

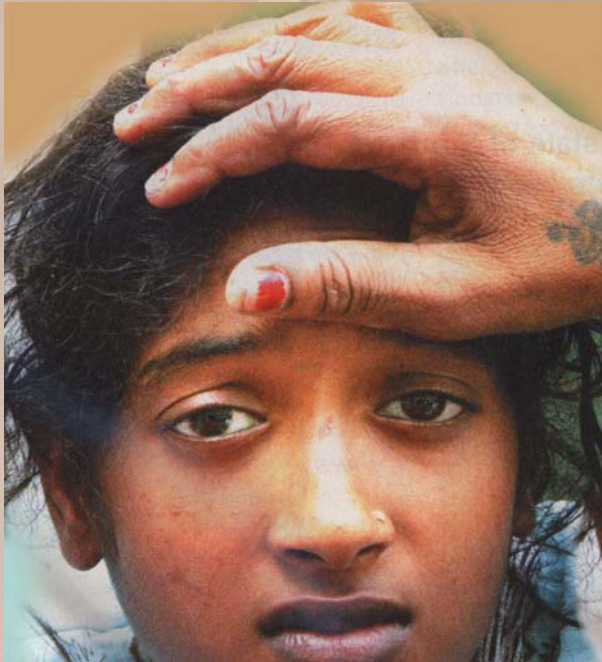
Crash Study on Viral Epidemic Fevers in Kerala, 2007

A Research project Conducted by:

Tropical Institute of Ecological Sciences

In Association with:

**Alphonsa College, Pala; Baselius
College, Kottayam; Catholicate
College, Pathanamthitta;
St. Thomas College,
Kozhencherry; St. Mary's
College, Manarcaud**



Crash Study on Viral Epidemic

Fevers in Kerala 2007

Survey Report





BACKGROUND

- Epidemic fevers are recurring in Kerala since 1995
- However this year's episode is totally different from the past with more number of cases and long term post recovery problems
- No studies have been reported so far
- Hence an elaborate study covering the largest sample size (of such studies in Kerala)

TROPICAL INSTITUTE OF ECOLOGICAL SCIENCES

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Fevers in Kerala 2007 Survey Report*



The Study

- Conducted by Tropical Institute of Ecological Sciences
- Covering 143 villages from Kottayam and Pathanamthitta districts
- A random sample check from 8 other districts covering 28 villages
- A total sample size of 1643 patients
- Three week study (20th June to 10th July 2007)

METHODS

- A field investigator (students from selected colleges) conducted a direct interview with each patient
- Only one respondent from one house
- Respondent should have a serious fever episode during the recent outbreak
- A structured interview sheet is used to collect data

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DATA ON RESEARCH TEAM

SI NO:	Name of the college	Number of investigators	Total persons surveyed
1	Alphonsa College, Palai	85	407
2	K.G College, Pampady	42	209
3	Baselius College, Kottayam	38	194
4	Catholicate College, Pathanamthitta	76	501
5	St. Thomas College, Kozenchery	26	183
6	St. Mary's College, Manarcadu	23	149
TOTAL		290	1643

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RESULTS

Classification of patients based on symptoms

SI NO:	Groups	Symptoms	Percentage
1	Group-I	<u>Basic symptoms</u> : Fever, Headache, Joint pain, Body pain	89.41
2	Group-II	<u>Chickunguniya like</u> : Fever, Headache, Joint pain, Body pain, Vomiting, Itching, Skin rashes, Skin shedding, Inflammation	3.71
3	Group-III	<u>Flu like</u> : Fever, Headache, Joint pain, Body pain, Diarrhea, Cold, Loss of Appetite, Cough, Shivering.	4.44
4	Group-IV	<u>Special symptoms</u> : Fever, Headache, Joint pain, Body pain, Loss of epithelium in mouth, Swelling on skin exanthems	1.70

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RESULTS

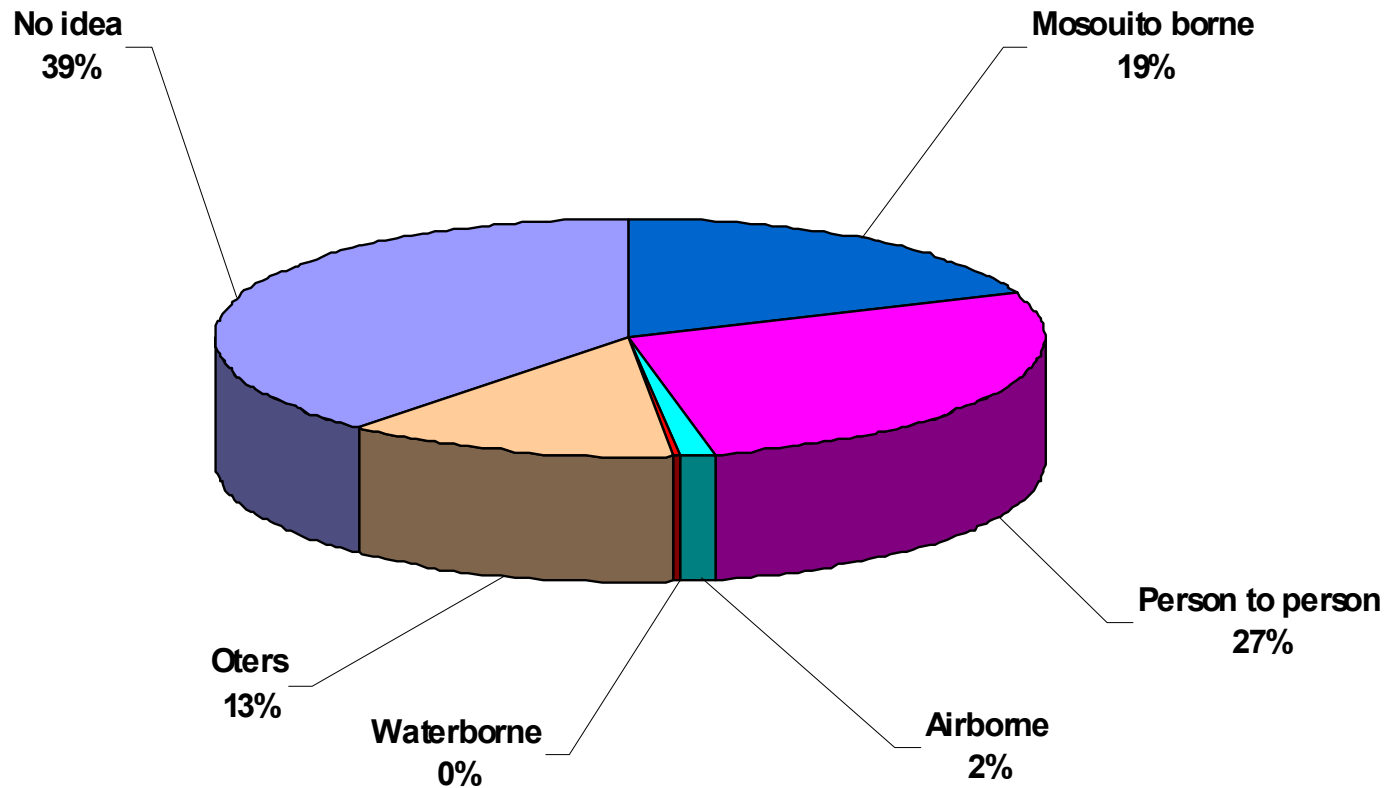
Reported cases of various fever in Kottayam district
(2007 1st January to 12th July 2007)

SI NO	Diseases	Reported cases	Suspected cases	Confirmed cases
1	Fever	284926	-	-
2	Chickunguniya	-	10547	111
3	Dengue	-	-	4

(Source: Epidemic fever containment Cell)

RESULTS

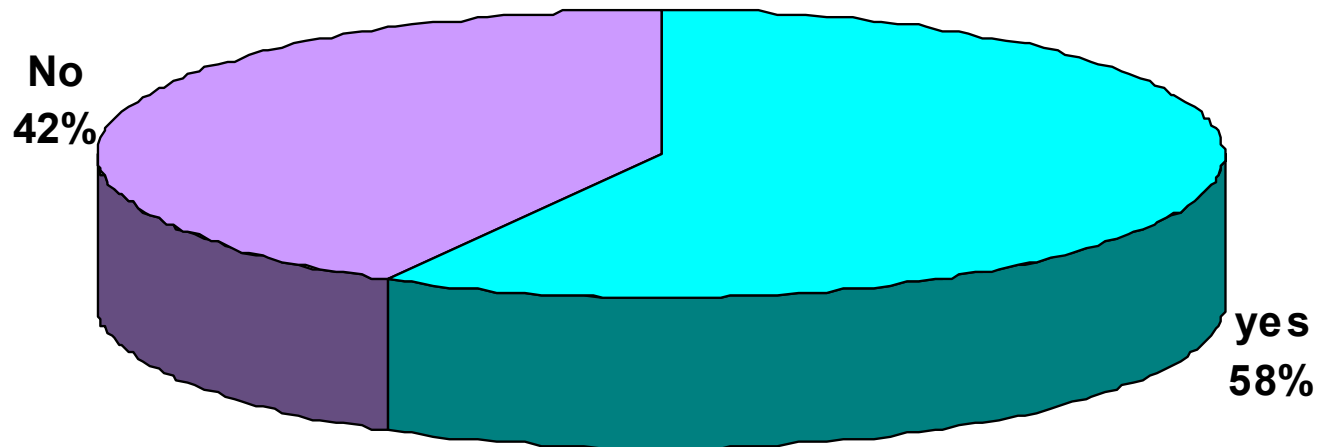
Perception of source of infection



RESULTS

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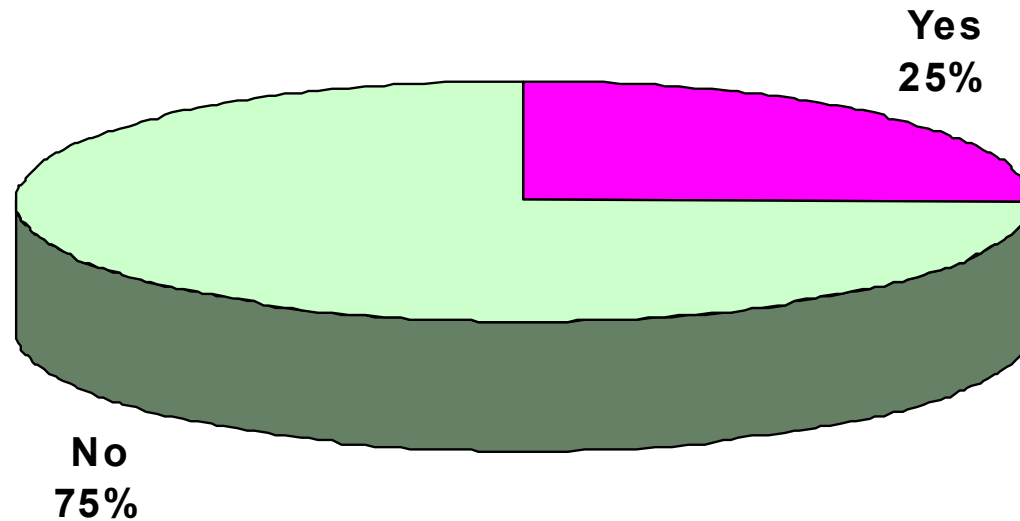
Provision for mosquito breeding near Patients residence area



RESULTS

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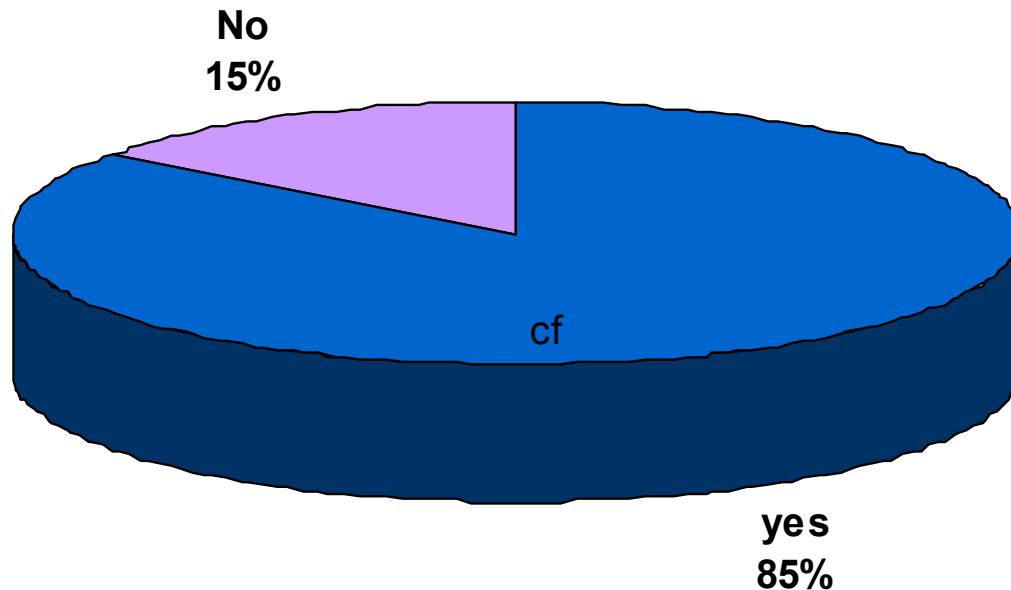
Public health programmes near Patients residence area



RESULTS

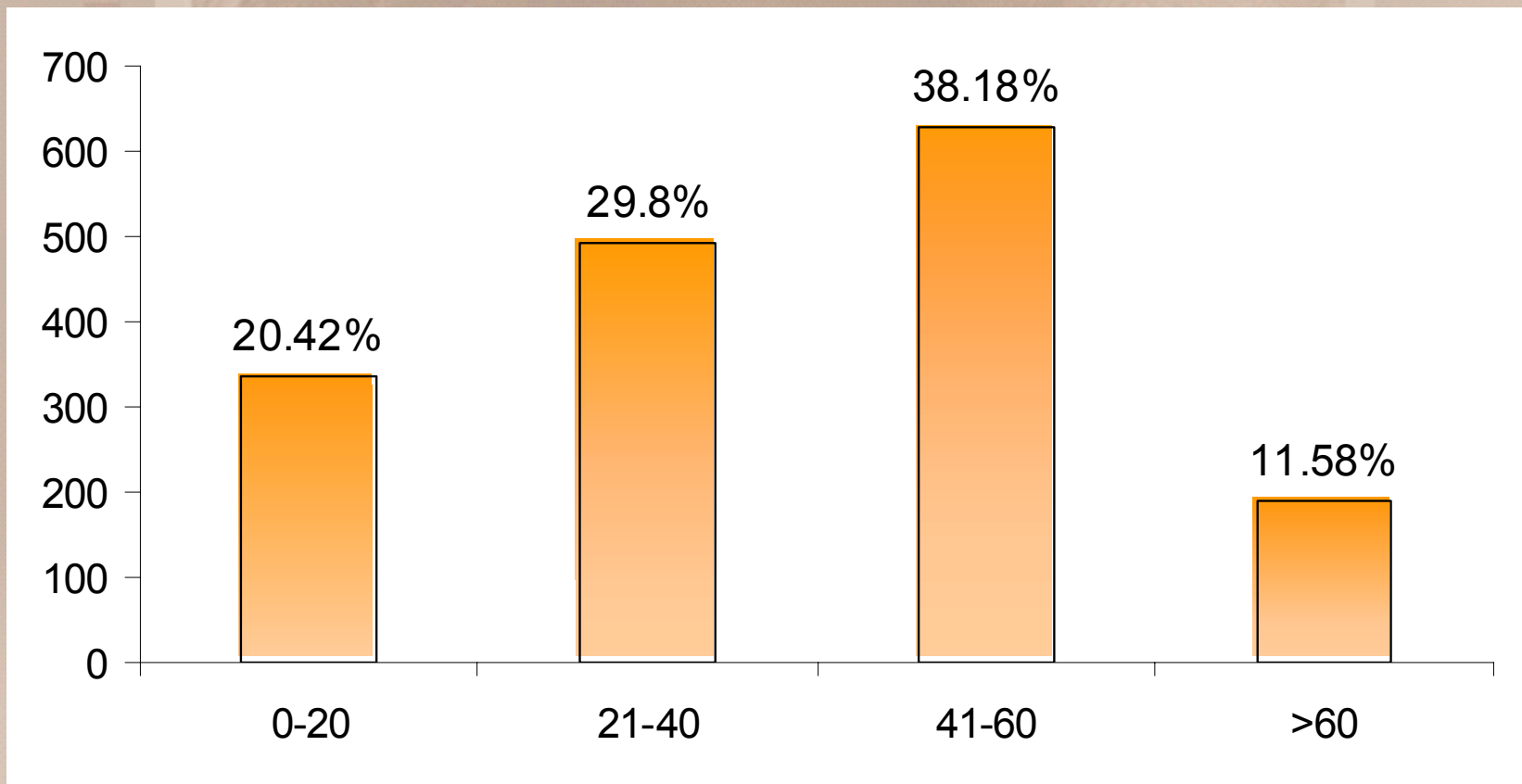
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Status of cleaning programmes near Patients residence area



RESULTS

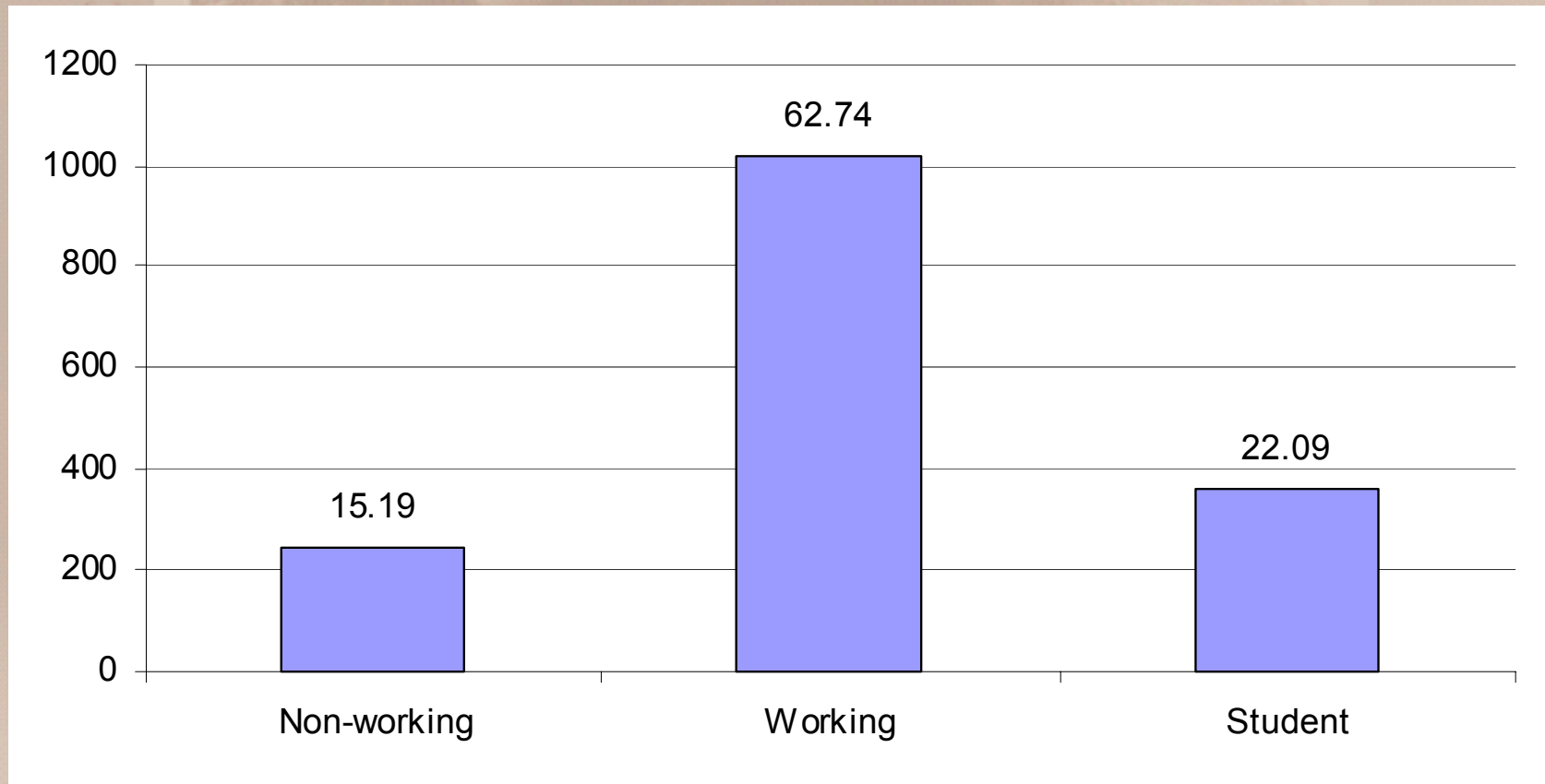
Age wise classes of fever affected people



RESULTS

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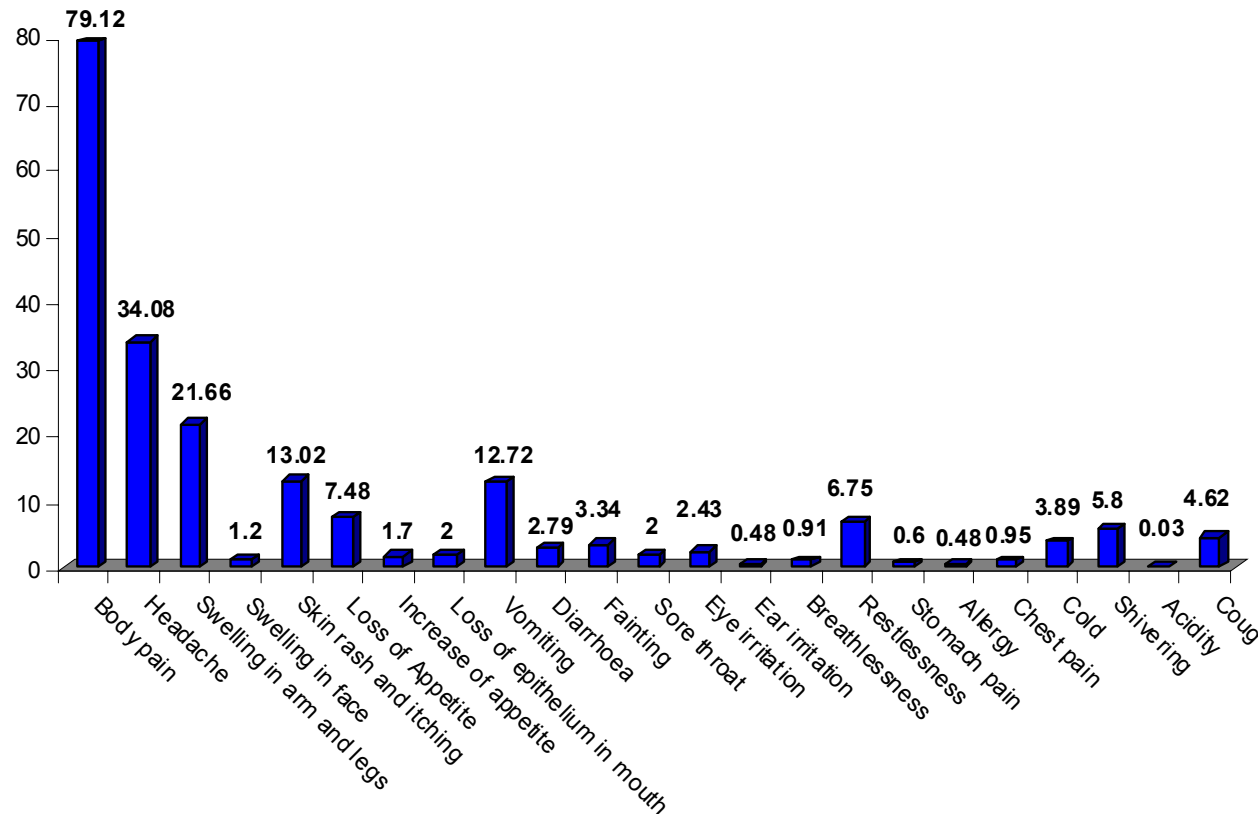
Occupation of fever affected people



RESULTS

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Symptoms of fever during infected period

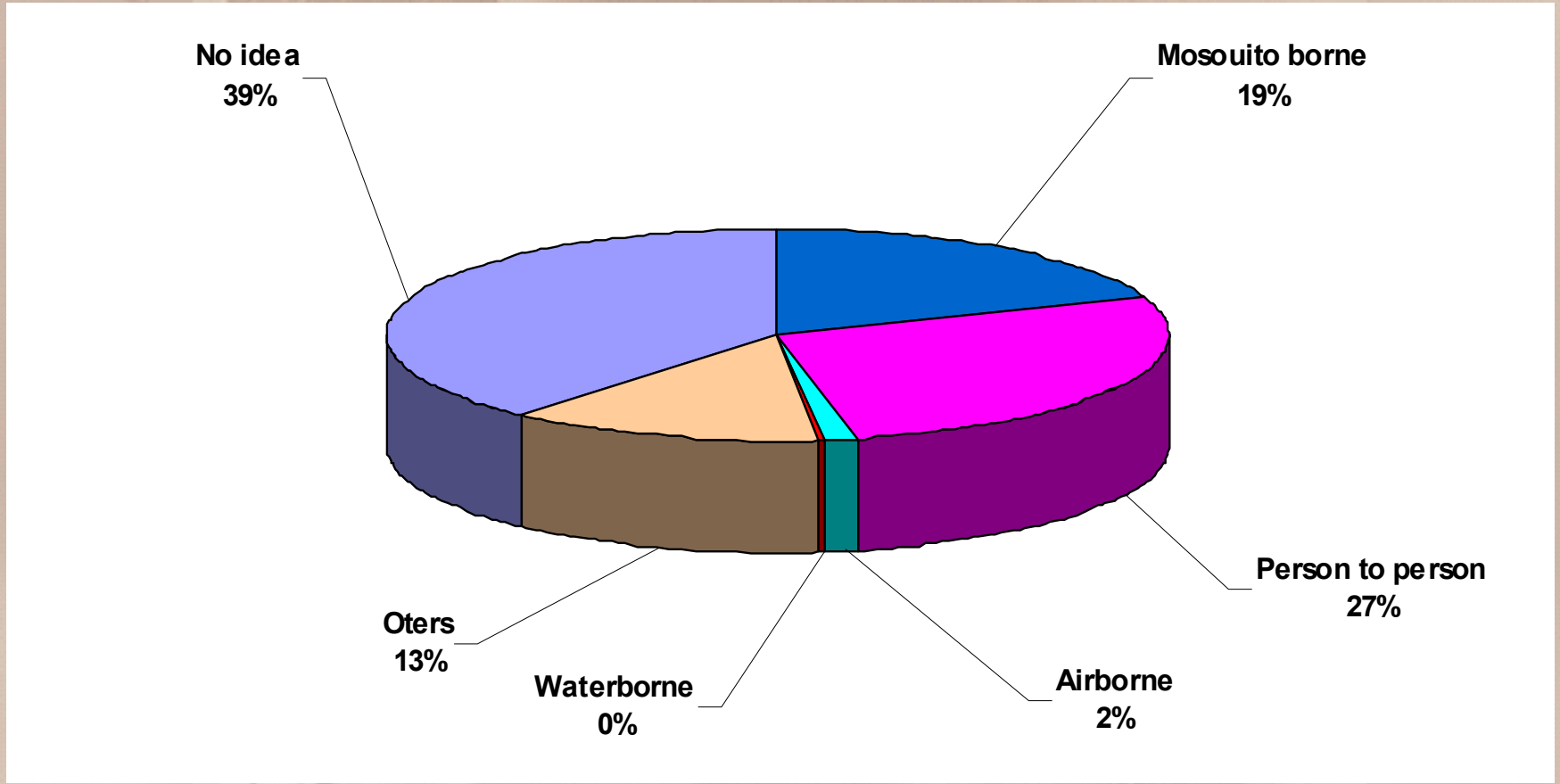


RESULTS

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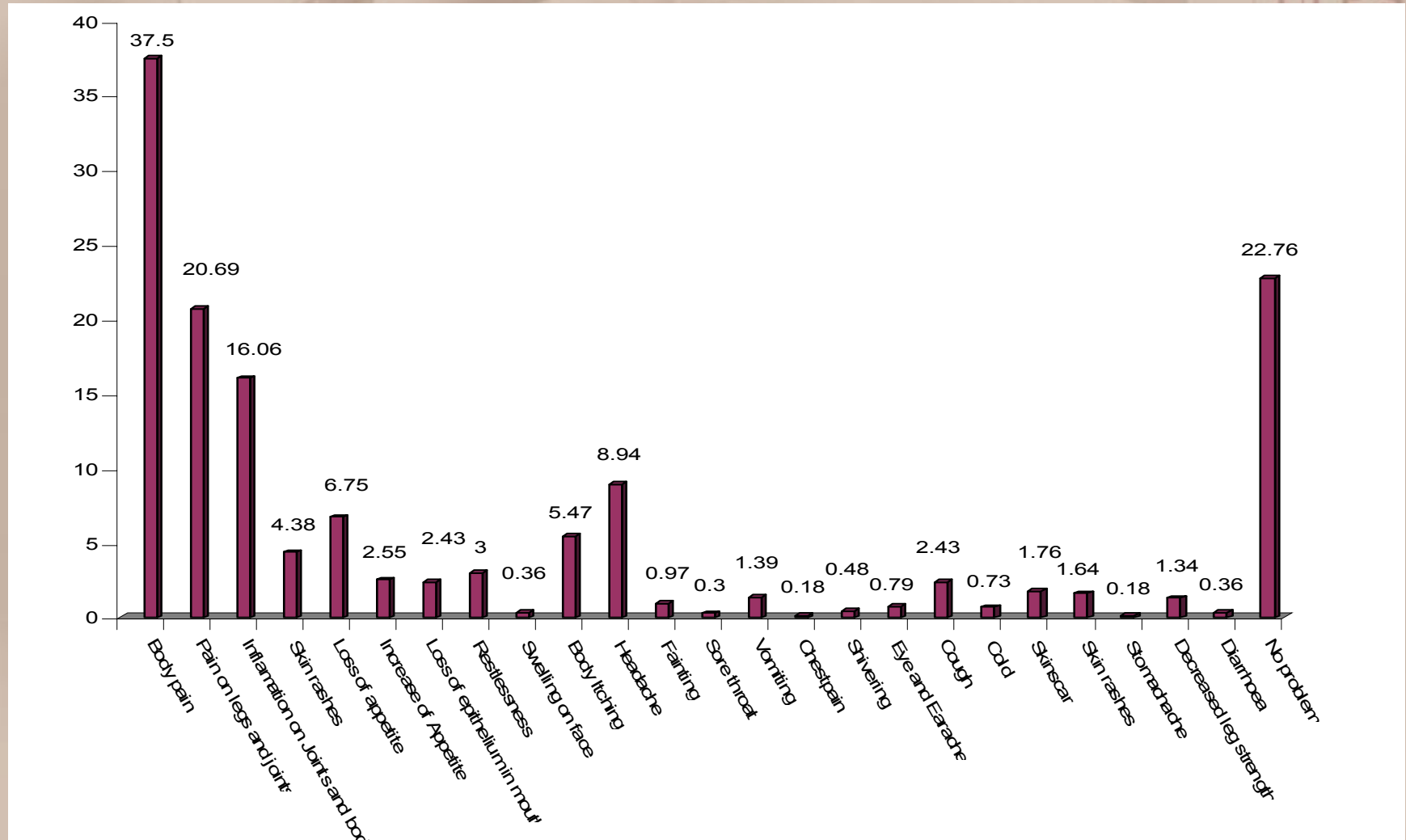
Perception of patients on source of infection



RESULTS

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Post recovery problems of patients

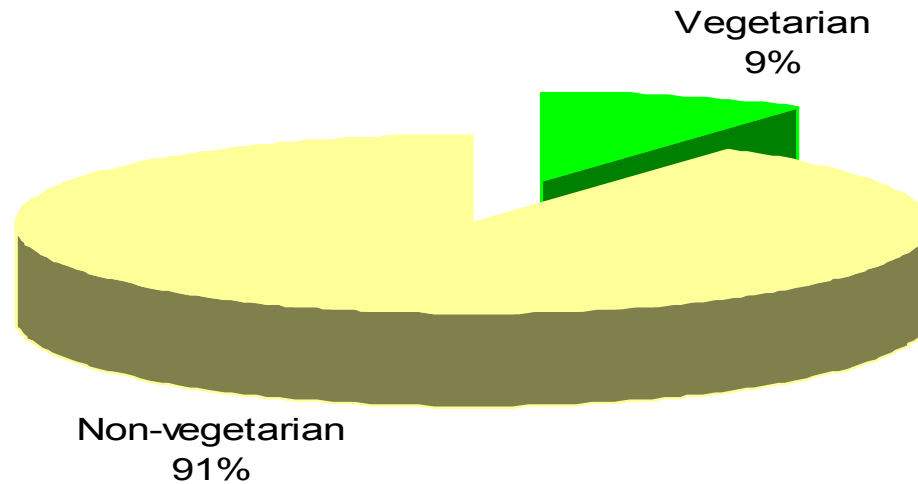


RESULTS

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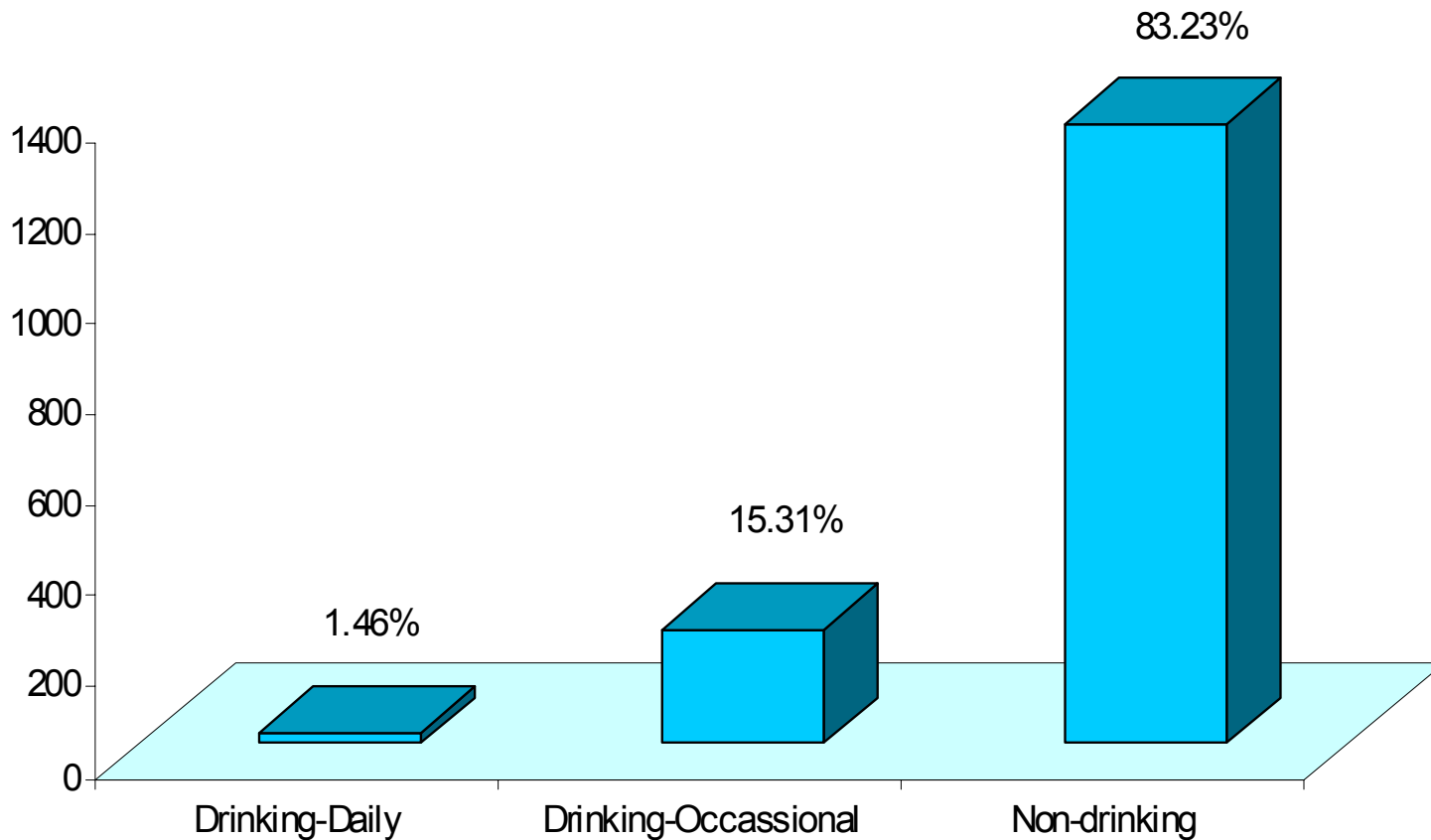
Food habit among fever affected group



RESULTS

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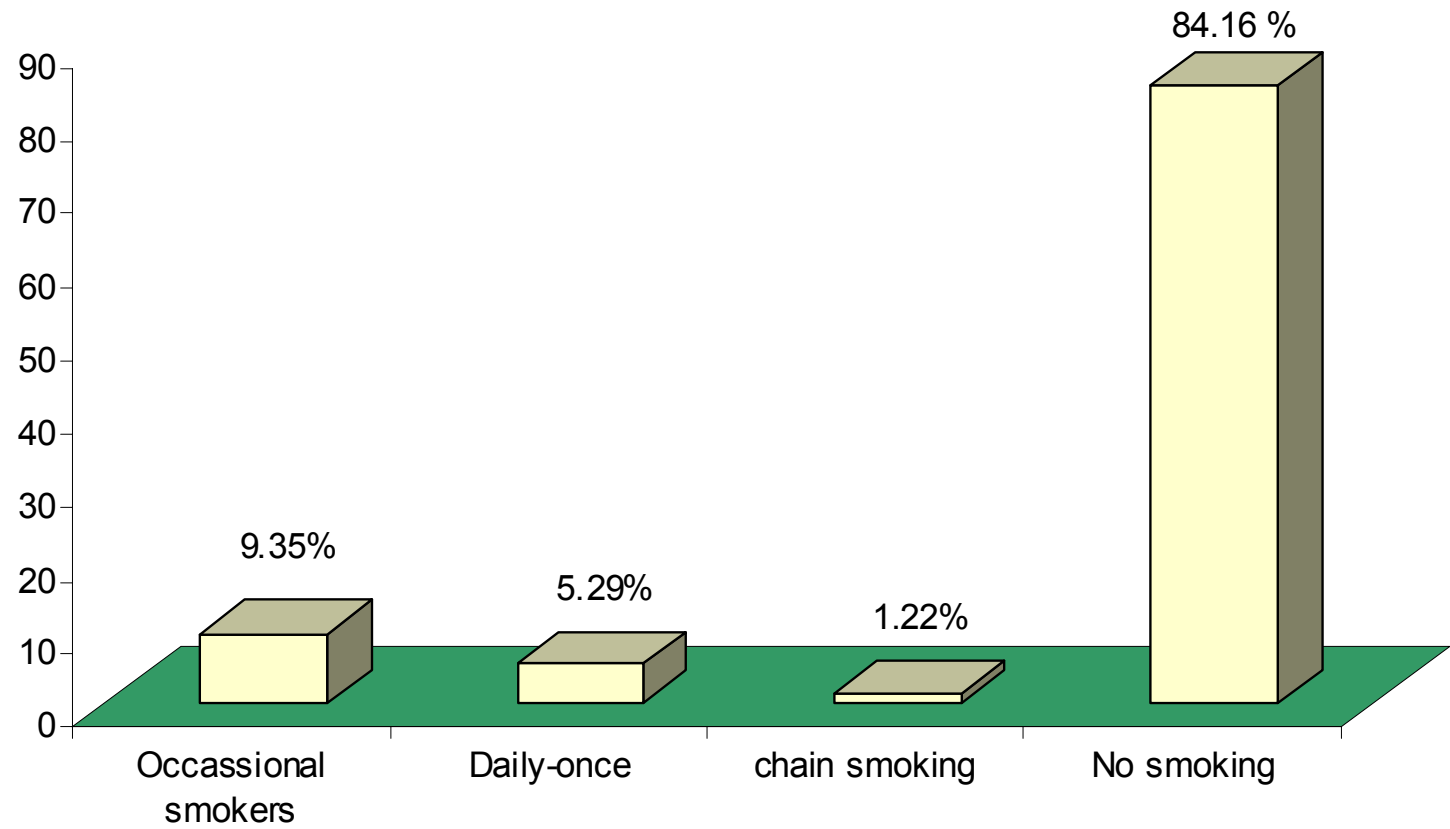
Alcohol drinking habit of fever affected group



RESULTS

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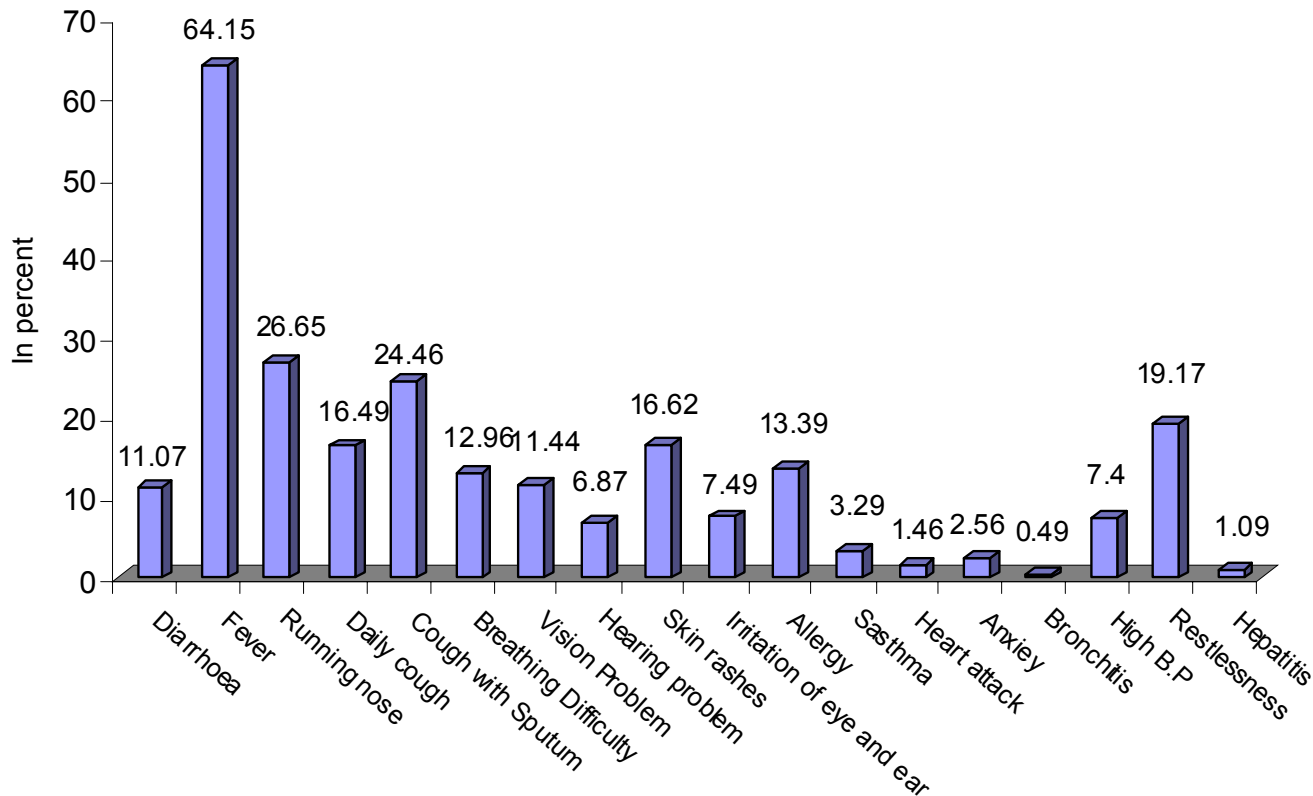
Tobacco smoking habit among fever affected group



RESULTS

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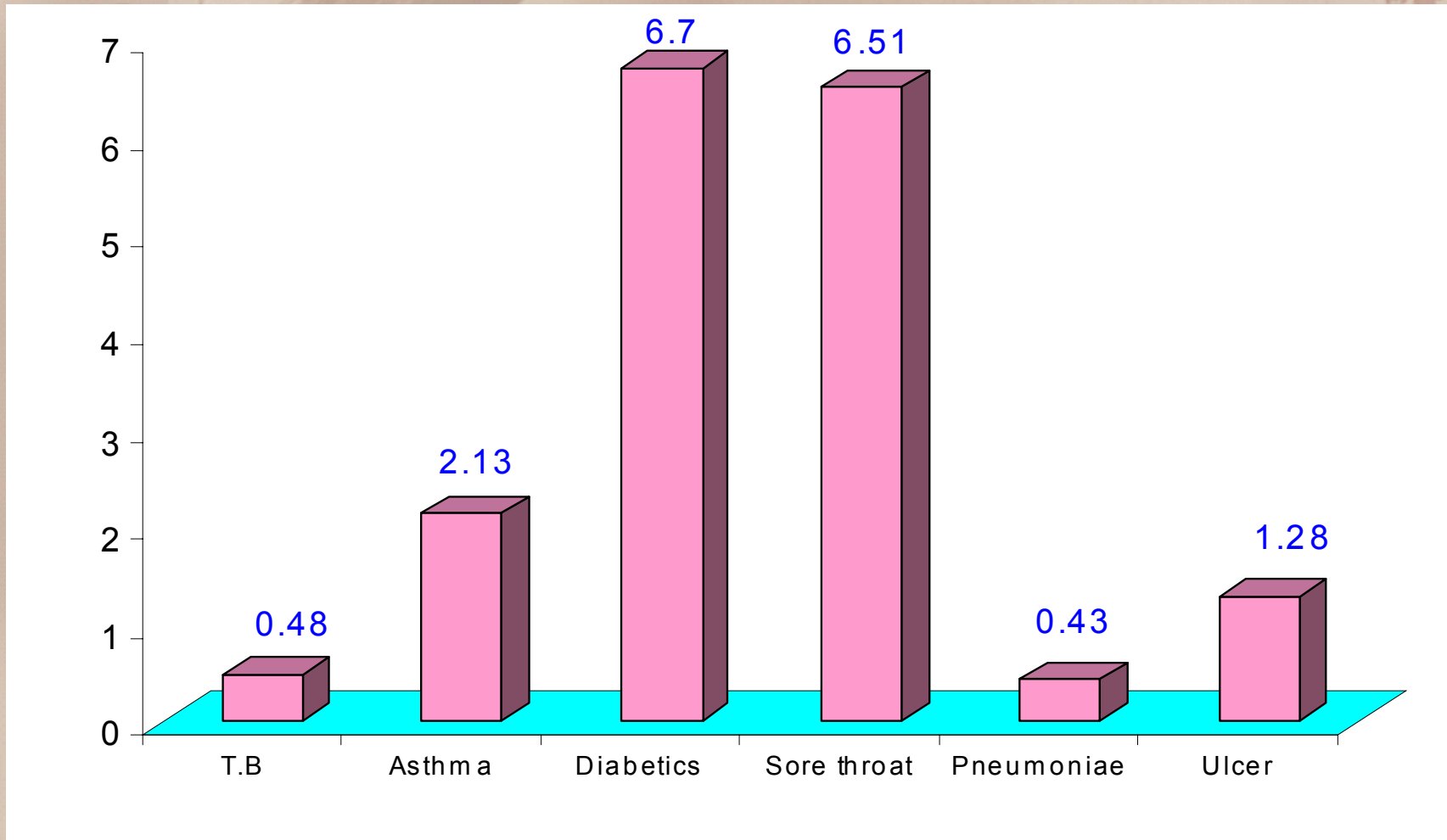
Acute diseases for the affected population during last year



RESULTS

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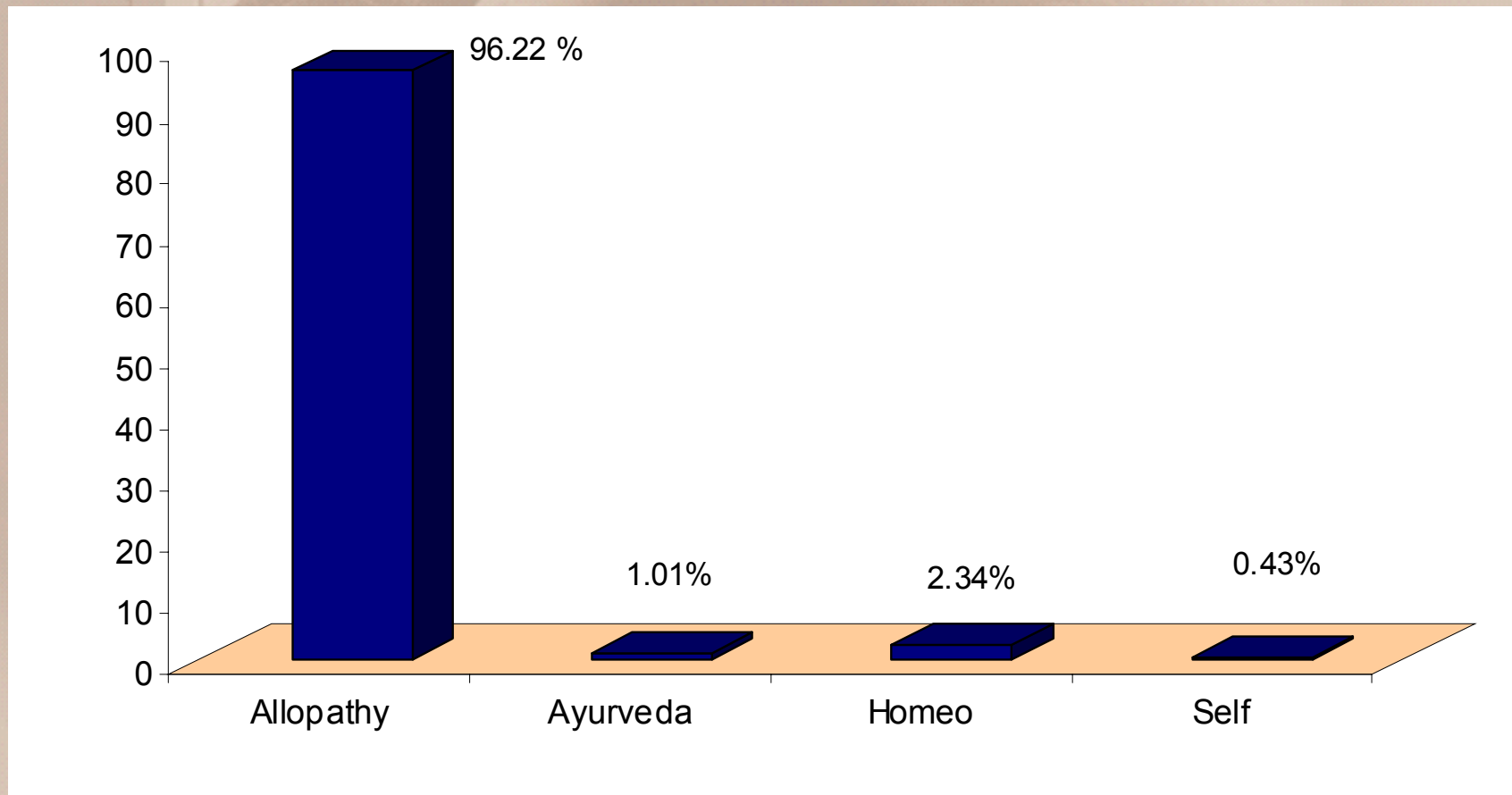
Chronic diseases of affected populations



RESULTS

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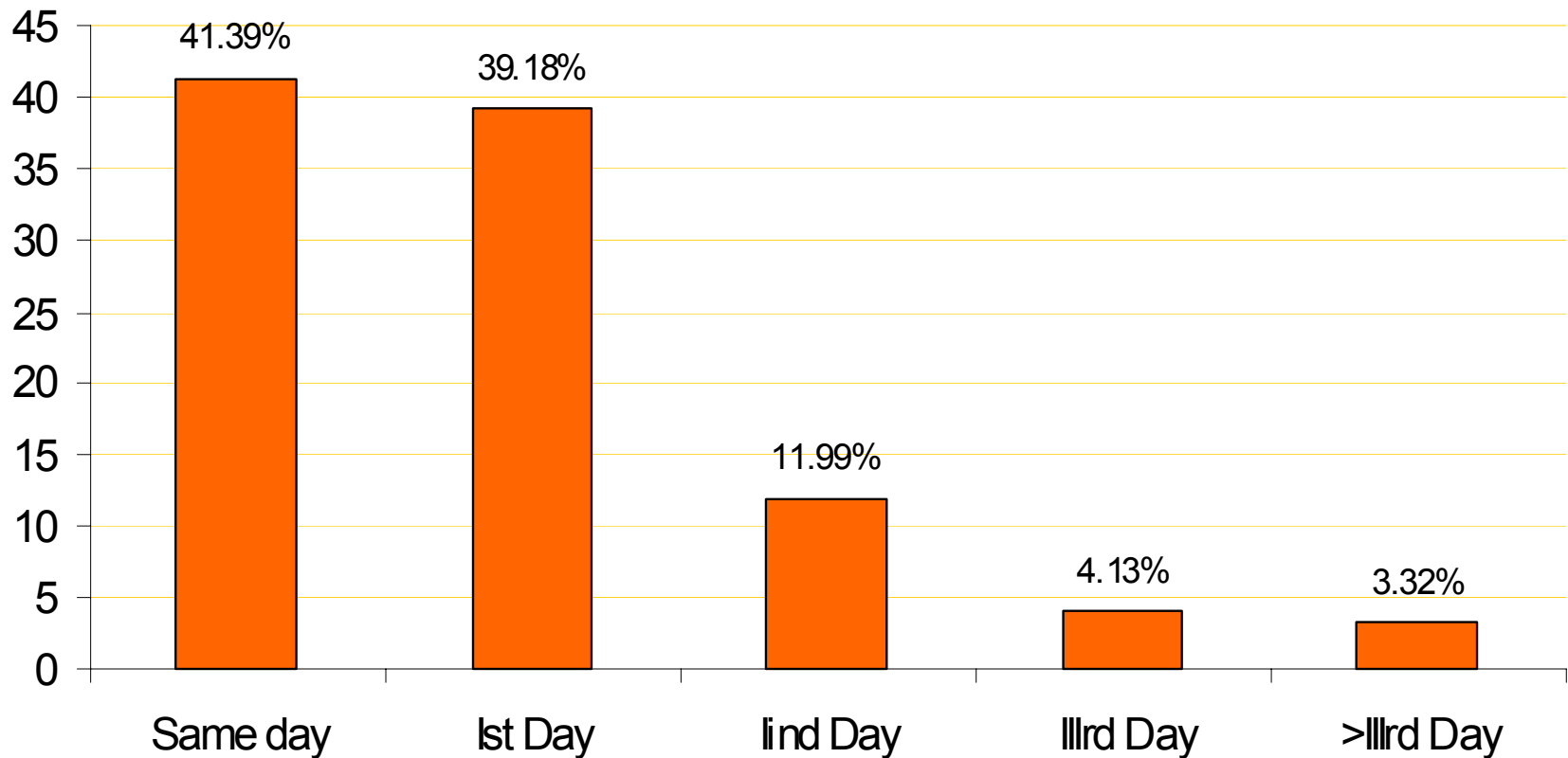
Mode of treatment received



RESULTS

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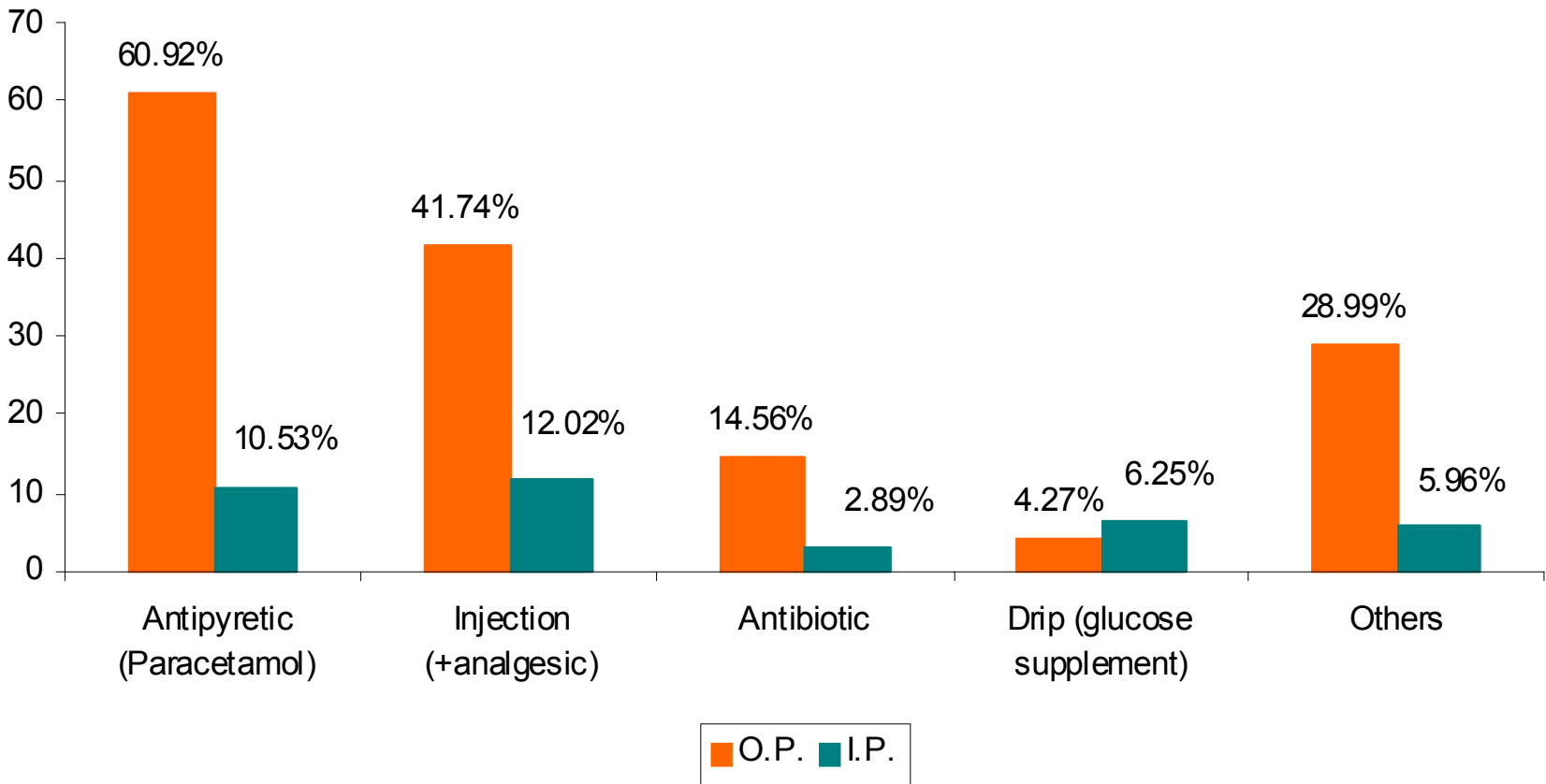
Date of hospital consultancy



RESULTS

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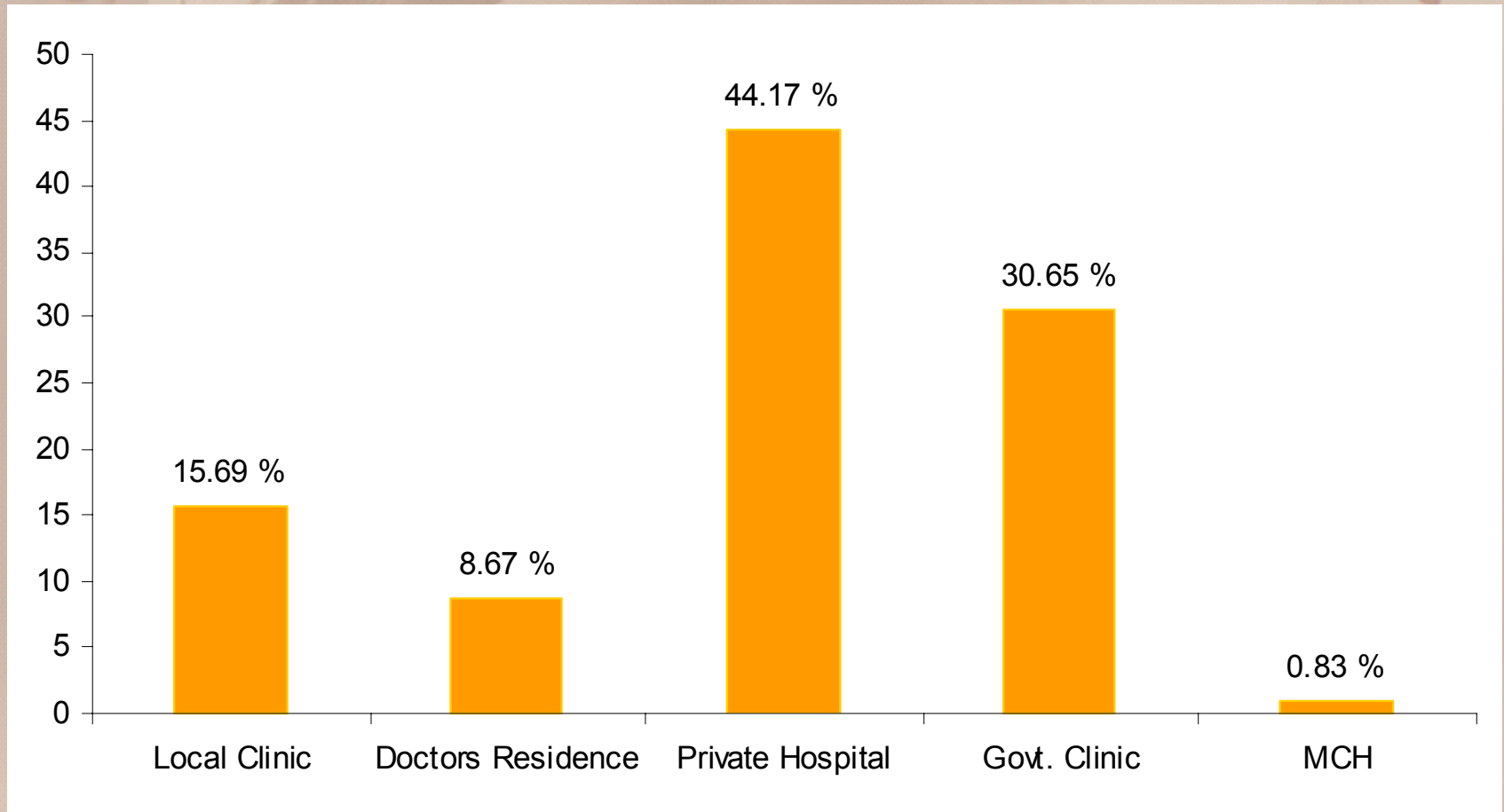
Treatment received



RESULTS

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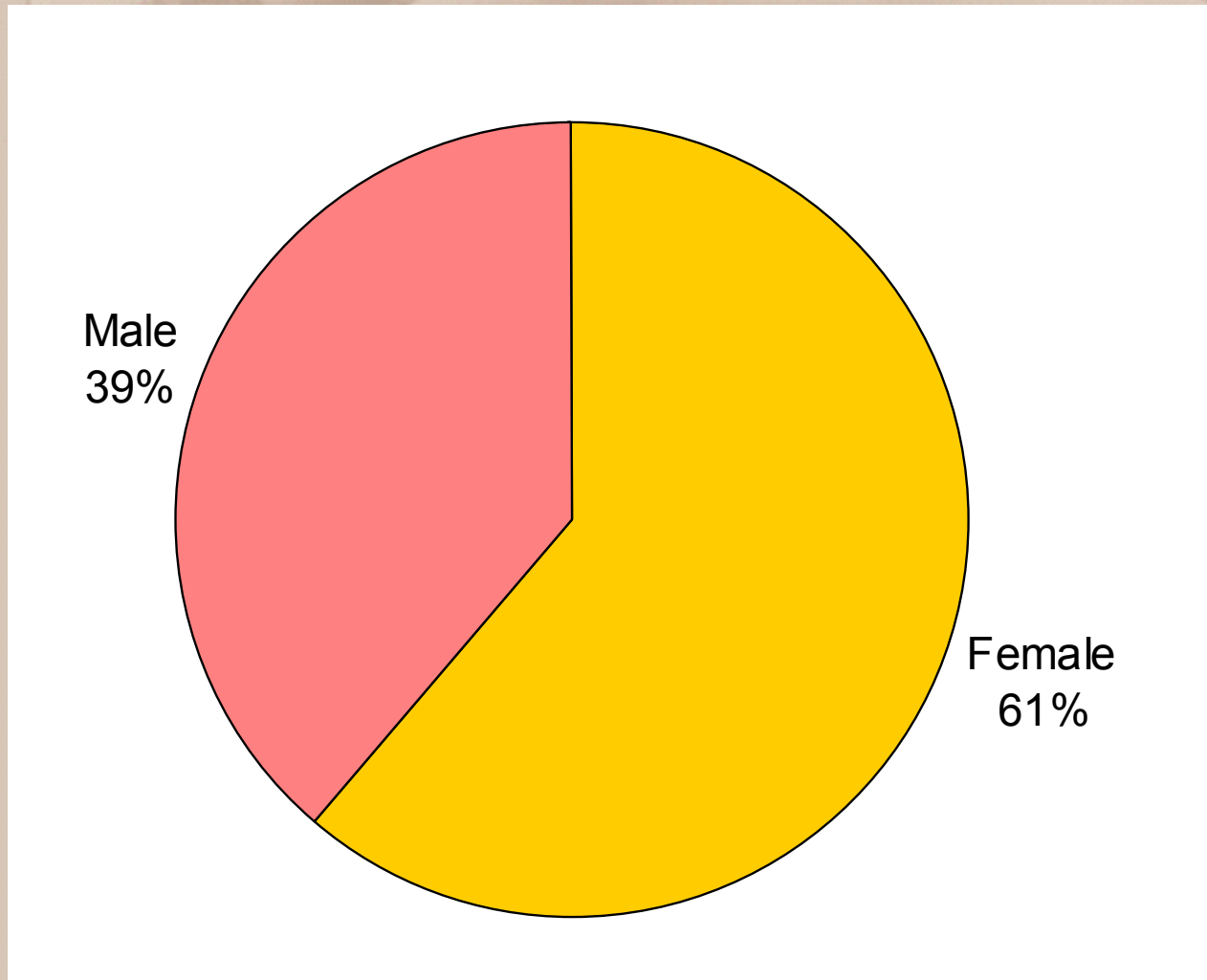
Type of allopathic health provider consulted



RESULTS

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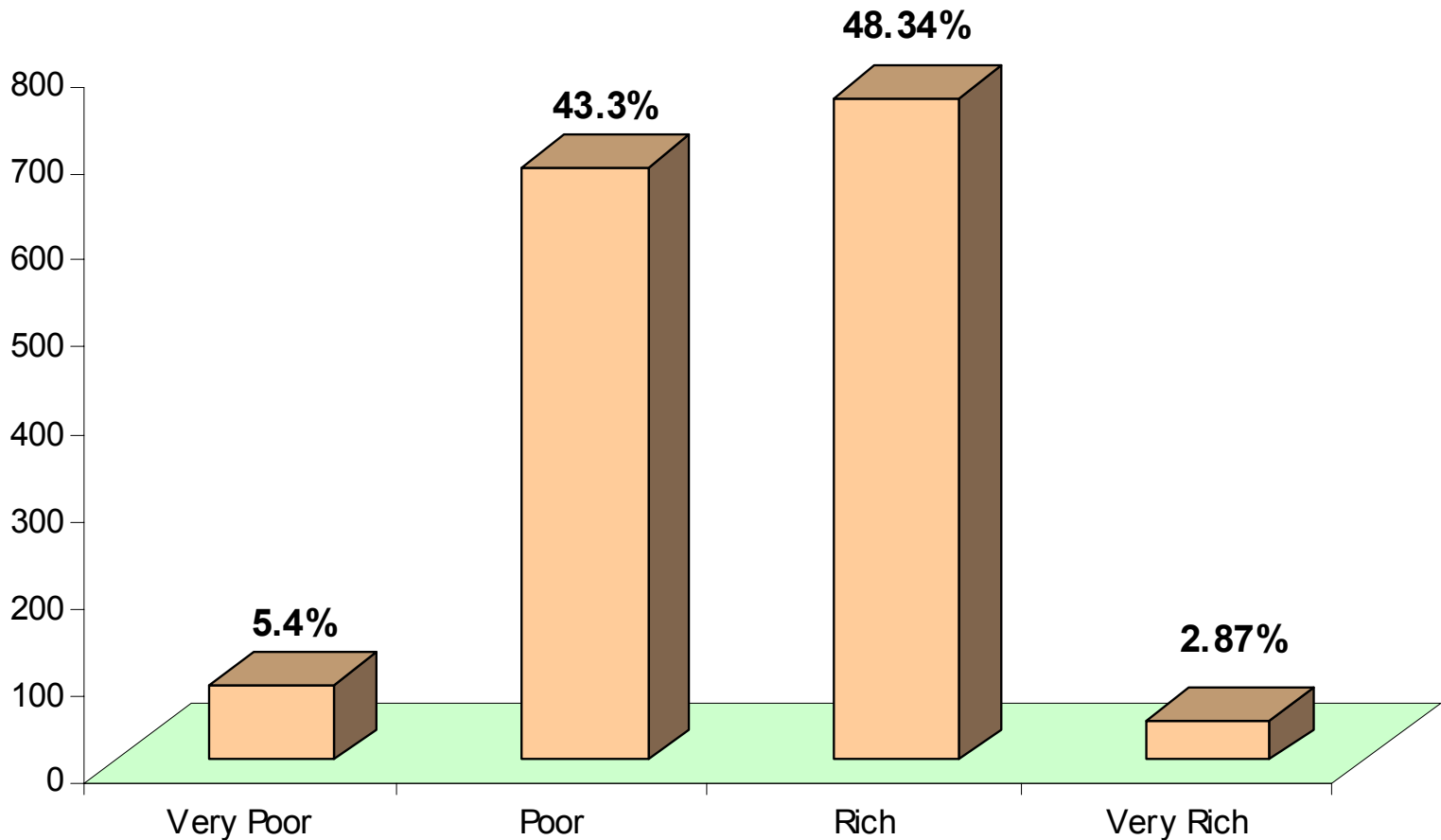
Sex wise grouping of fever affected persons



RESULTS

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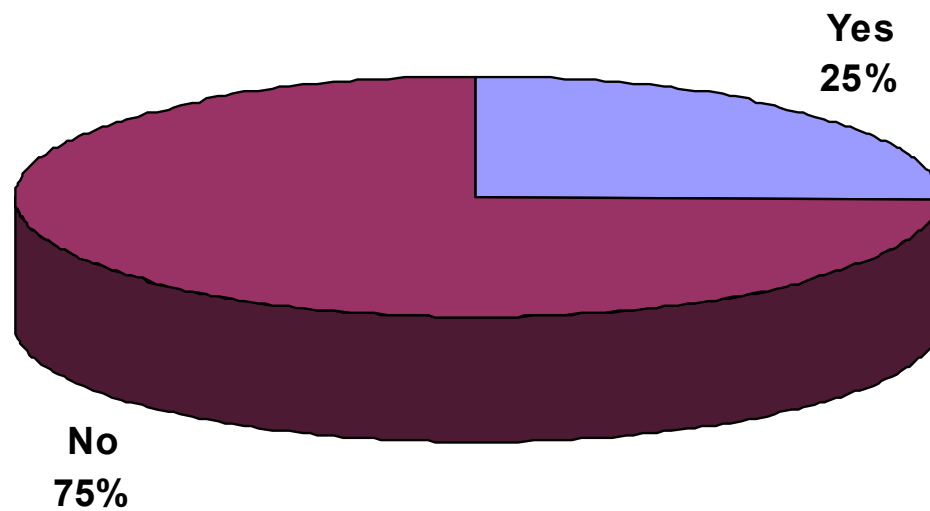
Economic status of fever affected group





RESULTS

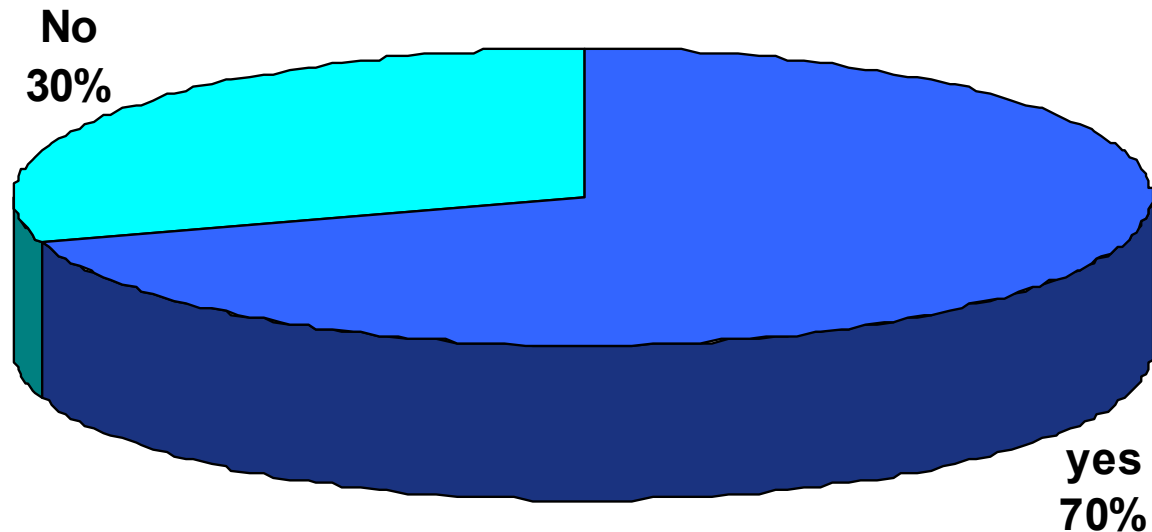
Condition of water-logging near Patients residence area



RESULTS

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Rubber plantations near Patients residence area



CONCLUSIONS

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The present prevailing viral fever in Kerala is not
Chickun guniya

- 91.11% of the surveyed cases have a different set of symptoms which are not specific to Chickun gunya.*
- a. Only 3.71% of the infected population showed the typical symptoms of Chickun guniya and only 0.001% showed the symptoms of Dengu fever. 91.11 % of sample doesn't have the typical symptoms of Chickun guniya

CONCLUSIONS

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- **As per the government report only 0.038% was reported as confirmed Chickun guniya cases and 3.70% cases only were suspected as Chickun guniya.**
- **Chickun guniya is not at all a deadly disease; but as per the official statistics 179 person died due to the present viral fever.**

CONCLUSIONS

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Mosquitoes are not the vectors of the present epidemic fever

- a. **The percent share of reported cases of Chickun guniya, Dengu fever (*vector: A. aegypti and A.albopictus*) and Japan fever (*vector: Culex*) are relatively little among the reported cases of fever, hence mosquito has very little role in the current outbreak.**
- b. **In the survey only 19.12% presume that diseases is spread by mosquitoes, 40.5% suggests that disease is spread due to the person-person transfer, airborne etc.**

CONCLUSIONS

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TIES

c. The pattern of spreading of diseases shows this is a typical 'cluster outbreak' (as per WHO definition, a cluster is an unusual aggregation of health events that area grouped in space and time).

The person to person transmission rate is 1 : 1.87 in the present study.

d. The first outbreak of the present epidemic fever is at places where the population of mosquitoes were comparatively very low and then only it is transmitted to other clusters.

CONCLUSIONS

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e. 87.83% of the diseased members and families have adopted cleaning and sanitation programmes such as cleaning surroundings, use of mosquito coils, nets etc. just after the outbreak and therefore the chances of mosquito breeding at present is almost nil.

But still the intensity and transmission of epidemic is same or more in those places.

CONCLUSIONS

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- f. Public health programmes and awareness campaigns conducted by the Government and NGOs had definitely a positive effect in controlling the mosquitoes.
- g. Most of the fever-affected persons are belonging to 20-60 years age category (69.78%). This is the group that actively engaged in work. However, among the aged persons (>60) few only got viral infection (11.59%), even though they are more exposed to mosquito bite, as they remain inside the houses most of the time.

CONCLUSIONS

Current viral fever outbreak is caused by a new type of virus or a known virus of mutated genome.

1. The virus that caused current epidemic fever may be transmitted through air in the aerosolised form. 27.50% of the infected persons think that they got the infection from another person. 13% considers, other reasons such as excessive work without rest, 'poison fumes', had rain on previous day *etc.* as the cause of fever. Interestingly 19.2% of patients only considers the possibility of mosquito bite, for their infection.

CONCLUSIONS

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2. The typical set of symptoms of Chikungunya was found only in 3.71% of patients. 4.44% of patients got common cold influenza. It is evident that the new set of symptoms observed in 91.11% of patients is due to the infection of a different virus from, Chikungunya and Dengue.
3. The post recovery problems that lasts for several weeks and even months are more severe and long lasting than that of Chikungunya infection.
4. However, elaborate studies using molecular techniques are essential to find out the exact etiological agent.

CONCLUSIONS

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Major causes of widespread infection

An analysis was done to find out any relationship between three major life style habits ad vulnerability for viral infections.

The exact cause for the current outbreak has not been identified (Peripheral survey is not sufficient to make such conclusions)

CONCLUSIONS

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Medical Expenses

Private hospitals filled their cash bag. Average expense for a patient in government hospitals range from Rs. 35/- to Rs. 450 and Rs. 500 to Rs. 15,000/- in private hospitals. Average per capita expense is Rs. 750/-.

The Economic Burden: It is estimated that financial loss due to human labour in these two districts as Rs. 675/- crores (15,00,000 (patients – unofficial statistics) X 30 days (average period of post recovery problems) X Rs. 150/- (average one day labour charge).

RECOMMENDATIONS

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Public

1. Take total rest at the onset of symptoms of fever itself. It should be noted that there are no effective and safe antiviral drugs available.
2. While resting increase the fluid intake into many folds by drinking fruit juices, Honey water or even ORS.
3. Avoid drugs like Paracetamol and antibiotics, if possible.
4. Avoid contact or even talk with a fever patient. Remember that the fever is transmitting through air.
5. Person with acute diseases during last one year and having chronic diseases should take care.
6. It is wise to avoid expensive lab tests. If there is no treatment, then why should You diagnose the pathogen?

RECOMMENDATIONS

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Authorities

- 1. Urgent steps should be taken to identify the unknown virus that caused the typical fever with a set of symptoms found in 91.11% of patients. Mosquitoes also should be screened for virions, using molecular techniques. Plan preventive programmes on the basis of the pathogen.**
- 2. Mosquito eradication is certainly an essential aspect in every public health programme, but the current 'mosquito chase' is dangerous. The use of tons of coils and other chemicals will severely affect the health of environment and man.**

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P.B.No. 243, KOTTAYAM, PIN. 686 001. KERALA, INDIA.

Tel. +91 481 3250417; E mail: info@tropicalinstitute.in