



Professional Practice of the Family Health Strategy in Tuberculosis Control*

Atuação de profissionais da Estratégia Saúde da Família no Controle da Tuberculose

Actuación de profesionales de la Estrategia Salud de la Familia en el Control de la Tuberculosis

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ABSTRACT

Objective: To evaluate the actions developed by professionals of the Family Health Strategy teams in tuberculosis control in the municipality of Teresina-PI. **Methods:** Evaluative research, of a quantitative approach, in which 286 health professionals (64 physicians, 76 nurses, 68 auxiliary nurses and 78 community health workers) of the Family Health Strategy were interviewed. **Results:** Of the 286 research participants, 86% reported they had trained in the Tuberculosis Control Program and 69.5% reported that the training was sufficient to perform the actions proposed in the program. In the verification of the association of the actions recommended for the diagnosis and for monitoring of tuberculosis patients and their implementation by professionals, there was a statistically significant association in all variables with $p < 0.05$. **Conclusion:** The development of actions of the program was associated with the professional category of those who performed them, so it is important that each team member knows their actual responsibilities.

Keywords: Tuberculosis/prevention & control; Primary health care; Assessment of health services; Family health

RESUMO

Objetivo: Avaliar as ações desenvolvidas por profissionais das equipes da Estratégia Saúde da Família no controle da tuberculose, no Município de Teresina-PI. **Métodos:** Pesquisa avaliativa, de abordagem quantitativa na qual foram entrevistados 286 profissionais de saúde (64 médicos, 76 enfermeiros, 68 auxiliares de enfermagem e 78 agentes comunitários de saúde) da Estratégia Saúde da Família. **Resultados:** Dos 286 participantes da pesquisa, 86% relataram ter sido capacitados no Programa de Controle da Tuberculose e 69,5% citaram que a capacitação foi suficiente para realizar as ações preconizadas no Programa. Na verificação de associação das ações preconizadas no diagnóstico e no acompanhamento do doente de tuberculose e sua realização pelos profissionais, constatou-se associação estatística significativa em todas as variáveis estudadas, com $p < 0,05$. **Conclusão:** O desenvolvimento de ações do programa está associado à categoria profissional de quem as realizam, portanto, é importante que cada componente da equipe conheça suas reais atribuições.

Descritores: Tuberculose/prevenção & controle; Atenção primária à saúde; Serviços de saúde; Avaliação; Saúde da família

RESUMEN

Objetivo: Evaluar las acciones desarrolladas por profesionales de los equipos de la Estrategia Salud de la Familia en el control de la tuberculosis, en el Municipio de Teresina-PI. **Métodos:** Investigación evaluativa, de abordaje cuantitativo en el cual fueron entrevistados 286 profesionales de salud (64 médicos, 76 enfermeros, 68 auxiliares de enfermería y 78 agentes comunitarios de salud) de la Estrategia Salud de la Familia. **Resultados:** De los 286 participantes de la investigación, 86% relataron haber sido capacitados en el Programa de Control de la Tuberculosis y el 69,5% citaron que la capacitación fue suficiente para realizar las acciones preconizadas en el Programa. En la verificación de asociación de las acciones preconizadas en el diagnóstico y en el acompañamiento del enfermo de tuberculosis y su realización por los profesionales, se constató una asociación estadística significativa en todas las variables estudiadas, con $p < 0,05$. **Conclusión:** El desarrollo de acciones del programa está asociado a la categoría profesional de quienes las realizan, por tanto, es importante que cada componente del equipo conozca sus reales atribuciones.

Descriptores: Tuberculosis/prevenición & control; Atención primaria de salud; Servicios de salud; Evaluación; Salud de la familia

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INTRODUCTION

Tuberculosis (TB) remains a major public health problem worldwide, requiring the development of strategies for its control, involving humanitarian and economic aspects, and public health. Since 2003, the Ministry of Health has been considering this disease as a priority on the health agenda by encouraging pressing coping measures, either through induction of health policies or through affirmative action, especially with the Family Health Strategy (FHS). Brazil is one of the 22 countries that are home to 80% of the global burden of tuberculosis being treated as a priority by the World Health Organization, considering that the country occupies the 19th position in the number of new cases. In 2009, the incidence rate was 37 cases per 100 thousand inhabitants, being reported 71,700 new cases of the disease ⁽¹⁾.

The new dynamism, structuring services and health actions proposed by the FHS as evidenced differential compared to traditional programs ⁽²⁾. In care for TB, the FHS aims at early diagnosis, detection of cases of respiratory symptoms (RS) and contacts, especially bacilliferous and children cases.⁽³⁾

Studies have shown the decentralization of diagnosis and treatment of TB care to Basic Health Units (BHU) and FHS as a strategy to expand access to health services to people with the disease. Thus, the decentralization of the BHU has led to significant changes in the volume of activity with increasing number of examined RS, bacilloscopy performed, new case detection, tracking contacts, approaching the targets set by the National Tuberculosis Control Program (NTCP) ^(4,5).

For this situation, it is urgent to assess the impact of primary care in finding cases, diagnosis and treatment of TB, considering that this point may represent the first contact with community services and local health systems.

In this regard, the present study aimed to assess the actions developed by professionals teams from the Family Health Strategy in tuberculosis control, in the city of Teresina-PI.

METHODS

This is an assessment research with a quantitative approach, which used a cross-sectional study design.

The city of Teresina – Piauí was elected as the study site, in accordance with the following characteristics: capital of that state, with a population of 802,416 inhabitants ⁽⁶⁾; is one of five priority municipalities in TB care in the state, besides, FHS has a population coverage of 96.5%, with a TB incidence rate of 42.7% in 2008.

The population of this study is the FHS team members constituted by physicians, nurses, nursing assistants and community health agents (CHA) who worked in the urban area of Teresina. In each team, a professional from each category was interviewed in their work schedule. We tried to make an individualized approach to avoid interference in responses.

Prior to data collection, the pre-test of the questionnaire was performed, with 29 other professional teams from other BHUs which were not chosen, representing about 10% of the sample, to evaluate the comprehensibility of the instrument questions and its cultural sensitivity.

We used the following inclusion criteria: be a FHS professional and agree to participate in the study by signing the Consent Form. Exclusion criteria were: health professionals on vacation or medical license. Professionals who were not located in BHUs during working hours after three scheduled visits, they were considered sample loss.

Thus, the sample of professionals consisted of 64 physicians, 76 nurses, 68 nursing assistants and 78 CHAs, totaling 286 professionals and a sample loss of 8.3%.

We applied a questionnaire with closed questions to FHS professionals with the following related variables: technical expertise to work with the Tuberculosis Control Program (TCP); the actions taken in the diagnosis and monitoring of TB treatment; difficulties faced by health services as proposed by the NTCP Logic Model ⁽¹⁾.

Data were entered in *Microsoft Excel* and then migrated to the *Statistical Package for Social Sciences – SPSS* (version 12.0 for Windows), where they were tabulated and analyzed.

The statistical analysis applied was descriptive, based on the percentage response categories of variables. Data were explored through univariate and bivariate techniques. Using the chi-square test (χ^2) with a significance level ($p < 0.05$) was used to investigate possible associations between variables. However, since this test does not measure the effect size of the association, for such purpose, we used V-Cramer ⁽⁷⁾, which is a measure of the degree of association between two categorical variables, and thus it is considered as a small effect when $r = 0.1$, medium $r = 0.3$ and large $r = 0.5$.

In accordance to the Resolution No. 196/96 of the National Health Council, the Consent Form was signed by all respondents. The research project was approved by the Ethics Committee of the Federal University of Piauí (No. 0177.0.045.000-09).

RESULTS

Data in Table 1 show the characteristics of qualification promoted by the municipal management for

professionals' performance in TCP. The mean time of professional performance in the FHS was 6.9 years with a standard deviation of 3.1 years.

As for specific qualification to work at the TCP, 86% of interviewed professionals reported having been

trained and 69.5% that the received qualification was enough to conduct actions to control TB. Regarding the score attributed to the program, the mean was 7.6, with a standard deviation of 1.2 (minimum of 3 and maximum of 10).

Table 1 – Distribution of professionals, as the characteristics of qualification to operate at the TCP and the score given to the TCP. Teresina (PI), 2010

Variable	Mean \bar{X}	Standard deviation (SD)	Confidence interval IC 95%	Minimum – Maximum	n	(%)
Professional Category						
Physician					64	22.4
Nurse					76	26.6
Nurse Assistant					68	23.8
Community Health Agent (CHA)					78	27.3
Total					286	100.0
Working time at the FHS (years)	6.9	(3.1)	6.5-7.2	1-16		
1 to 5					99	34.6
6 to 10					160	55.9
Over 10					27	9.4
Total					286	100.0
Specific qualification for the TCP						
Yes					246	86.0
No					40	14.0
Total					286	100.0
Enough qualification						
Yes					171	69.5
No					75	30.5
Total					246	100.0
Attributed mark to the TCP	7.6	(1.2)	7.5-7.8	3-10		

In data in Table 2, when seeking for associations of the actions recommended in the diagnosis of TB and the professional category responsible for the action, it was found

that there were statistically significant for all variables ($p < 0.05$), and the V-Cramer test presented medium effect on active search associations and identification of respiratory symptoms (RS).

Table 2 – Association between actions taken in the diagnosis of TB and professional categories of FHS Teresina (PI), 2010

Developed Actions	Professional Categories										p ¹ Value	r ² Value
	Physician		Nurse		Nurse Assistant		CHA		Total n (%)			
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)		
Active search												
Never	07	10.9	06	7.9	30	44.1	03	3.8	46	16.1	0.000	0.4
Sometimes	41	64.1	40	52.6	24	35.3	24	30.8	129	45.1		
Always	16	25.0	30	39.5	14	20.6	51	65.4	111	38.8		
Total	64	100	76	100	68	100	78	100	286	100		
RS* identification												
Never	01	1.6	-	-	26	38.2	08	10.3	35	12.2	0.000	0.4
Sometimes	09	14.1	28	36.8	32	47.1	32	41.0	101	35.3		
Always	54	84.4	48	63.2	10	14.7	38	48.7	150	52.4		
Total	64	100	76	100	68	100	78	100	286	100		
Cases notification												
Never	10	15.6	-	-	48	70.6	37	47.4	95	33.2	0.000	0.5
Sometimes	10	15.6	-	-	10	14.7	07	9.0	27	9.4		
Always	44	68.8	76	100	10	14.7	34	43.6	164	57.3		
Total	64	100	76	100	68	100	78	100	286	100		

* RS – Respiratory Symptoms; p¹ value – Qui-squared test; r² value – V-Cramer

Regarding the active search for cases, 45.1% of professionals reported that they would do it “sometimes”, highlighting that the most representative category among those who “always” performed an active search (65.4%) were the CHAs.

With regard to identification of RS by professionals participating in the study, only 52.4% reported that they “always” identified a suspect. Regarding the notification of TB cases, it was found that 100% of the nurses were

“always” responsible for this action and that a considerable portion of other professionals “never” performed (33.2%) this action. There was a large effect (0.5 – V-Cramer test) in association with the notification of the profession category.

In relation to the convening of the contacts of TB patients for evaluation, data in Table 3 show that the majority of professionals reported that they would “always” (77.3%) contact them, being nurses and CHAs professionals who did it the most, (96.1% and 91%, respectively).

Table 3 – Association between actions developed during the follow-up treatment of TB and professional categories of the FHS Teresina (PI), 2010

Developed Actions	Professional Categories										p ¹ Value	r ² Value
	Physician		Nurse		Nurse Assistant		CHA		Total n (%)			
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)		
Convene contacts												
Never	-	-	-	-	26	38.2	02	2.6	28	9.8	0.000	0.4
Sometimes	11	17.2	03	3.9	18	26.5	05	6.4	37	12.9		
Always	53	82.8	73	96.1	24	35.3	71	91.0	221	77.3		
Total	64	100	76	100	68	100	78	100	286	100		
Follow DOT												
Never	03	4.7	01	1.3	16	23.5	07	9.0	27	9.4	0.000	0.3
Sometimes	25	39.1	04	5.3	30	44.1	08	10.2	67	23.4		
Always	36	56.3	71	93.4	22	32.4	63	80.8	192	67.1		
Total	64	100	76	100	68	100	78	100	286	100		
Guidance for collecting sputum												
Never	11	17.2	01	1.3	17	25.0	23	29.5	52	18.2	0.000	0.3
Sometimes	16	25.0	02	2.6	23	33.8	16	20.5	57	19.9		
Always	37	57.8	73	96.1	28	41.2	39	50.0	177	61.9		
Total	64	100	76	100	68	100	78	100	286	100		
Active search for people who missed their appointment												
Never	05	7.8	-	-	28	41.2	01	1.3	34	11.9	0.000	0.5
Sometimes	25	39.1	05	6.6	20	29.4	05	6.4	55	19.2		
Always	34	53.1	71	93.4	20	29.4	72	92.3	197	68.9		
Total	64	100	76	100	68	100	78	100	286	100		
Educational Actions												
Never	05	7.8	03	3.9	15	22.1	06	7.7	29	10.1	0.002	0.2
Sometimes	42	65.6	46	60.5	41	60.3	42	53.8	171	59.8		
Always	17	26.6	27	35.5	12	17.6	30	38.5	86	30.1		
Total	64	100	76	100	68	100	78	100	286	100		
Home Visit												
Never	01	1.6	01	1.3	06	8.8	01	1.3	09	3.1	0.000	0.3
Sometimes	34	53.1	34	44.7	40	58.8	06	7.7	114	39.9		
Always	29	45.3	41	53.9	22	32.4	71	91.0	163	57.0		
Total	64	100	76	100	68	100	78	100	286	100		

p¹ value – chi-squared test; r² value – V-Cramer
CHA – Community Health Agents.

Regarding monitoring of Directly Observed Treatment (DOT), 67.1% of respondents reported they “always” monitor the patient for this type of treatment, followed by 23.4% who answered “sometimes.” When asked about the guidance for collecting sputum, 61.9% of the respondents reported they “always” do it, especially nurses (96.1%). As for the active pursuit of defaulters, 93.4% of nurses and 92.3%

of CHAs reported that they “always” performed the referred search.

Regarding educational activities, 59.8% of study participants reported that they “sometimes” reported such activity in its area of operation in the FHS and 57% of professionals reported that they “always” performed home care. There was a statistically significant association of variables with $p = 0.002$ and $p = 0.000$, respectively.

Table 4 – Difficulties for the proper functioning of the TB Control Programme in professionals’ perception of FHS Teresina (PI), 2010.

Difficulties*	Professional Category									
	Physician		Nurse		Nurse Assistant		CHA		Total	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Occasional lack of medication	11	17.5	15	20.8	15	22.1	11	15.5	52	75.9
BHU non-computerization	20	31.7	30	41.7	21	30.9	21	29.6	92	133.9
BHU physical deficiency	24	38.1	32	44.4	30	44.1	27	38.0	113	164.6
Occasional lack of inputs	27	42.9	45	62.5	36	52.9	22	31.0	130	189.3
Lack of flowchart of reference and counter-reference	26	41.3	33	45.8	07	10.3	10	14.1	76	111.5
Lack of qualification with practical guidance	05	7.9	16	22.2	33	48.5	26	36.6	80	115.2
Bureaucracy in delivering medication	06	9.5	16	22.2	13	19.1	04	5.6	39	56.4
Lack of organization in aid for the carrier	20	31.7	31	43.1	26	38.2	26	36.6	103	149.6
Other	02	3.2	04	5.6	-	-	07	9.9	13	18.7
Total of respondents	63	100.0	72	100.0	68	100.0	71	100.0	698	1015.1

Notes: ** Study participants could opine for more than one answer; CHA – Community health agents.

In the case of the variable “difficulties faced for the proper functioning of TCP”, shown in Table 4, the professionals could choose multiple answers, and the main notes are: possible lack of inputs, deficiency in the physical structure of BHUs, lack of organization in the system of aid for the carrier of low-income, non-computerization of BHUs and lack of training led to practical situations.

DISCUSSION

The easy access of the patient to treatment is an important factor in the control of TB in communities. To this end, decentralization of treatment needs to be carefully planned and executed, ensuring professional qualification, adequate supervision and quality of care ⁽¹⁾.

In a study conducted in Ribeirao Preto-SP, it was observed that the bond sick-health-professional has more favorable results in programs that serve fewer patients, which demonstrates that this aspect facilitates

communication and the relationship between patient and professional ⁽⁸⁾.

Ordinance No. 2.488/GM of 10.21.2011 established the minimum team number and the responsibilities of health professionals for the organization of primary care in FHS ⁽⁹⁾, and the norms of the Technical Manual for Health Surveillance ⁽¹⁰⁾ indicate the Specific assignments for each professional category in TB care.

The person who is in charge for the TCP needs to check places where the treatment is conducted, as well as health unities that perform the supervision of DOT ⁽¹⁾. In these locations, it is necessary to expand the technical capacity of professionals and the consequent empowerment, with respect to their duties and responsibilities in the face of tuberculosis cases.

Moreover, in Brazil there isn't a culture of assessment of public services offered, especially those directed to programs in health area ⁽¹⁰⁾. These are centrally conceived and operationalized, without the participation of teams from FHS, which will be the executors of these programs and, often, their results are not assessed. Thus,

the distance remains between principles which regulate them and those who manage them, and these with its daily functioning in society.

The decentralization of the NTCP actions for primary care involves the recognition of this point of attention as the lead in organizing the health care system, which must take organizational mechanisms or devices besides having a better capacity so you can be assured of longitudinal care ⁽¹¹⁾.

Therefore, it is expected that FHS teams develop PNC's actions, which include the performance of active search for respiratory symptoms in the community, the detection of tuberculosis smear positive cases by smear microscopy of sputum, the annulment of these sources of infection by standardized treatment and enforcement actions surveillance of outbreaks ^(5,12).

Regarding the active search for cases, 45.1% of professionals reported that they "sometimes" performed, statistical significance ($p = 0.000$). However, the active search is considered a public health activity and, as a recommended strategy internationally, must be held permanently by all professionals of health services at the primary, secondary and tertiary levels ^(1,13). Thus, the active search is a multidisciplinary activity with the goal of early diagnosis of TB cases ⁽¹⁴⁾, is therefore an important strategy to break the TB chain of transmission, it is fundamental to early detection of patients cases with active tuberculosis and reducing the incidence of long-term disease ⁽¹⁾.

With the decentralization of the NTCP for FHS actions, the active search and identification of RS should be extended to the community and included in the home visit ⁽¹⁾ and with the active participation of all professionals involved in these actions. However, one can say from this study that the implementation of the actions recommended for the diagnosis by TCP, is inherent to exercise one or other professional category.

The TB surveillance aims awareness of cases of the disease occurring in the population, allowing the adoption of measures aimed at interrupting transmission to susceptible individuals. Good quality information is essential to assess the program, because it allows us to know the magnitude of the transmission of the disease in the country ⁽¹⁵⁾.

Thus, the BHU that discovers and starts the treatment of new cases becomes responsible for the compulsory notification of same. And any professional from team can notify the case, being the notification mandatory a common assignment to all members of FHS staff ^(9,16).

The control contacts should be performed primarily by primary care. The nurse can use some strategies to reach and identify contacts: one is during the daily attendance for the DOT during the consultation, in-

vestigating the patient accompanying. Another strategy is the home visit, through the CHA, aiming to seek contacts and educate them about the importance of the exams ⁽¹⁷⁾.

From the DOT, you can establish relationships, acceptance, connection and responsibility to the patient with treatment and with the healthcare team. Furthermore, the organization makes the assistance process more flexible, including home visits which favors the establishment of a connection, also believes that the subject is the protagonist of its care process and is an essential point in the process of adherence to treatment ⁽¹⁸⁻¹⁹⁾.

The health unit should have a qualified professional to provide clear information to the patient regarding the collection of sputum because the quantity and quality of the sample interfere with the result of direct bacilloscopy, fundamental method for the diagnosis and treatment control in adults ⁽¹⁾.

Regarding the search for missing cases, this action must occur through home visits in order to avoid drop-outs of treatment and should be performed as soon as possible after the verification of non-attendance in the DOT in BHU ⁽¹⁾. There is, therefore, with this study, that nurses and CHA were most incorporated this activity into the daily work.

The results also show that 59.8% ($p < 0.002$) of the subjects reported performing "sometimes" educational activities in its area of operation in FHS, which corroborates the results of the study conducted in Ribeirao Preto-SP ⁽²⁰⁾, in which it was observed that health education is not a regular activity performed by health professionals.

Health education is a set of knowledge and practices aimed at disease prevention and health promotion. It is a resource for the scientific knowledge produced in the field of health, intermediated by health professionals, reaches people's everyday lives, since understanding the determinants of disease process will provide subsidies for the adoption of new habits and health behaviors ⁽²¹⁾.

Among respondents, 57% reported that they "always" performed home care. However, the study in the city of Bayeux-PB, this practice is not adopted regularly by the FHS professionals teams researched ⁽²²⁾. A home visit is a working tool of FHS and prerequisite for monitoring cases of TB in DOT.

Regarding the organization of services and health practices, the completeness characterized by assimilation of preventive practices and care for the same service. Thus, the user of the Unified Health System does not need to address to different health units to receive curative and preventive assistance. In the case of FHS, the team is able to perform actions from active search of cases in the community enrolled area, through home

visits, even follow-up of diagnosed cases and the supply of medicines. Following the principle of completeness, the activities of health education are included among the responsibilities of FHS professionals⁽²¹⁾.

The survey of the difficulties in the work process is necessary because subsidies the management in decision making and defining intervention strategies, and thus overcome the existing weaknesses in the different local health systems.

The study brings the perspective of health professionals and is focused on their experiences, which sought to capture the performance of FHS professionals in tuberculosis control, particularly with regard to the recommendations of the NTCP. For future studies it would be interesting to systematically monitor the work of these professionals in primary care. Because this was a cross sectional study, there are possibilities of information bias, both due to memory bias as reverse causality.

CONCLUSION

It is observed that the development of actions is associated with the professional category of who perform them. Thus, it is important for each team member to be aware of their real assignments within the TCP in

order to provide a more comprehensive care and thus, with a greater chance of solving their actions.

Through the decentralization of health actions and the restructuring of health services, FHS plays an essential role in tuberculosis control, with chances of becoming the protagonist in combating the disease, since during home visit, RS can be identified, and a bond with people may be created in the community, which may facilitate treatment adherence.

The study allowed us to understand the factors that hinder the operation of TCP in the daily work of Family Health Teams, providing indications of structural and organizational weaknesses (inputs estimation, insufficient qualification of professionals, bureaucracy), which has great influence on performance of these teams.

Given the evidence on the issue of tuberculosis and the reality of TCP in the city, the need to promote qualification of health teams emerges, so that they can institute assessment in their work processes. Other than that, it is necessary to conduct further research addressing the role of professionals in an individualized way. The results showed that overcoming the deficiencies requires persuasion, planning, political commitment and unified efforts of health professionals, managers and community in order to succeed in the fight against tuberculosis.

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