The association between common mental disorder and tuberculosis, a case control study from Guinea Bissau

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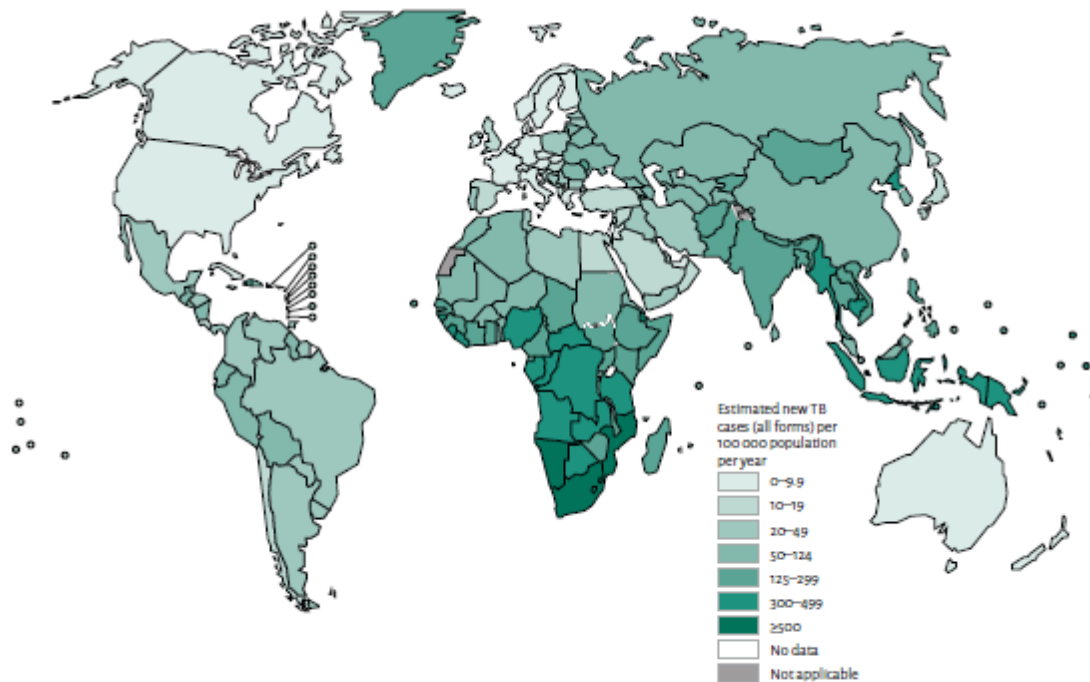
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Outline

- Background

- Methods

- Results

- Discussion

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Tuberculosis

9,6 million new TB-cases and 1.5 million deaths from TB in 2014

Estimated TB incidence rates, 2014

Estimated new TB cases (all forms) per 100 000 population per year

- 0–9.9
- 10–19
- 20–49
- 50–124
- 125–299
- 300–499
- ≥500
- No data
- Not applicable

WHO. TB report. 2015

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Global Mental Illness

- 13 % of the total disease burden

- Third largest cause of disability adjusted life years lost (DALYs)

WHO. Global burden of disease. 2012

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Tuberculosis and mental disorder

❑ Limited evidence from low and middle income countries

❑ Common mental disorder:

  ▪ Prevalence rating from 27 % - 82 % in TB cohorts

  ▪ Only one study from Africa investigates TB-cases compared to background population (Nigeria)

    ❑ 30 % CMD in TB patients
    ❑ 5 % CMD in healthy controls

Aghanwa HS et al. J Psychosom Res. 1998

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Description of study

- ## Objective:
  - Assess the association between common mental illness and tuberculosis in an area with high prevalence of tuberculosis

- ## Study design
  - case control study

- ## Guinea Bissau:
  - Prevalence of tuberculosis: 279/100.000
  - Prevalence of mental illness is unknown

Lemvik G et al. Trop Med Int Health. 2014

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Cases

- ❑ Recruited from a running TB-cohort, diagnoses and treated for six months according to WHO criteria

- ❑ Screened for common mental disorder was performed at:
  - ■ Inclusion
  - ■ 2, 4 and/or 6 months follow up

- ■ Not all included TB patients were screened at each time point

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Controls

❑ The Bandim Health Project (BHP), a Demographic Surveillance Site (DSS) since 1978

❑ A randomized sample of unmatched controls was obtained from the surveillance database

❑ Screening for common mental disorder was performed by a trained field assistant visiting controls at home

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Screening tools

- ## Kessler-10

  - 10 item Scale: 1-5 (sum: 10-50)

  - depression and anxiety

  - Validated in several sub-Saharan settings

  - Cut off 16

Andersen LS et al. Int J Methods Psychiatr Res. 2011
Tesfaye M et al. J Affect Disord. 2010

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Kessler-10

- During the past 30 days, how often have you been feeling:

  - 1. Tired out for no good reason?
  - 2. Nervous?
  - 3. So nervous that nothing could calm you down?
  - 4. Hopeless?
  - 5. Restless and fidgety?
  - 6. So restless that you could not sit still?
  - 7. Depressed?
  - 8. That everything was an effort?
  - 9. So sad that nothing could cheer you up?
  - 10. Worthless?

Screening tools

- ## SCL-8

  - 8 item version of the SCL-90 (Scale 0-4)
  - depression and anxiety
  - Well-validated in high resource settings
  - Item dichotomization, cut off 0/1

Fink P et al. J Psychosom Res. 2003

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SCL-8

- During the past 30 days, to what extent have you been bothered by the following problems:

  - 2. Nervousness or shakiness inside?
  - 30. Feeling blue?
  - 31. Worrying to much about things?
  - 33. Feeling fearful?
  - 54. Feeling hopeless about the future?
  - 71. Feeling everything is an effort?
  - 72. Spells of terror or panic?
  - 79. Feeling of worthlessness?

Interviews

- Portuguese versions of K-10 and SCL-8

- Interviews in Portuguese Kreol

- One field assistant for all interviews
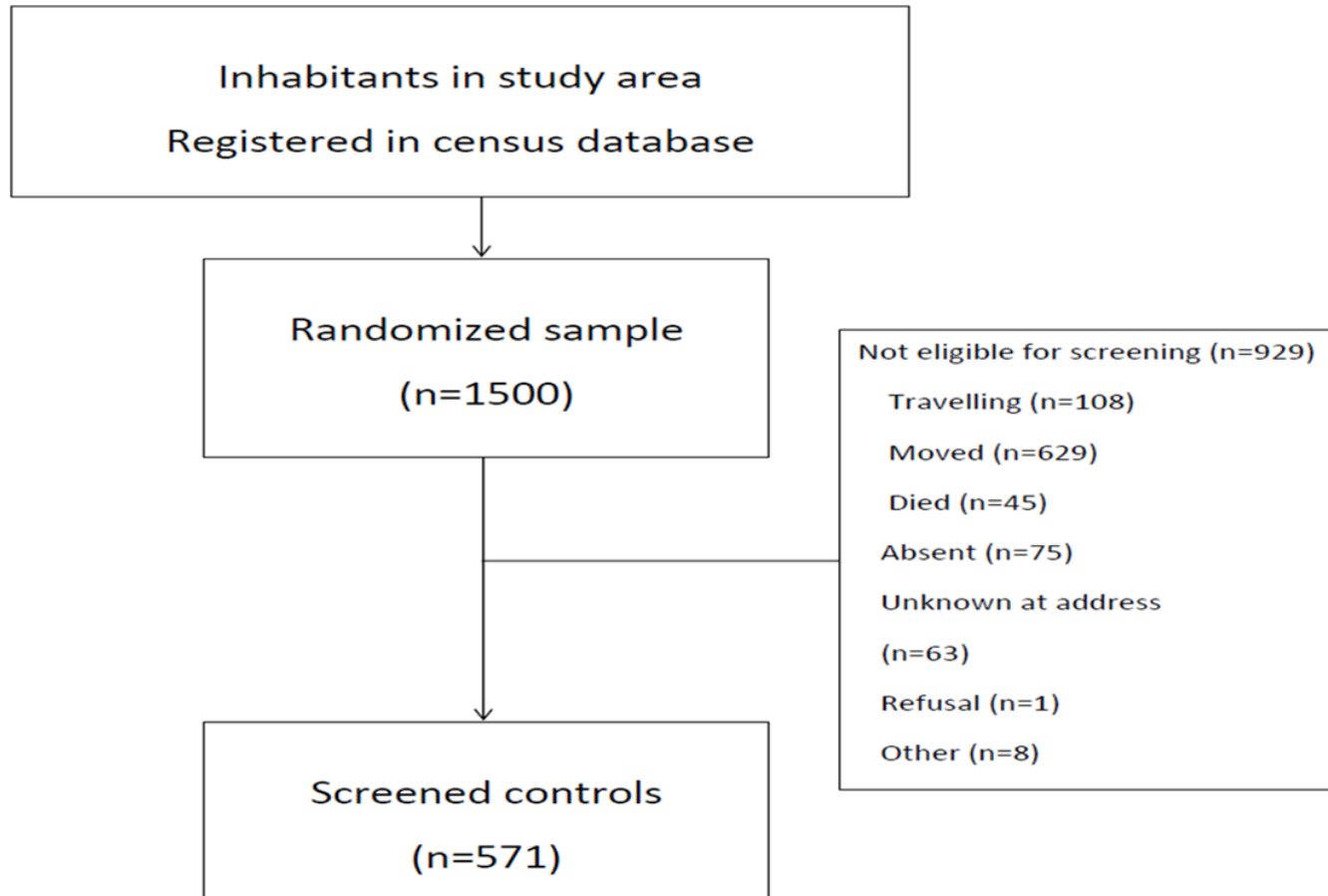
- Performed continuously

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Results

- Controls:
  - Interviews performed: 571

- Cases:
  - Interviews performed: 419
  - TB-patients interviewed: 218

Controls

Cases, interviews at each time point

- At inclusion: 121
- At 2 months: 106
- At 4 months: 92
- At 6 months: 100

- Cases at each time point were compared with controls

Sociodemographic characteristics

- Difference, cases vs controls (p<0,05)
  - Sex
  - Religion
  - Education
  - Employment
  - Smoking
  - Alcohol consumption
  - Civil state

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CMD, mean score, difference and effect size

	Controls Mean (SD)	Cases Mean (SD)	Dif. (CI)	P-value	Cohens d
At inclusion					
K10	1.19 (0.21)	1.36 (0.28)	-0.17	0.000	0.68
SCL 8	0.23 (0.26)	0.41 (0.33)	-0.17	0.000	0.61
At 2 months					
K10	1.19 (0.21)	1.17 (0.15)	0.02	0.172	0.13
SCL 8	0.23 (0.26)	0.18 (0.21)	0.05	0.035	0,20
At 4 months					
K10	1.19 (0.21)	1.21 (0.25)	-0.01	0.588	0.06
SCL 8	0.23 (0.26)	0.24 (0.30)	-0.01	0.811	0.03
At 6 months					
K10	1.19 (0.21)	1.14 (0.16)	0.05	0.005	0.29
SCL 8	0.23 (0.26)	0.18 (0.26)	0.05	0.058	0.20

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Prevalence of common mental disorder

	SCL-8 (Cut off 1/0)			Kessler-10 (Cut off ≥16)	
	N	Prevalence		N	Prevalence
TB-cases					
At inclusion	40	33 %		18	15 %
At 2 months	11	11 %		1	0.9 %
At 4 months	10	10 %		5	5.4 %
At 6 months	8	8 %		2	2 %
Controls	39	6.8 %		14	2.5 %

Common mental disorder, crude Odds Ratio, by logistic regression

	CMD defined by SCL-8 (cut off 0/1) Crude OR (95 % CI)	CMD defined by Kessler-10 (cut off ≥16) Crude OR (95 % CI)
Controls	Ref	Ref
TB-cases		
At inclusion	6.73 (4.09-11.10)	7.00 (3.35-14.42)
At 2 months	1.58 (0.78-3.19)	0.39 (0.05-2.91)
At 4 months	1.66 (0.80-3.46)	2.29 (0.80-6.51)
At 6 months	1.19 (0.54-2.62)	0.81 (0.18-3.63)

CMD, Adjusted Odds Ratio

	CMD defined by SCL-8 (cut off 0/1) Adjusted* OR (95 % CI)	CMD defined by Kessler-10 (cut off ≥16) Adjusted* OR (95 % CI)
Controls	Ref	Ref
TB-cases		
At inclusion	11.4 (5.79-22.61)	6.82 (2.49-18.7)
At 2 months	2.51 (1.05-6.01)	0.18 (0.01-2.42)
At 4 months	2.05 (0.83-5.03	1.18 (0.29-4.76)
At 6 months	1.61 (0.65-4.00)	0.53 (0.09-2.98)

*Adjusted for sex, age, religion, employment, smoking, alkohol consumption and civil state

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Conclusion

Screening for anxiety and depression revealed:

- **Higher prevalence of common mental disorder among TB patients at time of diagnosis compared to background population**

- **Decrease in score during treatment**

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Limitations

- Validation of screening tools
  - K-10: doubtfully low prevalence among background population and TB-patients

- Depression symptoms vs TB symptoms
  - Similar symptoms may blur the prevalence of CMD among TB-patients

- Sociodemographic background variables
  - The controls may not reflect the background population, due to the high amount of people non-eligible for screening

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Acknowledgments

- Dedicated field staff and participants in data collection
- Bandim Health Project
- Aarhus University Hospital, Aarhus, Denmark
- Department of infections diseases and Center for Global Health, Aarhus University Hospital, Aarhus, Denmark
- INDEPTH network
- Lundbeck Foundation
- The foundation of 17-12-1981 (fonden af 17-12-1981)
- Director Jacob Madsen and Olga Madsens Foundation (Direktør Jacob Madsen og Olga Madsens Fond)
- Ulla and Mogens Folmer Andersens Foundation (Ulla og Mogens Folmer Andersens Fond)

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Thank you