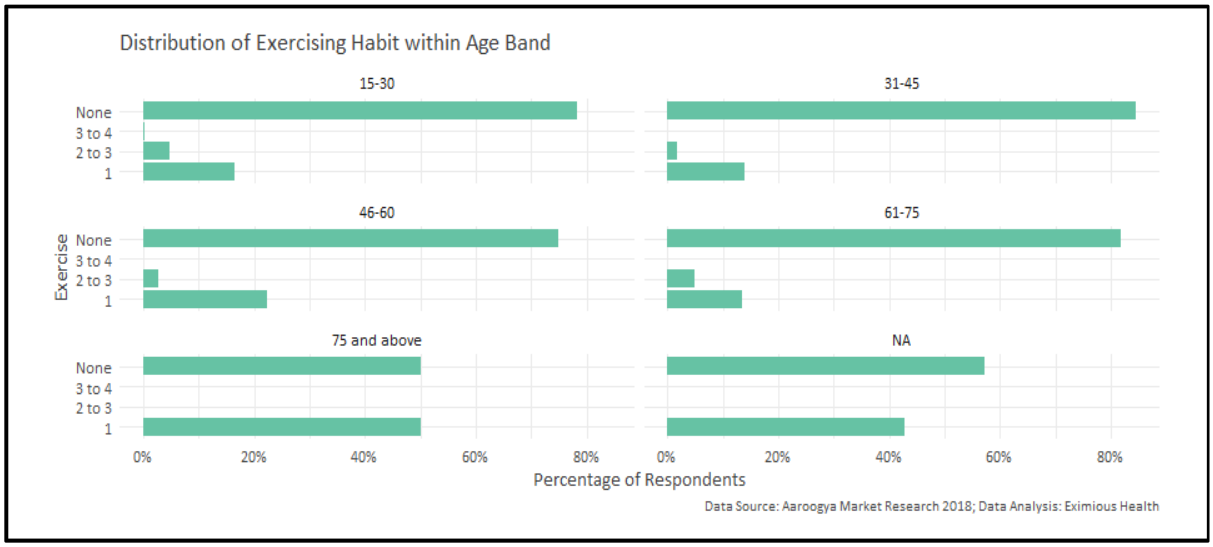


Figure 42: Exercise distribution in hours as age

6. USUAL CAUSES OF STRESS

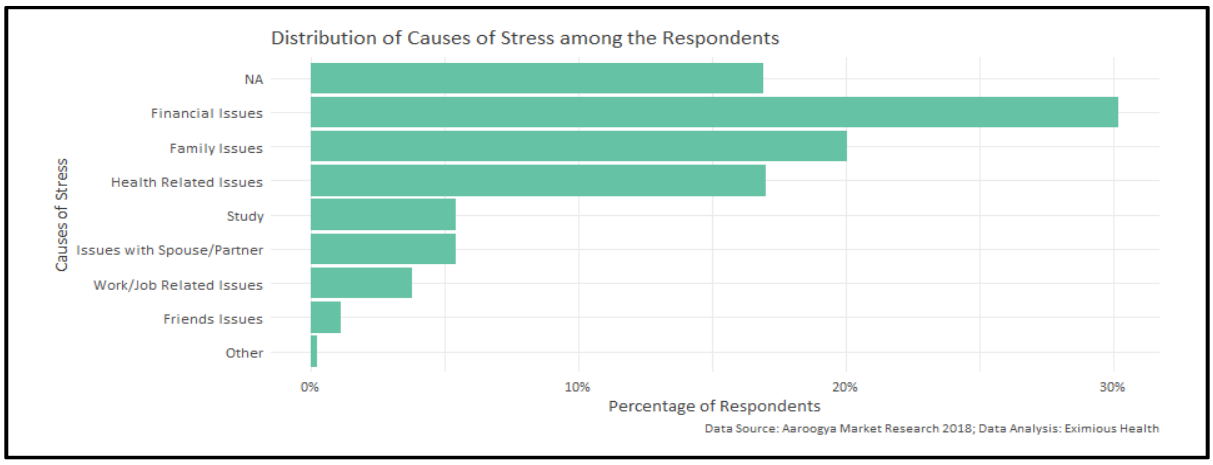


Figure 43: Top causes for stress

Nearly 30% of the respondents reported having stress related to financial issues. 20% reported having family related issues.17% reported having health issues related stress. 17% reported having no particular cause for stress.

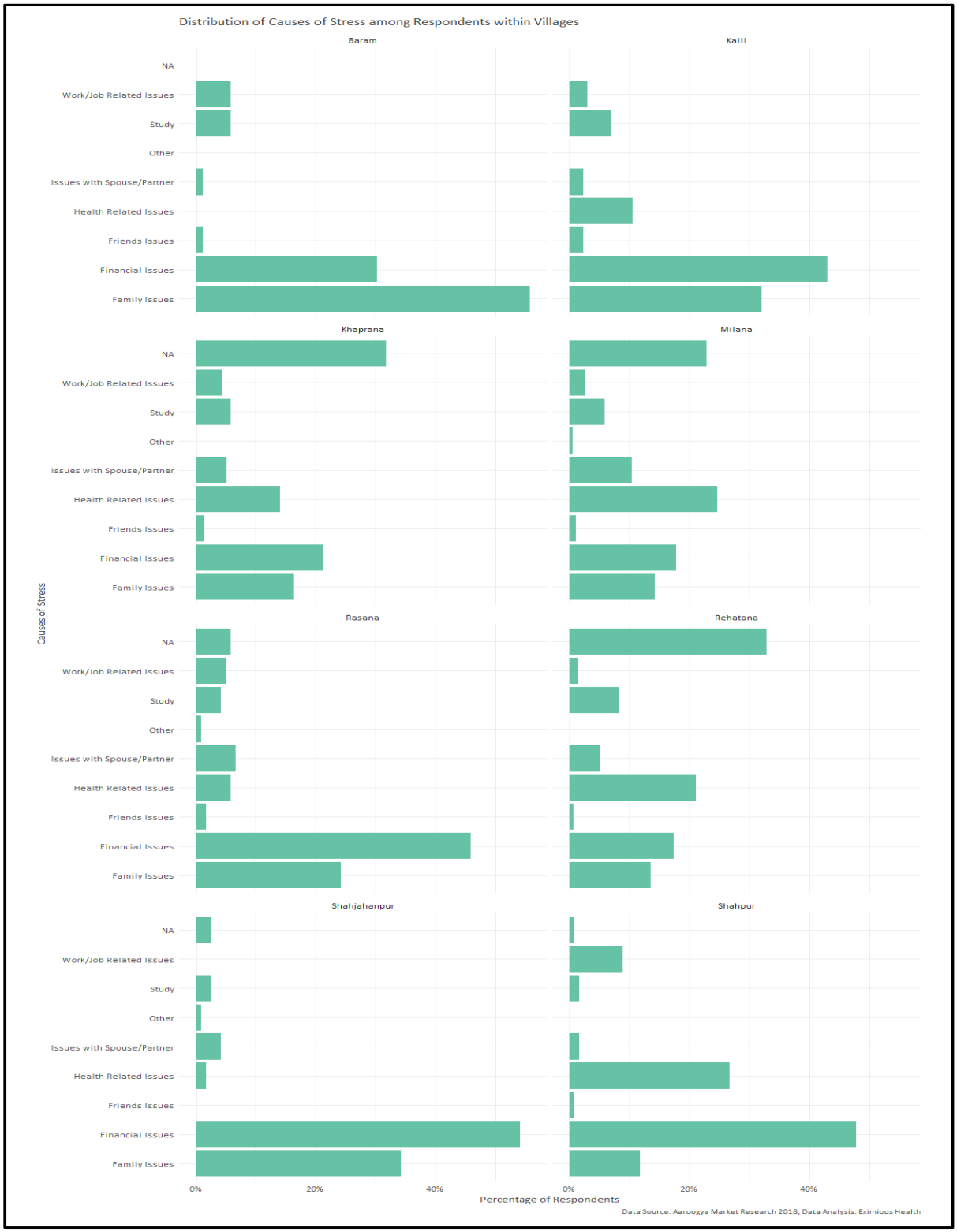


Figure 44: Top causes for stress per village

56% of the respondents from Baram reported having stress related to family issues. None of the respondents reported having health related stress. 32% of the respondents from Khaprana, 33% of the respondents from Rehatana and 23% of the respondents from Milana reported having no particular cause for stress.

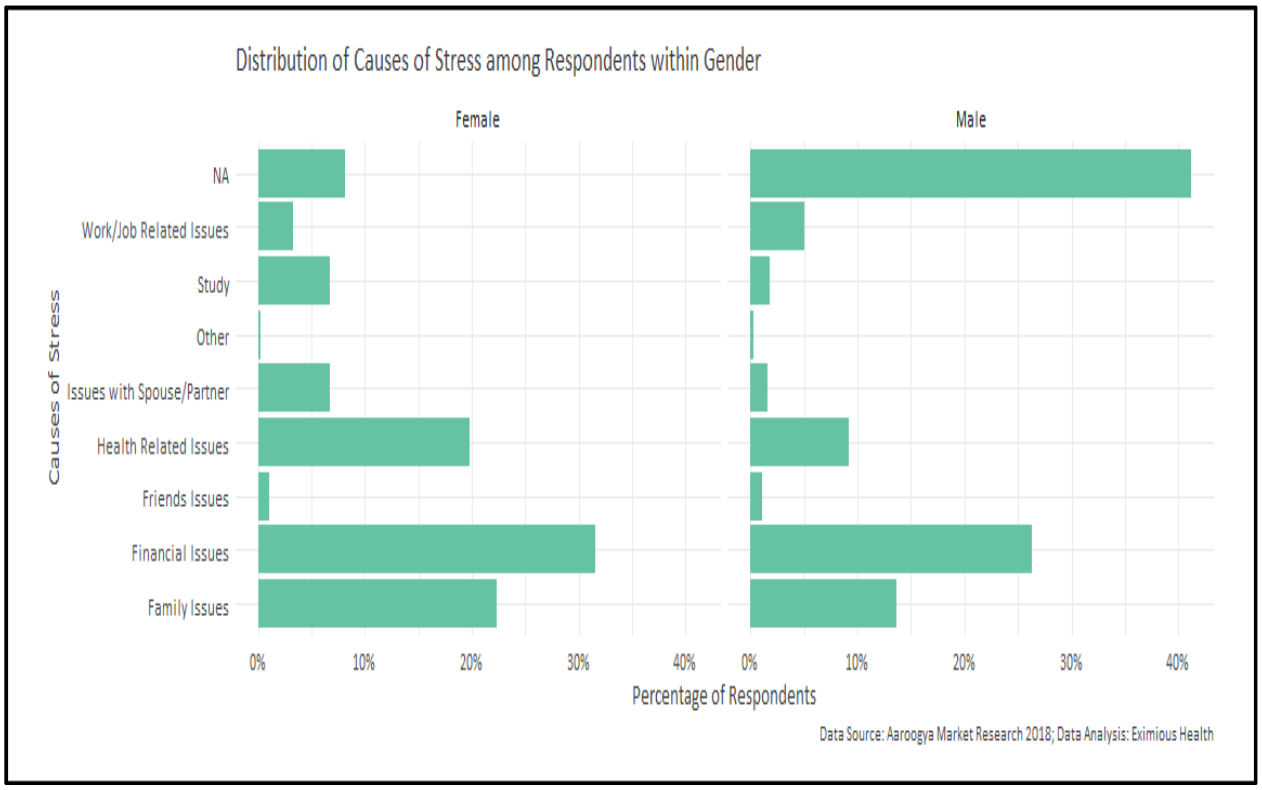


Figure 45: Top causes for stress as per gender

Interestingly, females seem to be more stressed and trump the men in almost all causes of stress. Only 8% of the females find themselves having no cause of stress as compared to 41% males who find having no cause of stress in their lives.

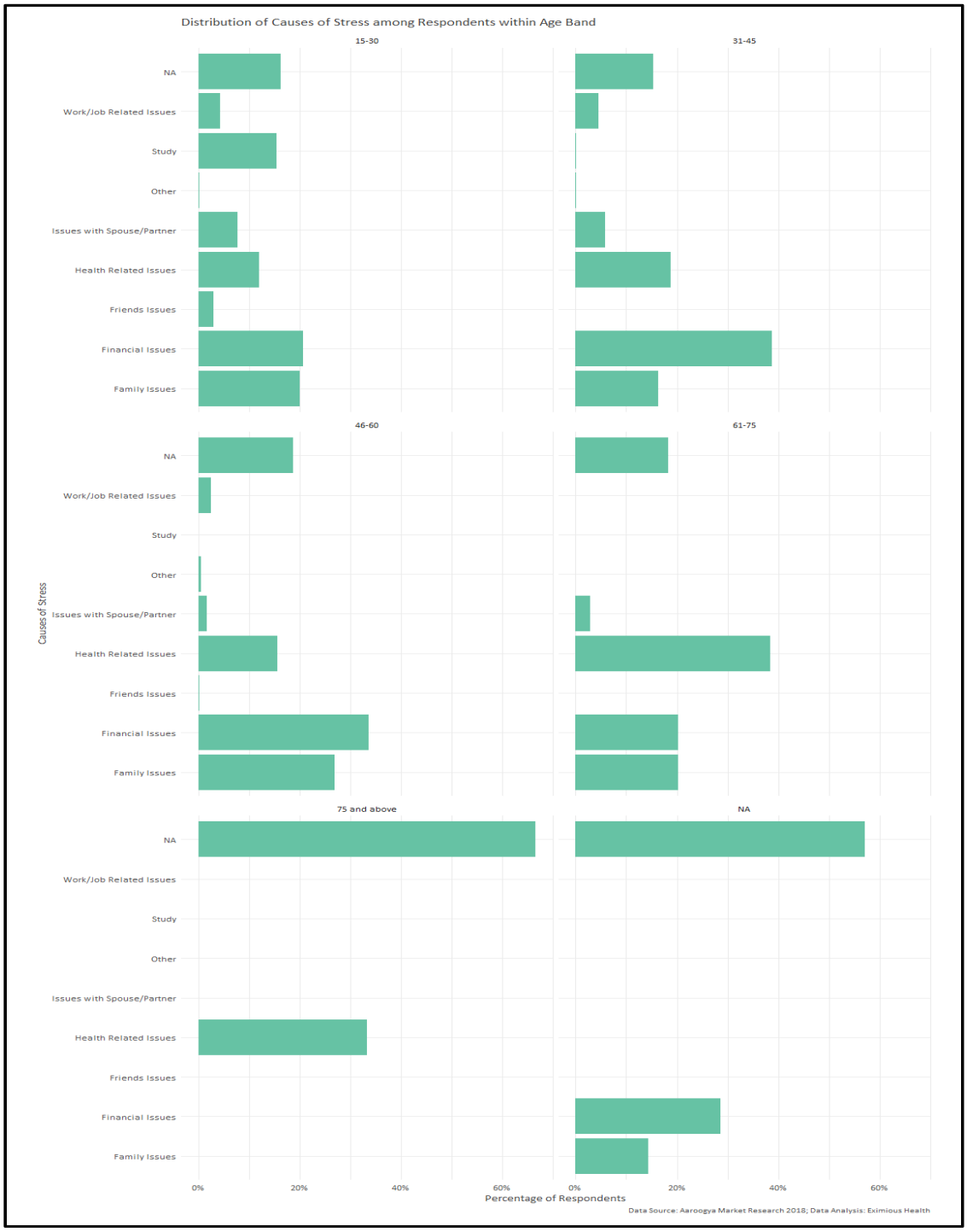


Figure 46: Top causes for stress as per age

The most important factor for stress among people aged 61 and above is health. People aged between 31 and 60 years of age are mostly troubled by stress related to financial issues.

4. SECTION 04: BREAST CANCER AWARENESS

1. BREAST SCREEN EXAMINATION

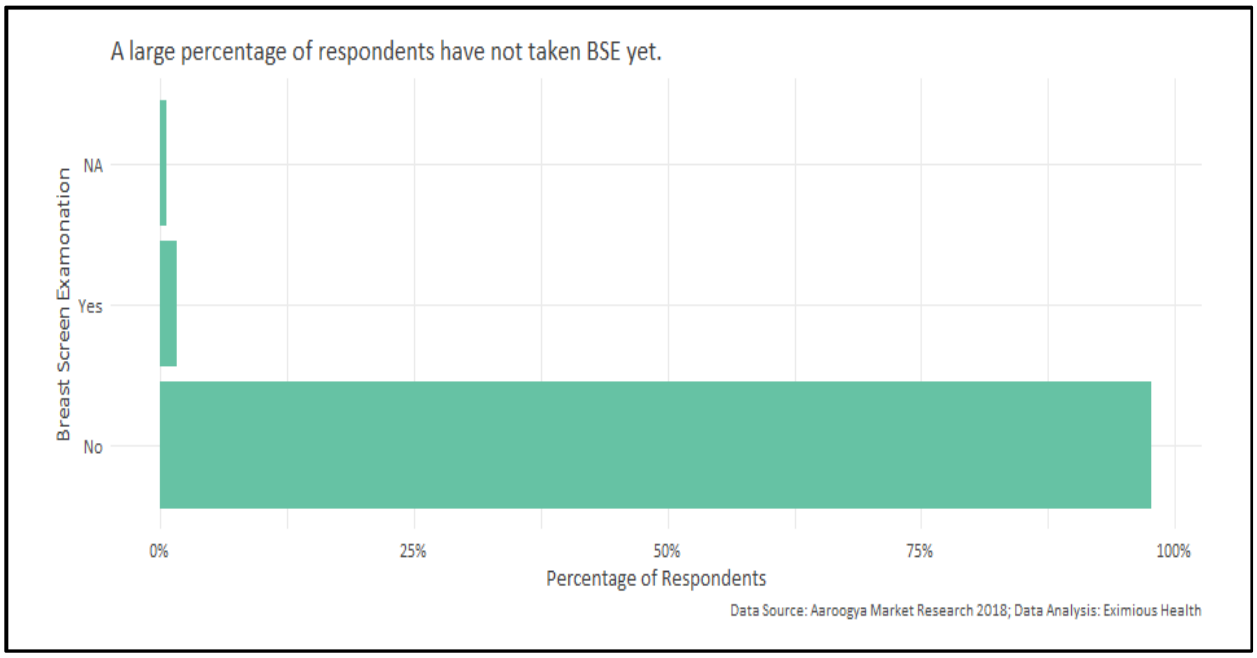


Figure 47: Percentage of respondents who took BSE

Nearly 98% of the respondents have not taken any breast screen exam yet.

Figure 48: Percentage of respondents who took BSE per village

All villages have similar stats for breast screen exam. Nearly all of the respondents have not taken BSE yet.

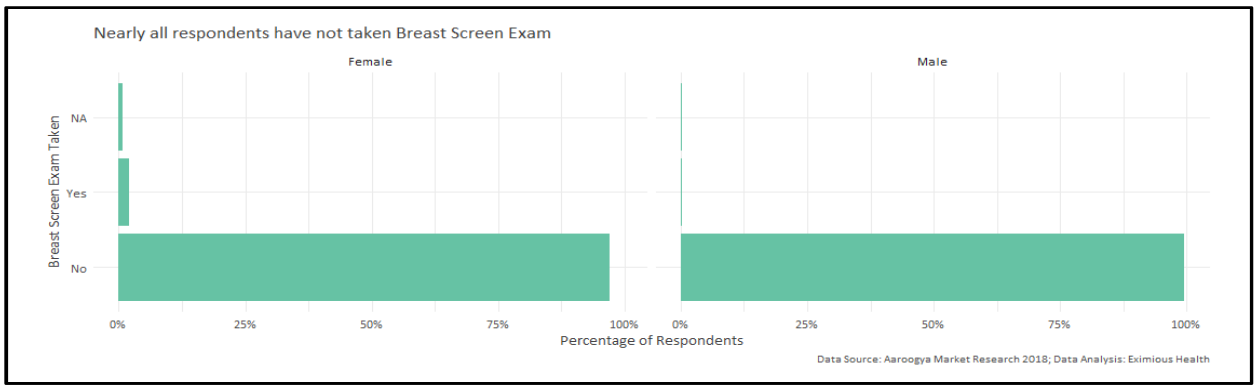


Figure 49: Percentage of respondents who took BSE as per gender

Only 2% of the females have taken breast screen exam compared to only 0.22% of the males.

Let us focus on females and their age groups.

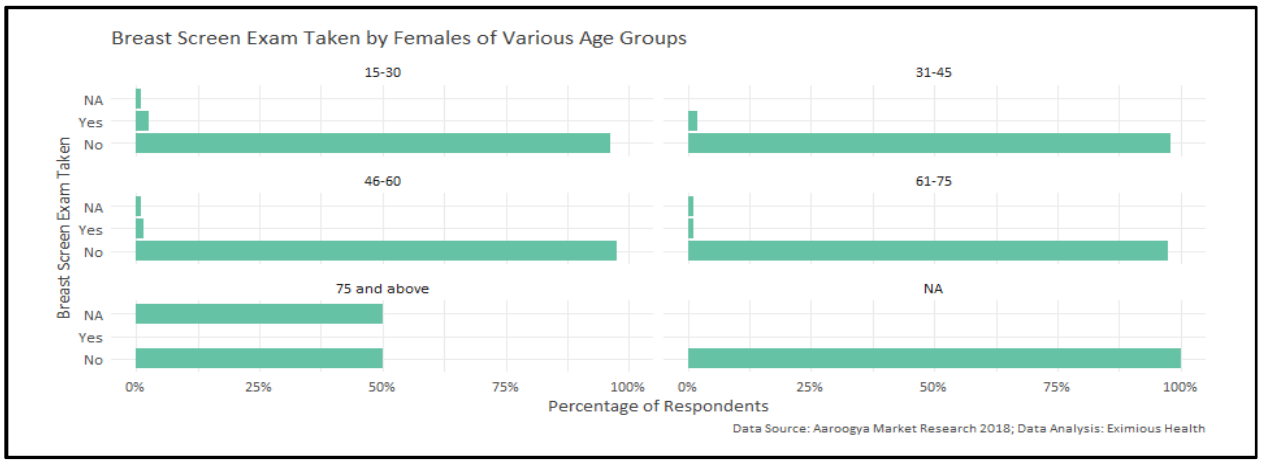


Figure 50: Percentage of respondents who took BSE as per age

2.7% of the female respondents aged between 15 and 30 years have taken breast screen examination.

2. SATISFACTION WITH BREAST SCREEN EXAM

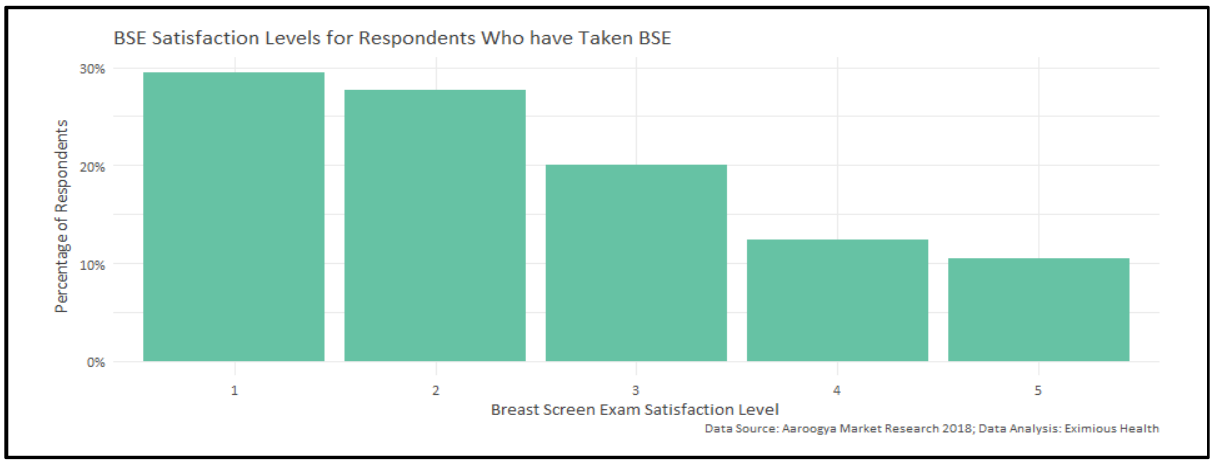


Figure 51: BSE satisfaction index

Of all the respondents who have taken a breast screen exam, 30% have described the experience to be least satisfying. 11% have described the experience as highly satisfying.

3. REASONS FOR NOT TAKING BREAST SCREEN EXAM

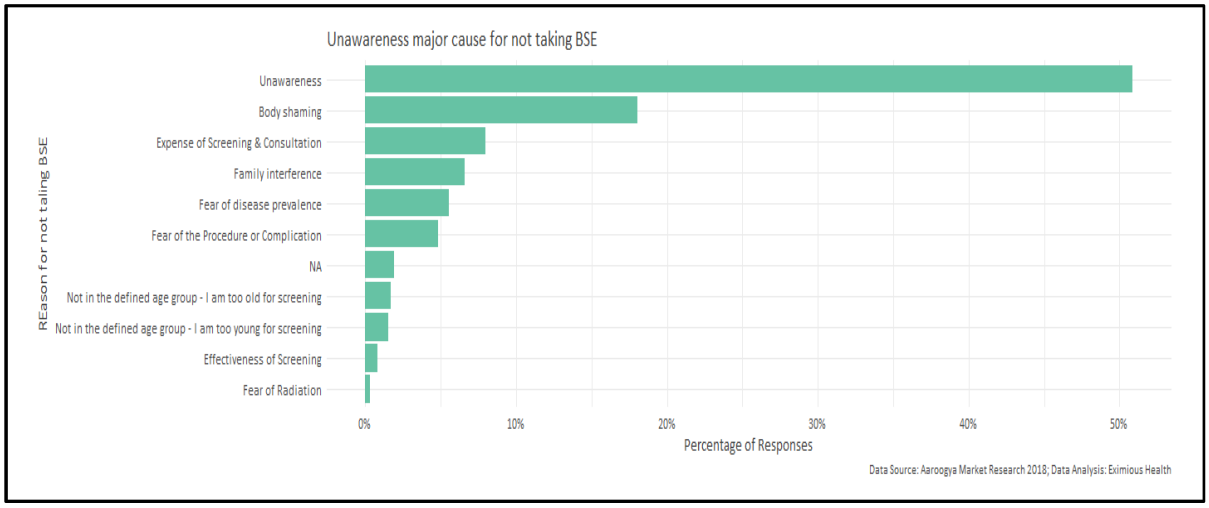


Figure 52: Reasons for not taking BSE

51% of the responses identify unawareness as the chief cause for not taking BSE followed by 18% of the responses which indicate body shaming as the reason.

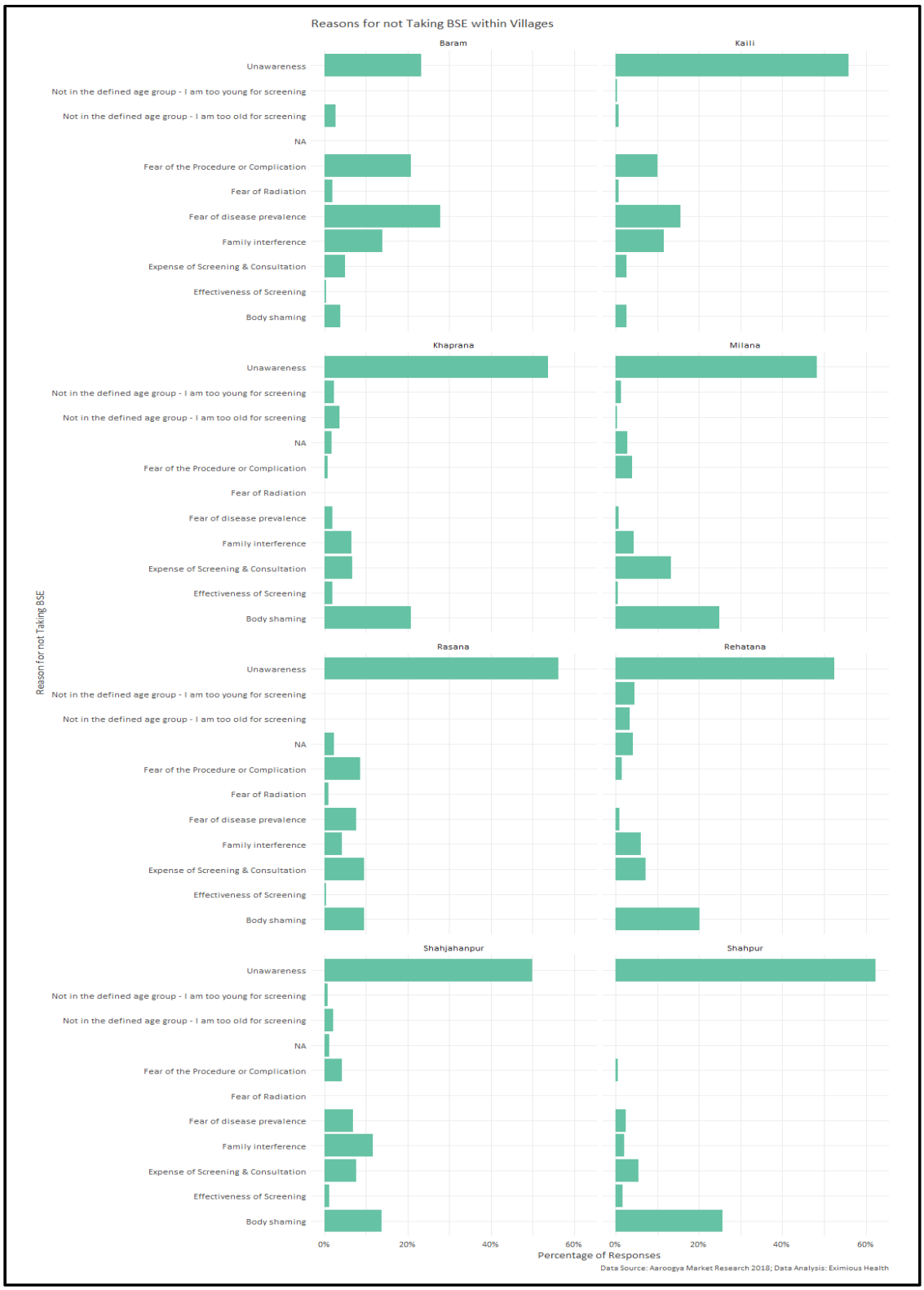


Figure 53: Reasons for not taking BSE per village

The top 3 reasons for not taking BSE are unawareness, body shaming and expense of screening & consultation for all villages except for Baram, Kaili, and Shahjahanpur. Responses from Baram indicate fear of disease prevalence (28%) as the top cause for not taking BSE followed by unawareness (23%) and fear of the procedure or complication (21%). Unawareness(51%) is the top cause among responses from Kaili followed by fear of disease prevalence (16%) and family interference (11%). Shahjahanpur responses list unawareness (50%) as the top cause followed by body shaming (14%) and family interference(12%).

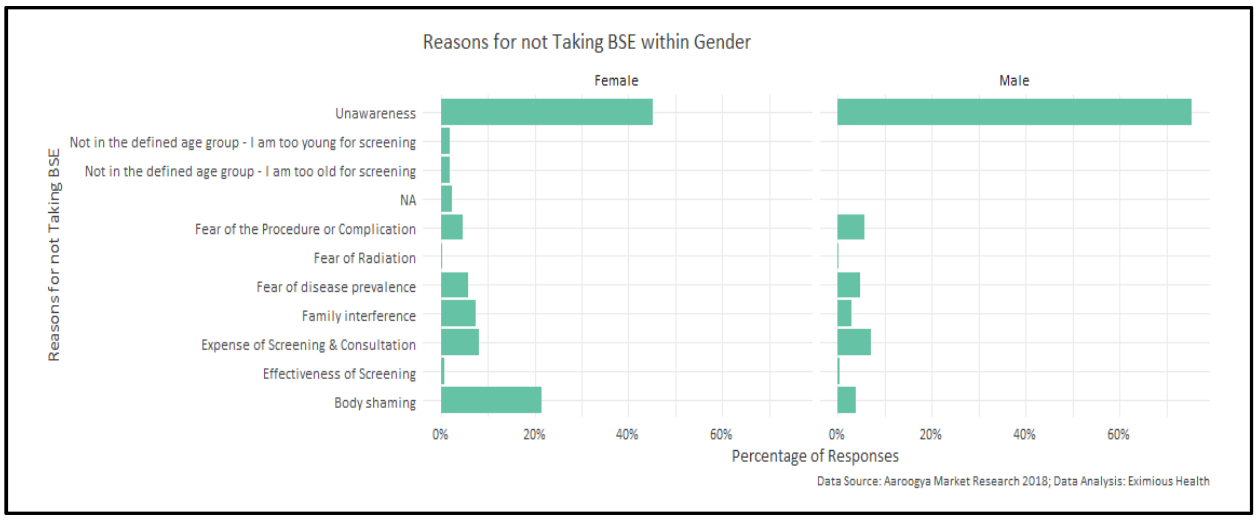


Figure 54: Reasons for not taking BSE as per gender

Unawareness is the top cause among both males and females. Body Shaming (21%) is the second most important reason among females followed by expense of screening & consultation (8%). Among males, expense of screening & consultation (7%) followed by fear of the procedure or complication (6%) are the top causes.

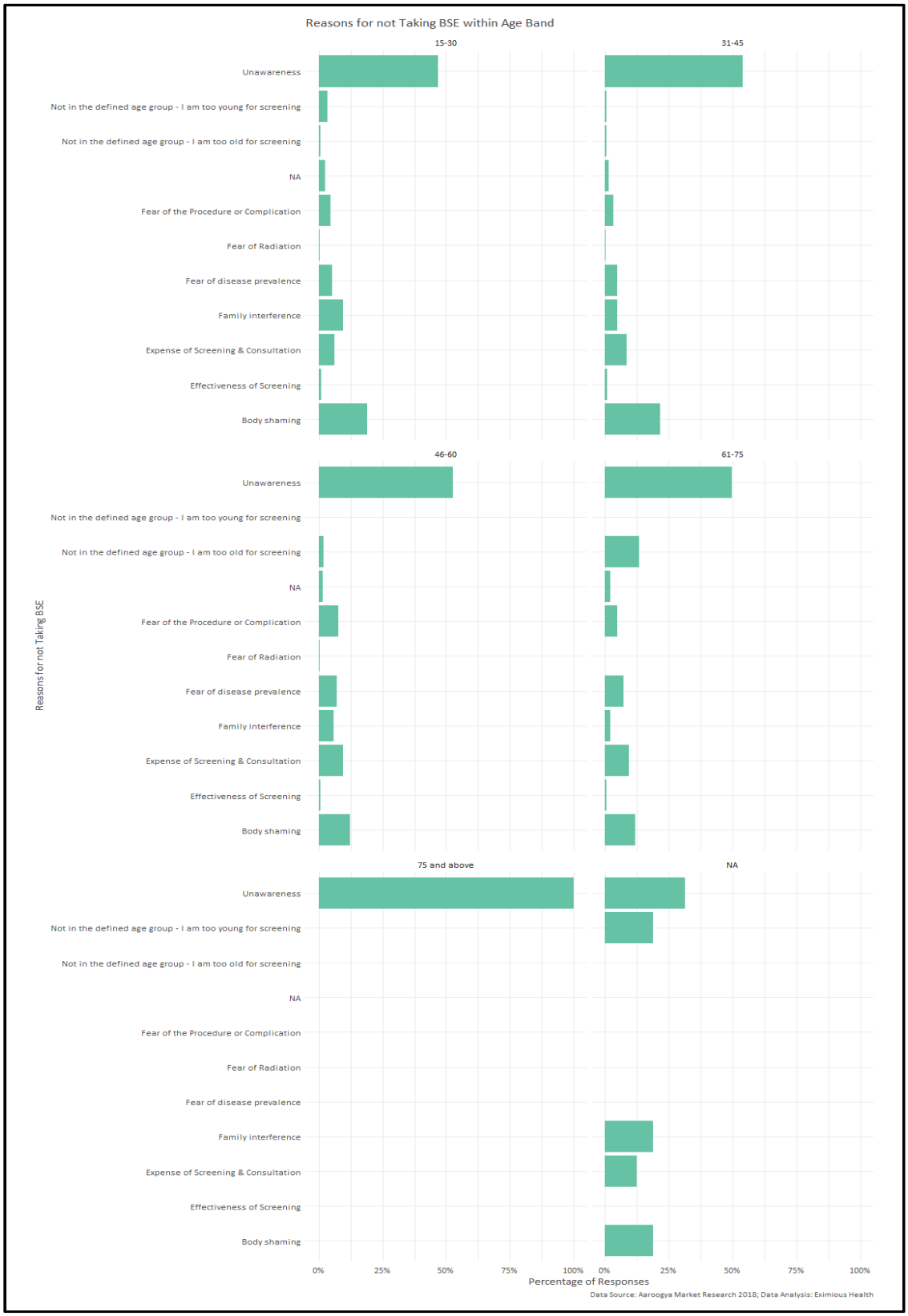


Figure 55: Reasons for not taking BSE as per age

For all age groups, unawareness, body shaming and expense of screening & consultation are the top causes for not taking a breast screening exam. However, for the age group, 15-30, the third most important reason is family interference. For the age group, 61-75, the second most important reason is "Not in the defined age group - I am too old for screening" followed by body shaming.

4. OPTIMAL AGE FOR BSE

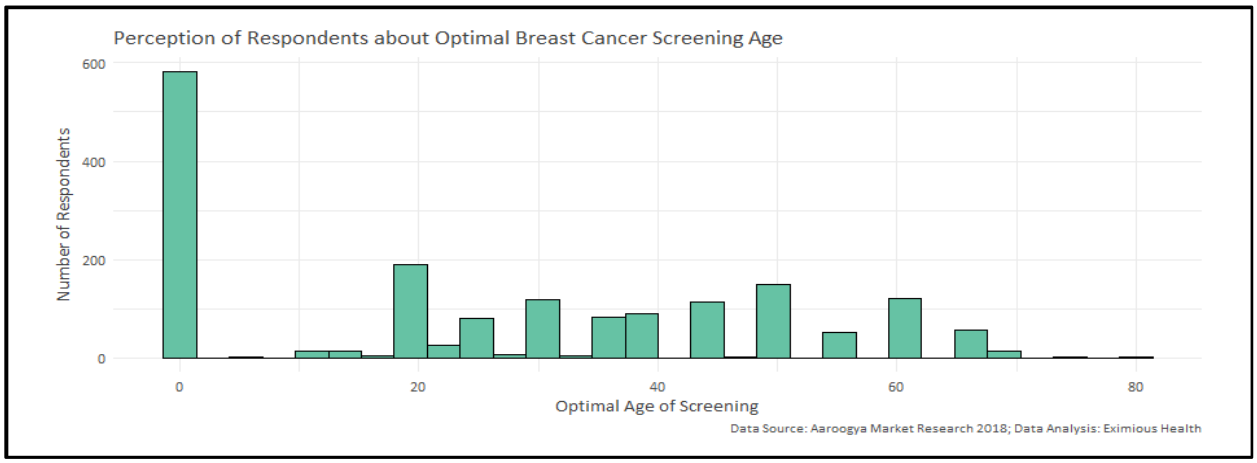


Figure 56: Optimal age for BSE

The median age for screening as percepted by respondents is 25 with an inter-quartile range of 45. Most of the respondents think that the optimal age for screening is at the birth.

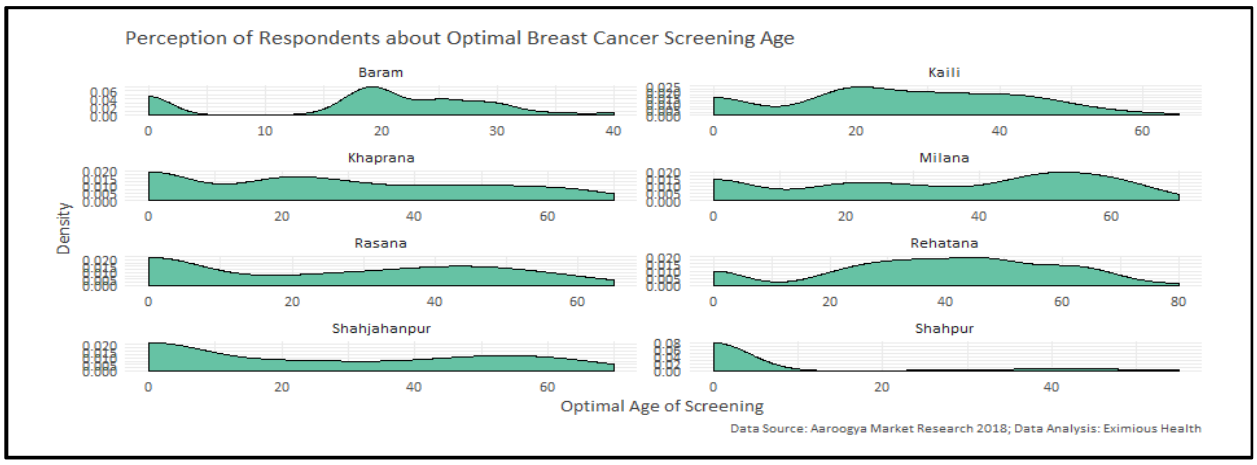


Figure 57: Optimal age for BSE per village

The percepted optimal age for breast screening exam varies widely among the villages and from individual to individual within a single village. The standard deviation of the percepted optimal age ranges from 11 to 25 years.

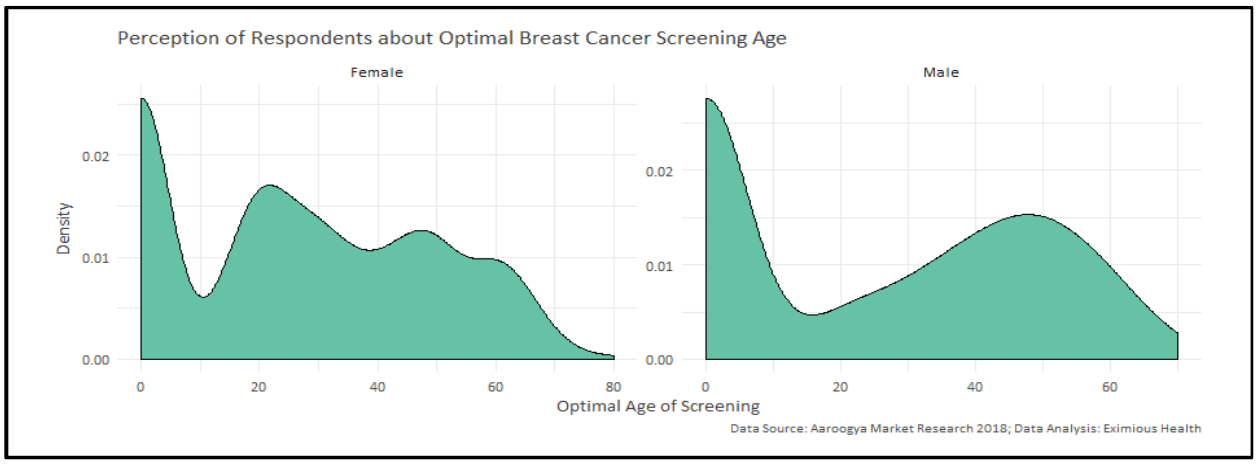


Figure 58: Optimal age for BSE as per gender

Men believe that the optimal age for breast cancer screening is 26 years whereas women think it is 25 years. The responses of men vary widely with a standard deviation of 22 and for women the standard deviation is 24.

5. AWARENESS ABOUT BREAST CANCER AFFECTING MALES

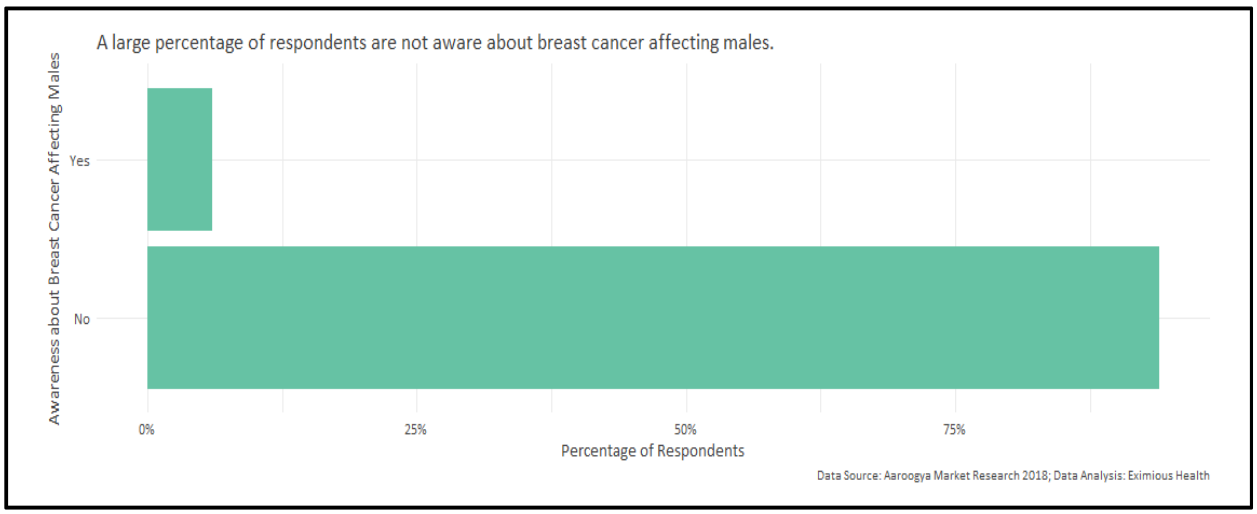


Figure 59: Awareness about breast cancer in males

Nearly 94% of the respondents are not aware that breast cancer can affect males.

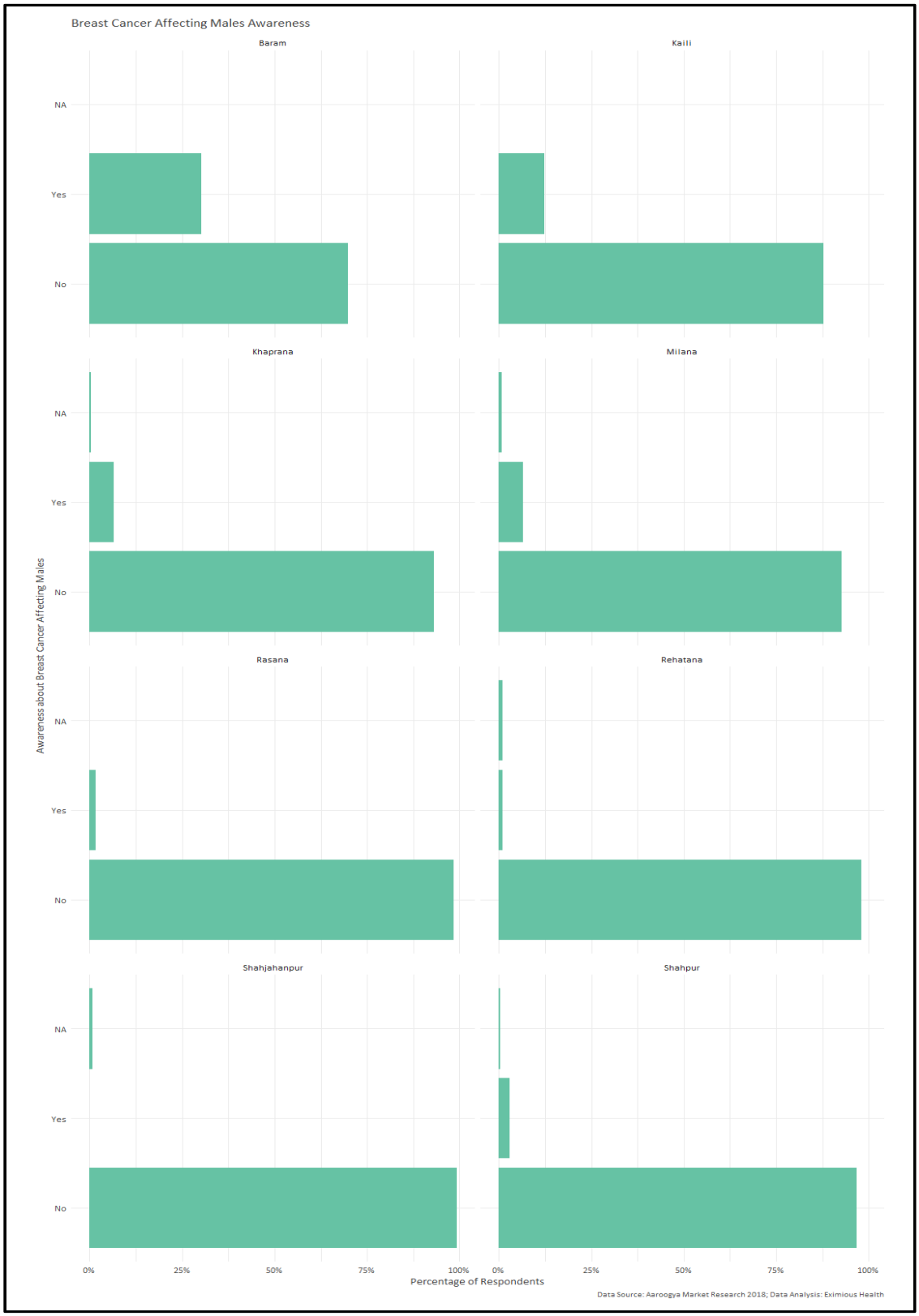


Figure 6o: Awareness about breast cancer in males per village

More than 90% of the respondents in all village have said that they are unaware about breast cancer affecting males except for respondents from Baram and Kaili. Only 70% of the respondents from Baram said that they are unaware about breast cancer affecting males.

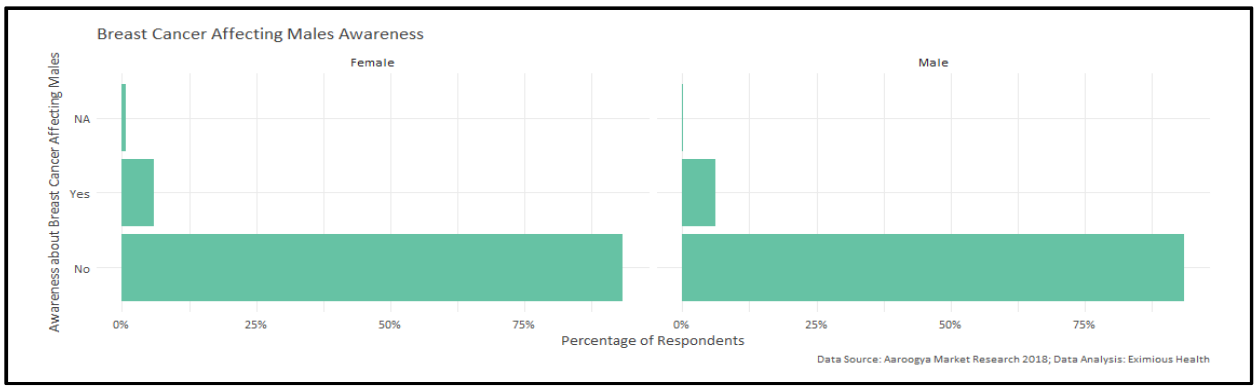


Figure 61: Awareness about breast cancer in males as per gender

Around 6% of both males and females are aware that breast cancer can affect males too.

5. SECTION 05: OPINION ABOUT HEALTHCARE FACILITIES

1. SATISFACTION LEVELS WITH EXISTING HEALTHCARE

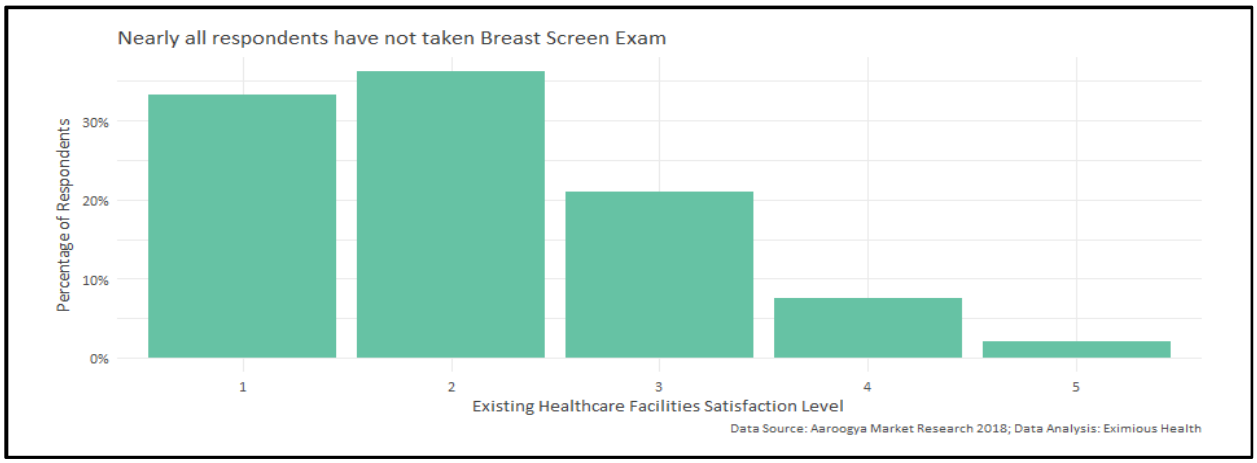


Figure 62: Satisfaction with existing healthcare infrastructure

Around 90% of the respondents find the existing healthcare facilities not to be satisfactory. The median satisfaction level for the existing healthcare services is 2.

2. CURRENT HEALTH CAMP FREQUENCY

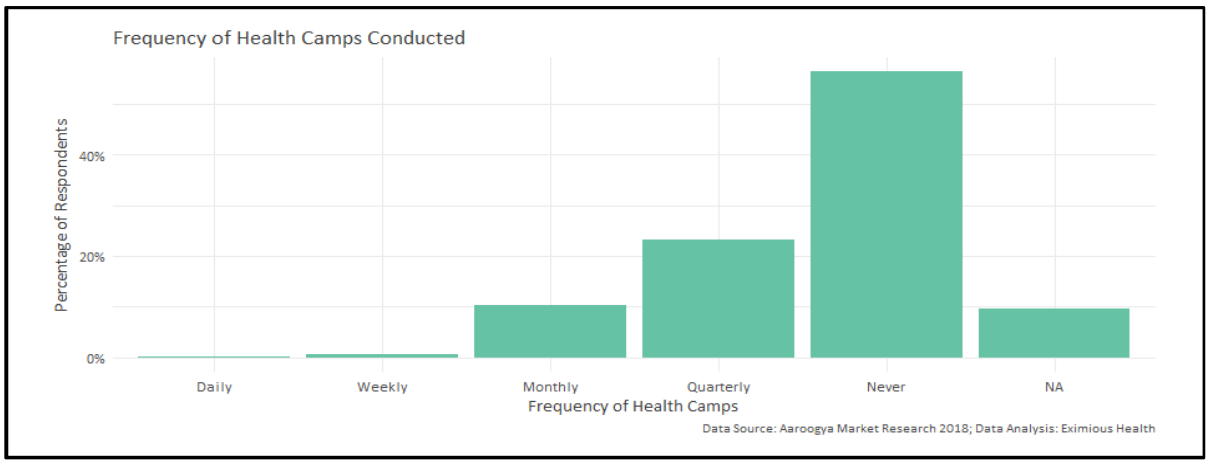


Figure 63: Current health camp frequency

56% of the respondents said that there are no health camps conducted at all.

3. REQUIRED HEALTH CAMP FREQUENCY

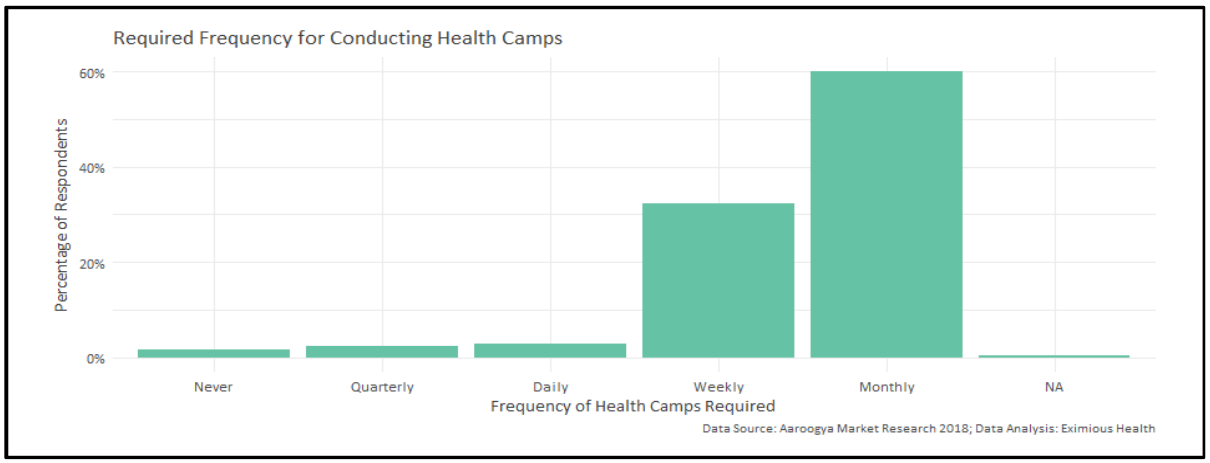


Figure 64: Desired health camp frequency

60% of the respondents feel that health camps should be conducted monthly whereas 32% of the respondents feel they should be conducted weekly.

E. CONCLUSION

Following are the key observations and our recommendations to be included in subsequent health camps:

	OBSERVATIONS	RECOMMENDATIONS
1	Household Size: The median family size is 6, which is way above the national average of 4.45. Rehatana and Milana are even higher with 7 & 9 members respectively.	Conducting sessions on family planning will go a long way in improving the socio-economic status of the families, and will also help manage their resources better.
2	Preventive Check-ups: 80% of respondents have never undertaken preventive check-up which is alarming given the prevalence of non-communicable diseases in the region.	Conducting sessions to spread the importance of preventive check-ups will help detect life-threatening conditions early on.
3	Contraceptive Use: A staggering 55% of the respondents declined to speak about the use of contraceptives. And only 6% took professional advice about its usage.	Conducting sessions to sensitize the villagers around the taboos associated with contraceptives is imperative. This should go hand-in-hand with family planning sessions.
4	Dietary Habits: Wheat, rice and vegetables primarily constitute the palate of the villagers in Western UP. 84% are either indulged in strenuous household chores or agriculture which requires a rich and balanced diet.	Conducting sessions to share the need and benefits of vitamins and proteins in the diet.
5	Smoking Habits: An alarming 32% of the villagers smoke which needs correction to spread the menace of oral and lung cancer.	Conducting awareness sessions is required.
6	Drinking Habits: Although only 7% agreed to consume alcohol, it's still a menace which depletes financial resources of the families. It also leads to incidents of domestic violence.	Conducting awareness sessions is required.

7	Exercise Habits: Surprisingly, almost 80% of the villagers don't exercise on a daily basis.	Conducting awareness sessions on the benefits of Yoga and Exercise will help the villagers attain mental and physical fitness.
8	Causes for Stress: The top three reasons for stress are financial (30%), due to family issues (20%) and followed by health reasons.	Conducting sessions on financial literacy to inculcate habits of micro savings and co-living to help overcome family issues is required.
9	Breast Screening Examination: 98% of respondents had not undertaken the BSE. Majority cite unawareness and body shaming are the prime reasons behind not doing so.	Conducting awareness sessions to do away with the notions of taboo and misconceptions around BSE is of utmost importance.
10	Frequency of Health Camps: Currently, 23% respondents said that quarterly camps are conducted in their areas whereas a whopping 57% said it has never been conducted so far.	Conducting mobile monthly health camps (as 60% of respondents wanted) on the aforementioned themes is the need of the hour to ensure the villagers in Western UP are able to meet the desired standards of living.

"Errors using inadequate data are lesser than those using no data at all." by Charles Babbage

Conducting an exhaustive survey with 1759 respondents across 8 villages ensured that our sample size was fairly random yet robust. The survey results have highlighted fascinating insights into the lifestyle and awareness of villagers in Western UP, which can hold true for most Tier 3 and 4 geographies in India. Cultural, religious, economic and societal barriers have played a role in inhibiting our villages (Bharat) from catching up with our cities (India).

Aaroogya, has taken an onus to understand and bridge this glaring gap and we at Eximious Health are proud to be partnering with them through our data-driven insights to enable them execute the outreach programs with utmost efficiency and outcome oriented approach.