

# Lay workers in directly observed treatment (DOT) programmes for tuberculosis in high burden settings: Should they be paid? A review of behavioural perspectives

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## ABSTRACT

The current global tuberculosis (TB) epidemic has pressured health care managers, particularly in developing countries, to seek for alternative, innovative ways of delivering effective treatment to the large number of TB patients diagnosed annually. One strategy employed is direct observation of treatment (DOT) for all patients. In high-burden settings innovation with this strategy has resulted into the use of lay community members to supervise TB patients during the duration of anti-TB treatment.

However, community involvement in health programmes is not a simple matter. There is often a need for continued motivation of community members in order to ensure sustainability of such projects. Lay workers may demand payment for work done particularly if this takes up a reasonable proportion of their time. TB treatment, by its very nature, lasts for a considerable period and this paper seeks to examine behavioural perspectives that attempt to address the issue of whether lay workers in such programmes should be paid for their services. The theories explored suggest intrinsic and extrinsic motivation as factors that lead people to volunteer for health programmes. Intrinsic motivation encompasses such feelings as empathy and altruism as well as other factors such as religious and cultural conviction. The authors argue however that in high-burden TB settings, these factors alone may be inadequate to provide continued motivation for lay worker involvement in health programmes. Extrinsic motivators, of which money is the strongest example, then also serve to keep sustained interest particularly in resource-limited settings where people expect payment for work done.

The debate on whether lay workers in health programmes should be paid is thus compounded by issues such as what factors one believes are responsible for motivation in particular contextual settings; how long lay persons are expected to perform tasks at hand; the capacity that exists to pay them and the sustainability of the motivating option chosen. We recommend more qualitative research to be done on this issue in high TB burden settings.

## BACKGROUND

### **Burden of Tuberculosis**

Many workers over the last decade have attested to the fact that tuberculosis (TB) remains a huge burden in developing countries.<sup>1-6</sup> With the advent of the HIV epi-

demio at the beginning of the 1980s, many countries, particularly those in sub-Saharan Africa have been faced with an ever increasing number of TB cases.<sup>3,7-12</sup> This increased patient caseload has further been compounded by a shortage of resources and trained manpower as well as poorly organised TB treatment delivery, which in many instances still remains the preserve of the tertiary health care system where patients are often admitted and treated at hospital level.

As a result of the above factors, a large proportion of TB patients in sub-Saharan Africa remain undiagnosed while many opt for the usage of alternative, though

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often largely ineffective, services in the private and traditional sectors.<sup>13,14</sup> Even for those who get diagnosed however, the huge number of patients who have to be treated has led to an acute scarcity of hospital beds, or to long waiting times at outpatient centres and this coupled with the high cost of travel to often far away diagnostic and treatment units is a disincentive to effective treatment delivery.

### **Directly observed treatment (DOT)**

In response to the global TB epidemic and in order to improve adherence to chemotherapy, the World Health Organization (WHO) currently advocates that patients receive their treatment under direct supervision, at least during the intensive phase of treatment. This practice has been termed as directly observed treatment (DOT).<sup>15</sup>

In the circumstances noted above however, health facility-based TB treatment supervision is often impractical in most developing countries as it is labour intensive and health units are far in-between. Furthermore, staff shortages often result in overburdening the few staff available who often find it a daunting task to have to supervise the daily treatment of large numbers of TB patients. Additionally, TB patients on ambulatory treatment may themselves be unable to make the daily trips to the health units all which factors can lead to poor treatment outcomes.

The considerations that have been pointed out above have pressured health care managers in high TB burden settings to seek for alternative, innovative but practical methods of delivering effective treatment to patients. One such innovation is community-based TB treatment delivery.

### **Lay Worker involvement in Health Programmes**

The utilisation of community members to assist health authorities in delivering appropriate health care has emerged as an important social force in certain communities.<sup>16</sup>

The 1978 WHO/UNICEF conference on Primary Health Care in Alma Ata proposed the development of national community Health Worker Programmes as an important policy for promoting primary health care.<sup>17</sup> The vision was that lay workers from the community would serve the unmet curative, preventive and promotive needs of village communities. By their very nature, community health worker programmes were envisioned to encompass and promote the key principles of equity, intersectoral collaboration, community involvement, prevention and the use of appropriate technologies in local settings.<sup>18</sup>

For the purposes of this paper, lay workers in health programmes are defined as being local inhabitants given a limited amount of training to provide specific basic health services to the members of their surrounding communities. These workers are expected to remain in their home village or neighbourhood and usually work part-time as health workers. They may be volunteers or receive a stipend. They are generally not, however, civil servants or professional employees of the Ministry of Health.<sup>19</sup>

Lay workers have shown that they can effect major changes in mortality and other indices of health status and that in some communities, they can satisfy prominent health care needs that cannot be realistically met by other means.<sup>19,20</sup> It is therefore in regard to this evidence that they have been incorporated into TB control programmes in different regions of the world as DOT supporters for TB patients.<sup>21-26</sup>

### **Lay Worker contribution to TB care delivery**

Community-based TB treatment supervision when properly managed has the potential to provide the necessary psychosocial support required to enhance treatment adherence.<sup>21</sup> The potential of a community to contribute to TB care depends on the degree to which it is sufficiently coherent for individuals to take part in community initiatives. This often depends on the degree of development of civil society, which may be measured through the presence of NGOs, philanthropic bodies and patient groups in a conducive political climate with population stability.<sup>27</sup>

The different ways in which communities participate in tuberculosis control depends on the level of socio-economic development, the particular cultural setting and the degree of social mobilization for tuberculosis among other health activities.<sup>27</sup> From the literature, different 'community groups' have taken part in effective TB care delivery in different parts of the world. In China for example, the 'barefoot' doctors took on the task of providing ambulatory supervised treatment for TB patients, which resulted in greatly improved cure rates.<sup>28</sup> In Bangladesh, it was female village health workers who performed this role through the auspices of the Bangladesh Rural Advancement Committee (BRAC), a large local NGO that has helped raise TB cure rates to over 85%.<sup>22,29</sup> In Hlabisa, South Africa, storekeepers largely provided the treatment supervision to patients.<sup>30</sup> While in the Northern Cape province, also in South Africa, it was also mainly female unemployed youth who provided DOT to patients resulting in treatment outcomes as good as those achieved through supervision by clinic staff.<sup>30-33</sup>

### **Challenges to lay worker involvement in health programmes**

Community involvement in health, particularly in developing countries, is not easy to achieve. Several challenges do exist when establishing lay health worker programmes. These include issues such as the attitudes of both formal health sector personnel and the community, the nature of the health care system, motivation of the lay workers as well as the issue of remuneration for tasks performed.

### **Attitudes of formal health care workers**

Interactions between lay workers and the formal health sector often depend on the way in which programmes have been introduced. Lay workers may be seen as lowly aides who simply assist clinic staff to achieve some desirable health service outcome or they may be seen as not bio-medically well trained enough to participate in the treatment of 'complex' diseases like TB.<sup>34</sup>

Additionally, the social, educational and cultural differences between health professionals and lay workers may be vast. The problem of health personnel with 'superiority complexes' has been well addressed by several authors.<sup>35,36</sup> Health professionals are often not trained to seek the assistance of lay people in the amelioration of community health concerns; hence relationships that develop between them and lay workers may be characterized more by distrust and cynicism, rather than co-operation and respect.<sup>20</sup> This may have the result of alienating the very community participation that was sought for in the first place.

### **Attitudes of the community**

If communities have negative attitudes towards the formal health system they are also likely to have negative attitudes towards lay health workers. This situation may be exacerbated by the fact that though lay workers are originally intended to be members of the communities they serve, they may become 'separated' from these very communities by virtue of their training in modern medical care and their integration into the public health culture. Lay workers may thus become 'medicalized' and take on the attitudes of health staff and adopt new beliefs and expectations about health and health care. Booysen and Beyers in Cape Town, South Africa have reported this problem.<sup>36</sup>

Other studies have also identified several factors that may have a negative effect on the relationship between the community and lay workers. Some communities do not have full confidence in lay workers because community members were neither adequately informed

nor consulted during the selection process as has been reported by workers in Zimbabwe.<sup>37</sup>

### **The nature of the health care system**

The district level of the health care system is the level most suited to support lay worker programmes in primary health care.<sup>20</sup> District health systems facilitate co-ordination and collaboration between local communities and the national level of the health services and if this system is lacking it may be difficult to harness community participation.

### **Motivation, training and remuneration of lay workers**

Lay workers often need motivation and basic training in order to effectively take up health service roles and any programme has to be introduced in a manner that is acceptable to the recipient community if it is to have any chance of success.

Furthermore, lay workers in health programmes may expect or demand payment for services rendered. Failure to address this issue may impact of the sustainability of programmes that rely heavily on community involvement. In some of the community-based TB programmes that have been mentioned above, lay workers were volunteers who did not receive monetary incentives for their efforts<sup>26</sup> in other programmes it was found necessary to pay them.<sup>22,23</sup> While much has been written about the knowledge, attitudes and behaviours of TB patients, little is known about the motivation of those who choose to supervise them in community-based programmes.<sup>38</sup>

This paper specifically seeks to examine the relevant behavioural theories that attempt to explain why lay people are motivated to get involved in community-based health programmes [such as TB treatment delivery] in an attempt to understand whether it is necessary, feasible or even acceptable to pay them for their involvement.

### **Behavioural perspectives on motivation of lay workers in health programmes**

The question about what motivates people to do or not to do voluntary work has no simple single answer. Reasons for volunteerism differ and are influenced by such factors as the nature of work to be performed as well as people's cultural and socio-economic background. The gap-year student who goes overseas to assist on a project in a remote village may be motivated by a sense of adventurism whereas the same cannot be said of a community member who volunteers to supervise TB patients as they take their daily medicines for 6-9 months.

Evidence from the literature suggests that successful volunteers should have free time to put in towards voluntary activity and, for any such work extending beyond the benefits of the immediate family, some additional motivating factors are often required. Such factors may include ideology, religious faith, cultural expectations, and the fear of some collective danger etc.<sup>39-43</sup>

Motivation for voluntary action can be explained using Bandura's Social Learning Theory (SLT), which analyses the consequent determinants of behaviour.<sup>44</sup> According to this theory, behaviour [which in this case can be taken as the act of deciding whether or not to volunteer in the TB programme] is extensively regulated by its consequences. Consequences determine behaviour largely through their informative and incentive value for example by creating expectations of similar outcomes on future occasions.

Motivation can be differentiated as being either extrinsic or intrinsic in origin. Extrinsic motivation arises from such things as peer approval, money, privileges etc. These are socially derived rather than natural consequences of the behaviour being performed. On the other hand, altruism, personal interest in activities performed and religious or cultural concerns can be viewed as being reliant on intrinsic motivation.

Intrinsic motivation is a highly appealing but rather elusive construct however. While it can be defined as the performance of activities for no apparent external reward, identifying the existence of intrinsic motivation from persistence of behaviour and absence of noticeable extrinsic incentives is not an easy task.<sup>44</sup> It is difficult to find any situations that lack external inducements for behaviour – the physical and social structures of situations, the materials they contain, the expectations of others and a whole range of other factors all exert substantial influence on behaviour.

For example, in a study on factors that motivate lay persons working in TB programmes in high burden settings, Kironde and Klaasen<sup>31</sup> reported that even among those who said that they were motivated by such factors as empathy and the need to fill in their spare time; a future expectation of payment for work performed was found to be a very strong motivating factor that kept them involved in the TB programme. Most human behaviour is maintained by anticipated rather than immediate consequences and therefore, it can be difficult to tell in any given instance whether an activity is being performed for inherent interest or for anticipated future benefits.<sup>44</sup>

For example, behaviour can be effectively maintained by making preferred activities available on later occasions contingent upon engaging in or completing a give task.

Money, which can be exchanged for countless things which people desire, is widely used on a deferred basis as a powerful generalised incentive.

### ***The role of incentives in motivation***

Incentives have been found to play a role in developing and maintaining motivation in activities such as volunteerism.<sup>44</sup>

In the case of tuberculosis care, treatment takes a long time and therefore voluntary work in community-based TB treatment delivery requires long-term commitment on part of the lay worker. Attrition rates in such programmes may thus be high unless the lay workers are highly motivated to continue with their tasks over sustained periods of time.

Bandura<sup>44</sup> notes that it is difficult to achieve generalised enduring behavioural changes [such as one consistently volunteering in a TB programme] when the activities performed are primarily for the benefit of others. He further suggests that it is necessary to provide sanctions and rewarding supports on a continuing basis for activities that are personally inconveniencing or uninteresting but are important to the general welfare. The task of lay workers providing supervision for TB patients as they take their medication can be placed in this category of activities.

### ***The effect of extrinsic rewards on intrinsic motivation***

It is important to note however that extrinsic reinforcement through the provision of incentives for activities performed could also have the effect of reducing intrinsic motivation in those who engage in these activities. According to attribution theory, people's perceptions of the causes of their behaviour influence how they behave on future occasions.<sup>45,46</sup> This theory postulates that people presumably judge their motivation partly from the circumstances under which they behave. If they perform activities for external rewards, they infer a lack of personal interest; but if they perform without external inducement, they judge themselves to be intrinsically interested in what they are doing. Hence, this view postulates that since people usually like what they do, when needlessly rewarded, they are more apt to make inference about the values, obtuseness or manipulateness of the rewarder than about their own interest in the activity being performed.

### ***Vicarious incentives as a motivating factor***

Vicarious incentives are indicated when observers increase behaviour for which they have seen others being rewarded. Social Learning Theory can explain how observed rewards can alter the thoughts, feelings and actions of others.<sup>47</sup>

Seeing others rewarded can be a motivator by arousing expectations in observers that they will also receive similar benefits for comparable performances.

In terms of TB control, some lay persons may volunteer to become DOT supporters because they have seen others they hold in high esteem performing the activity and being praised. The amount of influence exerted by observed consequences however depends on how highly observers value the outcomes of the behaviour that is being modelled.

Vicarious incentives introduce comparative judgemental processes into the operation of motivational influences. That is, observed consequences accruing to others provide a standard for judging whether the incentives one customarily receives are equitable, beneficent or unfair.

However, it is important to note that direct incentives are thought to be more likely to have greater motivational power than vicarious ones when it comes to maintaining behaviour over time.<sup>37</sup> Seeing others rewarded may temporarily enhance interest but is unlikely by itself to have much sustaining power if one is not directly rewarded for what one does.

## DISCUSSION

From the theories explored above, it appears that external incentives should be used if necessary, primarily to promote enduring interest. This may depend on the level of interest one perceives is already present among individuals who desire to perform a certain task in a particular contextual setting. To reward people for activities that already hold high interest for them is not only inappropriate but is contraindicated by reinforcement theory.<sup>47</sup> Likewise, to introduce excessive rewards invites unnecessary problems with sustainability when the time comes to stop them such as was experienced in one lay worker TB programme in the Western Cape province of South Africa when the money for paying DOT supporters ran out.

Incentives encourage participation in activities which people would otherwise disregard and thus never develop interest in them; they can therefore be used for that purpose if there is lack of primary interest in a proposed activity. As involvement, interest and skills in the activity increase, small symbolic and self-evaluative rewards also assume incentive function.<sup>48</sup>

### **Remuneration of Lay Workers**

The subject of motivating lay workers in health programmes by the use of incentives has long been debated.<sup>20</sup> The problems of lack of support may reflect an unwillingness to pay lay workers for benefits that are con-

sidered small,<sup>49</sup> or very poor communities may simply be unable to find the necessary funds needed to remunerate lay workers. These factors must be balanced against the fact that lay workers who are not compensated for their work may not be able to devote much time to volunteer activities. Additionally, some authors have reported that a gain in status is an inadequate motivation for many lay workers who are the sole providers for their families.<sup>50</sup>

De Zoyza and Cole-King<sup>51</sup> reviewed financial incentives for lay workers and identified three major sources: the government, non-governmental organisations and the community itself. However, these authors also noted that sustainability in all three approaches to financial incentives was problematic.

Hadley and Maher<sup>52</sup> note that when deciding on the type of incentive to serve as a motivation for lay workers, TB control programmes should ensure that strategies that chosen can be sustained in the long term and be of enough value to encourage lay people to work diligently. For programmes that utilize incentives for lay workers, sustainability of extrinsic rewards is important. This is because it has been noted that behaviour tends to decline when the rewards are no longer forthcoming.<sup>44</sup>

To answer the question posed in this paper as to whether lay workers in DOT programmes in high TB burden settings ought to be paid, the authors conclude that the debate continues. On one hand, there are those who believe that monetary incentives to lay workers in resource-limited settings are unsustainable and hence should not be attempted. On the other hand, there is also a feeling that since TB affects mainly the disadvantaged, it would be unrealistic and perhaps exploitative to expect lay workers, who often have similar socio-economic needs like the TB patients, to supervise treatment-taking for long periods of time without a monetary incentive and hope that such a programme can be sustainable.

Decisions on whether, or how much, lay workers in health programmes should be paid and who should be paid depend on issues such as the type of function these people are expected to perform, for how long, the capacity that exists to pay them, and the factors that are thought to be responsible for motivation of lay workers in particular contextual settings.

We recommend that more qualitative research be done to establish the factors that motivate individuals to involve themselves in TB programmes in different settings, only then can programme managers be sure of sustainable success with community participation in TB care delivery.

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