A preliminary investigation into the health related quality of life (HRQoL) and functional assessment of a cured Pulmonary Tuberculosis (PTB) population in the Breede Valley District: Challenges facing Rural Research

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Map of Breede Valley Municipality
Background and Purpose

• Despite modern medicines advances, PTB remains a major cause of death worldwide
• South Africa is burdened with one of the worse TB epidemics in the world
• Western Cape Incidence of 909/100000
• PTB is closely linked to the issues of overcrowding, poverty and unemployment
• Recent population based surveys has strongly linked previous PTB with the development of COPD
Both PTB and COPD share common risk factors:

1. Smoking
2. Low socio-economic status

Despite differences in etiology, both diseases could result in pulmonary scarring.

Many cases of COPD may be missed or wrongly diagnosed in high burden countries.

Current government strategies:
- New case identification
- Microbiological markers
- Outcomes such as cured, treatment completed or treatment failure/defaulted
Background continued…

However, patients have to deal with more than just the clinical symptoms.

Disease & Treatment may have considerable medical, social and psychological consequences.
Methods

• **Study Design:** Cross-sectional, observational study
• **Setting:** Five primary health care facilities in the Breede Valley sub-district of the Cape Winelands East District
• **Ethical Considerations:** Ethical approval for the study was obtained from the Committee for Human Research at Stellenbosch University (S12/06/186). All patients provided written informed consent prior to participating in the study.
• **Patient Recruitment:** The names of adult patients diagnosed with PTB, who had completed at least five months of anti-tuberculosis treatment, were obtained from the TB registers at the clinics from July 2012 up until April 2013. Post bronchodilator lung function tests, health related quality of life (SF-12 questionnaire) and six minute walk distance were measured. Clinic specific recruitment strategies were developed to ensure adequate sampling.
Total Names Obtained from Registers June 2012 – March 2013
n = 328

- Rawsonville Clinic n=35
  - Patients Not Included n=31
  - Reasons:
    - No Contact number n=25
    - Number does not exist n=3
    - Died n=1
    - Moved Away n=1
    - Not Interested n=1

- Worcester Clinic n=162
  - Patients Not Included n=145
  - Reasons:
    - No Contact number n=81
    - Died n=8
    - Moved Away n=11
    - Too sick n=8
    - Invalid Address n=21
    - Not Interested n=18
    - Gang Violence n=1

- Orchards Clinic n=16
  - Patients Not Included n=11
  - Reasons:
    - No Contact Number n=11

- De Doorns Clinic n=78
  - Patients Not Included n=59
  - Reasons:
    - No Contact number n=24
    - Number does not exist n=3
    - Too sick n=1
    - Under age n=1

- Touws Rivier Clinic n=33
  - Patients Not Included n=29
  - Reasons:
    - No Contact number n=24
    - Number does not exist n=3
    - Too sick n=1
    - Under age n=1

Total Patients included in the study n=45

- Spirometry n=44
  - Excluded: n=1
    - Patient did not understand spirometry manoeuvre and results were not repeatable to within 200ml

- 6 MWT n=44
  - Excluded: n=1
    - Patient could not perform the test due to unspecified illness at time of testing affecting the patient’s ability to ambulate

- Health Related QoL n=45
## Results

### Demographics

<table>
<thead>
<tr>
<th></th>
<th>Total n=45</th>
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<tbody>
<tr>
<td>Gender (male) % (n)</td>
<td>56% (n=25)</td>
</tr>
<tr>
<td>Age (years) (Mean ±SD)</td>
<td>39.88±10.20</td>
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<tr>
<td>Race % (n)</td>
<td></td>
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<tr>
<td>Coloured = 93% (n=42)</td>
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<tr>
<td>Black = 7% (n=3)</td>
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### Respiratory Conditions or Symptoms

<table>
<thead>
<tr>
<th>Condition</th>
<th>Total n=45</th>
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<tbody>
<tr>
<td>Previously diagnosed with TB % (n)</td>
<td>64.4% (n=29)</td>
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<tr>
<td>Average number of times diagnosed with TB (n)</td>
<td>1.9 (n=29)</td>
</tr>
<tr>
<td>Previously Diagnosed Asthma/Bronchitis % (n)</td>
<td>20% (n=9)</td>
</tr>
<tr>
<td>Previously Diagnosed COPD % (n)</td>
<td>6.6% (n=3)</td>
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<tr>
<td>Hospitalized before age 10yrs due to Respiratory complications % (n)</td>
<td>8% (n=4)</td>
</tr>
<tr>
<td>Breathing problems interfered with ADL’s % (n)</td>
<td>35.5% (n=16)</td>
</tr>
<tr>
<td>Usually cough without a cold % (n)</td>
<td>64.4% (n=29)</td>
</tr>
<tr>
<td>Usually cough up phlegm % (n)</td>
<td>73.3% (n=33)</td>
</tr>
<tr>
<td>Have had wheezing in the last 12 months % (n)</td>
<td>62.2% (n=28)</td>
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Specific Challenges Faced During Data Collection
• The 6MWT is a self paced test that according to ATS guidelines, should ideally be done indoors and in a 30m corridor
• Normal reference values have been established
• Space limitations in the primary care setting force researchers to modify this course length
• For this study:
  ➢ Course length was reduced to 20m at clinics
  ➢ Course length was reduced to 10m at patients homes
  ➢ Spirometry was done where space was available
Patient Reliability and Accessibility

- Researchers planned to recruit patients at the clinics at their 5 month sputum sample appointment.
- However, patients are not given a specific time and date to return to the clinic.
- Despite the great cooperation from the nursing staff and community workers.

Internal factors affecting patient recruitment:
- Accuracy of patient personal information (Files)
- TB nurses method of communication with patients
- DOTS vs no DOTS
External factors affecting patient recruitment:

- Weather
- Transport
- Distance to the clinic (Some patients had to walk ±20km)
- Food (Some clinics would hand out bread with medication. No bread = No show)
Safety

- Certain areas could only be accessed at specific times of the day
- Rioting and unrest in the area influenced patients turning up for appointments or the research team accessing certain areas
Recommendations for Future Research

- Independent recruitment strategies should be established for each clinic with the understanding that clinics handle patients differently depending on their location (rural vs town), as well as the patient load.
- To optimize patient recruitment, a trained research team should be sent to all included clinics during data collection.
- Farmers should be consulted during the project design phase and permission obtained for patients to be recruited at the farms rather than at their homes.
- Even though our questionnaire used for this project had been previously translated into Afrikaans and validated in a Cape Town community, many of the patients struggled to understand the questionnaire.
Many of the challenges faced during this pilot study stemmed from poor patient accessibility and poor environmental factors. Researchers should consider the specific challenges experienced in a rural setting when designing future studies. The clinic specific recruitment strategies developed during this pilot study can inform the study design. To ensure data reliability, data collection instruments must be standardised for use in rural settings.
References


• Beekman, E. 2013. Course Length of 30m Versus 10m has a Significant Influence on 6 Minute Walk Distance in Patients with COPD: An Experimental Cross Over Study. Journal of Physiotherapy, 59169-76.


• Eisner, M. 2010. Influence of Anxiety on Health Outcomes in COPD. Thorax, 65229-34.

THANK YOU