Author's response to reviews

Title: Health care workers' knowledge, attitudes and practices on tuberculosis infection control, Nepal

Authors:
Anita Shrestha (shres.aanie@hotmail.com)
Dipesh Bhattarai (dipeshbhattarai@hotmail.com)
Barsha Thapa (barsha35@gmail.com)
Prem Basel (prembasel11@gmail.com)
Rajendra Wagle (rajendrarwagle@gmail.com)

Version: 1 Date: 14 Aug 2017

Author’s response to reviews:

Edward Nardell (Reviewer 1):

Comment: Although the authors adequately report poor understanding of TB IC among HCWs, they fail to report exactly what exposure to these concepts (education or training) that HCWs would have had - if any? If they have had no training one would expect poor understanding, and, ideally, that data could be used to target future training. There is no indication that this KAPA was intended for planning training or for before and after comparison. In essence, the survey outcome was entirely predictable and contributed little to our understanding of TB IC and how to improve it. The time spent surveying workers might have been better spent educating workers about the subject matter.

Response: Many KAP studies on TB IC have been conducted in different parts of the world and most of them have revealed poor IC knowledge and practices of HCWs. However, to our knowledge, this is the first study conducted in Nepal highlighting the importance of TB IC. Though National TB Program, Nepal has identified IC as a key challenge, no significant efforts have been made to address the issue. Provided lack of TB IC policy/guideline and inadequate IC infrastructures including relevant trainings, it was predictable that HCWs would lack proper knowledge and practices on TB IC. But there were no published literature or documented evidence regarding the issue. In this context, the study seems highly relevant and forms sound evidence base that draws policy attention towards this pertinent issue. Our study has also
highlighted the need to focus both medical and non-medical staff while planning IC interventions at facility level. Therefore, we think the article is worth publishing.

Michelle Catherine Engelbrecht, Ph.D. (Reviewer 2):

Introduction

Comment: Background statistics regarding TB, MDR-TB and HIV in Nepal would improve the contextual information.

Response: The following section has been added to the introduction section providing information on TB, DR TB and HIV in Nepal:

“There were an estimated 44,000 incident TB cases (156 per 100,000) and 6,100 TB deaths in 2015 [1]. Drug resistance level is high with approximately 9.3 percent of new cases resistant to at least one drug. Rate of multi-drug resistant (MDR) TB is 2.2 percent among new cases while it is 15.4 percent among retreatment cases [15]. Though HIV prevalence in the country is low, which is estimated at 0.2 percent among adult population [16], studies have reported high rates of TB/HIV coinfection [17-19]. The latest surveillance (2012) showed that HIV prevalence among TB cases is 2.4 percent while TB prevalence among HIV clients is 11.5 percent [15].”

Comment: The dated references in the background (e.g. from 1992, 1995, 1996, 2006) should be replaced with more up-to-date references, especially given that much work has been published recently in the area of TB infection control.

Response: As you have suggested, references those published before 2000 are removed and replaced with the recent publications. However, we still cited “Guidelines for the prevention of tuberculosis in health care facilities in resource-limited settings by World Health Organization, 1999” since this is the guideline based on which IC measures are recommended.

Comment: In addition, mention should be made of any guidelines/policies for TB infection control in the country (or lack thereof). Lines 66-67 refer to “infection control remains a key
challenge in Nepal”, more explanation and a reference for this statement would better contextualise the problem.

Response: We have explained the issue as follows:

“High levels of drug resistance and TB/HIV coinfection add more concerns towards IC, which remains a key challenge in Nepal [15]. National TB Programme (NTP) has not made significant effort to address the issue and no focal person has been assigned for IC at national level. There does not exist any policy and/or guideline on TB IC to assist implementation of IC measures in health facilities. Information on TB IC knowledge and practices among HCWs can provide an important basis for NTP to initiate effort towards TB IC, but the relevant literature is lacking.”

Methods

Comment: More detail regarding the sampling methods is required:

1) 28 of how many health facilities were selected?

Response: There were 107 Directly Observed Treatment Short-course (DOTS) centres in the area. Of them, 28 were selected randomly. (Please refer to line 94)

2) How many were hospitals, primary health care facilities, etc.

Response: Changes made as suggested.

“The health facilities included government (17) and non-government (11) facilities providing TB services in the area. Nine of them were hospitals and 19 were primary level health facilities.”

3) How was the random sampling undertaken? 4) How were the staff selected at each facility?

Response: Changes made as suggested.
“...health facilities were randomly selected from the list available from the National Tuberculosis Centre, Nepal. Since the study was a part of TB infection assessment among HCWs, sample size was calculated based on the proportion of TB infection among HCWs. Due to the lack of information on prevalence of latent TB infection among HCWs in Nepal, the prevalence was assumed to be 50 percent as informed by a study in India[20]. The confidence level and margin of error were 95 percent and 0.6, respectively. All HCWs involved in TB services available during the study period were enrolled until the required sample number was met. Thus, a total of 190 HCWs from 28 health facilities were surveyed.”

5) Was any attempt made to sample staff proportionately according to the different categories.
Response: Since all HCWs were surveyed, the study did not follow proportionate sampling.

6) Why the decision to include all levels of staff.
Response: Since TB service in Nepal is integrated within national health system and provided through same outlet often within limited infrastructure, all HCWs are likely to be exposed to TB infection. Therefore, the study enrolled all levels of HCWs who are directly or indirectly involved in TB care. (Please refer to lines 111-118)

7) There are great differences in the number of staff in each category - justify why.
Response: Most of the health facilities were primary level facilities where staff mainly included Community health workers and a support staff. Other staff were mainly from hospitals and facilities with lab services, which were relatively less in our sample. Therefore, there is differences in number of staff in each category.

Comment: Define "paramedics", as this team is often used in relation to emergency medicine. Consider using "allied" instead.

Response: We have used “community health workers (CHWs)” instead of “paramedics”.

Comment: Questionnaire – Was it self-administered or researcher administered. Was it based on existing KAP TB infection control questionnaires?
Response: The questionnaire was researcher administered. It was based on tools used in similar studies. (Please refer to lines 120-122)

Comment: How was data collection undertaken? What was the role of the fieldworkers (to drop off and collect questionnaires, to administer questionnaire in an interview?)

Response: Data collection was done by trained field workers who visited the selected health facilities and conducted face-to-face interviews with the HCWs. (Please refer to lines 129-130)

Comment: Data analysis - why was ≥60% used as the cut-off point for a good level of knowledge? Was this based on similar studies? Similarly, why was ≥70% used as the cut-off for having positive attitudes?

Response: The cut off points for knowledge and attitude levels were set as informed by similar studies (Please refer to lines 142-143)

Results

Comment: It is not necessary to repeat everything that it already in the tables. Just highlight the most interesting findings in the text.

Response: Result section is corrected as suggested; most findings that are presented in tables are removed and important findings are explained.

Comment: Avoid stating direction when testing for associations, for example lines 150-151 "Analysis shows that HCWs with a higher level of knowledge were likely to have more positive attitudes towards TB infection control". 
Response: The statement is corrected as follow:

“Analysis shows that HCWs’ attitude level was significantly associated with their level of knowledge on TB IC.”

Comment: Some of the TB infection control practices may not be applicable to all staff. For example, wearing respirators. Admin staff are not likely to wear this; however, they are included in the 38% reported to not wear respirators. Consider only reporting the practices of staff directly involved in patient care.

Response: Health facilities in Nepal lack sufficient infrastructure and there is lack of separate space for TB patients or suspects. Some facilities are even functioning in a single room (e.g urban DOTS clinics). Most often admin related works are also carried out within same space. WHO recommends that everyone including visitors should also wear particulate respirators when in enclosed space with infectious cases (WHO 2009). Therefore, all HCWs were considered for using respirators though for limited proportion of time only while being exposed to TB patients or suspects.

For patient education, we have corrected our analysis considering only medical staff as administration and support staff were not supposed to provide health education (Please refer to lines 219-222).

Discussion

Comment: There are a number of studies on KAP regarding TB infection control. What value does this study add? What is new and interesting? This needs to be highlighted in the discussion.

Response: We agree that there are many KAP studies on TB IC. But to our knowledge this is the first study in Nepal. As discussed in the article, Nepal lacks TB IC policy/guideline at national level. In this scenario, this study forms sound evidence base and provides important information
to initiate necessary action towards IC (please refer to lines 316-329). Further, most of the similar studies only focused on medical staff but our study also included non-medical staff who are mostly ignored while their risk of being infected with TB and implications in implementing IC measures at health facilities cannot be undermined. Not surprisingly, we noted significant difference in knowledge level and practices among these categories (please refer to lines 235-243).

Comment: When comparing knowledge levels in the current study to other studies, keep in mind the cut-off point you used in your study for good levels of knowledge and compare it to what the other studies used.

Response: The cut-off point we used for good level of knowledge was >60 % and the comparison was made is the same line. The only difference was the inclusion of non-medical staff in our study which is discussed accordingly. (please refer to lines 231-234)

Comment: "Unavailability of respirators" (lines 219-220)- was this observed? Lines 224-225, did the South African study also include administrative staff? The reason for this is that administrative staff would be less likely to provide health education.

Response: Along with the KAP study, we had also assessed IC infrastructure and we observed lack of respirators in the health facilities (please refer to lines 297-298). As suggested we have only included medical staff for health education and comparison was made accordingly.

Comment: Reference is made to the lack of infection control policies (Line 232) - this is important for this study and should be discussed in the introduction so that the reader is aware that there are no policies guiding TB infection control implementation in health facilities in Nepal.

Response: The following section has been added to the introduction section:

“National TB Programme (NTP) has not made significant effort to address the issue and no focal person has been assigned for IC at national level. There does not exist any policy and/or guideline on TB IC to assist implementation of IC measures in health facilities.”
Conclusion

Comment: Training is recommended, the authors should consider similar infection control studies that have found that training alone is often not sufficient to change behaviour.

Response: Considering conventional trainings are not much effective to bring about changes in behaviour, skill-based trainings are recommended (please refer to lines 341-342).