

Education for Home Care Management of Pediatric Tuberculosis, Promise for Decreased Hospitalization: Evidences from Urban Slum Area, MP

Nagesh Kumar Sharma¹, Chakrapani Chaturvedi²,
Sakshi Chaturvedi³, Hitesh Kushwaha⁴

How to cite this article:

Nagesh Kumar Sharma, Chakrapani Chaturvedi, Sakshi Chaturvedi et. al/Education for Home care Management of Pediatric tuberculosis, promise for decreased Hospitalization: Evidences from urban slum area, MP/Community and Public Health Nursing. 2022;7(3):101-105.

Abstract

Introduction: Tuberculosis, which has been around for more than a century and may be prevented or treated with high quality medications, is nevertheless a major public health issue. Despite this, tuberculosis is still a major public health issue. The burden of adult tuberculosis is determined by the prevalence of pediatric tuberculosis in the population.

Methods: A study was done on children with TB. Planned Teaching of mothers was intervened how to care for children them at home. 50 samples were chosen with the help of purposive sampling. The structured knowledge interview questionnaire was used to get the information. It had 40 questions about how to manage care at home for people with TB. The pre-test was given to 50 mothers, and the planned teaching program was given to them seven days later. The post-test was given to the same group of mothers using the same tool. Most of the people who answered the survey (22) were between the ages of 21 and 30 and live in an urban slum area.

Result: The majority of the participants, 22 (44%), were between the ages of 21 and 30 and resided in an urban slum. The average post-test score was 34.6 ± 2.3 out of 40, whereas the pretest score was 5.2 ± 1.1 .

Conclusion: A well thought out educational program can help urban slum mothers better care for their children TB infection.

Keywords: Pediatrics; Tuberculosis; Public Health Issue; Adult Tuberculosis; National health problem.

Author's Affiliations: ^{1,4}Community Health Officer, Department of Health and Wellness Center, Jhansi 284001, Uttar Pradesh, India, ^{2,3}Associate Professor, Department of Nursing, Banasthali Vidyapith, Aliyabad, Rajasthan 304022, India.

Corresponding Author: Sakshi Chaturvedi, Associate Professor, Department of Nursing, Banasthali Vidyapith, Aliyabad, Rajasthan 304022, India.

E-mail: chaturvedimrsshakshi@gmail.com

Received on: 23.07.2022 **Accepted on:** 24.08.2022

INTRODUCTION

Even though there is a cure and prevention is possible, tuberculosis is still a national health problem in India. TB sufferers are thought to be more prevalent in the Gwalior and Indore regions of Madhya Pradesh. Protecting children from sickness is essential because healthy children represent the nation's future riches. Even if the proper precautions are taken, some children may still become sick.

Preventive steps like immunization are taken by the government to safeguard children from the six leading killer diseases. Many people die or become seriously ill as a result of these diseases. As one of the top six killers affecting children, TB is a major cause of death and a global health issue.^{1,2} Tuberculosis is the number one enemy for India's health.³ Tuberculosis (TB) is an oldest worldwide chronic opportunistic communicable infectious disease caused by 'Mycobacterium tuberculosis' an aerobic, Acid Fast Bacillus (AFB).^{4,5} Tuberculosis is recognized in India as "Kshaya", and also identified as "Phthisis", "White plague", "Consumption"; "Koch's disease" and "Scrofula" in the medical literature. In 460 B.C. Hippocrates identified "Phthisis" as most prevalent disease of the times which is now recognized as tuberculosis. He also observed that it killed nearly everyone it infected. Since Robert Koch established the scientific fact in 1882 that Acid Fast Bacilli were the cause of tuberculosis, diagnostic, curative and preventive measures were gradually developed and established.⁶ Von Pirquet discovered the tuberculosis test in 1907.⁷ The care and treatment have undergone enormous changes and constantly changing during past three decades.⁶ The tuberculosis problem in India was first recognized through a resolution passed in the All India Sanitary Conference, held at Madras in 1912. The anti-TB movement in the country gained momentum with the TB Association of India which was established in 1939. World Health Organization (WHO) and United Nation International Children Emergency Fund (UNICEF) took keen interest in providing assistance for introducing mass Bacilli Calmette-Guerin (BCG) vaccination with low cost in 1951. National Tuberculosis Control Program (NTP) was formulated in 1962 which was implemented in phased manner. The deficiency in NTP was identified in 1993 and Revised National TB Control Programme (RNTCP) was developed.⁷ The burden of TB for India for the year 2000 was estimated to be 8.5 million and the annual risk of TB infection varied from 1 to 2%. The TB preventive was significantly higher among people living below the poverty line compared with those above the poverty line (242 versus 149/100, 00 population).⁸ Among the marginalized people TB was 1-5 items more prevent. TB was disproportionately high among the poor and socially executed groups.⁹ India is classified along with the sub Saharan

African countries to be among those with a high burden and the least prospects of a favourable time trend of the disease as of now (group IV countries). The average prevalence of smear positive cases 2.27 per thousand and average annual incidence of smear-positive cases at 84 per 1, 00,000 annually.¹⁰ It however remained stable among males aged 55 yr in successive surfaces for the five year period, ranged from 400-700 per 100,000. In females it had increased only from 150 to 200 per 100,000.¹¹ An unexplained observation in there surveys was the annual incidence of about 100 per 100,000 in both sexes in the 15-34 yrs age group.¹² Tuberculosis in children is one of the major illness causes morbidity and mortality in our country. India has successfully implemented RNTCP using DOTS therapy. For the complete cure the child need to take medication at least 6 months of DOTS therapy. It is chronic illness where child need not be admitted to hospital except under serious conditions. Mothers are the primary care giver, during illness her responsibility will be high in caring of the children especially managing in the home setting. So, this study was conducted to enhance the knowledge of mothers through a planned teaching program on home care management of TB among children.

MATERIAL AND METHODS

Research design: An evaluative research approach with one group pretest posttest design. **Sample:** The population for this study consisted of mothers of pediatric TB clients. **Sampling technique:** Purposive sampling technique was used to select 50 samples. **Settings:** This study was conducted in the urban slum areas Thatipur, Gwalior. **Ethical consideration:** This study was conducted after taking the approval of the protocol review committee and institutional ethics committee and dual permission from local government. **Tool:** The tool used for the data collection was structured knowledge interview questionnaire which comprised of 11 items on demographic data and 40 items on home care management on TB. The reliability of the tool was established by Split Half technique, with 'r'=0.94. Conceptual frame work for the study was based on the J.W. Kenny system theory model. **Planned teaching program for home care Management of pediatric TB:** this program focused on basic concepts of TB and symptoms in children, Complications of untreated TB, medication administration in TB, general side-effects and severe side-effects of medication, caring

for other family member, regular follow up and its importance, diet and its importance in recovery, technique for disposal of excreta and sputum of client at home, psychological care and happiness for pediatric TB clients were discussed in their local language. **Administration of tool:** The pretest was administered to mothers of 50 pediatric TB clients followed by the STP on the 7th (seven) day; post test was conducted to the same sample using the same tool. Data gathered was analyzed using descriptive and inferential statistics in terms of frequency, percentage, mean, median, standard deviation, and chi-square test.

RESULTS

Demographic Characteristics: Classification of respondents by personal characteristics, such as age, educational status and occupational status. Majority of the respondents 22 (44%) were in the age group of 21-30 years, followed by 20 (40%) found

in the age group between 31-40 years 08 (16%) in the age group of 41-50 years. It was observed that, majority of the respondents studied 20 (40%) equally up to illiterate and primary school level. Further 6(12%) studied up to high school level, remaining 4(8%) found to be up to middle school. Further, occupational status indicates 20(40%) were agriculture and 18(36%) and 8(16%) were private workers and remaining 4(8%) were housewives. Data reveals that the level of knowledge on home care management on tuberculosis out of 50 mothers, in pretest 27(54%) of them had inadequate knowledge and 23(46%) had moderate knowledge (Table 1). Mean score in pretest was calculated as Pretest score was 5.2 ± 1.1 out of 40. median value was 3. Out of 50 mothers of pediatric TB clients in posttest 35 (70%) of them had moderate knowledge and 15(30%)(Table 1) had adequate knowledge. posttest mean score was 34.6 ± 2.3 out of 40 with median value of 21.

Table 1: pretest and posttest of mothers regarding Home care Management of TB.

Knowledge Level	Category	Respondents number and percentage	
		Pre-test	Posttest
Inadequate	< 50 % Score	27 (54%)	-
Moderate	51-75 % Score	23 (46%)	35(70%)
Adequate	> 75 % Score	-	15(30%)
Total		50 (100%)	

Association was find out between selected demographic variables and knowledge level of pretest among mothers of pediatric TB clients regarding home care management on tuberculosis. In regard to age of TB clients, 21-30 years 7(31.8%) had inadequate knowledge 15(68.1%) had moderate knowledge. Among 31-40 years 12(60%) had inadequate knowledge 8(40%) had moderate knowledge. Among 41-50 years 06(75%) had inadequate knowledge 2(25%) had moderate knowledge. The obtain χ^2 value 8.30 was significant at 5% level. It is inferred that there was significant association between age and knowledge of mothers of pediatric TB clients in urban slum. In regard to educational status of mothers of pediatric TB clients illiterate 12(60.0%) had inadequate knowledge and 08(40.0%) had moderate knowledge. Among primary 12(60.0%) had inadequate knowledge 08(40.0%) had moderate knowledge. Among middle school 1(25.0%) had inadequate knowledge 3(75%) had moderate knowledge. The obtain χ^2 value 2.40 was not significant at 0.05% level. It is

inferred that there was no significant association between educational status and knowledge of TB clients in rural PHC. In regard to occupational status of mothers of pediatric TB clients household worker 10 (55.5%) had inadequate knowledge 08 (44.4%) had moderate knowledge. Among agriculture 12 (60.0%) had inadequate knowledge 08 (40.0%) had moderate knowledge. Among private 5 (67.5%) had inadequate knowledge 3 (37.5%) had moderate knowledge. Among house wife 2 (50%) had inadequate knowledge 2 (50%) had moderate knowledge. The obtain χ^2 value 0.08 was not significant at 0.05% level. It is inferred that there was no significant association between occupational status and knowledge of TB clients in rural PHC. In regard to type of family among nuclear family 5(33.3%) had inadequate knowledge 10(66.7%) had moderate knowledge. Among joint family 20(57.1%) had inadequate knowledge 15(42.8%) had moderate knowledge. The obtain χ^2 value 5.18 was significant at 5% level. It is inferred that there was significant association

between type of family and knowledge of mothers. In regard to income of family 1,000-1,500, 11(50%) had inadequate knowledge 11(50%) had moderate knowledge. Among Rs. 1,501-2,000/, 11(50%) had inadequate knowledge 11(50%) had moderate knowledge. Among more than Rs 2000/- 4(50%) had inadequate knowledge 4(50%) had moderate knowledge. The obtain χ^2 value 0.08 was not significant at 0.05 level. It is inferred that there was no significant association between income and knowledge of mothers. In regard to family history of tuberculosis details reveals that 20(58.8%) had inadequate knowledge 14(41.1%) had moderate

knowledge. The obtain χ^2 value 5.18 was significant at 5% level. It is inferred that there was significant association between family history of tuberculosis and knowledge of mothers of pediatric TB clients. In relation to source of information regarding TB among TB clients details reveals that 17(60.7%) had inadequate knowledge 11(39.2%) had moderate knowledge. The obtain χ^2 value 4.91 was significant at 5% level. So the hypothesis was accepted. It is inferred that there was significant association between source of information regarding TB and knowledge of mothers of pediatric TB clients (Table 2).

Table 2: Relationship between sociodemographic variable and pre-test score

Demographic Variables	Category	Sample	Respondents Knowledge				χ2 value	P Value
			Inadequate		Moderate			
			N	%	N	%		
Age Group (years)	21-30	22	7	31.8	15	68.1	8.30*	< 0.05
	31-40	20	12	60	8	40		
	41-50	8	6	75	2	25		
	Unmarried	14	5	35.7	9	64.2		
Educational Status	Illiterate	20	12	60	8	40	2.4	> 0.05
	Primary	20	12	60	8	40	NS	
	Middle school	4	1	25	3	75		
	High school	6	4	66.6	2	33.3		
Occupational Status	Household job	18	10	55.5	8	44.4	0.08	> 0.05
	Agriculture	20	12	60	8	40	NS	
	Private	8	5	67.5	3	37.5		
	House wife	4	2	50	2	50		
Type of Family	Nuclear	15	5	33.3	10	66.7	5.18*	< 0.05
	Joint	35	20	57.1	15	42.8		
Family income/month	Rs.1,00-1,500	22	11	50	11	50	0.07	> 0.05
	Rs.1,501-2,000	22	11	50	11	50	NS	
	> Rs.2,000	8	4	50	4	50		
Family history	Yes	34	20	58.8	14	41.1	5.18*	< 0.05
of Tuberculosis	No	16	6	37.5	10	62.5		
	Parents	18	10	55.5	8	44.4		
	Not applicable	22	12	54.5	10	45.4		
Received information	Yes	28	17	60.7	11	39.2	4.91*	< 0.05
TB	No	22	15	68.1	7	31.8		
Combined		50	30	60	20	40		

* Significant at 5% Level, NS: Non-significant

DISCUSSION

The investigators observed that exposure of many clients with TB with symptoms of chest pain coughing up blood, and productive prolonged cough for more than three weeks, fever at night, failure to thrive and loss of weight. The investigator also finds that community health nurse giving more importance in home care management to treat the TB and investigator also find that there is very few homecare relevant articles on TB and its DOTS for this reason the investigator felt that there is a need for homecare management on tuberculosis among the TB clients to prevent further complication and promote healthy life.¹⁵ The study conducted by Amen MM, Clarke VP (2001) on the influence of mothers' health practice on use of preventive child health care services and mothers' perception of children's health status. The preventive child health care services were underutilized. The study results show that 37.6% of mothers were utilizing the preventive health services for their children.¹⁶ This study found that many mothers had inadequate knowledge to manage TB at home, they are unaware about incomplete treatment of TB and its complications, they are unaware about role of protein diet in recovery. The similar study conducted by Adetunji JA (1991) regarding mothers' health beliefs and practices affect their responses to five major killer diseases during childhood including tuberculosis. 74% of mothers not knew the cause for tuberculosis. 69% of the mothers practice herbal tea, modern drugs and prayers were the most commonly prescribed treatments for these diseases, so it was observed that most mothers used alternative sources of health care, rather than hospitals and clinics.¹⁷

CONCLUSION

Under RNTCP scheme DOTS therapy is most effective treatment for children, TB can be managed with treatment guidelines at home without hospitalization. Along with medications children need other aspects of care which is very much is essential for the complete cure from TB. If parents especially mothers of urban slum area are trained by agencies and health care personnel there will be ease in completion of treatment in pediatric TB clients.

Conflict of interest: Nil

Grant: self-funded

ACKNOWLEDGEMENT

Authors are thankful to all the mothers who have shown their keen interest and cooperation while learning regarding TB care at home.

REFERENCES

1. Park K. Park's text book of preventive and social medicine. 18th ed. Jabalpur: M/s BanarsidasBhanot; 2005. p. 146-160.
2. World Health Organization. WHO global tuberculosis control. Geneva. 2001.
3. Toufig Rashid. TB is enemy number 1 for India's health. Indian Express 2004 June17; Sect. A: 8 (col.2).
4. Basavanthappa BT. Community health nursing. 1st ed. New Delhi: Jaypee Brothers; 1998. p. 422-423.
5. Jayce M Black, Jane Hokanson Hawks. Medical surgical nursing. 7th ed. Volume II, Saunders; 2005. p.1844.
6. New Jersey State. Official web site. Communicable disease service tuberculosis control program, history of tuberculosis. Available from: URL: <http://www.state.nj.us/health/cd/tbhistory.htm>
7. Mahadev B, Kumar P. History of tuberculosis control in India. J Indian Med Assoc. 2003 Mar; 101(3): 142-43.
8. Klein SJ, NaizbyBE. New linkages for tuberculosis prevention and control in New York City: innovative use of non-traditional providers to enhance completion of therapy. J Com Heal. 1995 Feb 1;20(1):5-13.
9. World health Organization expert committee on Tuberculosis, 9th report WHO technical report series No. 552, 1974.
10. Park K. Park's text Book of preventive and social medicine, 17th Ed., Jabalpur; Banarasides, Bhanof, 2002. p. 138-142.
11. WHO. Global TB Control Surveillance Planning Financing, WHO Report; 2002.
12. WHO. World Health Report 2001, Report of the Director General WHO; 2001.
13. Anand Kumar. Report of District Tuberculosis Centre, 2004-2005, Mysore. p. 5.
14. Treece EW, Treece Jr JW. Elements of research in nursing. Nursing2019. 1977 Jun 1;7(6):12-3.
15. Muniyandi M, Ramachandran R. Socioeconomic inequalities of tuberculosis in India. ExpopinPharmacot. 2008 Jul 1;9(10):1623-8.
16. Amen MM, Clarke VP. The influence of mothers' health belief on use of preventive child health care services and mothers' perception of children's health status. Issues ComprPediatriNurs. 2001 Jul-Sep; 24 (3): 153-63.
17. Adetunji JA. Mothers' health beliefs and practices to five major killer diseases during childhood. SocSci Med. 1991; 32 (12): 1379-87.