



Awareness and Acceptance of Adult Vaccination Among Adult Population at Madurai

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1. INTRODUCTION

The population aged 50 and over has increased four times around the world in the previous 50 years. It is expected to constitute 404 million people in 2036, fairly 27% of the country's projected population¹. Geriatric people with infectious diseases have a greater prevalence and probability of serious comorbidities such as coronary artery disease, arrhythmia, stroke, myocardial infarction, hypertension, dyslipidaemia, and diabetes mellitus. Therefore, immunization of older adults through vaccination might largely curtail the burden required by vaccine preventable infectious diseases in this group¹. Both the Global Vaccine Action Plan endorsed at the 2012 World Health Assembly and the Immunization Agenda 2030 endorsed in 2021 suggested life-course approach to immunization to fight vaccine-preventable diseases.³ The COVID 19 pandemic has also demonstrated remarkable importance of vigorous vaccination system for control of vaccine-preventable diseases among elder adults. In 2009 The Association of Physicians in India focused consideration to the substantial burden of morbidity, disability and mortality due to infectious diseases among older adults in the country.⁴

Vaccination is recommended throughout life to prevent infectious diseases and their sequelae. Vaccines are pivotal to prevent mortality in that >25% of deaths are due to infections. Significant progress in adult vaccination is needed to decrease the health consequences of vaccine-preventable diseases among adults. Incomplete and inadequate immunization in India against these communicable diseases results in noticeable and worthless financial burden in terms of both hospitalization and treatment. The government of India as well as the World Health Organization (WHO) give childhood vaccination as the first priority, but there is not yet focus on adult immunization. Adult immunization in India is the ultimate neglected part of health care services.⁵

2. THE PRIMARY AIM OF THE STUDY

The aim of the study was to assess the awareness and acceptance regarding adult vaccination among adult population at Madurai.

Secondary objectives:

- 1.To assess the level of awareness and acceptance regarding adult vaccination among the adult population.
- 2.To find out the association between selected background variables and the level of awareness and acceptance regarding adult vaccination among the adult population.
3. To find out the relationship between the level of awareness and acceptance regarding adult vaccination among adult population.

3. METHODOLOGY

The survey descriptive research design was adopted by the researcher. The study was conducted in the outpatient department of the parent hospital. Apollo speciality hospital, Madurai is a 300 bedded multi-speciality hospital located in the Madurai city serving people since 1996. There are around 30 Outpatient section in three blocks which starts its service from 07.00am to 03.00pm. People residing in town and village around Madurai visit the hospital for getting treatment. Every day 450 – 500 out patients come to the hospital for the investigation, consultation and treatment.

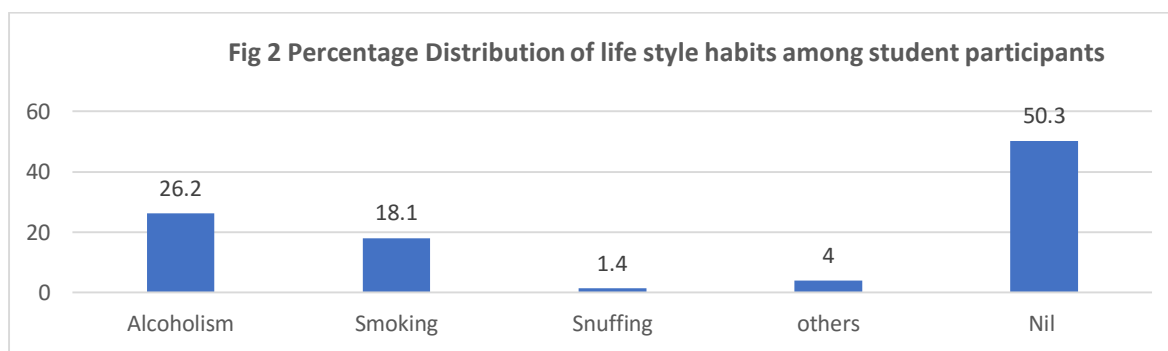
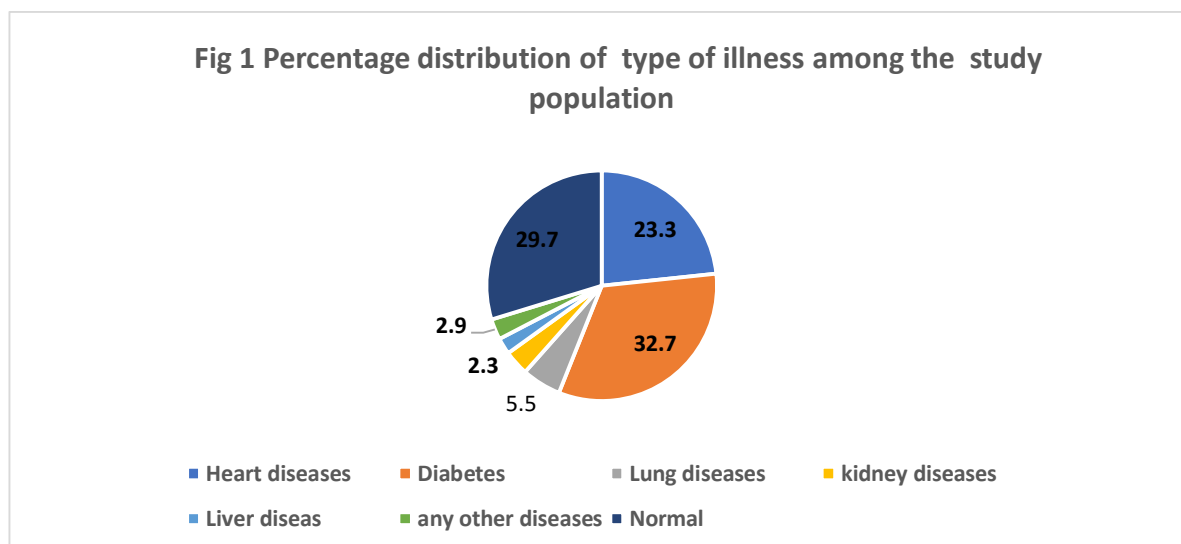
The research was carried out among the older adult above the age of 60 yrs who attended the Master health check department and outpatient department of Apollo Speciality Hospital, Madurai. The research was conducted from 21.10.2022 to 20.03.2023. The researcher used non probability purposive sampling technique to select the samples for the study. The conscious, stable adult who attended Outpatient department / MHC unit were included in the study. The exclusion criteria focused on the any adult who were unstable, bed ridden or not oriented or unable to communicate were excluded in the study. Institutional ethic committee clearance was sought at the beginning of the

research study. Identity of the research participants were kept confidential and the researcher did not do any manipulation on any subjects.

Study Findings

Table 1 Frequency percentage of background variables of study Participants N = 1195

Details	F	%
Age in Years		
60 – 65	489	40.9
66- 70	420	35.1
71 – 75	191	16
>= 76	94	7.9
Sex		
Male	634	53.1
Female	560	46.9
Area of residence		
Rural	529	44.3
Urban	540	45.1
Semi urban	123	10.3
Others	3	0.3
Current living state		
Andhra	7	0.6
Kerala	26	2.2
North India	3	0.2
Tamil Nadu	1159	97
Educational Status		
Non literate	473	39.6
Primary	375	31.4
High school	187	15.6
Higher secondary	85	7.1
Graduate	62	5.2
Post graduate	13	1.1



The above Table 1 projects the frequency percentage distribution of background variables of study participants, many participants (40%) belonged to the age of 60 – 65 yrs of age. More than half (53.1%). Similar percentage of people were residing in rural and urban area (44.3%, 45.1%), almost all the participants are from Tamil Nadu state, more people were non-literate (39.1%), many participants have diabetes (32.7%) (Fig 1), Half of the adult have no any life style habits (50.3%) (Fig 2)

Table 2 Frequency and percentage distribution of vaccine related details of the study participants

Details	F	%
Are you aware of adult preventable diseases?		
Yes	280	23.4
No	834	69.8
May be	81	6.8
Vaccine received		
Not at all	1037	86.8
Influenza	24	2.0
Pneumococcal	51	4.3
Hepatitis B	36	3.0
Any other	47	3.9
Sources of Information		
News paper	110	9.2
Radio	111	9.3
Television	23	1.9
Health professional	57	4.8
Friends and Relatives	38	3.2
Social media – WhatsApp, Facebook, internet	8	0.7
Others	45	3.8
Not at all	803	67.2

Barriers of vaccination		
Lack of awareness	731	61.2
Cost	325	27.2
Fear of being vaccinated	91	7.6
Lack of family support	26	2.2
Wrong notion	22	1.9

Table 2 showed that most of them (69.8%) did not know about adult preventable diseases, majority of the participants (86.8%) did not vaccinate in the adult age, most of them (67.2%) had no information about adult vaccination through any sources, lack of awareness was the major barrier (.61.2%),

Table 3 Frequency and percentage distribution of level of awareness and level of acceptance regarding adult vaccination

Category	Low level awareness		Medium level awareness		High level awareness	
	f	p	f	p	f	p
Level of awareness	1001	84	133	11	61	5
Category	Low acceptance		Medium acceptance		High acceptance	
Level of acceptance	1120	94	75	6	-	-

Table 2 depicted that majority of the adult (84%) had low-level awareness regarding adult vaccination, with regard to level of acceptance almost all the participants had low-level acceptance (94 %) regarding adult vaccination.

Table 4 Association between selected back ground variables and level of awareness regarding adult vaccination.

Details	F	%	P value
Age in Years			19.654
60 – 65	489	40.9	NS
66- 70	420	35.1	
71 – 75	191	16	
>= 76	94	7.9	
Sex			21.371
Male	634	53.1	0.001
Female	560	46.9	
Area of residence			29.483
Rural	529	44.3	0.003
Urban	540	45.1	
Semi urban	123	10.3	
Others	3	0.3	
Current living state			39.074
Andhra	7	0.6	0.001.
Kerala	26	2.2	
North India	3	0.2	
Tamil Nadu	1159	97	

Educational Status			51.391
Non literate	473	39.6	0.0001
Primary	375	31.4	
High school	187	15.6	
Higher secondary	85	7.1	
Graduate	62	5.2	
Post graduate	13	1.1	
Life style habits			259.1
Alcoholism	313	26.2	Df- 15
Smoking	216	18.1	0.000
Snuffing	17	1.4	
Others	48	4.0	
Nil	501	50.3	

There is a significant association between sex (21.371, $P < 0.001$), current state of living (21.371, $p < 0.001$), education status (51.391, $p < 0.0001$), and life style habits of the participants and the level of awareness regarding adult vaccination.

Table 5 Association between selected vaccine related details and level of acceptance regarding adult vaccination.

Details	F	%	P value
Vaccine received			76.768
Not at all	1037	86.8	0.0001
Influenza	24	2.0	
Pneumococcal	51	4.3	
Hepatitis B	36	3.0	
Any other	47	3.9	
Sources of Information			45.670
News paper	110	9.2	0.001
Radio	111	9.3	
Television	23	1.9	
Health professional	57	4.8	
Friends and Relatives	38	3.2	
Social media – WhatsApp, Facebook, internet	8	0.7	
Others	45	3.8	
Not at all	803	67.2	
Barriers of vaccination			1208.115
Lack of awareness	731	61.2	0.0001
Cost	325	27.2	
Fear of being vaccinated	91	7.6	
Lack of family support	26	2.2	
Wrong notion	22	1.9	

All the vaccine related in formation's namely sources of information (45.670) and barriers of adult vaccination (1208.115) were significantly associated with the decision on adult vaccination at $p < 0.0001$ level.

4. DISCUSSION

The above Table 1 projects the frequency percentage distribution of background variables of study participants, many participants (40%) belonged to the age of 60 – 65 yrs of age. More than half (53.1%) were male. Similar percentage of people were residing in rural and urban area (44.3%, 45.1%), almost all the participants are from Tamil Nadu state, more people were non-literate (39.1%), many participants have diabetes (32.7%), Half of the adult have no any life style habits (50.3%)

Similar finding was noted in a study conducted by Singh D, Sinah A, Kanungo.S, Pati S in 2022, This study was based on 31,464 participants aged ≥ 60 years with a mean age of 68.87 ± 7.51 years. Almost half of the participants (58.51%) were 60–69 years of age. We observed a female predilection (52.55%) in the study population. Around 70.55 of the respondents lived in rural areas. We found that 43.48% of the participants had formal education⁷.

Table 2 showed that most of them (69.8%) did not know about adult preventable diseases, majority of the participants (86.8%) did not vaccinate in the adult age, most of them (67.2%) had no information about adult immunization through any sources, lack of awareness was the major barrier (.61.2%),

In India, there are various adult vaccination recommendations but none has been nationally adopted and no systematic programs are in place to recommend, promote, or fund any of these schedules. The lack of a national commitment to improve adult vaccination has resulted in adult immunization being neglected and underpublicized. Further, over 2/3 of Indian adults are not aware of adult vaccination, many thinking that vaccines are only for children.¹² There is also a lack of infrastructure for adult immunization in India.

Majority of the adult (84%) had low level awareness regarding adult vaccination, with regard to level of acceptance almost all the participants had low level acceptance regarding adult vaccination. The investigator noted the similar observation in a survey done by Kalra N et al (2021) observed that out of 461 adults who participated in the survey 158 people never received any vaccine in their older age. The reason for this was not advised by physician or health professionals (38.6%) lack of knowledge (15.8%) and anxiety about the adverse reaction (7.6%).

There is a significant association between sex, (adult male) (21.371, $P < 0.001$), current state of living (Tamil Nadu) (21.371, $p < 0.001$), education status (graduates) (51.391, $p < 0.0001$), and life style habits of the participants (No life style habits) and the decision to vaccinate during adult period.

The present finding was consistent with the finding of Sevin AM et al (2016) that participants with primary school education were significantly more likely to indicate that access to reliable transportation, cost of vaccines, time it takes to get a vaccine, and dislike or fear of needles influenced their decision to get immunized. “Concern about getting sick if I get a vaccine” was a more frequently indicated factor in the decision to be vaccinated in individuals with less than high school (60.0 %, 15/25).

All the vaccine related information’s namely awareness about adult preventable disease (70.989), sources of information (source of Information) (45.670) and barriers of adult vaccination (cost) (1208.115) were significantly associated with the level of acceptance on adult immunization at $p < 0.0001$ level.

There was a no relationship between the level of awareness regarding adult vaccination and level of acceptance of vaccination. ($r = 0.22$). Cheng JYJ et al (2022) interpreted non-significant correlation between knowledge and practice scores suggests that a high level of knowledge of COVID-19 vaccination is not sufficient to influence practices.

5. CONCLUSION

“Life-course immunization” has been adopted in many countries, as adult vaccination is an important contributor to healthy living. However, adult vaccination coverage in India is currently negligible,¹⁵ due to a lack of national guidelines and perceived need. This failure to immunize adults particularly those with chronic conditions will be more vulnerable to infection and at increased risk of complications. Improving adult vaccination coverage in India, particularly among older adults, could help to reduce the burden of disease among those with chronic conditions by reducing hospital admissions, health costs, and mortality rates, and improving quality of life.

Little data exists in the area of patient knowledge about need for vaccines based on the variety of these chronic disease states, as observed in this survey. This study found many participants knew that there are guidelines existed (82.7 %), but had low awareness of the benefits of vaccination in patients with asthma (40 %), as well as heart disease and diabetes (46.6 %). A study by Schoefer et al. showed 46.5 % and 14.6 % of asthma patients receiving influenza and pneumococcal vaccines, respectively⁸. Factors influencing those not being vaccinated included insufficient information and patients believing that vaccines are unnecessary²².

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

Authors' contributions

Co-author have read and accepted the final manuscript and gave consent for publication.

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