

Field Activities

A TRIAL TO MOBILIZE NGO HEALTH VOLUNTEERS TO IMPROVE TUBERCULOSIS PATIENT CARE IN SANA'A CITY, YEMEN

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Abstract [Objectives] The study aims to show the feasibility of involvement of Non-Governmental Organization (NGO) health volunteers with regular monitoring mechanism on tuberculosis (TB) control in Sana'a City, Yemen. [Methods] Interventions to mobilize NGO health volunteers with regular monitoring field visits in two selected districts with approximately 400,000 population in Sana'a City were conducted. 52 NGO health volunteers who belonged to a domestic NGO were trained on TB case finding and case holding activities by the national TB control programme staff during the fourth quarter of 2004. [Results] 136 new smear-positive TB cases were enrolled from January 2005 to September 2006. The cure rates indicated significant improvement from 73.4% to 84.6% after start of the intervention ($p=0.023$). The cure rate of patients whose treatment partners were health volunteers was significantly higher than patients whose treatment partners were health centre staff (93.3% vs. 79.8%, Exact $p=0.045$). [Conclusion] The present study showed the favourable results of the implementation of the intervention in two selected districts in Sana'a City with regards to the treatment outcomes. The National Tuberculosis Control Programme has decided to expand the NGO's health volunteers' involvement as treatment partners to at least urban settings in Yemen.

Key words: Tuberculosis, Directly Observed Treatment Short-course (DOTS), Non-governmental organization (NGO), Patient care, Urban health services, Yemen

Background

Approximately 8,500 people in Yemen suffer from tuberculosis (TB) in a year, which is equivalent to approximately 38 TB cases per 100,000 population in 2005¹⁾. The National Tuberculosis Control Programme (NTCP) was established in the mid-1970s, and in 1995 adopted and started the implementation of the WHO-recommended directly observed treatment, short-course (DOTS)²⁾. DOTS was expanded in a stepwise manner across Yemen until the DOTS coverage at district level population had reached 98% in 2002³⁾. However, the cure rate and success rate in urban settings like Sana'a City have been consistently relatively low. The new smear-positive TB cases registered in 2005 indicated a 60% cure rate and a 71% success rate³⁾.

The involvement of community members and non-governmental organizations (NGOs) were essential components for improving TB patient care at the community level. Charitable Society for Social Welfare (CSSW), established in 1990, is one of the NGOs with coverage across the whole country and has served mainly economically depressed people in Yemen.

Cure rate is defined as the proportion of smear-positive TB patients who are sputum smear-negative in the last month of treatment and on at least one previous occasion, i.e., cured TB patients, among all smear-positive TB patients registered⁴⁾. Treatment success rate is defined as the proportion of the sum of cured TB patients and completed treatment TB patients, who are not cured nor treatment failed but just completed TB treatment, among all smear-positive TB patients registered⁴⁾.

The objective of this study is to show the feasibility of the

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involvement of health volunteers of NGOs in TB with regular monitoring visits by responsible bodies for improving TB patient care.

Methods

It is a descriptive observational study with intervention to assess the feasibility of the involvement of health volunteers of an NGO in the NTCP with regular monitoring visits to health centres for improving TB patient care in urban settings in Yemen. Two districts, Azal District and Maeen District were selected, with a total population of around 400,000 people. Pre- & post- intervention surveys of new smear-positive TB patients, based on the data on treatment outcomes routinely collected by public health authorities through the NTCP quarterly reporting system, were conducted on the treatment outcomes of those registered between the 2nd Quarter of 2002 and the 3rd Quarter of 2003, and between the 1st Quarter of 2005 and the 3rd Quarter of 2006 respectively.

Interventions were launched from the 4th Quarter of 2004, included the following activities: 1) to conduct a series of the training courses for NGO health volunteers and for health staff at health centres that covered basic epidemiological situation of tuberculosis, the principle of tuberculosis diagnosis, treatment, patient care, recording NTCP documents, 2) to do regular, i.e., quarterly, monitoring and supervision visits by Sana'a City TB coordinator with District TB coordinator. 52 NGO health volunteers were trained and worked as DOTS partners in the two districts without any payment. One NGO supervisor per five health volunteers coordinated health staff, health volunteers, and patients.

Upon the diagnosis of new smear-positive TB patients, health staff at health centres, NGO supervisors and the patient discussed about the TB service to be delivered and chose from one the following options; 1) TB patient who lives nearby (roughly within 20 minutes walking distance) a hospital/health centre is encouraged to come to the nearest health facility every day during the intensive phase of treatment; 2) TB patient who lives far from health facilities has an NGO's health volunteer as a DOTS partner; 3) TB patient who prefers not to go with Directly Observed Treatment (DOT) by health workers or volunteers, is assigned with a reliable family member as a treatment partner.

Results

There were 143 new smear-positive TB cases registered between the 2nd Quarter of 2002 and the 3rd Quarter of 2003 in the two selected districts, Azal and Maeen districts in Sana'a City. After a series of the training courses for the 52 NGO health volunteers in the two selected districts, 136 new smear-positive TB cases were registered and enrolled for evaluation in this study between January 2005 and September 2006. The cure rates in the two districts indicated significant improvement from 73.4% before intervention to 84.6% after the intervention ($\chi^2=5.18$, $p=0.023$). Although the difference was not statistically significant ($p=0.447$), the treatment success rates also indicated some improvement from 85.3% to 89.7%. The cure rates in other districts of Sana'a City on the other hand, dropped from 66.9% to 47.2% during the same period of the observation ($\chi^2=25.79$, $p=0.000$), and the treatment success rates also dropped from 83.1% to 64.9%

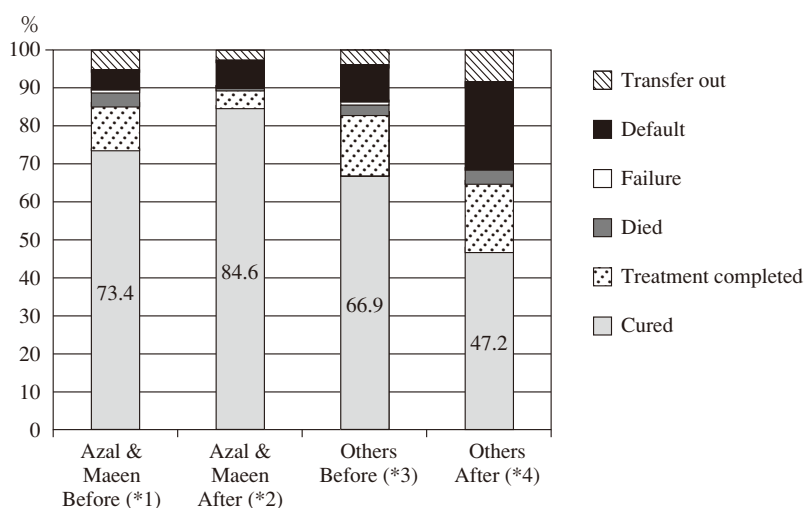


Fig. Treatment outcomes of new smear-positive TB patients in the two pilot districts (Azal and Maeen districts) and in the other districts in Sana'a City

- *1 Azal & Maeen Before: Treatment outcomes of the new smear-positive TB patients registered in the two pilot districts between the 2nd Quarter of 2002 and the 3rd Quarter of 2003. Total number evaluated: 143 patients.
- *2 Azal & Maeen After: Treatment outcomes of the new smear-positive TB patients registered in the two pilot districts between the 1st Quarter of 2005 and the 3rd Quarter of 2006. Total number evaluated: 136 patients.
- *3 Others Before: Treatment outcomes of the new smear-positive TB patients registered in the other districts in Sana'a City between the 2nd Quarter of 2002 and the 3rd Quarter of 2003. Total number evaluated: 314 patients.
- *4 Others After: Treatment outcomes of the new smear-positive TB patients registered in the other districts in Sana'a City between the 1st Quarter of 2005 and the 3rd Quarter of 2006. Total number evaluated: 345 patients.

Table Treatment outcomes (n=136, *5) by treatment partner in the two pilot districts (Azal and Maeen districts), Sana'a City, Yemen

| Treatment partners | Cured (%) | Completed | Died | Failure | Default | Transfer out | Total (%) |
|---------------------|------------|-----------|------|---------|---------|--------------|-----------|
| Health centre staff | 67 (79.8) | 6 | 1 | 0 | 8 | 2 | 84 (100) |
| Health volunteers | 42 (93.3) | 0 | 0 | 0 | 2 | 1 | 45 (100) |
| Family members | 6 (85.7) | 1 | 0 | 0 | 0 | 0 | 7 (100) |
| Total | 115 (84.6) | 7 | 1 | 0 | 10 | 3 | 136 (100) |

*5 Treatment outcomes of new smear-positive TB patients registered in the two pilot districts, Azal and Maeen districts in Sana'a City, between the 1st Quarter of 2005 and the 3rd Quarter of 2006.

respectively ($\chi^2=28.0$, $p=0.000$). The figure indicates the treatment outcome results by area in Sana'a City before and after the start of the intervention.

A total of 45 new smear positive TB cases among the 136 enrolled were cared for by the NGO's health volunteers throughout the treatment course. Another 84 cases were cared by health centre staff, and seven cases by family members. The cure rate of those whose treatment partners were health volunteers was significantly higher than that of those whose treatment partners were health centre staff (93.3% vs. 79.8%, Exact $p=0.045$, Table).

Discussion

The present study indicated that the involvement of NGO's health volunteers as treatment partners with regular monitoring field visits to health centres in Sana'a City to improve case holding activities was feasible. In order to offer equal access to quality TB care, community involvement is one of the essential components. Some countries such as Bangladesh^{5,6}, India⁷, the Philippines⁸, China⁹ have a relatively long history involving community people and including local and international NGOs in treatment and thus have achieved reasonably good treatment outcomes. Yemen, on the other hand, had never involved community members in the NTCP systemically until the early 2000's. The NTCP in Yemen had focused mainly upon the expansion of the recommended DOTS strategy to the established primary health care network in the 1900's. Nonetheless made the NTCP significant efforts, Sana'a City regrettably achieved an unacceptable low level of cure rate and therefore this endeavour of community involvement has been launched in the capital.

The present study showed the favourable results of the implementation of the intervention in the two selected districts in Sana'a City with regards to the treatment outcomes. The higher cure rate of the new smear-positive TB cases whose treatment partners were NGO health volunteers than that of those whose treatment partners were health centre staff may have been due to better accessibility for the TB patients to quality TB service provided by the NGOs than by the health centres.

In response to these favourable results, the NTCP has decided to expand the NGO's health volunteers' involvement

as treatment partners to at least urban settings in Yemen. The NGO that initiated this intervention has a nationwide organizational network throughout Yemen. Consequently, it should be possible to expand this intervention to at least all of Sana'a City and hopefully in other urban settings as well.

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イエメン国サナア市での NGO 保健ボランティア参加による
結核患者ケア改善の試行

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要旨:〔目的〕イエメン国サナア市において, 既存の非政府組織 (Non-Governmental Organization) 保健ボランティアが結核対策に参加することの可能性について検討すること。〔対象および方法〕人口約40万人が居住する同市内2カ所の郡で, NGO保健ボランティアを対象とする結核対策に関する研修の実施前後における新塗抹陽性結核患者の治癒率について比較検討した。2004年9月から12月の期間に, 既存の国内 NGO に所属する52人の保健ボランティアを対象にして, 結核患者発見とケアに関する基本的事項を含む研修を実施した。〔結果〕2005年1月から2006年9月の間に, 対象地域内で136人の新塗抹陽性結核患者が登録された。治癒率は, 73.4% から84.6% に ($\chi^2=5.18$, $p=0.023$) 改善し, 保健所職員によりケアを受けていた結核患者での治癒率よりも, 保健ボランティアによりケアを受けていた結核患者の治癒率が有意に高い傾向を示した (93.3% vs. 79.8%, Exact $p=0.045$)。〔まとめ〕サナア市内2郡での NGO 保健ボランティアによる結核対策への協力により, 治癒率の改善が認められた。

キーワード: 結核, DOTS, 非政府組織, 患者ケア, 都市部保健サービス, イエメン