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## Monsoon-in the views of urban people

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### ABSTRACT

**BACKGROUND:** (1) To know the problems faced by people during monsoon. 2) To know how they cop up with it 2) To know the participants view related to monsoon **MATERIAL & Methods:** A cross sectional study was carried out on 12-09-14 among people who were invited in this study by open invitation on social media and local newspaper. Combinations of different qualitative methods (Free listing & Pile sorting method) were used to know their problems and their views regarding monsoon. **RESULTS:** Out of 21 free listed problems, four most common problems pile sorted by participants were (1) Vector born disease (2) Water logging (3) More Turbid water supplied (4) Lack of cleanliness which are faced by Surat people. Community has the knowledge regarding the problems and they know how to deal this problem. **CONCLUSION:** People have the knowledge about the problems related to monsoon and they have their own way to combat it.

**Key Words:** Monsoon problems, Climate change, Surat City

### INTRODUCTION

The development of an Urban Health System is an upcoming priority for India. The rural health service system in the nation, though it faces many challenges, does have well developed, prescribed norms of health care infrastructure, outreach services, etc. Urban health services are lacking even these norms and services, so during the monsoon season people from urban faced certain problems. It is important to note what different problem they facing and their point of views about the monsoon<sup>1</sup>. Surat is a city in the Indian state of Gujarat. It is economic capital of Gujarat state and administrative capital of the district which is located at left bank of the Tapti River (Tapi). Surat is Gujarat's second-largest city with a population of 4.6 million at the 2011 census. Surat is the 34<sup>th</sup>

largest city by area and 4th-fastest developing cities in a study conducted by the City Mayors Foundation, an international think tank on urban affairs.<sup>1</sup> People are coming from all around the country to Surat in search of jobs and businesses. Surat has practically zero percent unemployment rate and jobs are easier to get here due to very fast development of various industries in and around Surat City.<sup>2,3,4</sup> With all this achievement Surat city has his own problems like Surat city is endemic for malaria, dengue and filariasis.<sup>5,6</sup> Vector born disease prevalent in Surat city; cases of malaria & other vector born disease increase during monsoon.<sup>(7)</sup> Surat city faced frequent flood like situation during the monsoon in past.

### MATERIAL & METHODOLOGY

**Study design:** Cross sectional study

**Study type:** Qualitative study (free listing and pile sorting, Group discussion)

**Study population:** General population from Surat city.

For gathering people for this event we gave advertisement one day before the event in local newspaper for open invitation. We did publicity via social media, email was sent to people who

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earlier participated in this kind of open discussion. Thirty participants took part in this study.

**Study period:** All the preparation was done during August and September and this dialogue is arranged on 12<sup>th</sup> September, 2014 for 1 Hour 45 minutes.

**Study setting:** Southern Gujarat Chamber of Commerce and Industries (SGCCI), Samrudhi hall, in centre of Surat city where people from different part of city with different back ground can easily come.

**Material & Tools:** We pre decided flow of events like first free listing and pile sorting, then open discussion with group of people to know their views. This is not fixed protocol and we modified the duration or sequence of event according to the interest of participants. We used audio visual aids and numbers of different health related films were shown to maintain the participants' interest.

This IEC material was used during the study:

- Chart paper + A4 size paper
- Three videos from Gujhealth web site related VBD (Vector borne diseases).<sup>8</sup>
- Two video related to El nino (TV 9 news).<sup>9</sup>
- One video related to rainfall
- One video related to importance of sanitation & cleanliness.<sup>10</sup>

This Information, Education & Communication (IEC) material was used to provide information regarding issues and health problems related to monsoon after discussing with study population this was shown to them and their query solved. We appreciated them for their knowledge and simultaneously answered their queries using above material. Content analysis was done using NVIVO.

**RESULTS**

In this study 30 participants of different age group (20-68 years) took part. Among them 53% were men & 47% were women. We started the discussion with participant's introduction, so the participants could know each other. In this introduction participant told about his/her name, age, back ground and whether

he/she like or dislike the monsoon with their own reasoning.

**Table: 1 Participants feeling towards monsoon with the reasons**

We like monsoon (57%)	We don't like monsoon (43%)
Monsoon keeps the atmosphere cool	Monsoon is unpredictable
Monsoon brings happiness in peoples life and adds beauty to the nature	In monsoon the environment is dirty and unhygienic
Due to monsoon the water level increases which helps in the growing of food	3. Health problems are increased during monsoon

**Table: 2 Free listing and pile sorting of problems faced during monsoon by community**

Sr. no	Free listed items (Pile sorted)	Sr. no	Free listed items (Pile sorted)
1	Water lodging ( 5)	11	Accidents (2)
2	Vector borne diseases, Health problems (15)	12	To keep children (0)
3	Humidity rises (3)	13	Transportation problem (1)
4	Be a doctor- income rise (0)	14	Infective disease increases (1)
5	Water related diseases (2)	15	Decreased appetite (1)
6	Dirtiness increase(4)	16	Difficulty for fisherman (0)
7	Asthmatic patients faces problem (1)	17	feels laziness (0)
8	Turbid water supplies for drinking (4)	18	Washed clothes doesn't dry (0)
9	Land slide (0)	19	Skin problem increase (0)
10	Drainage overflow (0)	20	Rail land slide (0)

Participants prioritize following four problems as major concern for Surat city:

- Vector borne diseases, 2) Water lodging, 3) More Turbid water supplied, 4) Lack of cleanliness (Table: 2)

**Group activity:** We divided our participants in 5 groups and allotted them task:

- Problems related to monsoon
- How to prevent diseases?
- Where do you go for Primary care?
- Home based remedies
- Experience related to health in monsoon

In this five heading our participant prepared their views with consensus to their team member and open discussion was done on it.

**DISCUSSION**

Surat has a tropical monsoon climate with summer temperatures ranging from 37°C to 44°C. Annual rainfall ranges from 1,000 to 1,200 millimeters and also has high rainfall. The city's population has grown

more than ten-fold since 1951 to reach 4.5 million inhabitants, while the municipal boundary area has expanded from 8.2 square kilometers in 1951 to 327 square kilometers today. The expansion of the city boundaries to include the Dumas coastal area has also made Surat a coastal city.<sup>11</sup> After finishing their introduction & easing the environment of participant, we shown video and pictures related to the pattern of rain in India. How the rain occur usually in India. We asked them what they feel about the rain pattern in the current year in comparison to previous year. During the introduction we asked all participant what they feel about the monsoon of this year and all participants replied that this year monsoon was late and it's less in amount compare to previous which is predicted by the Indian Meteorological department(we discussed El nino effect).<sup>9</sup> Surat city has favorable environment for malaria and incidence increase during monsoon due to high humidity above 60% & mean temperature 25-30 C along with the continuous but low dense rain fall, which was among the top priority of Surat people came out in free listing and pile sorting (Picture 1).<sup>12</sup>

**Table 2: Summary of group discussion: People's view towards the monsoon.**

Category	Code	Participants views
Problems related to monsoon	Accident	When rain is going on there was increase in number of accident because of rain drop directly coming on eyes so there is problem in vision and high chances of accident.
	Flood	Specific problem they pointed as Ukai dam is nearby Surat city and because of it there was flood like situation.
	Disease	Malaria, dengue like disease as well diarrhea vomiting cases increase
	Water	People thinks during the rainy season clean water for drinking purpose not supplied and supplied water is also yellowish in color. People also concern about dirtiness increase during monsoon. As water going to collect in ditches and road pits.
	Unpredictable	People likes monsoon and knows that it's important for survival as agriculture depends on it
How to	Hygiene	We have to make sure that

prevent diseases?		children and adult also wash their hand after going to toilet and before eating food; Wash the fruits and vegetables before use; Avoid the consumption of stale food; Avoid eating outside food.
	Dirtiness	To prevent water logging we have to fill the ditches with sand or dug this also help us in mosquito control. And this thing also helps in prevention of road traffic accident.
	Household measure	We have to make sure that water should not be accumulated in tray behind freeze, or in flower pot or other artificial collection. There should be demarcation between which water is going to use for drinking and which water for bathing, cloth washing so forth.
Where do you go for Primary Health care?"	Quacks	Don't go to any doctor just because he is giving drugs cheaply, you need to check what kind of degree he is having. They are affordable, feasible we know so if you visiting then if not cured then move to the nearby hospital.
	Government Set up	In city there is Urban Health center you can visit, they are treating free of cost. In case of emergency you can call 108 and it will drop you wherever you want.
Home based remedies	Mosquito	We should wear full sleeve cloths; has to use mosquito nets; Use mosquito repellent coils; Use <i>Neem</i> leaves for purification of air.
	Cleanliness	Keep house clean so house fly & mosquito did not come in house; Maintain cleanliness in and around house.
	Purification	Keep water in pot made of "Taamba" that will purify the water; Boil water before using; Alum can be used to keep the water clean, Use modern water filtration technology if affordable.

During the discussion participant shown their concern about the frequent flood like situation in Surat and think that Ukai dam is the main reason which we also found in literature review.<sup>11</sup> In the developing world, informal providers (quacks) represent a huge number in healthcare system; Poor populations are most likely to seek care from this sector because of convenience, affordability, and culturally acceptable, factors were the most common reason.<sup>13</sup> One participant shared her

experience related to monsoon. It's like this "I am Surti after marriage but before that I was living in Kosamba with my parents a nearby town. During that time there was monsoon related Dengue outbreak in one society. At least a single member from every household was suffering. Investigation by medical team was unable to trace mosquito breeding. All possible sources like flower vases, backyards were checked. Family members from those houses who regularly maintain cleanliness were also found to be Dengue victims. But the health team also very smart. Ultimately, tray kept under refrigerator was found to be house of mosquitoes."

- 29 year old female

### CONCLUSION

Most community members liked monsoon & they had knowledge about problems occurring in the monsoon. They also pointed out VBD, Water logging, turbid water supply, lack of cleanliness as major problems which appear in Surat. Participants shared how they combat these problems in monsoon.

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