J Nur Today

RESEARCH ARTICLE

www.jolnt.com

e-ISSN 2456-1630

Staff Nurses Knowledge Regarding Tuberculosis Treatment as per RNTCP Guidelines Working in Community Health Center- Literature Review

Twara S Christian[1]* and Anil Sharma[2]

[1]Manikaka Topawala Institute of Nursing –CHARUSAT, Changa, Gujarat, India

[2]Principal & HOD of Medical Surgical Nursing. Manikaka Topawala Institute of Nursing – CHARUSAT, Changa, Gujarat, India

Greentree Group

Received: 28.06.2016

Edited : 02.07.2016

Accepted: 10.07.2016

Published: 15.07.2016

Abstract

The current study aims to assess staff nurses knowledge regarding tuberculosis treatment as per RNTCP guidelines working in community health center employing literature review as the methodology. Multiple databases were searched focusing of assessing knowledge of TB treatment as per RNTCP guidelines among staff nurses working at selected CHC'S. It was concluded that to find out and to search level of knowledge of staff nurses at CHC'S. Whether they are taken any training or with or without experience in community sector they having basic knowledge to provide quality of care to TB treatment or not.

Keywords

Knowledge, Tuberculosis, RNTCP, CHC'S, Staff nurses

INTRODUCTION

Tuberculosis is an infectious disease caused by Mycobacterium, Tuberculi. The disease primarily affects the lungs and cause pulmonary tuberculosis. It can also affect structure such as Intestine, meninges, bones and joints, lymph gland, skin and others tissue and body parts[1].

The Revised National TB Control Program (RNTCP) now aims to widen the scope for providing standardized, good quality treatment and diagnostic services to all TB patients in a patient-friendly environment, in which ever health care facility they seek treatment from. Recognizing the need to reach to every TB patient in the country, the program has made special provisions to reach marginalized sections of the society, including creating demand for services through specific advocacy, communication and social mobilization activities[2].

Nurse's roles in the WHO DOTS (directly observed therapy short course) strategy cover the entire spectrum of activities, including advocating for political commitment, case detection, administering and monitoring drug regimens, ensuring a regular supply of medicines, and standardizing recording and reporting systems[3].

The staff nurses of PHC & CHC'S may be first to suspect Tuberculosis in patients, as they are the health personnel's from the grass root level. The doctors will prescribe the treatment regimen, but the staff nurses will be responsible for teaching the patient about the disease and its treatment including follow up strategies[4].

The literature reviewed was obtained through different database which includes CINAHAL (cumulative index to nursing & allied health literature), MEDLINE (medical literature analysis & retrieval system online), PubMed, science direct, springer link, proquest & Google

scholar[7,8]. Material, Methods and Findings: the study is to assess their level of knowledge of staff nurses about TB treatment as per RNTCP guidelines.

A study to assess learning needs, knowledge and attitude of nurses regarding tuberculosis care under RNTCP in two tertiary care tuberculosis institutions. This study was done by kansal anita rani, mahal rajinder, behera and sarin rohit at national institute of TB & RD and national institute of tuberculosis and respiratory diseases, Aurobindo Marg, New Delhi, India. This study was conducted for 400 staff nurses working in tertiary care TB institutions. The result showed that 20% of nurses expressed that they knew about category 4 treatments, its regimens and records and reports related to RNTCP. Remaining 80% have expressed the desire to learn these areas. About 30 % nurses expressed they have knowledge regarding ACMS, regimens of treatment, diagnosis of tuberculosis as per RNTCP guidelines. 50% nurses expressed that they have learnt about history, etiology and pathophysiology, side effects of ATT, categories of treatment and role of nurse for TB treatment. Mean knowledge score was 31.54 out of 50(63.08%). Knowledge was the lowest in the programmatic aspect of RNTCP domain (49.40)% followed by prevention of TB (58%) drug resistance of TB(63%) and basic of drug sensitive (73%). Demographic variables such as age, gender, qualification, designation did not affect the total knowledge score but source of learning, training and experience has affected the knowledge score was 69.77. Demographic variables did not affect the attitude score except qualification[5].

A study to assess knowledge, attitudes & practices regarding tuberculosis care among Healthcare providers, this study was done by Sumanee Lertkanokkun , Kamolnetr Okanurak, Jaranit Kaewkungwal, Nuntaporn Meksawasdichai at Office of Disease Prevention & Control Region, Faculty of Tropical Medicine, Mahidol University Bangkok, Thailand. This study was cross-sectional in design. A self-administered questionnaire was used to collect providers' socio-demographic information, their knowledge and attitudes towards TB, and their practices concerning TB care. The study covered TB providers in 30 government hospitals in 3 provinces of Thailand. The study recruited 212 healthcare providers. It was found that 56.13% had a good level of TB knowledge; the remainder had a fair level. More than half of the providers had a positive attitude towards TB and TB care. However, most had a negative attitude towards TB patients. Many providers were not

delivering care in accordance with the National Tuberculosis Program (NTP) guidelines. Providers' knowledge levels were significantly linked to attendance at TB training, as well as their profession. Providers' age was also significantly related to their attitudes. Duration of work, TB training attendance, and age were all found to be related to providers' practices in the delivery of TB care[6].

A Descriptive study of the implementation and impact of the directly observed treatment, short-course strategy in the São José do Rio Preto municipal tuberculosis control program during1998-2003.this study was done by Gazetta CE, Vendramini SH, Ruffino-Netto A, Oliveira MR, Villa TC. To describe treatment outcomes (cure, noncompliance or death) after the implementation of the Directly Observed Treatment, Short-course (DOTS) strategy for tuberculosis control in the city of São José do Rio Preto, Brazil, between 1998 and 2003. This descriptive study, based on secondary data (National Case Registry database, Tuberculosis Epidemiology database, and the 'Black Book' Registry), was conducted using a specific instrument. The data were analyzed using descriptive statistics. The study result shown that After the implementation of the DOTS strategy, there was a decrease in noncompliance and case detection rates as well as an increase in cure and death rates. The increase in the number of tuberculosis-related deaths might be attributable to three factors: the predominance of the disease in individuals over 50 years of age, tuberculosis/HIV co-infection, and the presence of accompanying diseases. So at last final conclusion was the implementation of the DOTS strategy strengthened the decentralization of the tuberculosis control plans as well as the integration of the Basic Health Care Clinic teams with the Tuberculosis Control Program team. Political commitment of the administrator to tuberculosis control, in conjunction with the policy of benefits and incentives, is essential for the sustainability of the DOTS strategy[7].

A study to assess knowledge regarding management of tuberculosis among general practitioners in northern areas of Pakistan. This study was done at The Aga Khan University Hospital, Karachi by Shehzadi R, Irfan M, Zohra T, Khan JA, Hussain SF. A cross-sectional survey of general practitioners (groups) from North West Frontier Province (NWFP) and northern areas of Pakistan was done. The sampling strategy was convenience sampling. The data was collected on a structured questionnaire after taking verbal consent. The study result shown that Out of

88 groups 43% regarded sputum microscopy and 22% chest radiograph as confirmatory tests for the diagnosis of pulmonary TB. During follow up of pulmonary TB patients, 32% doctors considered chest radiograph as the best investigation while sputum microscopy was chosen by only 28%. Eighty seven percent of groups correctly identified TB as a droplet infection but 6% considered sexual contact to be the main mode of spread of this disease. Two third of the prescriptions, written for a 60 kg man with newly diagnosed smear-positive pulmonary TB, were not in line with national guidelines. Only 3% of the groups knew all the five components of DOTS.at last the final conclusion was Severe deficiencies were seen in the management of TB by groups of Northern areas of Pakistan. National TB control Program must take appropriate measures to educate and train the groups in TB management. Without involving the groups, TB control will remain a problem in Pakistan[8].

A study to investigate the knowledge, attitudes and practices of private sector TB care providers in high burden countries. The past decade has seen a significant increase in private sector provision of tuberculosis (TB) care. While patients often seek and select treatment from private providers at significant out-of-pocket expense, treatment outcomes remain largely unknown. Medline, Pubmed, Embase, International Pharmaceutical Abstracts and Cumulative Index to Nursing and Allied Health Literature (CINAHL) databases were searched using Medical Subject Headings terms, Emtree terms and key words. Studies were included if they reported the knowledge, attitudes or practice behaviors of private health care providers working in one of 22 high-TB-burden countries. Each included study was critically assessed using a structured data extraction tool. Data extracted included the study setting, objective, design, sample, response rate, outcomes and limitations. The result shows 34 studies that met review inclusion criteria compassed diverse study methods and designs. All categories of TB care providers lacked comprehensive knowledge of national treatment guidelines. Procedures for referral, treatment monitoring, record keeping and case holding were not systematically implemented. However, there was a high degree of willingness to collaborate with national TB programs[9].

A study was conducted to investigate knowledge about tuberculosis (TB) and to identify target groups for information, education and communication activities. Cross-sectional survey based on a

structured questionnaire using a convenience sampling among subjects aged > or =18 years. Data were stratified by sex, age group, educational background, personal monthly income and contact with TB patients. TB knowledge scores were determined from the number of correct answers to 12 selected questions. The questionnaires were completed by 386 subjects. No statistically significant differences were observed between females and males with respect to age, educational background or contact with TB patients, except for personal income, which was higher in males (P < 0.001). The mean TB knowledge score was 9.4 +/- 1.98 (range 1-12, median 10). A low score was associated with the youngest age group, 18-29 years (P = 0.018), and with <12 years of education (P = 0.002)[10].

A cross-sectional study to assess knowledge and practices about Revised National Tuberculosis Control Program among Clinicians of a Medical College in India. This study was done by Shrivastava, rambiharilal S; Shrivastava, Saurabh P; Ramasamy, J. This study was done for two months duration February - March 2013 was conducted among all the clinical teaching faculty of various departments of a private Medical College in Kancheepuram district.A pre-tested, semi-structured questionnaire was designed after thoroughly studying the Revised national TB Control Program (RNTCP) training modules. Out of the 51 study participants only 4 were trained in RNTCP. Almost 28 participants wrongly responded that three sputum examinations are recommended for diagnosis of pulmonary tuberculosis. Approximately, half 25 of the clinicians could not correctly ascertain the duration of treatment of TB. As the private sector plays a significant role in diagnosis of a major proportion of TB cases, the RNTCP cannot afford to disregard this sector. The study findings demonstrate wide gaps in knowledge about RNTCP guidelines among clinical faculties. Out of the total 66 clinical teaching faculties present at the time of study only 51 participated in the study. The present study has depicted that 29(56.9%) of the respondents rightly cited that most important criteria to suspect Pulmonary TB is cough of more than two weeks duration. However, in a cross-sectional descriptive qualitative study conducted among private medical practitioners on TB in Kenya it was observed that only 7.8% of the respondents clearly stated that cough for more than two or more weeks should be used as a criteria to suspect pulmonary TB[17]. Results of another cross-sectional descriptive study divulged that less than 1% of the physicians were aware about the duration

of cough for suspecting pulmonary TB while none of the practitioners were following National TB Control guidelines for prescribing drugs[11].

A study to assess the source of previous treatment for re-treatment TB patients registered under India's Revised National TB control Programme (RNTCP). This study was done in 2010 by Sachdeva, Kuldeep Singh; Satyanarayana, Srinath; Dewan, Puneet Kumar; Nair, Sreenivas Achuthan; Reddy, Raveendra; a sample of 36 randomly-selected districts. All consecutively registered retreatment TB patients during a defined 15-day period in these 36 districts were contacted and the information on the source of previous treatment sought. The result shown that Data was collected from all 1712 retreatment TB patients registered in the identified districts during the study period. The data includes information on 595 'relapse' cases, 105 'failure' cases, 437 treatment after default (TAD)' cases and 575 're- treatment others' cases. The source of most recent previous anti-tuberculosis therapy for 754 [44% (95% CI, 38.2%-49.9%)] of the re treatment TB patients was from providers outside the TB control programme. A higher proportion of patients registered as TAD (64%) and 'retreatment others' (59%) were likely to be treated outside the National Programme, when compared to the proportion among 'relapse' (22%) or 'failure' (6%). Extrapolated to national registration, of the 292,972 re- treatment registrations in 2010, 128,907 patients would have been most recently treated outside the national programme[12].

A study to assess Tuberculosis Education for Nurse Practitioner Students. This study was done by Benkert, Ramona This study tested the reliability and validity of an instrument examining self-efficacy in providing TB care, beliefs about educational preparation, and knowledge about TB among nurse practitioner students from diverse programs. A one-time self-report instrument was distributed during a final clinical course. Rasch analysis was used to assess the instrument's reliability and validity. Most of the 92 respondents were from family nurse practitioner programs and had received TB education via lecture. Students were moderately knowledgeable on TB content and had a moderate level of perceived self-efficacy. They valued TB education as it related to both their current program and their clinical practice. The instrument had excellent reliability ($\alpha = 0.96$ to 0.98), and it appears to be an effective measure to help faculty understand student knowledge and confidence in the care of individuals with TB. The mean number of items

answered correctly on the 18-item TB knowledge test was 9.0, and the average percent correct was 56%. The mean TB self-efficacy score was 2.9, and the mean TB education beliefs score was 2.3. These results indicate the NP students were only moderately knowledgeable of core TB content and had a moderate level of perceived self-efficacy for care of patients with TB. They held a moderately high value for TB education as it related to both their current program and their later clinical practice[13].

Impact of Health Education on the Knowledge of Tuberculosis among Sputum-Positive Pulmonary TB Patients and their Care-givers. This study was done by G Shyamala Gopu, Vijaya Baskar Rao, Jayalakshmi Vadivet. Using a structured questionnaire with multiple choices regarding signs & symptoms, causes, transmission of tuberculosis, availability of treatment etc. On 56 patients and 62 care-givers.The study concludes that direct and indirect methods of health education significantly enhance. The awareness about the nature, spread and prevention of tuberculosis. To find out the initial level of knowledge on TB, a pre-tested structured questionnaire with multiple choice (Yes or No) was administered on patients and their care givers who attend TRC at two points of time, one at the time when they registered (pre) and at the time of admission to study or at time of refer back which is less than 15 days. It contained questions on signs and symptoms of TB, causes of infection, mode of transmission, knowledge on DOTS, and importance of regular treatment and preventive measures, and knowledge of availability of investigations and treatment facilities free of cost in the Government Health Institution. Fifty-six patients and 62 care-givers were interviewed to find out their initial level knowledge of TB and health education given. Among them 53 patients and 56 care-givers could be contacted for interview after health education with same interview schedule; 3 patients and 6 care-givers could not be contacted for reasons like patients default to attend clinic and particular care-givers did not accompany the patients. Distribution of respondents as per sex, age and education. The analysis of data showed that direct and indirect methods of health education created awareness and knowledge on TB in the community in addition to their basic understanding of TB.at last final conclusion was The educational Programme targeting the patients and their care-givers must first endeavor to dispel the stigma attached with tuberculosis. The educational Programme encompassing clarity about the genesis and transmission

of tuberculosis can effectively bring down the incidence of the disease significantly[14]. Comparative analysis of RNTCP indicators in a rural and an urban tuberculosis unit of Burdwan district in West Bengal. This study was done by Mukhopadhyay, Sujishnu; Sarkar, Aditya. He has published this study in Indian Journal of Community Medicine 36.2 (Apr 2011): 146-149. The study, conducted between February 2009 and May 2009, was a record analysis of tuberculosis registers of the tuberculosis units (tus) at Bhatar and Burdwan Sadar in Burdwan district, West Bengal. Being Rural Health Unit of the Department of Community Medicine, Burdwan Medical College, the former is located in a rural area with a substantial tribal population and the latter in the district headquarter. Data were collected from the said registers pertaining to four quarters of 2007. RNTCP indicators were comparatively analyzed between the tus primarily. More in-depth analysis of the outcomes was done to find out possible contributory factors. Data were analyzed in a standard statistical norm using the software package of the Epi Info version 6, the result shown significantly more urban adolescents ($P<0.001$) were treated. In both areas, the proportion of NSN cases and smear positive retreatment cases among total smear positives were less than expected, while more NSP cases were registered. Significantly lesser retreatment cases (13.33%) were registered in the rural area. Smear negative and EP cases of all the patients in Cat I were significantly less in the rural area. Outcomes like cured, treatment completed, default, and death were similar approaching the RNTCP norm. But sputum conversion (78.02%) and failure rate (4.93%) were worse than the RNTCP norm in the urban area and varied significantly between two areas. The outcomes like cured, treatment completed, and default differed significantly with age in the areas. The outcome of TAD cases was different, but the outcomes of NSN, EP, and other retreatment cases were similar in two areas. Age at treatment onset was found to be the only factor associated with default. Conclusion: Managerial indicators may reveal something different despite common indicators showing acceptable results[15].

Effectiveness of different models of DOTS providers under RNTCP in Ahmedabad City, Gujarat. This study was done by Bhagyalaxmi, A; Jain, Shikha; Kadri, A. The objective was to assess the effectiveness of the different types of DOTS providers functioning under Revised National Tuberculosis Control Programme (RNTCP). Materials and Methods: A total of 200 patients, treated

under RNTCP during September to December 2004, were selected for the study. Results: A total of 105 and 95 patients were under the supervision of tuberculosis health visitors (tbhvs) and non-tbhvs, respectively. During the intensive phase, around 95% of the patients took the medicine under the direct observation in both the groups. Supervision of the first dose of treatment in a week during the continuation phase was significantly better with the TBHV (94.74%) as compared to the non-TBHV (79.31%). However, there was no significant difference in the cure and the completed rate which was 76.19% with the TBHV and 86.13% with the non-TBHV. Conclusion: The available community workforce could be involved in supervising the intermittent short course chemotherapy[16].

Risk Factors for Treatment Default among Re-Treatment Tuberculosis Patients in India, in 2006. This study was done by Jha, Ugra Mohan; Satyanarayana, Srinath; Dewan, Puneet K. Under India's Revised National Tuberculosis Control Programme (RNTCP), >15% of previously-treated patients in the reported 2006 patient cohort defaulted from anti-tuberculosis treatment.Objective of the study was To assess the timing, characteristics, and risk factors for default amongst re-treatment TB patients. For this case-control study, in 90 randomly-selected programme units treatment records were abstracted from all 2006 defaulters from the RNTCP re-treatment regimen (cases), with one consecutively-selected non-defaulter per case. Patients who interrupted anti-tuberculosis treatment for >2 months were classified as defaulters. The result shown that 1,141 defaulters and 1,189 non-defaulters were included. The median duration of treatment prior to default was 81 days (25%-75% interquartile range 44-117 days) and documented retrieval efforts after treatment interruption were inadequate. Defaulters were more likely to have been male (adjusted odds ratio [aor] 1.4, 95% confidence interval [CI] 1.2-1.7), have previously defaulted anti-tuberculosis treatment (aor 1.3 95%CI 1.1-1.6], have previous treatment from non-RNTCP providers (AOR 1.3, 95%CI 1.0-1.6], or have public health facility-based treatment observation (aor 1.3, 95%CI 1.1-1.6). At last the final conclusion was Amongst the large number of re-treatment patients in India, default occurs early and often. Improved pre-treatment counseling and community-based treatment provision may reduce default rates. Efforts to retrieve treatment interrupters prior to default require strengthening[17].

CONCLUSION

It concluded with assessing level of knowledge among staff nurses working at selected CHC'S to find out quality of care provided as per RNTCP guidelines or not. And moreover, the knowledge of staff nurses plays an important role in enhancing safety of the patients.

Acknowledgement:

I (Twara S Christian, investigator) would like to acknowledge nursing division of Selected CHC'S at Anand district & CHARUSAT University, changa, Gujarat. India.

Conflict of interest: None

Source of funding: No separate funding was received for this study.

Ethical clearance: the ethical clearance obtained from institutional review board at Manikaka Topawala Institute Of Nursing, A Constituent of Charotar University Of Science & Technology, Changa, Ta; Petlad, Dist: Anand, Gujarat-388421, India.

REFERENCES

1. Park K. A text book of tuberculosis of Preventive and Social Medicine. 18th Ed. Jabalpur, Banarsidas, Bhanot publishers; 2005
2. TBC india; directorate general of health services ministry of health and family welfare
3. Pragati V Chavan1, Debjyoti Datta2, Rajashri S Patil3, Arun Daniel J4, Open Access Journal.
4. Basavantappa BT. A text book of Community Health Nursing. New Delhi: Jaypee brothers, medical publishers; 2003
5. Kansal, Anita Rani; Behera, Rajinder Mahal D et al, A study to assess learning need, knowledge and attitude of nurses regarding tuberculosis care under RNTCP, Asian Journal of Nursing Education and Research 4.1 (Jan-Mar 2014): 30-34.
6. Sumanee Lertkanokkun1, A study to assess knowledge, attitudes & practices regarding tuberculosis care among Healthcare providers, 2, Kamolnetr Okanurak2, Jaranit Kaewkungwal2 et al Healthcare providers' knowledge, attitudes & practices regarding tuberculosis care, JITMM2012 PROCEEDINGS, vol 2, 2013.
7. International Journal of Nursing Practice, A Descriptive study of the implementation and impact of the directly observed treatment, short-course strategy Volume 19, Issue 1, pages 47–53, February 2013
8. R Shehzadi, M Irfan, T Zohra, JA Khan JPMA, the journal of Pakistan medical association,2005, (55(4)174-176)
9. Duncan G, Saini B.int j A study to investigate the knowledge, attitudes and practices of private sector TB care providers in high burden countries, 2011 Aug;15(8):1005-17. doi: 10.5588/ijtld.10.0294.
10. Jurcev Savicevic A, Popovic-Grle S, Milovac S et al A study was conducted to investigate knowledge about tuberculosis (TB) and to identify target groups for information, education and communication activities. Public Health Institute of Split and Dalmatia County, Split, Croatia, Int J Tuberc Lung Dis. 2008 Jul;12(7):780-5.
11. Shrivastava, RamBihariLal S; Shrivastava, Saurabh P; et al. A cross-sectional study to assess knowledge and practices about Revised National Tuberculosis Control Program among clinicians of a medical college, Progress in Health Sciences 3.1 (2013): 94-103.
12. Sachdeva, Kuldeep Singh; Satyanarayana, Srinath; Dewan, Puneet Kumar; et al A study to assess the source of previous treatment for re-treatment TB

patients registered under India's Revised National TB control Programme (RNTCP). PLoS One 6.7 (Jul 2011).

13. Benkert, Ramona, A study to assess Tuberculosis Education for Nurse Practitioner Students PhD, ANP-BC; Resnick, Barbara, PhD, CRNP, FAAN; Brackley, Margaret, PhD, APRN; Simpson, Terri, PhD, RN; Fair, Betty, PhD, RN; et al. Journal of Nursing Education 48.5 (May 2009): 255-65.

14. G Shyamala Gopu, Vijaya Baskar Rao, Jayalakshmi Vadivet; Impact of Health Education on the Knowledge of Tuberculosis among Sputum-Positive Pulmonary TB Patients and their Care-givers. the nursing journal of india, NJI-aug-2012

15. Mukhopadhyay, Sujishnu; Sarkar, Aditya. Comparative analysis of RNTCP indicators in a rural and an urban tuberculosis unit Indian Journal of Community Medicine 36.2 (Apr 2011): 146-149.

16. Bhagyalaxmi, A; Jain, Shikha; Kadri, A. Effectiveness of different models of DOTS providers under RNTCP Indian Journal of Community Medicine 35.4 (Oct 2010): 495-497.

17. Jha, Ugra Mohan; Satyanarayana, Srinath et al, Risk Factors for Treatment Default among Re-Treatment Tuberculosis Patients in India, PLoS One 5.1 (Jan 2010).