



**Original Article**

**Oral Health Policy Framing For Thirumazhisai Town Panchayat,  
Thiruvallur District, Tamilnadu.**

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**How to cite: Maheswari Elumalai., Oral Health Policy Framing For Thirumazhisai Town Panchayat, Thiruvallur District, Tamilnadu. *Int J Orofac.Biol.*2024;8(1):18-28.**

**DOI:** <https://doi.org/10.56501/intjorofacbiol.v8i1.1132>

Received: 20/03/2024

Accepted:27/03/2024

Web Published:29/04/2024

**Abstract:**

**Introduction**

Oral health is an integral part of general health and no individual can be considered fully healthy while there is active disease in the mouth as “Health is a state of complete physical, mental and social wellbeing and not merely an absence of disease or infirmity. Aim of the study was to assess the prevalence of oral diseases and treatment needs among 5 years, 12 years, 15 years, 35–44 years, and 65–74 years age group population residing in Thirumazhisai town panchayat, India.

**Materials and methods**

It is a Cross- sectional study conducted in Thirumazhisai town panchayat. Permanent residents with the index age group -5, 12, 15, 35- 44, 65-74 years were included. A systematic random sampling methodology is used to carry out a cross sectional study in Thirumazhisai. Sample size, N= 207. Data collection to be done using a pre-tested questionnaire and clinical examination of study participant. The first part involved collection of demographic information of participant. The dentition status, oral mucosal lesions and treatment needs were assessed based on WHO proforma. All the subjects were examined under adequate illumination using plane mouth mirror and CPITN probe.

**Results**

In this study, among 35 to 44 years age group 27%(56) were females and 19.4%(40) were males. Prevalence of dental caries was found to be high about 42% among 35-44 years age group. Prevalence of partial denture wearers ( lower denture about 5.3% and upper denture about 4.8%) among 35-44 years old age group population. Prevalence of complete denture (about 2.4% )was found to be more among 65-74 years age group of study population

**Conclusion**

In the present study, Preventive treatment was highly required among 12 years age group of study subjects.. Urgent treatment was highly required among 35-44 years old study population. Prevalence of dental caries and partial denture wearers was found to be high among 35-44 years old age group of study population.

**Keywords:** dental caries, oral mucosal lesion, prevalence, oral health, dental erosion.

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## INTRODUCTION

Oral health is a vital part of general health and is a valuable asset of every individual. Oral diseases are one of the most common of non-communicable diseases affecting varied population. It is an important public health problem owing to the prevalence, socio-economical aspect, expensive treatment and lack of awareness [1]. There is evidence to prove the interrelationship between oral and general health.[2]

Oral health priorities seek to reduce the negative impacts of oral diseases and their influences on overall health[3,4,5]. Common oral diseases include caries and inflammatory conditions of the gingiva that affect oral health and may lead to tooth loss [6,7]. Despite the overall decline in caries prevalence in developed countries.[8] Caries continues to be an important disease in most developing countries.[9] Studies have shown that caries remains a major problem in the adult population of both developing and industrialized countries [10-12].

Oral health is considered as an important component of public health, and oral diseases are among the preventable noncommunicable diseases. India is the second highest populated country with more than two billion population, out of which approximately 72% live in rural areas and 28% live in urban areas.[13] The dentist to population ratio is 1:10,000 in urban areas and 1:250,000 in rural areas.[14]

The dental problems are initially painless but become chronic and destructive later, showing adverse effect on the vital organs of the body. It is now therefore become essential to make people aware of preventive and curative aspects of oral health so that quality of life of the people can be improved [15]. Dental caries can be traced to be as old as civilization with its evidence seen even in skeletal remnants of prehistoric humans.[16] Dental caries is the most prevalent dental affliction of childhood. In spite of credible advances in dentistry, the disease continues to be a major public health problem. Untreated oral diseases in children frequently lead to serious general health problems, significant pain, interference with eating, and lost school time.[17]

Evidence has shown that there exist disparities in oral health status of urban and rural populations.[18] and studies done on people living in rural areas covering all indexed age groups appear to be fewer and limited, which is essential for oral health service for the population. In a study on rural women, prevalence of dental caries was 60.2% and it was found that age is the most associated risk factor for caries.[19] The caries prevalence rates among 30–35 years aged population in West Bengal, Orissa, and Sikkim were 18.1, 24.5, and 20.1%, respectively.[20] A study in rural Moradabad showed 91.2% prevalence of periodontal diseases among 40–49 years age group.[21].

The concept of need is essential for planning and evaluation of oral health care. Most needs assessments are based on normative or professionally defined need. The clinical indicators in current use do not take account of the individual's perception of need. Brandshaw's taxonomy of need defines normative need as that which the professional or expert defines as need in a given situation. Felt or perceived need is a lay person's own assessment of his or her needs. [22]

The inadequacy of normative approach in measuring oral health has been recognized and this has led to the development measures related to oral health-related quality of life.[23] These measures determine the extent to which oral conditions disrupt normal functioning and impact the quality of life as perceived by the subjects and have been referred to as perceived needs.[24,25]. Health care need assessment is mandatory to evaluate the prevalence and severity of the disease. To identify the vulnerable groups to provide sufficient nutritional intervention and treatment modalities at the early stage, which helps in reducing morbidity and mortality. Patient need for dental services must shift to expressed need, so that people will report to dental clinic to receive the dental care. Perceived need has gained considerable attention among health researchers in dental service planning[26]

The World Health Organization (WHO) recommends basic oral health surveys in five selected age groups (i.e., 5 years, 12 years, 15 years, 35–44 years, and 65–74 years)[27] to estimate the magnitude of the problem and to plan intervention activities. Thus, in the light of above situation, this study was conducted with an aim to assess the prevalence of oral diseases and treatment needs among 5 years, 12 years, 35–44 years, and 65–74 years age group population residing in Thirumazhisai town panchayat, India.

## MATERIALS AND METHODS

It is a Cross-sectional study conducted in Thirumazhisai town panchayat. Prior to the start of the study ethical clearance was obtained from the institutional Ethics committee, Saveetha university. Written informed consent was obtained from the study participants

### Inclusion Criteria

- Permanent residents with the index age group -5, 12, 15, 35- 44, 65-74 years were included.

### Exclusion Criteria

- Participants with age groups other than the index age groups were excluded.
- Those who are not willing to participate in the study were excluded.

### Sampling

A systematic random sampling methodology is used to carry out a cross sectional study in Thirumazhisai. There are 15 wards in Thirumazhisai town panchayat, two wards are randomly selected and households were selected by simple random sampling.

**Sample Size:** N= 207 was calculated based on the study done by Sahil Handa et al 2016.

### Survey Instrument

Data collection to be done using a pre-tested questionnaire and clinical examination of study participant. The first part involved collection of demographic information of participant. The dentition status, oral mucosal lesions and treatment needs were assessed based on WHO proforma 2013. All the subjects were examined under adequate illumination using plane mouth mirror and CPITN probe.

### Statistical Analysis

Statistical analysis done using SPSS software (version 20). Means of decayed, missing, filled (DMFT) and their components along with oral hygiene scores in each age group are calculated and Chi-square test was used to analyse the data.

## RESULTS

Table 1 depicts the distribution of study subjects based on age and gender. In five years age group 4.8%(10) were females and 3.9%(8) were males. In 35 to 44 years age group 27%(56) were females and 19.4%(40) were males. In 65 to 74 years age group 11.1%(23) were females and 12.5%(26) were males. Table 2 depicts the mean DMFT Score based on various age groups. In twelve years age group the mean DMFT score was  $0.54 \pm 0.13$ . Table 3 depicts the occurrence of tooth trauma among various age groups. Tooth trauma was present in about 0.9%(2), 2.8%(6), 3.4%(7), 7.2%(15) and 1.4%(3) among 5 years, 12 years, 15 years, 35-44 years and 65-74 years age group of study subjects. Table 4 depicts the association between gender and tooth trauma. Tooth trauma was absent in 47.3%(98) of females and 36.8%(76) of males. Tooth trauma was present in 5.3%(11) of females and 10.6%(22) of males. The difference in tooth trauma between gender was found to be statistically significant with p-value 0.02. Table 5 depicts the association between gender and oral mucosal lesion. Oral mucosal lesion was present in 2.8%(6) of females and 8.7%(18) of males. Oral mucosal lesion was absent in 38.7%(80) of males and 49.8%(103) of males the difference was found to be significant statistically (p-value 0.04). Table 6 depicts the association between gender and dental erosion. Dental

erosion was present in 8.2%(17) of females and 10.2%(21) males. Dental erosion was absent in 44.4%(92) of females and 37.2%(77) of males. The difference between gender was not found to be statistically significant. (p value- 0.15). Table 7 depicts the distribution of prosthetic status among study participants. Upper denture was found among 4.8%(10) of 35- 44years age group and 3.7%(8) of 65-74 years age group study subjects. Complete denture prosthesis was found among 2.4%(5) of 65-74 years age group study subjects. Table 8 depicts the distribution of study subjects based on treatment need, Urgent treatment was required in 0.5%(1) of 15 years, 2.4%(5) of 35-44 years and 1.9%(4) of 65-74 years old study subjects prosthesis was found among 2.4%(5) of 65-74 years age group study subjects.

**Table 1: Distribution of Study Subjects According to Age and Gender**

Age group (in years)	Gender					
	Female		Male		Total	
	n	%	n	%	n	%
5	11	4.8	7	3.9	18	8.7
12	12	5.8	11	5.3	23	11.1
15	8	3.9	13	6.3	21	10.1
35-44	56	27	40	19.4	96	46.4
65-74	23	11.1	26	12.5	49	23.7
Total	109	52.6	98	47.4	207	100

**Table 2: Mean DMFT Score Based on Various Age Groups**

Age groups (in years)	DMFT			Mean± SD	Overall prevalence %
	DT	MT	FT	DMFT	
12	0.43± 0.10	0	0.11 ± 0.03	0.54 ± 0.13	9%
15	1.77 ± 1.04	0.14 ± 0.35	0.27 ± 0.13	2.18 ± 1.52	8%
35-44	2.89 ± 1.3	1.91 ± 1.01	0.72 ± 0.54	5.52 ± 2.80	42%
65-74	2.43 ± 0.91	4.83 ± 2.43	0.13 ± 0.09	7.39 ± 3.43	21%

**Table 3: Occurrence of tooth trauma among various age groups**

Tooth trauma	Age groups									
	5 years		12 years		15 years		35-44 years		65-74 years	
	n	%	n	%	n	%	n	%	n	%
Present	3	1.4	6	2.8	7	3.4	15	7.2	3	1.4
Absent	15	7.2	17	8.2	14	6.7	81	39.1	46	22.2
Total	18	8.6	23	11	21	10.1	96	46.3	49	23.6

**Table 4: Association between gender and tooth trauma**

Gender*	Tooth fracture*				Total		p-value
	absent		present		n	%	
	n	%	n	%			
Female	98	47.3	11	5.3	109	52.6	0.02
Male	76	36.8	22	10.6	98	47.4	
Total	174	84.1	33	15.9	207	100	

\*Chi-square test.  $\chi^2 - 4.83$

**Table 5: Association between Gender And Oral Mucosal Lesions**

Gender*	Oral mucosal lesions*				Total		p-value
	absent		present		n	%	
	n	%	n	%			
Female	103	49.8	6	2.8	109	52.6	0.04
Male	80	38.7	18	8.7	98	47.4	
Total	183	88.5	24	11.5	207	100	

\*Independant t test. t value- 2.83

**Table 6: Association between Gender And Dental erosion**

Gender*	Dental erosion*				Total		p-value
	absent		present		n	%	
	n	%	n	%			
Female	92	44.4	17	8.2	109	52.6	0.15
Male	77	37.2	21	10.2	98	47.4	
Total	169	81.6	38	18.4	753	100	

\*Chi-square test.  $\chi^2$ - 2.01

**Table 7: Distribution of prosthetic status among study participants**

Age group	Upper denture		Lower denture		Complete denture	
	n	%	n	%	n	%
35-44 years	10	4.8	11	5.3	0	0
65-74 years	8	3.7	5	2.4	5	2.4
Total	18	18.7	16	7.7	5	2.4

**Table 8: Distribution of study participants according to treatment needs**

Age groups (Years)	Preventive, caries arresting care		Fissure sealant		One surface filling		Two surface filling		Crown for any other reason		Veneer or laminate		Pulp care		Extraction	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
12	13	56.5	7	30.4	2	8.6	1	4.3	0	0	0	0	0	0	0	0
15	12	57.1	6	28.5	2	9.5	1	4.7	0	0	0	0	0	0	0	0
35-44	0	0	0	0	22	22.9	11	11.4	6	6.2	3	3.1	8	8.3	7	7.3
65-74	0	0	0	0	5	10.2	4	8	1	2	0	0	2	4	10	20.4

**Table 9: Distribution of treatment needs among study participants based on gender**

Gender	Preventive, caries arresting care		Fissure sealant		One surface filling		Two surface filling		Crown for any other reason		Veneer or laminate		Pulp care		Extraction	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Male	11	11.2	6	6.1	17	17.3	8	8	3	3	1	1	6	6.1	9	9.2
Female	14	12.8	7	6.4	14	12.8	9	8.2	5	4.6	2	1.8	5	4.5	8	7.3

## DISCUSSION

Dental health services are very important to rural residents. Oral health affects both general health and emotional health. Despite its importance, access to dental services is very limited or difficult in many communities.

The present study was conducted among 207 residents of Thirumazhisai town panchayat and it was found that majority of the study subjects belong to 35-44 years old 96(46%) whereas 49 (23.7%) of study participant were in

the age group of 65- 74 years. Remaining study subjects belonged to the study were 8.7% of 5 years old, 11.1% of 12 years old and 10.1% of 15 years old.

Overall, there were more females (52.6%) than males (47.4%) in this study. In a similar study conducted by Deepthi Athuluru et al[28] (2016, Andhra Pradesh) also had more male participants in the study. In a total sample of 800 participants, sample comprises 50.5% males and 49.5% females. The reason for more females in the present study may be because the survey timings coincided with working hours and, therefore, the men could not be contacted; the majority of the participants were housewives.

The mean DMFT Score based on various age groups in this study was found to be, among twelve years age group the mean DMFT score was  $0.54 \pm 0.13$ . Among 15 years age group the mean DMFT score was  $2.18 \pm 1.5$ . Among 35 to 44 years age group and 65 to 74 years age group the mean DMFT score was  $5.52 \pm 2.80$  and  $7.39 \pm 3.43$  respectively. The prevalence of dental caries in the age-group of 35-44 years in the present study was found to be 42%, which is lower than that reported in the WHO Oral Health Country People (94%).[16] However, the results were found to be higher than that found in a study conducted by Doifode et al.[30] in Nagpur (48.6%) in the same age-group and by Chakraborty et al.[31] in Siliguri (57.03%) in the age-group of 35-40 years.

Tooth trauma was present in about 0.9%(2), 2.8%(6), 3.4%(7), 7.2%(15) and 1.4%(3) among 5 years, 12 years, 15 years, 35-44 years and 65-74 years age group of study subjects. In a study done by Mithra N Hegde et al [32](Mangalore, 2015) Out of 365 cases with anterior tooth fracture due to trauma, 33.2% of cases were noticed in the age group of 36 to 45 years of age and 25.8% of cases were seen in the age group of 25 to 35 years of age. 56.2% cases affected are males and 43.8% of cases affected were females

Oral mucosal lesion was present in 2.8%(6) and absent in 49.8%(103) of females. Oral mucosal lesion was found in 8.7%(18) and absent in 38.7%(80) of males. In a study done by Anuna Laila Mathew et al[33] (Southern India, 2008) revealed The prevalence of leukoplakia in our population was 1.59%. It was more prevalent in men than in women (2.27% and 0.45%, respectively). The presence of recurrent aphthae was 2.1%. It was most prevalent (2.6%) in the 21-40 years age-group and more frequent in men (2.27%) than in women (1.8%).

In the present study dental erosion was present in 8.2%(17) and absent in 44.4%(92) of females. In a study done by Deshpande and Hugar 2004[34] prevalence of dental erosion among 56 years was found to be 34%. The reason for higher prevalence of dental erosion in comparative study could be because the study was conducted among larger study sample of participants and people now consume more soft drinks and beverages. This is more acidic in nature to cause dental erosion.

In the present study upper denture was found among 4.8%(10) of 35- 44years age group and 3.7%(8) of 65-74 years age group study subjects. Complete denture prosthesis was found among 2.4%(5) of 65-74 years age group study subjects. In a study done by Sahil Handa et al [29] (2016, Haryana), the presence of upper denture and lower denture prosthesis was stated to be 28% and 29%. The reason could be because in comparative study the study sample was larger and it includes both urban and rural population. In urban region, people are knowledgeable about the consequences of loss of teeth and they are more concerned about their dental health. Prosthesis will provide a replacement of missing teeth accounting for esthetic, chewing and phonetics purpose.

Distribution of treatment needs among study participants. Preventive treatment was required in 3.7%( 8) of 5 years, 6.3%9.2%(19) of 35-44 years and 2.4%(5) of 65-74 years old study subjects. Prompt treatment was required in 6.7%(14) of 15 years, 34.7%(72) of 35-44 years and 18.8%(39) of 65-74 years old study subjects.

Urgent treatment was required in 0.5%(1) of 15 years, 2.4%(5) of 35-44 years and 1.9%(4) of 65-74 years old study subjects. In a study done by Harpreet Grewal et al[35] (Delhi,2011) 22.1% two or more surface fillings, 19.4% children required fissure sealants and preventive care, remaining 5.1% required pulp care, 3% extraction, 0.8% crown, and 1.3% had other care needs. Need for one surface filling in 12 years old is 45% and in 35-44 years old is about 48.8%, whereas need for two surface fillings is more for 5 years which is about 22.9%. Need for pulp care therapy in 12 years old people is 16.5% and 35-44 years is 23.2%, and majority of the older age group subjects need extractions which are about 52.1%. Other care (oral prophylaxis) is required in 83.1% of the 35-44 years old population.

In a study done by Faaazila fathima et al[36] (Chennai, 2015), It was also observed that 60% of them visited the dentist rarely and 30% of them had never visited the dentist, 47% experienced severe pain and 11% of study subjects reported mild pain. In literature several articles related the impact of oral health on general health. In a study done by Thanish Ahamed et al[37](Chennai, 2016) stated that the attitude towards the dental care varies among the subjects. The study reports 32.4% of people visit a dentist occasionally where 26.9% visit only when they have dental pain and around 23.1% visits regularly every 6-12 months and 17.6% had never visited a dentist. Health education must be provided to people to visit the visit once in 6 month, to maintain their oral health.

Knowledge about replacement of missing teeth must be imparted among all community people, because loss of teeth affects chewing ability, phonetics and esthetics. In a study done by Benley George et al [38](Chennai, 2016) among prison inmates revealed the mean missing teeth of females in this study was 1.5. It shows people report to dental clinics mainly for reason of dental pain. Oral health problems will pose a serious effect on the quality of life. According to Ketaki Kamanth et al[39] (Chennai, 2017) 86% agree that general body health has a relationship to oral and health diseases.

The concept of need is essential for planning and evaluation of oral health care. Most needs assessments are based on normative or professionally defined need. The clinical indicators in current use do not take account of the individual's perception of need. Brandshaw's taxonomy of need defines normative need as that which the professional or expert defines as need in a given situation. Felt or perceived need is a lay person's own assessment of his or her needs. [23] Data of treatment needs to provide curative treatment to vast and diverse population as access and affordability to the dental facilities become a constraint for majority of the population.[40]. The patient's comfort is more vital to the acceptance of any intervention. Patient's acceptance, in other words, is patient satisfaction.[41].

Oral health education is directed at reducing disease and injury to the teeth and their supporting structures rather it influences on general health and promotes a feeling of well – being. [42]. In order to assess the magnitude of the preventive task it is necessary to know the extent and severity of the disease[43]. Knowledge about ill effects of tobacco use must be imparted to tobacco users, so that they can refrain from using tobacco products. It is important to instill good oral health practices from young age to ensure long term dental health and hygiene.[44]

### **Oral Health Policy For Thirumazhisai Town Panchayat,Poonamallee, Thiruvallur District**

Over decades, health in India is gaining less importance and oral health, the least.4 Oral diseases remained still a public health problem for developed countries and a burden for developing countries like India especially among the rural population.5 India is predominantly rural covering about 69% of the population.1 Prevalence of oral diseases is very high in India with dental caries (50%, 52.5%, 61.4%, 79.2%, and 84.7% in 5, 12, 15, 35-44, and 65-74 year old, respectively) and periodontal diseases (55.4%, 89.2%, and 79.4% in 12, 35-44, and 65-74 years old, respectively) as the 2 most common oral diseases.6

In a county like India, health is a state subject and most of the states in the country are suffering from financial burden even for subsistence rather than providing quality health care. Mostly the health care is looked after by the private sector and individual practices including nonformal medical facilities. The government is unable to provide adequate dental services to the people as treatment of majority of oral disease involves large expenses. Dental auxiliaries forms an important group of people, who can play effective role in providing oral health care services especially in the rural areas. However, there is acute shortage of registered hygienists and laboratory technicians in India.

Oral health policy in India, formulated way back, is a bleak picture even today. In 1984, national workshops were organized in Bombay on oral health targets for India and in the year 1986, oral health policy was conscripted by Indian Dental Association (IDA). Dental diseases greatly affect day to day activities of an individual which are essential for livelihood. Dental pain causes loss of concentration on the work and the person may not be able to work at all. This factor can bring serious economic implications on the country. So we can very well understand the social and economic implications due to neglect of oral health. As 26% of the Indian population is living below the poverty line and depend on daily earning; the loss of working hours is significant in the Indian context.

Oral health policy to be framed to provide dental care in sub urban and in rural regions of the country. In present study, prevalence of oral health status of Thirumazhisai town panchayat was assessed. The prevalence of dental caries, periodontal disease, malocclusion, partial edentulism and oral lesions was found to be higher. So, oral health promotion, preventive and curative strategies to be recommended to improve the oral health status of residents of Thirumazhisai town panchayat.

### Need for Oral Health Policy

1. For oral health promotion through prevention considering the fact that oral diseases are almost preventable by simple and cost effective means.
2. To decrease the burden of oral diseases.
3. Taboos, myths or misconceptions need to be eradicated.
4. Water fluoridation, one of the preventive measures for dental caries was recommended in the 12th 5-year plan without any proposed strategies for its implementation.
5. There is inaccessibility, non-affordability of oral healthcare services and deficiency of dental manpower in PHCs
6. To narrow the rural-urban gap in oral healthcare
7. As there is lack of proper public oral healthcare infrastructure
8. There is no organized data recording system
9. For quality dental education
10. Definite budget allocation for oral health, seen in developed countries is lacking in India.

### Proposed plan for oral healthcare program

Oral Health Education	Preventive programs	Curative service programs
Training of the trainers	Promotion of fluoride toothpaste	Oral healthcare setup
Oral health education chapters in school curriculum	Legislation against tobacco products	School dental health programs
Oral health education through mass media	Manufacture of sugar free chewing gums	Manpower requirements
	Sugar substitutes in medicinal syrup	Equipment requirements



### Oral Health Recommendations

- Dental preventive procedures such as topical fluoride application, pit and fissure sealant application are recommended for school children.
- Early curative measures such as oral prophylaxis to cure gingival problems among adolescents and adults.
- Restoration of dental caries lesion and pulpal disease management in children, adolescent, adults and elderly.
- Orthodontic therapy based on the severity of the malocclusion was recommended
- Prosthetic rehabilitation both partial denture and complete denture prosthesis are to be provided to improve the quality of life
- Emergency management in case of dental pain, dental traumatic injuries are to be provided by the government through implementation of dental clinics, dental hospitals and increasing dental manpower such as dentist, dental hygienist in PHCs to improve the dental health of residents of Thirumazhisai town panchayat.

### CONCLUSION

- In the current study, majority of the study subjects belong to 35-44 years age group. Among 15 years age group the mean DMFT score was  $2.18 \pm 1.5$ . Among 35 to 44 years age group and 65 to 74 years age group the mean DMFT score was  $5.52 \pm 2.80$  and  $7.39 \pm 3.43$  respectively. gingival bleeding was present in 19.3%(40) of females and 18.3%(38) of males.
- Tooth trauma was present in about 0.9%(2), 2.8%(6), 3.4%(7), 7.2%(15) and 1.4%(3) among 5 years, 12 years, 15 years, 35-44 years and 65-74 years age group of study subjects.
- Preventive treatment was required in 3.7%(8) of 5 years, 6.3%9.2%(19) of 35-44 years and 2.4%(5) of 65-74 years old study subjects. Prompt treatment was required in 6.7%(14) of 15 years, 34.7%(72) of 35-44 years and 18.8%(39) of 65-74 years old study subjects. Urgent treatment was required in 0.5%(1) of 15 years, 2.4%(5) of 35-44 years and 1.9%(4) of 65-74 years old study subjects.

### FINANCIAL SUPPORT AND SPONSORSHIP

Self-funded

### CONFLICTS OF INTEREST

There are no conflicts of interest

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