Annals of Health Research
Volume 3, Issue No 2: 126 - 131
July- December 2017

ORIGINAL RESEARCH

The effect of health sector industrial actions on TB and TB/HIV case finding in Ogun State, Nigeria: Is Public-Private Mix a viable solution?

Daniel OJ[1], Adejumo OA*[2], Soyinka FO[3], Oritogun KS[1], Jaiyesimi EO[1], Ladi-Akinyemi TW[4]

[1]Department of Community Medicine and Primary Care, Olabisi Onabanjo University, Sagamu, Ogun State
[2]Department of Community Health and Primary Health Care, Lagos State University Teaching Hospital Ikeja, Lagos
[3]Ogun State Tuberculosis and Leprosy Control Programme, Abeokuta, Ogun State
[4]Department of Community Health and Primary Care, University of Lagos, Lagos.

*Correspondence: Dr. O.A. Adejumo, Department of Community Health and Primary Health care, Lagos State University Teaching Hospital, Ikeja, Lagos; Tel: +2348033502773;
Email: oluadejumo75@gmail.com,; ORCID: http://orcid.org/0000-0001-8946-3244.

Abstract

Background: Though industrial disputes are a global phenomenon, there is a rising concern of its frequent occurrence in Sub-Saharan Africa.
Objective: To assess the effect of industrial actions embarked upon by the health workers during the year 2014 on Tuberculosis (TB) notification in Ogun State, Nigeria.
Methods: A retrospective review of TB notification in 2013 and 2014 was conducted. Quarterly TB case notification, the proportions of Human Immunodeficiency Virus (HIV) test, Co-trimoxazole (CPT) uptake and Antiretroviral Therapy (ART) uptake in the years 2013 and 2014 were compared using the Epi-info software.
Results: There was a decline in the proportion of TB cases reported by the public sector health services and an increase in the proportion of TB cases reported by the private health facilities during the period of industrial disputes in the public health sector (doctors and non-doctors) (p = 0.001). Compared to the year 2013, the proportion of presumptive TB cases tested for HIV declined significantly during the period of the strike actions by the non-doctors but not during the strike actions by doctors in 2014. There was no difference in the uptake of Co-trimoxazole (p = 0.456 and 0.511) and Anti-retroviral Therapy (p = 0.192 and 0.544) by TB/HIV co-infected patients during the strike actions by the doctors and the non-doctors respectively.
Conclusion: This study demonstrated the importance of Public-PrivateMix for TB case finding efforts in the developing countries, where there are incessant strike actions by health workers in the public sector.

Key words: Case finding, Disease notification, Health sector, labour strike action, Nigeria, Public-Private-Mix, Tuberculosis

Introduction

Industrial dispute, also known as labour strike actions in the health sector is a global phenomenon and there is a rising concern of its frequent occurrence in Sub-Saharan Africa. [1] Over the years, the Nigerian health system has experienced several industrial disputes by all categories of health care workers, including doctors, nurses and allied health care workers. It was reported that at least eight different strike actions involving doctors, nurses and allied healthcare workers occurred in Nigeria between 2013 and 2015. [2] Several reasons have been adduced for

© 2017. Annals of Health Research. The Journal reserves the right to grant on request, permissions to copy, use or distribute this material.

www.annalsofhealthresearch.com

these strike actions and these included career stagnation, perceived discriminatory policies by government, poor wages and poor infrastructure/man power shortages. [3] These strike actions, which spanned a few days to weeks or months, often led to complete shutdown of public health facilities with the interruption of health services.

The impacts of strike actions are felt more in the less developed countries than in the developed countries, due to the weak health systems, poor socioeconomic circumstances and embedded infrastructural deficiencies. [4] These strike actions have had a negative impact on the quality of healthcare service delivery leading to several avoidable complications and deaths, including increasing number of people seeking health services in other countries. [4,5]

Nigeria is currently the fourth among the 22 high burden countries for TB in the world with an incidence rate of 322/100,000 population. [6] The country has, consistently over the years, notified less than a quarter of the expected estimated TB cases in spite of the efforts of the National TB and Leprosy Control Programmes and other partners to increase TB case finding. Incessant service interruption due to industrial dispute is recognized as one of the factors responsible for the low TB notification rate in the country.[7]

Several strike actions occurred in the year 2014; [8] these included the nationwide medical doctors strike action ordered by the Nigerian Medical Association (NMA) between July and August, and the Joint Health Sector Union (JOHESU) national strike involving nurses, pharmacists and other allied health staff between November and December 2014. Though the negative effects of these strike actions on the performance of TB programme are anticipated, there is no study to project these effects in Nigeria. Therefore, this study assessed the effect of industrial disputes and strike actions in the health sector on TB and TB/HIV case finding in Ogun State, Nigeria in the year 2014.

Methods

Study Location

Ogun State, created in February 1976, is located in south-west Nigeria. The state has 20 Local Government Areas (LGAs) and is bounded on the West by Benin Republic, on the South by Lagos State and the Atlantic Ocean and on the North by Oyo and Osun States. The state has an estimated population of 4.9 million people as projected from the 2006 National Population Census (NPC). The State has 426 primary health care facilities, 26 secondary health care facilities, three tertiary health care institutions and 904 registered private health facilities. The Ogun State Tuberculosis and Leprosy Control Programme became operational in 1993 and the Public-Private Mix for TB management commenced in Ogun state in 2007. There are, presently, about 120 facilities providing TB treatment services in all the LGAs in the state. A total of 134 facilities (100 public and 34 private) reported TB patients at the end of 2014.

Study design

This study was a retrospective review of TB cases notified to the Ogun State TB Programme between 2013 and 2014. In Quarter 3 (July-September) in the year 2014, there was a strike action by medical doctors in the public health sector of the state which lasted 55 days (July 1-August 25, 2014) while in Quarter 4 (October December) 2014, the Joint Health Sector Union (JOHESU) comprising nurses, pharmacist and allied health professionals had a strike action from November 11 to December 31, 2014 (50 days). This group of health care workers is referred to as the Allied Health Professionals (AHP) in this study.

The data for this study were obtained from the routine programme data submitted quarterly to the Ogun State TB and Leprosy Control Programme. The TB Program in Ogun State offers free TB treatment to patients; however, patients managed at the private Directly-Observed Treatment (DOT) facilities pay consultation fees and also pay for laboratory tests other than sputum microscopy. Human Immunodeficiency Virus (HIV) Counseling and Testing services were offered to all presumptive TB clients and HIV test was conducted in accordance with the HIV testing and counseling policy in the country.

Definition of outcome variables

A presumptive TB patient is defined, according to the national guidelines, as one having ongoing cough for two weeks or more, while a diagnosed TB patient is one who has at least 2 sputum smear examined positive for AFB (positive), or a person whose sputum smear is negative but is confirmed by a medical officer as having clinical tuberculosis based on other ancillary investigations or patients with signs and symptoms suggestive of TB outside the lung (Extra pulmonary TB). [9]

Ethical issues

The data used for this study were retrieved from the secondary aggregated de-identified data routinely collected by the Ogun State Tuberculosis and Leprosy Control Programme. Therefore, research ethics clearance was not required. However, the permission to use the data was obtained from Ogun State Ministry of Health.

Data Analysis

The data were analysed using the Epi info software version 3.5 while Microsoft Excel was used for graphics. Percentages of numerical variables were determined and the Chi Square test was used to compare proportions of independent variables. *P* values less than 0.05 were considered statistically significant.

Results

A total of 2740 TB cases was reported in the year 2013 while there was a 14.7% reduction (n = 2337) in the TB cases reported in the year 2014. Figure 1 shows the trend of TB cases reported in 2013 and 2014. The TB cases reported in 2014 decreased from 702 cases in Quarter-1 (Q1) to 428 TB cases in Quarter-4 (Q4) (39% reduction). In 2013, there was a 1.6 % reduction in the number of TB cases reported between Q1 (n = 688) and Q4 (n = 677). In Quarters 1 and 2 of 2014, there was a statistically significant increase in TB case reported in 2014 compared with the year 2013 (p = 0.0001).

Comparing the total cases reported during Q3 and Q4 of the years 2013 and 2014, there was a significant decrease in TB cases reported in the state in 2014 compared to 2013 (49.8% vs 40.4%; p = 0.0001) as shown in Table I.

Table I: Total number of TB cases reported in Ogun State, Nigeria for the year 2013 and 2014

Quarter	*Year 2013 [n (%)]*	*Year 2014 [n (%)]*	*P values*
Q1	688 (25.1)	702(30.0)	0.001
Q2	686(25.1)	692(29.6)	0.0003
Q3	689(25.1)	515(22.1)	0.01
Q4	677(24.7)	428(18.3)	0.0001
Q3+Q4	1366 (49.8)	43(40.4)	0.0001
Total	**2740**	**2337**	

Table II shows the proportion of TB cases reported by the private health facilities in the state. The proportion of TB cases reported by the private health facilities declined from 12.6% in Q1 of 2013 to 9.3% in Q4 2013. However, in 2014, the proportion of TB cases reported in 2014 increased from 10% in Q1 to 21% in Q3 and 16.8% in Q4. The proportion of TB cases reported from private health facilities in Q3 and Q4 of 2014 increased significantly compared with Q3 and Q4 of 2013 (p = 0.0001).

The proportion of presumptive TB and diagnosed TB cases tested for HIV and the uptake of Co-trimoxazole prophylaxis (CPT) and Anti-retroviral Therapy (ART) in the years 2013 and 2014 are presented in Table III. The proportion of presumptive TB patients tested for HIV increased from 21.3% in Q1 2013 to 29% in Q4 2013 while there was a decrease from 28.9% in Q1 2014 to 19.5% in Q4 2014.

In Q1 and Q2 of 2013 and 2014, there was a significant increase in the proportion of presumptive TB patients tested for HIV in 2013 compared to 2014 ($p < 0.05$). In Q3 2014, (when there was a strike action by the Doctors), there was no significant decrease in the proportion of presumptive TB patients tested for HIV compared with Q3 2013 (p = 0.453).

Figure 1: Notified Tuberculosis (TB) cases in 2013 and 2014

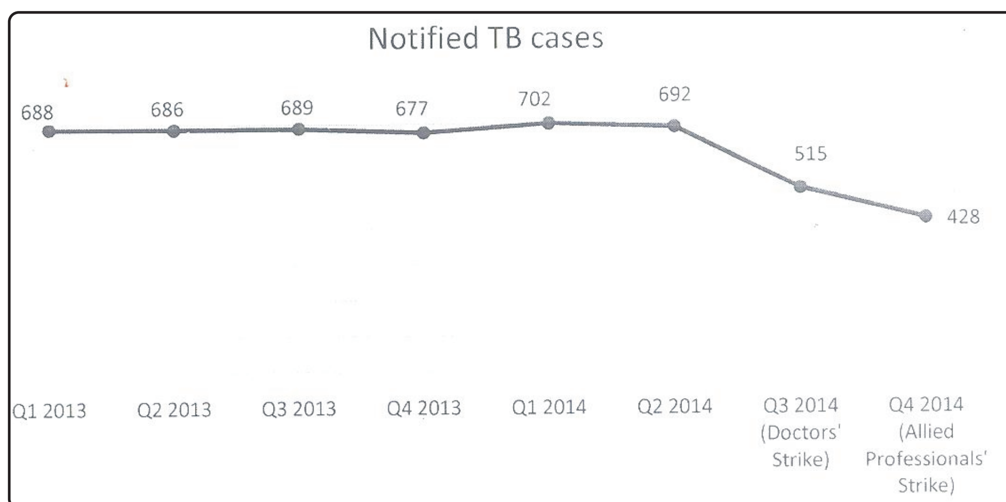

Table II: The proportion of total TB cases reported by the private health facilities in Ogun State, Nigeria, for the year 2013 and 2014

Quarter	*Total number of TB cases reported in 2013*	*Total number of TB cases reported in 2014*	*Proportion reported by private facilities in 2013 (%)*	*Proportion reported by private facilities in 2014 (%)*	*P-values*
Q1	688	702	87/688 (12.6)	70/702 (10.0)	0.136
Q2	686	692	69/686 (10.7)	83/692 (12.0)	0.288
Q3	689	515	67/689 (9.7)	108/515 (21.0)	< 0.001
Q4	677	428	63/677 (9.3)	72/428 (16.8)	< 0.001
Q3+Q4	1366	943	130/1366 (9.5)	180/943 (19.1)	< 0.001

Table III: Proportion of presumptive and diagnosed TB cases tested for HIV and the uptake of CPT and ART by TB/HIV co-infected patients in Ogun State Nigeria, 2013-2014.

Quarter	*Year 2013*	*Year 2014*	*P values*
Proportion of Presumptive TB patients tested for HIV			
Q1	1379 (21.3)	1837(28.9)	0.0001
Q2	1470 (22.7)	1600 (29.6)	0.001
Q3	1751(27.0)	1680 (25.2)	0.453
Q4	1879 (29.0)	1241(19.5)	0.0001
Total	6479	6358	
Proportion of Diagnosed TB Patients tested for HIV			
Q1	568/688 (82.6)	606/702 (86.3)	0.062
Q2	626/686 (91.3)	630/692 (91.0)	0.965
Q3	570/689 (82.7)	496/515 (96.3)	0.0001
Q4	635/677 (93.8)	403/428 (94.1)	0.907
Proportion of TB/HIV co-infected on CPT			
Q1	91/91 (100)	69/80 (86.3)	0.0002
Q2	80/88 (90.9)	68/75 (90.7)	0.957
Q3	86/89 (96.6)	61/65 (93.8)	0.456
Q4	63/67 (94.0)	49/54 (90.7)	0.511
Proportion of TB/HIV co-infected on ART			
Q1	56/91 (61.5)	50/80 (62.5)	0.897
Q2	70/88 (79.5)	45/75 (60)	0.011
Q3	78/89 (87.6)	51/65 (78.5)	0.192
Q4	55/67 (82.1)	41/54 (75.9)	0.544

In Q4 2014 (when there was a strike action by the AHP), there was a significant decrease in the proportion of presumptive TB patients tested for HIV (29.0% vs 19.5%) compared with Q4 2013 (p = 0.0001). The proportion of TB patients tested for HIV during the Doctors' strike action in Q3 2014 was higher (82.7% vs. 96.3%) than in Q3 2013 (p = 0.0001) while there was no difference in the proportion of TB patients tested for HIV in the other quarters of the years under consideration. In addition, there was no difference in the uptake of CPT (p = 0.456 and 0.511) and ART (p = 0.192 and 0.544) by TB/HIV co-infected patients during the strike actions by both the doctors and the allied professionals in 2014 compared to 2013 respectively.

Discussion

Industrial disputes have become a common occurrence in developing countries, including Nigeria. Although the reasons for the strike actions vary from place to place, wage increment and professional rivalry are the common reasons for strike actions in the public health sector. A review of the effect of strike actions by surgery specialists and anaesthesiologists in the United States of America in 1976, showed that the effect of strike actions varies from loss of revenue for hospitals, layoffs of workers, increased mortality, [10] increased readmission [11] cancelled appointments to lost operations.[12]

The present study observed that, there was a significant decrease in the number of TB cases reported in the state during the periods of strike actions by doctors and allied health professionals compared with the preceding year. However, the decline in the number of reported cases was more pronounced during the periods of strike action by the allied health professionals, possibly because of their relatively larger number compared with the doctors. It is interesting to note that, there was an increase in the proportion of TB cases reported by the private health facilities during the same period. It is expected that patronage of private health care providers should increase during strike actions by health workers in the public sector. Therefore, some presumptive TB cases may seek care at the private health facilities and other unorthodox facilities during such periods.

A study showed that patients who could not afford the services of the private health care providers either remained at home without appropriate care until the strike action was over or patronised quacks or traditional health providers. [13] The engagement of all health care providers in TB control, especially the involvement of private health facilities through public-private mix for TB, has been advocated as a viable option for the state and country TB programmes where incessant strike actions plague the public health sector.[14] Although TB services are provided free in the private health facilities engaged by the Ogun State TB and Leprosy Control Programmes, the patients pay for other laboratory tests (apart from sputum microscopy) which might be required by the attending physician. [15] The cost of care may prevent many presumptive TB patients from accessing quality care at the private health facilities. The median total cost of TB care per household was estimated at $592 (about 37% median annual household income) in a Nigerian study.[13]

The present study also observed a significant decrease in the proportion of presumptive TB patients tested for HIV during the period of strike actions by allied health professional but not during the period of doctor's strike actions. In addition, there was a significant increase in the proportion of diagnosed TB cases tested for HIV during the doctors' strike actions, but not during the period of strike action by the allied health professionals. This is presumably because HIV Counselling and Testing (HCT) is usually conducted either in the clinic by the nurses, community health workers, and social workers or in the laboratory by laboratory scientists or technicians. Therefore, the HCT activity was not adversely affected during the strike actions by the doctors. This finding supported the call by some researchers for task shifting and use of non-medical staff in the provision of HCT services for TB patients in the health facilities.[16]

Conclusion

The present study demonstrated the importance of PP-Mix for TB case finding efforts in developing countries where public health services are plagued with incessant strike actions of the medical doctors and other allied health professionals. There is a need for the expansion of the network of private facilities involved in TB control in Ogun State, Nigeria, in order to increase access to TB services by the populace, especially during periods of industrial strike actions by public health care workers.

Authors' Contributions: DOJ participated in research concept, data analysis and drafting of the manuscript. AOA participated in the drafting of the manuscript and partook in review of the final draft. SFO took part in the design and conceptualization and data collection. OKS, JEO and L-ATW took part in literature search, data collection and analysis and review of the draft. All the authors read and approved the final version of the manuscript.

Conflict of interest: None.
Funding: Self-funded
Publication History: Submitted 03-August 2017; Revised 15-September 2017; Accepted 30-September 2017.

References

1. Kamau AW. Labour strikes are becoming a rising concern across Africa. https:// www.brookings.edu/ blog/up-front/2012/10/18/labor-strikes-are-becoming-a-rising-concern-across-africa/ October 18, 2012.

2. Oleribe OO, Ezieme1 IP, Oladipo O, Akinola EP, Udofia D, Taylor-Robinson SD. Industrial action by healthcare workers in Nigeria in 20132015: an inquiry into causes, consequences and controla cross-sectional descriptive study. Human Resources Health 2016; 14:46. DOI 10.1186/s12960-016-0142-7

3. Ogunbanjo GA, Knapp van Bogaert D. Doctors and strike action: can this be morally justifiable? S Afr Fam Pract 2009; 51: 30608.

4. Osakede KO, Ijimakinwa SA. The effect of public sector health care workers strike: Nigeria experience. Rev Public Admin Manag 2014; 3: 154-61.

5. Adebimpe WO, Owolade OA, Adebimpe MA. Health worker's perception of the use of strikes as a tool for dispute resolution in Lagos State, Nigeria. J Soc Sci Public Policy 2010; 2: 1923.

6. World Health Organization. Global Tuberculosis Report 2016. Available at http://www.who.int/tb/ publications/global_report/en/ (Accessed July 2017)

7. Association of Reproductive and Family Health (ARFH). 50,000 tuberculosis cases detected and treated in Nigeria in the first semester of 2016. Available at Http://arfh-ng.org/50000-tuberculosis-cases-detected-and-treated-in-nigeria-so-far-in-2016/ (Accessed May 2017)

8. Adepoju W. 2014: The year of strikes. The Nation newspaper http://thenationonlineng.net/2014-year-strikes/ (Accessed July 2017)

9. Federal Ministry of Health. National Tuberculosis and Leprosy Control programme. Models for training of general health care workers on tuberculosis control 4th edition. Abuja: Sounasprints; 2012: 8-51.

10. James J J. Impacts of the medical malpractice slowdown in Los Angeles County: Am J Public Health 1979; 69: 43743.

11. Wright S H. Evidence on the Effects of Nurses' Strikes. The National Bureau of Economic Research 2010. Available at http://www.nber.org/ digest/ jul10/w15855.html (Accessed May 2017)

12. Bodkin H, Mendick R. Impact of junior doctors' strikes will be even worse than predict. The Telegraph, September 2016 http:// www.telegraph.co.uk/ news/2016/09/02/impact-of-junior-doctors-strikes-will-be-even-worse-than-predict/ (Accessed June 2017)

13. Ukwaja KN, Alobu I, lgwenyi C, Hopewell PC. The High Cost of Free Tuberculosis Services: Patient and Household Costs Associated with Tuberculosis Care in Ebonyi State, Nigeria. *PLoS ONE* 2013; *8*(8). http://doi.org/10.1371/journal.pone.0073134

14. Adejumo OA, Daniel OJ, Gidado M, Otesanya AF, Adejumo EN[5], Jaiyesimi EO, *et al*. Are Tuberculosis Patients Managed According to the National Guidelines in Lagos State Nigeria? **Int J Clin Med 2016;** 7: 16- 24.

15. Ukwaja KN, Alobu I, Nweke CO, Onyenwe EC. Healthcare-seeking behavior, treatment delays and its determinants among pulmonary tuberculosis patients in rural Nigeria: a cross-sectional study. *BMC Health Serv Res 2013*; *13;* 25. http://doi.org/10.1186/1472-6963-13-25

16. Crowley T, Mayers P. Trends in Task Shifting in HIV Treatment in Africa: Effectiveness, Challenges and Acceptability to the Health Professions. *Afr J Primary Health Care Fam Med 2015;* 7: 1- 9. doi: 10.4102/phcfm.v7i1.807.