ORIGINAL ARTICLE

Dengue Awareness: A Community Survey

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ABSTRACT
Objectives: To determine the presence of potential indoor breeding sites, to determine the extent of knowingness about dengue and preventive services provided.
Results: Out of 199 respondents, 85.4% knew about Dengue out of which 52.8% regarded it to be a viral disease. Majority had gutter covers among all breeding sites 70.4%. 58.8% had AC and its water leakage and 54.8% had solid waste in the form of tins, shoppers, bottle caps. The commonly used repellant was anti-mosquito spray 39.2% and coils 18.6%. Household cases of Dengue during the last year outbreak were 54.8% and 61.3% in neighborhood. 39.7% respondents were facilitated by the Indoor spraying by the Health team whereas 73.9% had outdoor spraying done by the Health Team. 34.7% respondents reported that recent filling of holes and depressions has been done. The major source of awareness among the respondents is due to Media 94.9%, family and friends 90.9% and doctors 27.6%.
Conclusions: Majority of the people have a good knowledge about Dengue and its transmission which can be either due to greater proportion of educated people in the sample or mass media campaigns since last year outbreak. Still many potential breeding sites have been kept in the houses which are not checked.

Keywords: Aedes aegypti , dengue hemorrhagic fever ,potential breeding sites,global pandemic.

INTRODUCTION
Geographic distribution and abundance of Aedes Aegypt is strongly climate dependent. Breeding habitat for mosquito consists of any type of water - holding container from tree holes or leaves to man-made cisterns, discarded bottles and tires(1). These man-made habitats are abundant near urban populations where food supply for mosquitoes is also sufficient. In these environments, climatic variables like temperature, humidity and precipitation greatly affects mosquitoes life cycle. Temperature affects rate of development in different mosquito life stages as well as dengue development. Mosquito development rates are temperature dependent(2). Water is essential for egg laying, hatching and for larval survivorship.10 days are taken by mosquitoes to attain their adult form. Relative humidity affects adult mosquito mortal. Many factors have a significant effect on distribution of Dengue(21). Dengue/DHF caseloads and on the extent of an epidemic it also includes socio-economic variables presence of mosquito monitoring and control programs, and use of worldwide screens and air conditioning. Exposure to one of virus provides lifelong immunity to that virus but it increases the probability of contracting DHF upon exposure to other 3 dengue viruses .A global pandemic of dengue begun in Southeast Asia after World War II and has intensified during the last 15 years. This is likely due in part to increases in the human population, International travels, circulation of additional dengue viruses, and climate-dependent mosquito densities. The Global Strategy for prevention and control of Dengue virus mainly includes Environmental management(5)

The geographic distribution of dengue viruses has expanded, and it has become a Global problem. In Asia, Dengue has made its route geographically from Southeast Asian countries.(3) In 1994 pakistan suffered its 1st confirmed outbreak of dengue. DENV-2 sterotype was detected by AKUH. Thereafter, sporadic cases of DHF continued to be repo from different parts of the country. Antibodies particular to DENV-1 and DENV-2 were found in sera.(4)

Till then dengue fever has affects 2.5 billion people in more than 100 tropical and sub-tropical countries and is considered the most important vector-borne viral disease in the world(6). Epidemics of dengue are increasing in frequency. During epidemics, infection rates among those who have not been previously exposed to the virus

are often 40% to 50% but can also reach 80% to 90%.

Classical Dengue fever also known as (break bone fever) is distinguished by headache, a sudden onset of fever, sore muscles and joints, with occasional nausea/vomiting and rash(10). These symptoms may remain for several days. Dengue hemorrhagic is more serious illness mainly affecting children and young adults. Symptoms include a sudden onset of fever and hemorrhagic manifestations that result in significant fluid loss and may result in shock (7)

Almost 5% cases of DHF are fatal. Prior infection with one of the four dengue viruses result in greater probability of contracting DHF(8,9). Present study is aimed at assessment of potential breeding sites, current level of knowledge of people of Lahore about the disease, preventive measures taken at homes and the extent to which the prevention services provided by the Health Team were accessible to them[7].

METHODOLOGY

Objectives:

1. To determine the presence of indoor potential breeding sites.
2. To determine the degree of knowingness about dengue in community.

Study design: Cross sectional study.
Study Population: MBBS students of fjmc
Sample size: 199
Sampling Technique: Convenient sampling.

Data Collection Method:
Data was collected using a self administered structured questionnaire. Information was obtained on demographic characteristics, area of residence, potential larval breeding sites at home, any case occurring in home during 2011 epidemic, awareness and preventive services provided, and prevention measures taken for prevention of dengue.

Data Analysis:
Data was entered and analyzed using SPSS. Initially descriptive statistics and frequency distribution was computed. Chi- square test and t-test was used to determine the statistical significance. All tests was performed at alpha = .05

Ethical Considerations:
This was anonymous survey, and study population was voluntary. The questionnaire was administered after obtaining consent. The permission was obtained from concerned authorities as well. No personal identifiers was used. Date was kept secure and confidentiality was maintained. Data was presented in an aggregated form to prevent identification of study participants. No invasive procedures was involved.

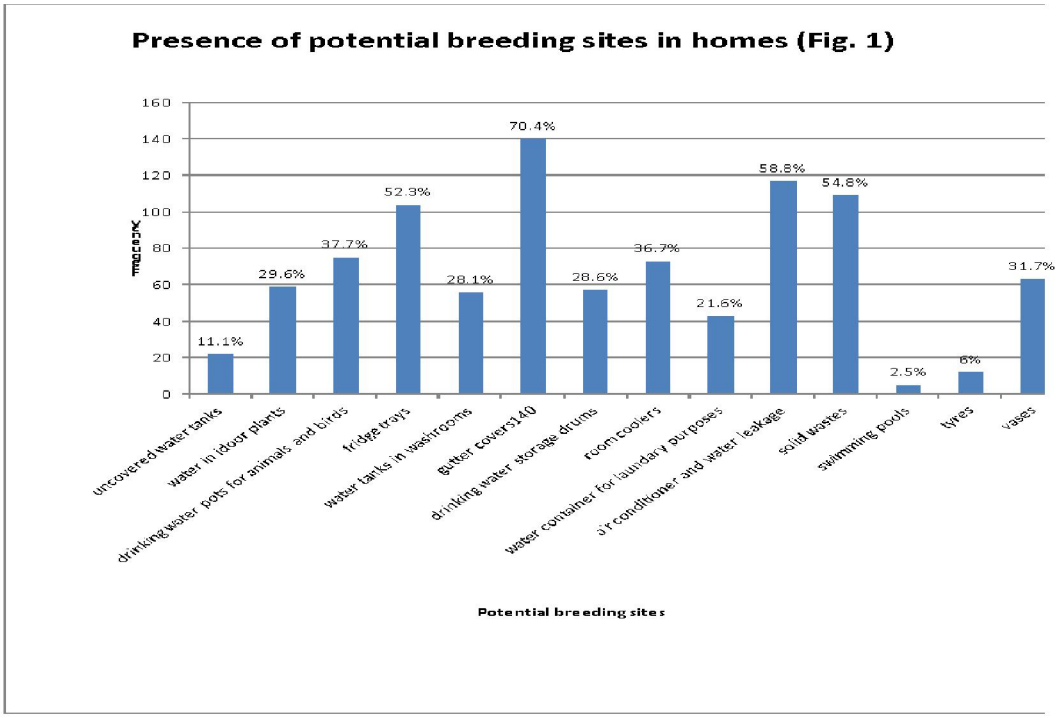
RESULT

The demographic characteristics of 199 respondents were collected from different areas of Lahore. The questionnaire was preferably filled by females. The Age of respondents varied between 31 to 55 years with a mean of 43 years. 5% of the respondents were illiterate, 32.6% were educated up to matric and a considerable number of them were above matric 62.3%. Majority of the respondents were housewives 53.26% while 16.08% were Govt. employees and 30.65% worked in private sector.

The data indicates that 85.4% people knew about Dengue whereas 14.57% had no idea about the disease. Majority of the people 52.8% reported it to be a viral disease while only 25.1% said that it was due to bacterial infection 16.08% had no knowledge about the cause of disease.11.5% people said that the peak season of this disease if from Jan – Mar. Whereas 66.33% said disease spread from Jul- Sep. People had good knowledge about the transmission of disease as 84.4% said that it was transmitted by bite of the mosquito, 5% said it was airborne while 4% said it was transmitted by fomites. 48.2% people had knowledge that mosquito bites in early morning. 12.2% said afternoon was the time of mosquito bite.93.5% had knowledge about dengue symptoms.71.5% people reported fever headache and red spots to be the signs of disease.82.9%knew what lab tests to undergo while 16.7% had no knowledge about the lab tests.87.9% knew about the complications of the disease and 51% reported bleeding, fluid loss and death to be the complications.

Presence of potential breeding sites in home shows 22(11.2%) respondents had uncovered water tanks in their homes and 177 (88.9%) responded that they had not any uncovered tanks at their homes. 59 responded with water in indoor plants (12.9%). 75 of respondents had water pots for birds (37.7%). 104 had fridge trays out of 199 members (52.3%). 56 members had waters in containers in there washrooms (28.1%). Out of 199 members 140 (70.4%) responded with covered

gutters. 57 (28.6%) owned water storage drums. 73 respondents had water coolers in their homes (36.7%) and 125 (62.8%) had not. 43 members contained water for laundry (21.6%). 117 had a problem of water leakage and 82 had sealed n proper water pipes (41.2%). 63 (31.7%) had vases and 135 (67.8%) had not had vase Fig 1)



During last outbreak 54.8% family cases of dengue were diagnosed. Majority of the patients were treated at Govt. Hospitals(51.4%), while others were treated in private hospitals and clinics. 47.7% respondents confirmed that anti-mosquito spray team visited their houses. 61.3% respondents have neighborhood cases of dengue. Measures taken by people to prevent the spread of disease, 84.4% people took measure to prevent the pooling of water at homes .187.5% respondents covered water tanks and pots at home while 11% did not cover water tanks.90.5% people disposed off the waste properly while 9.5% did not properly discard solid waste. 82.4% did not allow water to stand in plants as this is a potential breeding site of the mosquito.60.8% daily changed water in the pots while 24.6% were negligent about it .the frequency of changing water in pots was once a day in 31.7% people and was once a week in 23.1% people. 40.2 % used room coolers while 57.3% did not use it.

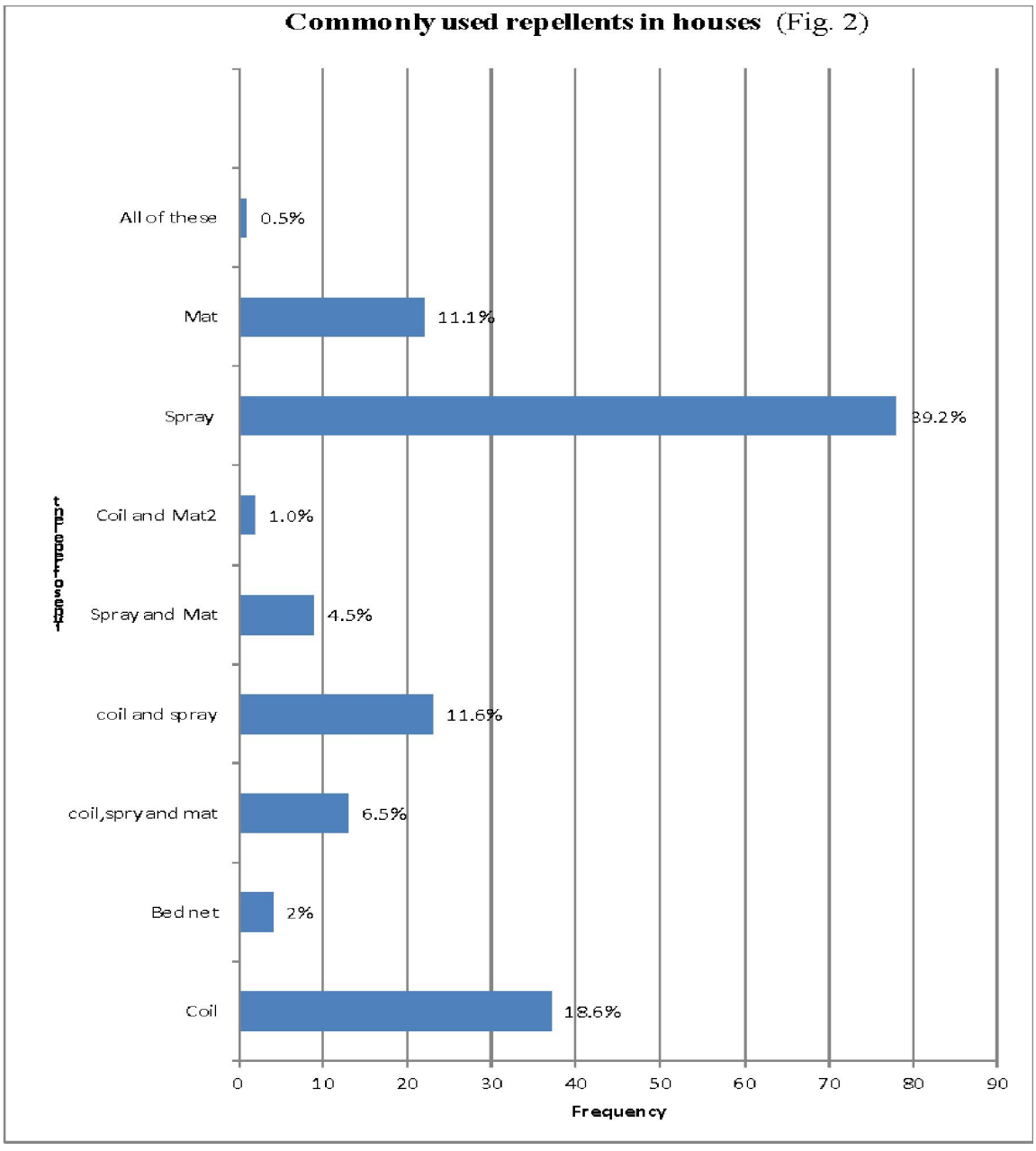
The major source of awareness about dengue is media. 81.9% respondents said that they get information from TV, 43.2% from news paper, rest of them get information from radio and internet. Family, friends and doctors also played a significant role in providing information about dengue prevention and control.

Table-: Source of Dengue awareness

Characteristics	Frequency	% age
Dengue Awareness by Media		
Yes	186	94.9
No	10	51.1
Source of Info.		
TV	163	81.9
Newspaper	86	43.2
Radio	22	11.1
Internet	4	2
Friends and family	180	90.9
Doctors	55	27.6
Dengue awareness team	17	8.5
TV		

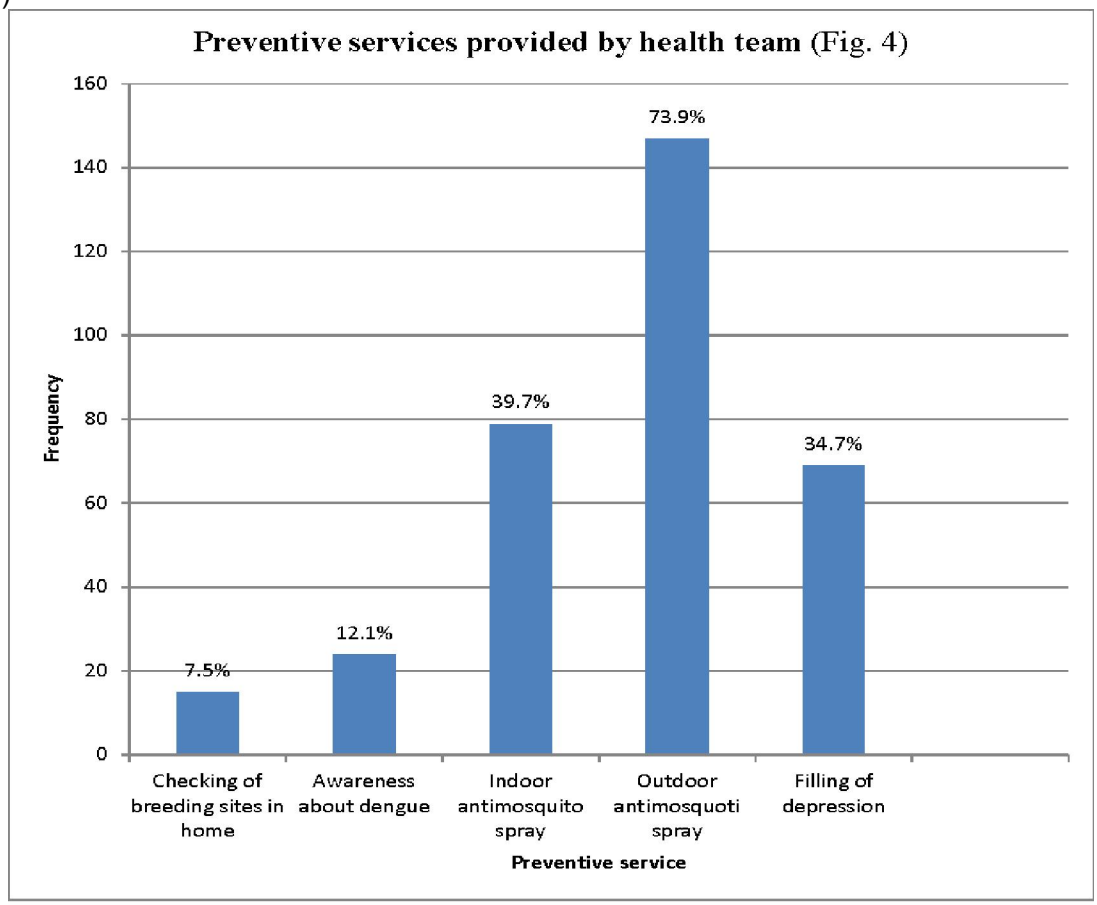
The study conducted on the type of repellent used showed that 39.2% used sprays and hence the most commonly used repellent among the study group.bed net were used by 2% of all members.6.5% used coil, spray n mat.11.6% used coil n spray.4.5%spray n mat. Coil n mat both were used by 1% of all respondents .mats by 11.1% and all of above repellents were used by 0.5 % of all respondents

Figure 2:



By checking the preventive measures taken by health team 7.5% said that health team had checked their homes for breeding sites.12.1% of all members got awareness about dengue by health team .39.7% had their homes sprayed by health team.73.9% of all study group said that health had team sprayed anti mosquitoes repellents in outdoors and 34.7% said health team had filled depressions in their proximity to prevent water to fill them

(Figure 4)



DISCUSSION

Dengue is the most far flung mosquito-borne infection of immediate past. Dengue has become a major public health concern especially in Asian countries such as India, Sri Lanka and Pakistan. The problem of dengue has increased several folds and has now drawn out fears of an outbreak mainly within Punjab and throughout the country(19). This disease needs to be eradicated by prevention and control as it has no vaccination available so far. The Govt. of Punjab has planned a broad prevention and control management plans to fight against this disease(20), First Aid to Save a Life. This requires timely updated information about the public level of knowledge, attitude and practices so as to strengthen concerned strategies. Our study is based on the assessment of potential breeding sites, extent of knowledge of the people of Lahore about the type of disease, its mode of transmission, common season of spread, peak time of vector bite, symptoms, investigations, complications, management, household preventive measures and the extent of accessibility of preventive services provided by the Health Team to the epidemic hit areas so that it can help policy makers in dealing with the prevention and control of vectors of Dengue in Lahore.(17)

We conducted a study based on convenient sampling of 199 respondents from different areas of Lahore. Our sample had 5.0% illiterate people, 32.6% were educated upto matric and a considerable number from matric up to Graduation and above 62.3% .Results does not manifest the national average education status as fairly large proportion of Pakistani population is considered illiterate. By contrast it was observed that 170(85.4%) of the respondents claimed that they knew about Dengue. Out of these only 105(61.7%) really knew that the disease is viral whereas 32(18.8%) might not be sure as they did not know what type of disease it is but few of them had really wrong concept as 21(12.3%) regarded it as bacterial and 12(7%) regarded it as parasitic . Majority of the respondents were well aware of the disease. 94.0% of the sample population thinks

dengue is curable and 84.4% were familiar with the mode of transmission of dengue being mosquito bite 168(84.4%)(13,14). According to WHO guidelines on dengue, the peak time of *Aedes aegypti* mosquito is during the day. A significant numbers of respondents (48.2%) regarded the most prone time of *Aedes aegypti* bite as the 'early morning time'. Though insignificant yet several misconceptions among the respondents have also been identified. 7.5% of the sample considered dengue to be contagious.

Three known expression are; dengue fever, dengue hemorrhagic fever and dengue shock syndrome. Fever is the average presenting symptom in all of them(11,12.). Out of 199 respondents, 186(93.5%) claimed that they knew symptoms out of whom many had significant awareness about the symptoms 133(71.5%), with fever been regarded as the most common 74(39.7%). Rash and back ache is a specifically assossiated with dengue infection. good proportion of respondent 47(25.2%) can differentiate dengue from other diseases. 175(87.9%) claimed they knew complications and they were quite right as 60% of them agreed with all complications. 156(94.5) knew the commonest lab investigation as Blood test . Result showed that the extent of knowledge about dengue and its symptoms was ample . Cognition about the treatment of dengue was not enough. Although a number of people did identify temperature control, fluid intake and isolation as important measures to be taken, some were unaware (15)

More than half of the respondents had had a case of Dengue in their home 109(54.8%) during the last outbreak and 88 (44.2%) are those who did not have any Dengue afflicted case in their family . 51.4% of the Dengue afflicted patients got treated in Govt. Hospital of their locality and considerable cases went to private GPs, private hospitals and some took home remedies 9%. Half of the household cases 52 (47.7%) had an anti-mosquito spray done in their homes by the Team. 122 (61.3%) of the respondents had Dengue cases in their neighborhood and 77 (63.1%) of them got mobile health team anti-mosquito spraying service.(16) This data reflects that half of the people got efficient anti-spraying services at doorstep after a case of Dengue. Very few about 20.1% people reported to health authority about a case .

Commonly used preventive measures included use of anti- mosquito sprays and then coils and mats as repellants.(18) Respondent aimed at prevention of water stagnation 84.4%, A huge percentage of the sample population covers water tanks, water storage pots, properly disposes solid waste and changes water in plant pots regularly . Out of those who have room coolers, 66.2% keep them dry to prevent water leakage while 33.7% don't bother to dry the coolers which can be potential breeding sites.

When asked about their source of information on dengue. As city government had never launched any anti dengue campiangn before outbreaks in recent past; neither were there any mass awareness measures taken to educate the general public on dengue, all sources disseminating knowledge about the disease were a recent reaction of government and public to the last outbreaks. The knowledge on all aspects seemed to be closely linked, as the frequencies recorded were almost equal for knowledge on prevention, vector characteristics, symptoms and treatment of dengue. not related of the source of information, a good awareness of the disease was being provided. Television has played a major role of awareness(81.9%).and then newspapers (43.2%). as number of local television channels had increased and media is spreading information mainly in national language and local languages to get the desired results of eradicating dengue and educating public.

Study Limitations

Factors such as socio-economic status of the sample were not analyzed in the questionnaire. Some people with higher socio-economic and other factors may have high level of awareness. But our study did not determine that factor.

Recommendations

More surveys and studies are required to assess the true picture about awareness and preventive measures taken for dengue illness so that proper recommended actions can be taken for control of disease. Moreover, Health Team should go for indoor checking of vector breeding sites to get a true measure of potential for vector breed in different areas as there are many household and neighborhood.(19)

CONCLUSION

there is relatively greater prevalence of sufficient awareness in our sample. Though a considerable proportion has potential breeding sites such as

gutter cover, air conditioner and its water, solid waste, water storage drums, fridge trays, room coolers, many people take safety measures for the prevention of pooling of water. Services provided by the Health Dept. such as filling of holes and depressions in different localities, indoor spraying, indoor checking of potential breeding sites are accessible to few areas.

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