



## PERCEPTIONS ABOUT 'MAKKALAI THEDI MARUTHUVAM' SCHEME AMONG OUTPATIENTS AT TERTIARY CARE PUBLIC DENTAL HOSPITAL – A CROSS-SECTIONAL SURVEY

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Article Received on 21/09/2022

Article Revised on 11/10/2022

Article Accepted on 31/10/2022

### ABSTRACT

**Background:** Non-communicable diseases are the major health problems in this 21st century. 'Makkalai Thedi Maruthuvam' (MTM) scheme was launched to reduce non-communicable disease burden in the community. The present study aims to assess the awareness about newly launched 'MTM' scheme among outpatients at tertiary care public dental hospital. **Material and Methods:** A cross-sectional survey was conducted among 650 outpatients visiting tertiary care public dental hospital. Data were collected using a customized pre-structured questionnaire which consists of socio-demographic profiles and data for assessing their knowledge about 'MTM' scheme. The collected data were analyzed using chi-square test. **Results:** Among 650 participants, 528 participants responded. Out of the respondents, 68.4% participants were cognizant of MTM scheme. Among them, 42.9% participants were aware of this scheme through television and 46.8% participants were aware of the fact that this scheme is for treating non-communicable diseases. Almost 83.7% of the participants were willing to utilize this scheme. Approximately 1/3rd of participants feared about the usage of the prescribed drugs without the consent of their family physician. **Conclusion:** Our study shows fairly appreciable awareness among participants about the scheme. Policy makers should take appropriate measures to expand awareness about the scheme and its use among the general public for successful implementation of the newly launched scheme.

**KEYWORDS:** Makkalai Thedi Maruthuvam (MTM), home-based healthcare delivery, non-communicable disease, diabetes, hypertension.

### INTRODUCTION

Non-communicable diseases (NCDs) account for approximately 41 million deaths each year,<sup>[1]</sup> and over 85% occur in low- and middle-income countries.<sup>[2]</sup> In India, NCDs contribute to 62% of total deaths.<sup>[3]</sup> Rising burden of NCDs are due to high prevalence of major risk factors such as tobacco use, consumption of alcohol, poor diet and physical inactivity.<sup>[4]</sup>

The Government of India (GoI) has committed to meet the target of NCD-related sustainable development goals by 2030 and also reduce one third premature mortality from NCD.<sup>[5]</sup> In order to achieve this target the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular disease and Stroke was launched by GoI in 2010 with a focus of health promotion, early diagnosis, treatment and referral,<sup>[6]</sup> and

to build strong monitoring and evaluation system and disease specific care centers at district and state level across the country.

However, under this program, monitoring of blood sugars and dispensing of medicines happens at Primary Health Center level, where patients with disabilities have barriers in assessing these health centers.<sup>[7,8]</sup> The access to drugs, dialysis facilities, palliative care and geriatric services were compromised during the COVID-19 pandemic resulting in increased morbidity and mortality due to non-COVID-19 reasons across Tamil Nadu. To tackle the effect of NCD in the state, the healthcare services are delivered directly at the doorsteps of the beneficiaries.<sup>[9]</sup>

Therefore, on August 5, 2021, Department of Health and Family Welfare of Government of Tamil Nadu launched a flagship scheme named 'MTM' under directives of The Hon'ble Chief Minister of Tamil Nadu in the following seven districts, namely Thanjavur, Trichy, Tirunelveli, Coimbatore, Chennai, Salem and Madurai.<sup>[9]</sup>

The 'MTM' scheme includes the population based screening programme wherein women health volunteers will deliver hypertensive and diabetic drugs to registered patients aged 45 years and above, and also to those with restricted or poor mobility; home-based palliative care services for geriatric patients with chronic debilitating illness and who have difficulties in visiting health facilities; home-based physiotherapy services; and home-based outreach services by delivering peritoneal dialysis bags to patients under continuous ambulatory peritoneal dialysis (CAPD)<sup>[9]</sup> Thus, the access to these health services to persons with disabilities is likely to be enhanced under this scheme. Utilization of the scheme requires knowledge regarding it. Exploration of scientific literature revealed paucity of studies regarding the perception about 'MTM' scheme. Therefore, the present study aims to assess the perceptions about newly launched 'MTM' program among outpatients at Tertiary Care Public Dental Hospital and to compare awareness with respect to age groups and genders.

## MATERIALS AND METHODS

Ethical clearance was obtained from Institutional Ethical Review Board for this study.

### Study population

The study population consists of outpatients of tertiary care public dental hospital.

### Inclusion criteria

The outpatients above the age of 15 years visiting tertiary care public dental hospital are included in this study.

### Exclusion criteria

- Physically and mentally challenged individuals
- Severely debilitated patients
- Patients seeking emergency oral care services

### Study design

Cross-sectional survey.

### Sampling method

A cross-sectional survey was conducted among 650 outpatients at tertiary care public dental hospital through convenience sampling after obtaining informed consent from the patients and fulfilling the eligibility criteria. This cross-sectional questionnaire survey was based on STORBE guidelines to assess the awareness regarding the 'MTM' scheme launched by TN Government.

### Questionnaire

A customized pre-structured questionnaire was framed which consists of following sections: socio demographic

details and 13 questions assessing perception in multiple-choice question format. A pilot study was conducted to assess the reliability of the questionnaire. Then, the self-administered questionnaire was given to the participants after obtaining informed consent. Approximately, 10 minutes was taken for the participants to read and complete the survey form. The questionnaire was provided in regional language (Tamil) or English as per participant's choice. Questions were based on knowledge about the 'MTM' scheme and the level of acceptance towards the scheme. The participants were also given options to select multiple responses.

The responses were coded and entered in Microsoft Excel sheet. Statistical analysis was carried out by a trained biostatistician who was blinded about the details of the study. The data were analyzed through SPSS version 27.0 (IBM, Chicago).

## RESULTS

This study was undertaken among outpatients visiting tertiary care public dental hospital. Approximately 650 participants were included out of which 528 participants responded (Response rate=81%). Among these 528 participants, 270 (51%) were males and 258 (49%) were females (Table 1).

Table 2 shows that 31.1% responded as neither easy nor difficult regarding the difficulties to avail healthcare services during COVID-19 times, 68.4% were aware about the scheme, out of which 42.9% of the participants were aware about the scheme through television and 7.7% were aware through display board. Approximately 70% thought that Aadhaar Card is essential for availing this scheme. Majority of the participants were unaware of the fact that ration card and phone number registered with the ration card are essential for providing home-based healthcare delivery to patients.

Only 46.8% of the participants were aware of the fact that this scheme is to treat NCD and maximum number of the participants were aware that only hypertension (43.6%) was screened and drugs were given for treating hypertension (43.1%). Table 2 reveals that the participants were aware that it is a home-based healthcare service and found it beneficial for early treatment of diseases. Though 35.8% of the participants felt that the scheme was beneficial, majority of participants were willing to utilize the scheme (83.7%). However, one-third of participants (34.4%) feared about the usage of the prescribed drugs without the consent of their family physician.

Table 3 reflects that there was statistically significant difference observed between different age groups regarding the difficulties to avail healthcare services during COVID-19 period, and awareness about the scheme, and whether this scheme is beneficial to people of Tamil Nadu. Table 4 compares the responses between males and females, which reflects no statistically

significant difference in the perception about the 'MTM' scheme.

**Table 1: Socio demographic data of study participants.**

VARIABLES	(%)
<b>Age</b>	
15–25 years	24.1
26–35 years	22.3
36–45 years	21.6
46–55 years	18.0
56–65 years	9.5
66–75 years	4.0
>76 years	6
<b>Gender</b>	
Male	51
Female	49
<b>Socioeconomic status</b>	
Upper class	2.07
Upper middle class	19.29
Lower middle class	65.98
Upper lower	7.56
Lower	5.1

**Table 2: Perceptions about 'Makkalai Thedi Maruthuvam' scheme.**

S.No	QUESTIONS	RESPONSES	(%)
1.	How difficult was it to avail healthcare services during COVID times?	Very easy	13.4
		Easy	14.6
		Neither easy nor difficult	31.1
		Difficult	21.6
		Very difficult	13.8
2.	Are you aware about 'Makkalai Thedi Maruthuvam' scheme launched by our Tamil Nadu Government?	Yes	68.4
		No	30.9
3.	If yes, how did you come to know about the scheme?	Newspaper	20.6
		Television	42.9
		Radio	4.1
		Social media	19.5
		Word of mouth	14.9
		Display boards	7.7
4.	Are you aware that this scheme is launched to treat non-communicable disease?	Yes	46.8
		No	45.1
5.	What are the diseases screened under this scheme?	Hypertension	43.6
		Diabetes	35.1
		Cancer (breast, oral, cervical)	17.3
		Congenital defects	10.6
		COVID-19	24.2
		Tuberculosis	7.4
6.	Do you know what are the services provided under this scheme?	Drugs for hypertension	43.1
		Drugs for diabetes mellitus	31.9
		Physiotherapy	17.2
		Palliative care for debilitating disease	21.4
		Provision for dialysis bag	8.0
7.	What type of healthcare delivery does 'Makkalai Thedi Maruthuvam' provide?	Institutional-based healthcare service	39.4
		Home-based healthcare service	41.6
8.	What is your level of satisfaction for home-based	Not satisfied	4.9

		Slightly satisfied	10.4
		Neutral	33.1
		Very satisfied	22.5
		Extremely satisfied	13.6
9.	What document is required for availing the benefits of this scheme?	Aadhaar card	72.5
		Ration card	29.1
		Driving license	5.9
		Pan card	6.5
		Voter ID	9.8
10.	What are the advantages of this scheme?	Early diagnosis of unknown cases of hypertension, diabetes and cancer	36.3
		Early treatment of disease	36.7
		Limits the progression of disease	25.5
		Accessibility of medical services at door step	26.0
		Availability of medical services at door step	30.5
		Affordability of medicine	29.3
		Saves time	29.2
		Others(specify)	4.0
11.	What are the limitations of this scheme?	Does not include person below 45 years	28.0
		Fear about prescribed drug usage without the consent of their family physician.	34.4
		Postponing regular follow-up/check up	11.7
		Others(specify)	9.2
12.	I will utilize the service under 'Makkalai Thedi Maruthuvam' scheme	Yes	83.7
		No	8.5
13.	'Makkalai Thedi Maruthuvam' scheme is beneficial to people of Tamil Nadu	Strongly disagree	5.1
		Disagree	1.1
		Neutral	25.9
		Agree	35.8
		Strongly agree	23.9

**Table 3: Perceptions about 'Makkalai Thedi Maruthuvam' scheme among different age groups.**

S.No	QUESTIONS	OPTIONS	15-25 yrs n=127	26-35 yrs n=118	36-45 yrs n=114	46-55 yrs n=95	56-65 yrs n=50	66-75 yrs n=21	More than 76 yrs n=3	p-VALUE
1.	How difficult was it to avail healthcare services during COVID times?	Very easy	12	8	12	18	9	10	2	<b>0</b>
		Easy	18	15	11	14	13	6	0	
		Neither easy nor difficult	48	40	37	24	13	2	0	
		Difficult	28	21	34	22	6	2	1	
		Very difficult	17	27	14	10	5	0	0	
		Not answered	0	4	7	6	7	4	1	
2.	Are you aware about 'Makkalai Thedi Maruthuvam' scheme launched by our Tamil Nadu Government?	Yes	88	75	81	62	38	16	1	0.657
		No	38	43	32	31	12	5	2	
		Not answered	1	0	1	2	0	0	0	
3.	If yes, how did you come to know about the scheme?	Newspaper	55	51	40	50	18	13	3	<b>0.000</b>
		Television	66	73	83	79	30	14	3	
		Radio	6	4	7	0	2	1	1	
		Social media	26	32	17	11	6	3	2	
		Words of mouth	21	22	16	6	11	5	0	
		Display boards	14	7	7	4	6	2	0	
		Not answered	27	30	22	31	7	5	1	
4.	Are you aware that	Yes	58	58	52	43	23	11	2	0.371

		No	63	49	54	42	24	6	0	
		Not answered	6	11	8	10	3	4	1	
5.	What are the diseases screened under this scheme?	Hypertension	52	48	52	46	23	8	1	0.959
		Diabetes	40	35	47	37	16	9	1	
		Cancer (breast, oral, cervical)	26	20	19	18	4	4	0	
		Congenital defects	13	16	9	13	3	2	0	
		COVID-19	40	29	26	19	10	2	1	
		Tuberculosis	11	9	7	8	4	0	0	
		Not answered	25	34	32	35	19	11	2	
6.	Do you know what are the services provided under this scheme?	Drugs for hypertension	54	50	50	44	21	8	1	0.465
		Drugs for diabetes mellitus	35	30	42	38	16	6	1	
		Physiotherapy	26	23	19	10	7	5	1	
		Palliative care for debilitating disease	13	16	9	13	3	2	0	
		Provision for dialysis bag	40	29	26	19	10	2	1	
		Not answered	32	39	37	40	23	11	2	
7.	What type of healthcare delivery does 'Makkalai Thedi Maruthuvam' provide?	Institutional-based healthcare service	57	45	53	31	13	8	1	0.012
		Home-based healthcare service	55	55	43	42	19	5	1	
		Not answered	16	22	19	22	18	9	1	
8.	What is your level of satisfaction for home-based healthcare delivery?	Not satisfied	6	8	6	2	4	0	0	0.066
		Slightly satisfied	19	16	12	3	5	0	0	
		Neutral	44	44	40	31	12	4	0	
		Very satisfied	30	22	26	24	10	5	2	
		Extremely satisfied	18	11	13	18	7	5	0	
		Not answered	10	17	17	17	12	7	1	
9.	What document is required for availing the benefits of this scheme?	Aadhar card	99	88	85	58	36	15	2	0.679
		Ration card	26	31	43	34	15	3	2	
		Driving license	3	4	10	7	5	1	1	
		Pan card	6	7	8	6	5	1	1	
		Voter ID	9	11	17	12	7	4	1	
		Not answered	21	20	19	23	9	5	1	
10.	What are the advantages of this scheme?	Early diagnosis of unknown case of hypertension, diabetes, cancer	42	39	40	44	18	6	0	0.334

		Early treatment of disease	43	40	46	31	22	9	0	
		Limits the progression of disease	33	27	23	28	17	4	0	
		Accessibility of medical at door step	25	34	27	27	14	7	0	
		Availability of medical service at door step	30	34	37	34	19	7	0	
		Affordability of medicine	27	34	30	25	19	11	0	
		Saves time	27	36	26	33	20	9	0	
		Others (specify)	0	0	0	0	0	0	0	
		Not answered	19	22	22	25	9	4	3	
11.	What are the limitations of this scheme?	Does not include person below 45 yrs	36	34	33	28	11	6	0	0.546
		Fear of drug usage without consultation with a doctor	41	37	41	33	22	7	0	
		Postponing regular follow up/check up	21	18	9	10	4	1	0	
		Others (specify)	13	17	11	2	3	1	0	
		Not answered	32	33	32	33	15	7	3	
12.	I will utilize the service under 'Makkalai Thedi Maruthuvam' scheme	Yes	105	96	91	84	44	19	3	0.423
		No	16	12	10	4	3	0	0	
		Not answered	6	10	13	7	3	2	0	
13.	'Makkalai Thedi Maruthuvam' scheme is beneficial to people of Tamil Nadu	Strongly disagree	6	9	2	2	4	2	2	0.000
		Disagree	2	1	2	0	1	0	0	
		Neutral	34	35	38	24	6	0	0	
		Agree	52	43	41	28	17	8	0	
		Strongly agree	28	19	18	33	18	9	1	
		Not answered	5	11	13	8	4	2	0	

Table 4: Perceptions about 'Makkalai Thedi Maruthuvam' scheme between genders.

S.No	QUESTIONS	OPTIONS	MALE n=270	FEMALE n=258	p VALUE
1.	How difficult was it to avail healthcare services during COVID times?	Very easy	43	28	0.239
		Easy	38	39	
		Neither easy nor difficult	89	75	
		Difficult	49	65	
		Very difficult	37	36	
		Not answered	13	16	
2.	Are you aware about 'Makkalai Thedi Maruthuvam' scheme launched by Tamil Nadu Government?	Yes	182	179	0.514
		No	86	77	
		Not answered	1	3	
3.	If yes, how did you come to know about	Newspaper	68	39	0.176

		Television	117	108	
		Radio	12	9	
		Social media	64	33	
		Word of mouth	39	42	
		Display boards	21	19	
		Not answered	60	63	
4.	Are you aware that this scheme is launched to treat non-communicable disease?	Yes	128	119	0.922
		No	119	119	
		Not answered	22	21	
5.	What are the diseases screened under this scheme?	Hypertension	119	111	0.341
		Diabetes	80	94	
		Cancer (breast, oral, cervical)	50	41	
		Congenital defects	24	32	
		COVID-19	65	62	
		Tuberculosis	28	11	
		Not answered	80	78	
6.	Do you know what are the services provided under this scheme?	Drugs for hypertension	118	110	0.113
		Drugs for diabetes mellitus	80	88	
		Physiotherapy	50	41	
		Palliative care for debilitating disease	61	52	
		Not answered	96	88	
7.	What type of healthcare delivery does 'Makkalai Thedi Maruthuvam' provide?	Institutional-based healthcare service	96	112	0.088
		Home-based healthcare service	119	101	
		Not answered	55	52	
8.	What is your level of satisfaction for home-based healthcare delivery?	Not satisfied	15	11	0.934
		Slightly satisfied	29	26	
		Neutral	85	90	
		Very satisfied	63	56	
		Extremely satisfied	35	37	
		Not answered	42	39	
9.	What document is required for availing the benefits of this scheme?	Aadhar card	202	181	0.665
		Ration card	78	76	
		Driving license	22	9	
		Pan card	20	14	
		Voter ID	33	28	
		Not answered	47	51	
10.	What are the advantages of this scheme?	Early diagnosis of previous unknown cases of hypertension, diabetes, cancer	86	103	0.169
		Early treatment of disease	103	86	
		Limits the progression of disease	71	58	
		Accessibility of medical service at door step	70	64	
		Availability of medical service at door step	73	86	
		Affordability of medicine	66	80	
		Saves time	76	75	
		Others(specify)	14	7	
		Not answered	56	48	
11.	What are the limitations of this scheme?	Does not include person below 45 years	76	72	0.619
		Fear of drug usage without consultation with a doctor	90	91	
		Postponing regular follow up/check up	35	28	
		Others(specify)	30	18	
		Not answered	78	77	
12.	I will utilize the service under 'Makkalai Thedi Maruthuvam' scheme	Yes	221	221	0.571
		No	26	19	
		Not answered	22	19	
13.	'Makkalai Thedi Maruthuvam' scheme	Strongly disagree	13	14	

	Disagree	4	2
	Neutral	69	68
	Agree	90	99
	Strongly agree	67	39
	Not answered	26	17

## DISCUSSION

The present study assessed the perceptions about 'MTM' scheme among outpatients visiting tertiary care public dental hospital. Each year, more than 15 million people died due to NCD between the age group of 30-69 years. Annually, cardiovascular diseases account for most NCD death (17.9 million) followed by cancer (9.3 million), respiratory disease (4.1 million) and diabetes (1.5 million).<sup>[10]</sup> Tobacco use, physical inactivity, unhealthy diet and alcohol increases the risk of NCD. Detection, screening and treatment of NCDs, as well as palliative care are key components of the response to NCDs. Due to COVID-19 pandemic, medications were the only mainstay treatment and people also could not follow lifestyle modification to reduce the risk of NCD.<sup>[10]</sup> A major impact during the COVID-19 pandemic was the difficulty in accessing the healthcare services due to lock down restrictions and lower prioritization of NCD due to fear of spread of COVID-19.<sup>[11]</sup>

Studies from rural Malawi and South Africa also have shown that difficulty in access to healthcare services particularly for persons with disabilities and elderly due to cost of transport, limited healthcare resource availability and dependence on others.<sup>[12,13]</sup> Apart from this, Tamil Nadu has excellent logistics and supply chain of medications at all levels, however, certain medications such as cardiac and higher order drugs may not be available at all levels of public health system.<sup>14</sup> Hence, geriatric patients and physically challenged and rural population confronted difficulty to avail treatment as they had to visit hospital to get treated. So, to improve the rates of early detection and to reduce NCD burden during COVID-19 pandemic and to provide home-based healthcare delivery system to all population, the 'MTM' scheme was launched in Tamil Nadu, especially to provide medical services at the door step of beneficiaries.

The present study shows that people faced difficulties in availing healthcare services during COVID-19 period. It is believed that the newly launched 'MTM' scheme could minimize this barrier of accessibility in near future. Television was the major mode of imparting awareness to the study participants. However, this study was done in an urban setting. The present study demonstrated that majority were interested in availing the health services provided by the Government, particularly younger participants. However, knowledge was assessed among outpatients visiting tertiary care dental hospital, which was a method of convenience sampling. Therefore, the results of this study may not be applicable to general population.

The present study is first of its kind, which constraints comparisons with previous studies. Moreover, the results would have been different if the study had assessed perceptions of rural populations. We recommend further studies to assess perceptions of the scheme in different populations for better understanding.

## CONCLUSIONS

Our study shows fairly appreciable awareness among participants about the scheme. Participants expressed a positive attitude towards utilization of this scheme. Success of any public health programme depends upon the cognizance of the scheme and utilization by the beneficiaries. Thus, policy makers should take appropriate measures to expand awareness about the scheme and its use among the general public for successful implementation of the newly launched scheme.

## ACKNOWLEDGEMENT

We sincerely thank the participants of the study. We also extend our gratitude to Dr S. K. Kokila and Ms. Smitha Dasan for reviewing and editing the manuscript.

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