THE ACCEPTABILITY OF SCREENING OF DIABETES MELLITUS AMONG TUBERCULOSIS PATIENTS AT DIRECTLY OBSERVED TREATMENT SHORTCOURSE (DOTS) CENTER IN SELECTED DISTRICTS OF NEPAL

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TDR
For research on diseases of poverty
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INTRODUCTION

• Tuberculosis (TB) is a public health problem and is the sixth leading cause of death in Nepal (National Tuberculosis Center, 2015).

• Diabetes Mellitus (DM) is an already established risk factor of tuberculosis associated with poor treatment outcome (World Health Organization, 2016).

• DM increases the incidence of active tuberculosis by 2-3 times and also the risk of TB treatment failure or death (Boillat-blanco et al., 2016), (Zhao et al., 2016).

• Most of the health care interventions are complex in nature with various interacting components and delivered at different levels of care. Hence, this focus on acceptability as key consideration (Craig et al., 2006).
The link between DM and TB is more prominent where TB is endemic and burden of DM is increasing.

It was estimated that out of all TB cases, 15% could attribute to DM, with 40% of cases reported from China and India (Zheng, Hu, & Gao, 2017).

The awareness about the possible consequences of the dual disease among the general population and current national health system is minimal.

Study on to what extent DM has contributed to avoidable burden of TB, the magnitude and appropriate intervention to address these issues remain important.
To assess the yield of DM screening among TB patients in selected districts of Nepal.

To explore the acceptability of DM screening among TB patients, providers and key stakeholders in selected districts of Nepal.

To explore the key factors affecting acceptability of DM screening among TB patients in selected districts of Nepal.
**METHODOLOGY**

- **Research Design:** A sequential explanatory mixed method.

- **Research Context:**
  
  Study was conducted in four different settings in two districts:

  - **Zonal hospital:** Main referral center for the people residing in far-western region of the country.
  
  - **Health posts:** Community level health facility.
  
  - **Urban health clinics:** Health centres responsible to provide health services in municipality.
  
  - **NGOs:** DOTS clinic operated by NGO.

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**Quantitative Data Collection and Analysis**

**Qualitative Data Collection and Analysis**

**Inferences drawn**
Figure: Map of Nepal and DOTS Center in Nepal
<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Quantitative Method</th>
<th>Qualitative Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Design</td>
<td>Descriptive Cross Sectional</td>
<td>Thematic Analysis</td>
</tr>
<tr>
<td>Study Duration</td>
<td>September 2017 - November 2017</td>
<td>December 2017-January 2018</td>
</tr>
<tr>
<td>Study Population</td>
<td>Registered TB patients excluding sputum negative TB, children, pregnant women and TB patients with documented HIV status</td>
<td>National/District TB focal person, Health facility Incharge, DOTS provider, TB patients</td>
</tr>
<tr>
<td>Sample Size</td>
<td>212</td>
<td>19</td>
</tr>
<tr>
<td>Sampling Technique</td>
<td>Simple Random Sampling</td>
<td>Purposive Sampling</td>
</tr>
<tr>
<td>Data Collection</td>
<td>Prevalence, HF Context Assessment</td>
<td>Patient Experience, Reasons for unacceptability, stakeholder KII</td>
</tr>
<tr>
<td>Research Instrument</td>
<td>Glucometer, CAI Tool</td>
<td>FGD Guideline, IDI guideline, Semi-structured interview questionnaire</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>Entry Epi data</td>
<td>Audiotaped, transcribed, coded and analyzed using open code 4.02</td>
</tr>
<tr>
<td>Data Validation</td>
<td>Double entry, Observation</td>
<td>Skilled moderator, Triangulation</td>
</tr>
</tbody>
</table>
Research Ethics:

- Ethical Review Board, Nepal Health Research Council.
- Medical and Health Research Ethics Committee (MHREC), Universitas Gadjah Mada.

Dissemination:

- A policy brief and research report was disseminated to the national and district programme managers.

Research Limitations:

- The study was conducted in two district out of 77 total districts. Therefore, the study results could not be generalized.
- Six health facilities were selected, as a result analytical assessment of health facilities weren’t possible due to less sample size and descriptive analysis was performed.
R1: Yield of DM Screening among TB patients

Total Respondents: 212

Accepted screening: 207 (97.64%)

Unaccepted: 5 (2.35%)

Respondents with FBG (≥126 mg/dl): 98 (47.34%)

Respondents with RBG (≥200 mg/dl): 109 (52.65%)

Total screened positive for DM: 39 (18.84%)

Respondents with FBG (≥126 mg/dl): 19 (48.71%)

Respondents with RBG (≥200 mg/dl): 10 (25.64%)

Figure: Flowchart for screening of patients with Tuberculosis for DM
### RESULTS CONTD...

#### R2: Context Assessment Index of Health Facility

<table>
<thead>
<tr>
<th>Health Facility</th>
<th>Collaborative Practice (%)</th>
<th>Evidence Informed Practice (%)</th>
<th>Respect for the person (%)</th>
<th>Practice Boundaries (%)</th>
<th>Evaluation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manamaiju Health Post</td>
<td>17.90</td>
<td>19.54</td>
<td>16.78</td>
<td>19.60</td>
<td>19.20</td>
</tr>
<tr>
<td>Balaju Urban Health Clinic</td>
<td>16.66</td>
<td>18.39</td>
<td>16.78</td>
<td>17.64</td>
<td>18.00</td>
</tr>
<tr>
<td>Mitrapark Urban Health Clinic</td>
<td>17.28</td>
<td>14.36</td>
<td>16.08</td>
<td>16.66</td>
<td>14.10</td>
</tr>
<tr>
<td>Red Cross Society</td>
<td>20.37</td>
<td>17.81</td>
<td>18.88</td>
<td>19.60</td>
<td>19.22</td>
</tr>
<tr>
<td>Gongabu Health Post</td>
<td>14.19</td>
<td>16.66</td>
<td>17.48</td>
<td>14.70</td>
<td>14.10</td>
</tr>
<tr>
<td>Seti Zonal Hospital</td>
<td>13.58</td>
<td>13.21</td>
<td>14</td>
<td>11.76</td>
<td>15.38</td>
</tr>
</tbody>
</table>

CAI = Each HF construct score
    Total HF construct score
R3: Key structural and Organizational factors affecting Acceptability

- Increased Burden
- Institutional Capacity
- Training and Education
- Linkage, Coordination and Integration of Services
- Sustainability
DM screening was highly acceptable to TB patients, health facility in charge, health providers and programme managers.

Coordination with multiple stakeholders involved in disease control and prevention activities could be done with the development of joint technical working group.

Joint collaboration of the service was identified as major factor affecting acceptability. Therefore new screening programme could be merged with the successful programmes like TB-HIV, FP collaboration programmes.

Feasibility of the screening could be assessed with continuous follow up of the study group.
THANKYOU