

Effectiveness of Planned Teaching on Knowledge Regarding Prevention of Chronic Suppurative Otitis Media Among School Children

Sneha Tadulwar¹, Ranjana Sharma², Vikrant Mankar³, Sachin Patil⁴ and Swarupa Chakole⁵

¹Nursing Final Year Student Smt. Radhikabai Meghe Memorial College of Nursing, Datta Meghe Institute of Medical Sciences (Deemed to be University) Sawangi (Meghe) Wardha, Maharashtra, India

²Department of Medical and Surgical Nursing, Smt. Radhikabai Meghe Memorial College of Nursing, Datta Meghe Institute of Medical Sciences (Deemed to be University) Sawangi (Meghe) Wardha, Maharashtra, India

³Clinical Instructor Datta Meghe College of Nursing, Wanadongari, Nagpur

⁴Department of Community Medicine Datta Meghe Medical College, Nagpur

⁵Department of Community Medicine Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences (Deemed to be University) Sawangi (Meghe) Wardha, Maharashtra, India

ABSTRACT

In poorer countries, Chronic Suppurative Otitis Media (CSOM) is a well-known illness that causes significant local damage and can be life-threatening. Early and successful treatment, based on a thorough understanding of the virus's causative organisms and their antibiotic resistance, allows for rapid clinical recovery and avoidance of negative repercussions. To determine if pupils have a basic understanding of how to prevent chronic suppurative otitis media. 2. To determine the impact of planned teaching on schoolchildren's understanding of chronic suppurative otitis media prevention. 3. To determine if there is a link between posttest knowledge and certain demographic characteristics. This was an interventional study involving a non - probability convenience sampling technique with 100 schoolchildren's from Wardha District. Following the completion of data collection, descriptive and inferential statistics were used to conduct statistical analysis (Mean, mean percentage and standard deviation). The significance of the difference between pre- and post-test readings was determined using a t-test, and the relationship between knowledge and demographic characteristics was determined using a one-way ANOVA and an independent t-test. The findings of the study showed that none of the samples had a low level of knowledge, 3(3%) of samples had an acceptable (average) level of education (knowledge), 6 (6%) of them had a good level of knowledge, 58 (58%) of them had excellent levels of education (knowledge) and 33 (33%) of samples had excellent information points (knowledge). The minimum score was 8 and the maximum score was 19, the mean was 15.44 ± 2.185 with a mean percentage of 77.2 %. It is to conclude that the knowledge of prevention of chronic suppurative otitis media are which throws light on need for arrangement of special classes for the school children and also need for assessing the children's periodically. The school children must upgrade their knowledge as they are the future to the preventing and promoting the health.

KEY WORDS: KNOWLEDGE, PLANNED TEACHING, SCHOOLCHILDREN AND CSOM.

Biosc Biotech Res Comm P-ISSN: 0974-6455 E-ISSN: 2321-4007



Identifiers and Pagination

Year: 2021 Vol: 14 No (7) Special Issue

Pages: 179-185

This is an open access article under Creative

Commons License Attribn 4.0 Intl (CC-BY).

DOI: <http://dx.doi.org/10.21786/bbrc/14.7.43>

Article Information

Received: 15th April 2021

Accepted after revision: 04th June 2021

INTRODUCTION

Chronic suppurative otitis media (CSOM) is a major health issue in developing and developing countries around the world, including India (Salem Muftah 2015). In India, CSOM is also a very important cause of hearing loss and takes up a large amount of clinical and operational time for otolaryngologists. Despite severe restrictions,

the progression from high respiratory infection (URTI) to AOM with perforation and recurrent / recurrent infection (CSOM) leading to eventual hearing loss is sadly common in rural areas of India (Parmar SM et al., 2018). Chronic suppurative otitis media (CSOM) is a disorder defined by persistent perforation of the tympanic membrane and recurrent or permanent mucopurulent otorrhoea, which is caused by chronic inflammation of the middle ear cleft. The duration of otorrhoea was a point of contention among otorhinolaryngologists for the classification of CSOM, which ranged from three weeks to three months. The duration of this study will be at least 2 weeks, in accordance with the World Health Organization's guidelines.

It is also one of the world's leading causes of preventable hearing loss, and in most cases, it is a sequela of acute otitis media that is improperly treated and consequently implied (Abraham ZS et al., 2019). Microbial drug resistance is a well-known phenomenon that is becoming a global problem. *E. coli*, *Klebsiella* species, and *Pseudomonas aeruginosa* are the most resistant Gram-negative bacteria, with growing trends found for all major anti-Gram negative drugs. Gram-positive bacterial infections are becoming increasingly difficult to treat as a result of pathogens like methicillin-resistant *S. aureus* (MRSA) and penicillin-resistant *S. pneumoniae*. The discovery of multidrug resistant isolates may limit therapeutic options even more. As a result, microbial culture and sensitivity will aid in the right management of otitis media and its complications, limiting the formation of bacteria resistant to antibiotics. Understanding the epidemiology and microbiology of CSOM is necessary for developing effective primary prevention and disease management measures (Balan S et al., 2017).

Background: In impoverished nations, chronic suppurative otitis media (CSOM) is one of the most common causes of preventable debilitating hearing loss. Early detection and management supports other survival initiatives, increases work capacity, and improves schoolchildren's learning chances. We wanted to avoid CSOM in schoolchildren aged 12 to 15 years old (Amit Chudaman Patil 2017). In many underdeveloped nations, including Bangladesh, chronic suppurative otitis media is one of the most common childhood community health problems, inflicting major devastation and long-term consequences, and clinically manifesting as deafness and discharge. Its occurrence is influenced by racial and socioeconomic factors to some extent (Ahmed Raquib 2017).

Genetics, disease, allergies, environmental, socioeconomic, and racial factors, as well as Eustachian tube dysfunction, all have a role in the etiology and pathogenesis of otitis media. As a result of improved housing, hygiene, and antimicrobial treatment, the frequency of suppurative otitis media has decreased considerably in recent decades. Only a few patients from higher social and economic levels were impacted by CSOM, and pathology began before the patient ascended the social and economic ladder (Adhikari P 2007).

CSOM is the world's most incurable disease. The factors that contribute to the pathophysiology of CSOM are currently unknown. Focusing on research studies in the CSOM field is critical, as it will pave the way for creative medical studies to combat CSOM and thereby avoid hearing loss. Medical and surgical choices are restricted, come with dangers and adverse effects, and aren't always helpful in curing sickness. The major antibiotic, which is the initial line of treatment you choose, is only for individuals who are ototoxic. Furthermore, the surgery has the potential to cause hearing loss, as well as facial nerve injury and facial paresis⁸.

School children are not paying attention on pain as well as their parents also ignore some this kind of pain. Because school children always paying with little things like, pain, pencil, small toys, while playing they insert small things in the ear so that found children need to take protection of ear from foreign body and take attention and prevention of chronic suppurative otitis media.

MATERIAL AND METHODS

The current study took a quantitative approach and used a quasi-experimental one-group pre-test, post-test research design. The current study used a non-probability convenience sampling methodology. The research was carried out in a few schools in Maharashtra's Wardha District.

Population and Sampling: In this study the population is all the school children. Population is distinguishing as target and accessible population. The accessible population for this study was school children in selected schools of Wardha. Non-probability convenience sampling was used for present study.

Data Collection Procedure: After receiving clearance from the Institutional Ethics Committee (IEC), Datta Meghe Institute of Medical Sciences (Deemed to be University) Sawangi (Meghe), Wardha, the study was carried out. The nature and goal of study were taught to the students. Prior to their participation in the study, the participants signed a written consent form. They were assured that the information would be kept private. Investigator took permission from the principal of school and then approached to the sample and informed them about the nature of the study. The investigator approached the school children explain the proposed study and how it will be beneficial for them. Investigator administered the questionnaire. Once the questionnaire is completed investigator collect them back each sample required maximum time of 30 minutes to complete the questionnaire.

Data Collection Instrument: The investigator developed the tools after updating theoretical knowledge about the prevention of chronic suppurative otitis media. The investigators' own experience, theoretical knowledge, and expert guidance, as well as a review of the literature, all contributed to the development of the tool needed for the study.

Data Analysis: The significance of the difference between pre- and post-test readings was determined using a t-test, and the relationship between knowledge and demographic characteristics was determined using a one-way ANOVA test and an independent t-test.

Ethical Consideration: Before proceeding to the permission was obtained from the Institutional Ethics Committee (IEC), Datta Meghe institute of medical sciences (Deemed university) Sawangi (Meghe), Wardha.

RESULTS

Part I: distribution of samples with regards to selected demographic variables. Most of the participants were male 52 (52 %) and 48 (48 %) female. Most of them were in 15 years of age 64 (64 %), all studying in 9th class and most of them residing in urban area 61(61 %). For more detail, refer table no.1.

Part II: Assessment of existing knowledge regarding prevention of CSOM. In pretest majority of the schoolchildren, 75 had low level of knowledge, 25 of them had average level of knowledge and none of the schoolchildren were had good, very good and excellent level of knowledge. The minimum score was 0 and the maximum score was 8. With a mean percentage score of 16.9, the mean score was 3.38 ± 1.963 . In the last majority of the sample, it shows that none of the sample had a low level of knowledge, 3(3%) of them had an average level of knowledge, 6(6%) of them had a good level of knowledge, 58(58%) of them had a very good level of knowledge, and 33(33%) of them had excellent knowledge. The minimum knowledge score was 8 and the maximum knowledge score was 19. With an average percentage score of 77.2 percent, the mean score was 15.44 ± 2.185 . The findings are shown in tables 2 and 3.

Table 1. Distribution of Demographic Data n=100

Demographic Variable	Frequency	Percentage (%)
Age in years		
13	20	20%
14	16	16%
15	64	64%
Sex		
Male	52	52%
Female	48	48%
Education		
9th	100	100%
Religion		
Hindu	47	47%
Muslim	15	15%
Christian	12	12%
Buddhist	14	14%
Others	12	12%
Residence		
Urban	61	61%
Rural	17	17%
Semi urban	22	22%

Figure 2: showing the sex of school children

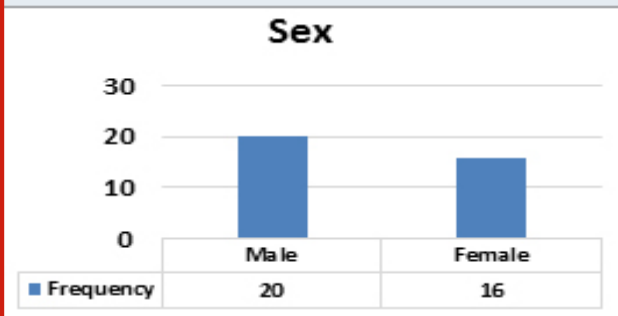
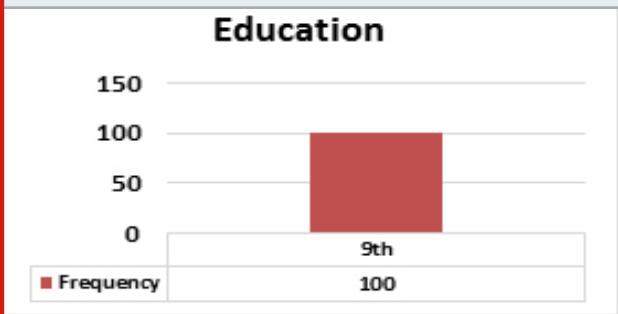


Figure 3: showing the education of school children



Graph 1: showing the age of school children

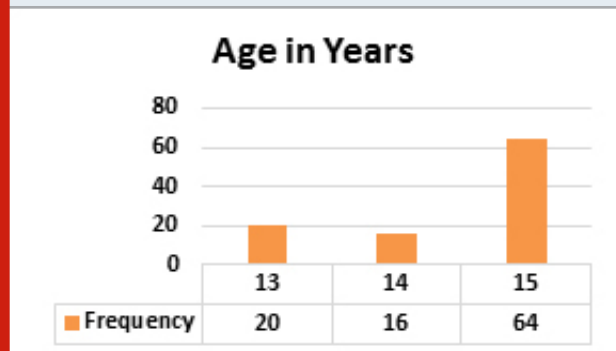


Figure 4: showing the religion of school children

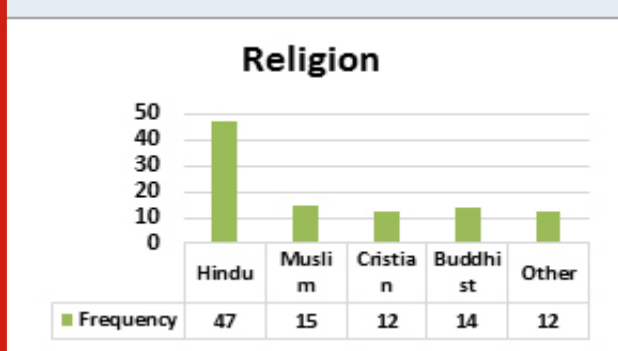
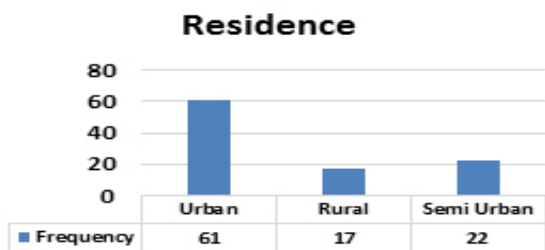


Figure 5: showing the residence of school children



Part III: Description of pretest and posttest knowledge scores: The pretest has a mean of 3.38 and the posttest has a mean of 15.45. The pretest has a standard deviation of 1.963 and the posttest has a standard deviation of 2.185. The calculated t-value was 2.00, while the tabulated 't' value was 40.199 and the p-value was 0.00. As a result, statistical analysis indicates that the planned imparting of knowledge about CSOM prevention was effective among school children. Table no. 4 summarizes the above findings.

Table 2. Assessment of existing knowledge regarding prevention of CSOM. n=100

Level of knowledge score	Score range	Percentage score	Pre Test	
			Frequency	Percentage
Poor	0-4	0-20%	75	75%
Average	5-8	21-40%	25	25%
Good	9-12	41-60%	00	00%
Very good	13-16	61-80%	00	00%
Excellent	17-20	81-100%	00	00%
Minimum score	00			
Maximum score	08			
Mean score	3.38 ± 1.963			
Mean %	16.9			

Figure 6: showing the post test knowledge of school children

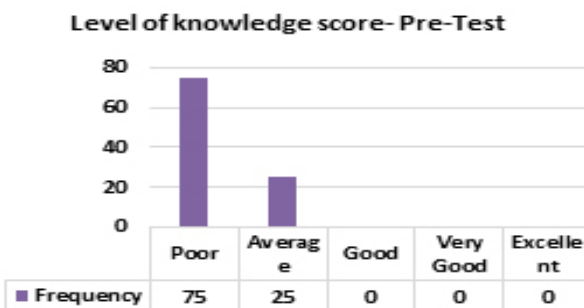


Table 3. Assessment of post- test knowledge regarding prevention of CSOM n =100

Level of knowledge score	Score range	Percentage score	Pre Test	
			Frequency	Percentage
Poor	0-4	0-20%	00	0%
Average	5-8	21-40%	3	3%
Good	9-12	41-60%	6	6%
Very good	13-16	61-80%	58	58%
Excellent	17-20	81-100%	33	33%
Minimum score	08			
Maximum score	19			
Mean score	15.44 ± 2.185			
Mean %	77.2%			

Figure 7: showing the post test knowledge of school children

Level of knowledge score- Post Test



Figure 8: Comparison between pre-test and post test knowledge score

Level of knowledge score

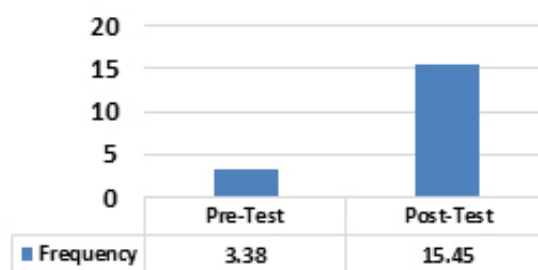


Table 4. Association of posttest knowledge score in relation to selected demographic variables

Tests	Mean score	SD	't'(cal)-value	t'(tab)-value	Degree of Freedom	p-value	Significant
Pre Test	3.38	±1.963	2.00	40.199	99	0.000	S, p<0.05
Post Test	15.45	±2.185					

99, the 'F' value was calculated to be 0 at 5% significance level. The calculated 'p' value is also 0.393, which is more than the acceptable significance level, i.e. 'p'=0.05. It is therefore interpreted that the age of school children in years is not related to their knowledge scores. Association of the gender of the samples with knowledge scores. The 'F' with degree of freedom 99 was calculated at 5 percent significance level 00. 'p'= 0.312 was also calculated, which was more than the acceptable significance level, i.e.' p'=0.05. It is therefore interpreted that their knowledge scores are not significantly associated with the sex of the samples.

Association of knowledge scores with sample education. The 'F' value was calculated at a 5 percent significance level of 0.996 with a degree of freedom of 99. 'p'=0.218 was also calculated, which was greater than the acceptable level of significance, i.e.' p'=0.05. It has therefore been interpreted that the standard of samples is not related to their knowledge scores. The religion of samples has an association with knowledge ratings. The 'F' value was estimated at a 5% significance level of 0.969, with a degree of freedom of 99, and 'p'=0.427, which was higher than the allowed level of significance, i.e.' p'=0.05. As a result, it's been deduced that sample religion has nothing to do with their knowledge ratings. There is a link between knowledge scores and where you live. The 'F' value was estimated using a degree of freedom of 99 and a 0.053 significance level. 'p'=0.949 was also estimated, which was larger than the allowed level of significance, i.e.' p'=0.05. It has therefore been interpreted that sample residency is not associated with their knowledge scores.

DISCUSSION

In present study after proving the planned teaching the knowledge score was none of the subjects were having poor level of knowledge, all are having average (3%), good (6%), very good (58%) excellent (33%) level of knowledge score respectively. Mukara, K. B et.al, supports present study. Most respondents had good knowledge and good attitudes and habits regarding ear infections. However, medical interactions were common. There is a need to improve public awareness and access to basic health care services for ear infections, especially in rural Rwanda (Mukara, K. B et al., 2017). In the present study, planned teaching was effective in improving knowledge of schoolchildren regarding prevention of CSOM shown in table no. 4.

Research reported by Surya Prakash P. (2014) in pretest of the 60 school children, 46 (76.67%) children have insufficient information processing and 14 (23.33%) have insufficient information. In posttest 12 (20%) they had enough knowledge and 48 (80%) had enough knowledge. The value of t' 833 .80 compared to the set table value of P <0.05 was significant. It therefore concluded that educational interventions to prevent common health problems in school-age children are effective (Surya Prakash P 2014). Similarly in the present study planned teaching on prevention CSOM was found effective (pre-test mean percentage=3.38 and post-test mean percentage=15.45). Gain in knowledge would definitely contribute to reformed attitude and practices. An experimental study conducted by Elsayed Yousef Y et.al., found that most children with CSOM have one or more symptoms of the disease; the education system applies to CSOM management (whether a solution or a complete solution); increased maternal compliance increases response rate; regular follow-up and interpretation of

the importance of the system played an important role in compliance with the plan (Elsayed Yousef Y 2015).

A cross-sectional study was done by Parmar SM et.al. Survey of 2158 schoolchildren between the ages of 5 and 15 years. The urban school had a total of 1161 children, while 997 children were from three adjacent rural government schools. It has been found that a total of 78 children suffer from either unilateral or bilateral CSOM.

In present study, we included the same age group between 13-15 years and both urban and rural area included. Present study is supported by the study conducted by Nehra V et.al. The impact of the health awareness program was found to be 5.78 percent in terms of increasing the knowledge score of parents of primary school children, while the skill increase was found to be 14.18 percent. The outcomes of a study conducted by Rajan JK revealed that schoolchildren had insufficient knowledge of the role of exercise in obesity prevention. The planned education program on the benefits of exercise in preventing obesity was quite effective ($t(59) = 23.14, p < 0.05$) (Rajan JK). In present study pretest, knowledge of schoolchildren was 3.38 ± 1.963 and posttest knowledge was 15.44 ± 2.185 . Therefore, it is concluded that the planned teaching was highly effective ($t(99) = 40.19, p < 0.05$) in improvement of knowledge of schoolchildren. Similar studies on effectiveness of planned teaching in different disease conditions were reviewed 13-16. Some key interesting studies on teaching in healthcare were reported (Zodpey 2018 & Quazi Syed 2020).

CONCLUSION

We may conclude from this study that structured instruction has been beneficial in boosting schoolchildren's awareness regarding chronic otitis media prevention. Based on the study's findings, the following recommendations for further research may be made.

- A similar large-scale study regarding the management of suppurative otitis media in middle school children among schoolchildren.
- Comparative surveys can be conducted in urban and rural areas with information on the ongoing blockade of media outlets rising among school children.
- An experimental study may be conducted regarding the prevention of chronic obstructive pulmonary disease among school children.
- Study can be done in school environments among school children, health education can provide and follow can be done to assess their practice that will provide better performance to people and the community.
- Research recommends that it is an educational institution and should be a function in promoting and advancing health education regarding the prevention of chronic arterial arteries that develop among school children.

REFERENCES

- Abraham ZS, Ntunaguzi D, Kahinga AA, Mapondella KB, Massawe ER, Nkuwi EJ, Nkya A (2019 Dec). Prevalence and etiological agents for chronic suppurative otitis media in a tertiary hospital in Tanzania. *BMC research notes*; 12(1):1-6.
- Adhikari P (2007). Chronic Suppurative Otitis Media in School Children of Kathmandu Valley. *Int. Arch. Otorhinolaryngol*; 11(2):175-178
- Balan S, Viswanatha B (2017). Microbiology of chronic suppurative otitis media: a prospective study in a tertiary care hospital. *J Otolaryngol ENT Res*; 9(1):00277.
- Dr.Amit Chudaman Patil, Dr Poonam subhash khairnar (2017). Assessment of demographic factors and clinic presentation of chronic suppurative otitis media, 3(3), 174 - 175.
- Elsayed Yousef Y, Abo El-Magd EA, El-Asheer OM, Kotb S 2015 Feb. Impact of educational program on the management of chronic suppurative otitis media among children. *International journal of otolaryngology*; 22;2015.
- Ghugare, Suvarna Banduji, and Archana Tej Mourya (August 31, 2020). "To Assess the Effectiveness of Planned Teaching on Knowledge of Ganja Addiction Hazards, and Its Prevention among Male Adolescents." *Journal Of Evolution Of Medical And Dental Sciences-JEMDS* 9, no. 35: 2536-39. <https://doi.org/10.14260/jemds/2020/551>.
- MD.Mazharul shabeen, Ahmed Raquib, and Shaikh Maniruddin Ahmad. Chronic suppurative otitis media and its Association with socioeconomic factors. 2012 mar, 64(1):36 - 41.
- Mittal R, Lisi CV, Gerring R, Mittal J, Mathee K, Narasimhan G, Azad RK, Yao Q, Grati MH, Yan D, Eshraghi AA. Current concepts in the pathogenesis and treatment of chronic suppurative otitis media. *Journal of medical microbiology*. 2015 Oct; 64(Pt 10):1103.
- Mukara, K. B., Waiswa, P., Lilford, R., & Tucci, D. L. (2017). Knowledge and care seeking practices for ear infections among parents of under five children in Kigali, Rwanda: a cross-sectional study. *BMC ear, nose, and throat disorders*, 17, 7. <https://doi.org/10.1186/s12901-017-0040-1>
- Narayane, Madhvi Madhukar, and Savita Bansiram Pohekar (September 2020). "Effectiveness of Planned Teaching Program on Knowledge Regarding Management of Leukaemia among Leukaemia Patients." *Journal Of Clinical And Diagnostic Research* 14, no. 9. <https://doi.org/10.7860/JCDR/2020/44771.14056>.
- Parmar SM, Sood A, Chakkal HS (2018 Oct). Prevalence of chronic suppurative otitis media in schoolgoing children. *Indian Journal of Otolaryngology*; 24(4):223.

Quazi Syed, Zahiruddin, Abhay Gaidhane, Shilpa Gaidhane, Mahalaqua Nazli Khatib, and Sanjay Zodpey (April 2020). Cultural Competency Framework for Masters of Public Health (MPH) Program: Calling for Action." *Medical Science* 24, no. 102: 776–85.

Rajan JK. Effectiveness of Planned Teaching Programme Regarding Importance of Exercise in Prevention of Obesity among Children.

Salem Muftah (2015 sept), Ian Mackenzie, Brian faragher and Bernard brabin. Prevalence of chronic suppurative otitis media (csom) and associate hearing impairment; 30(5):358 - 365.

Sukhdeve, Naina, and Seema Singh ((2020)). Assess The Effectiveness Of Planned Teaching On Knowledge Regarding Early Warning Signs And Management Of Alzheimer's Disease Among Care Givers Of Elderly Client." *International Journal Of Modern Agriculture*

9, no. 3: 148–53.

Surya Prakash P (2014). Impact of Educational Interventions on common, Health Problems among school age children at Government Higher Secondary School, Sothupakkam (Doctoral dissertation, Adhiparasakathi College of Nursing, Melmaruvathur).

Taksande, Archana Lohave (February 2021). "Effectiveness of Planned Teaching on Knowledge Regarding First Aid for Burns and Its Prevention among Parents of Children Under Five Years." *Journal Of Clinical And Diagnostic Research* 15, no. 2. <https://doi.org/10.7860/JCDR/2020/44766.14476>.

Zodpey, Sanjay, Anjali Sharma, Zahiruddin Quazi Syed, Abhay Gaidhane, and Sunanda Shrikhande (June 2018). "Allopathic Doctors in India: Estimates, Norms and Projections." *Journal Of Health Management* 20, no. 2: 151–63. <https://doi.org/10.1177/0972063418763651>.