

Screening and brief intervention to
reduce occupational harm from tobacco,
alcohol and cannabis among coal mine
workers in West Bengal

Introduction

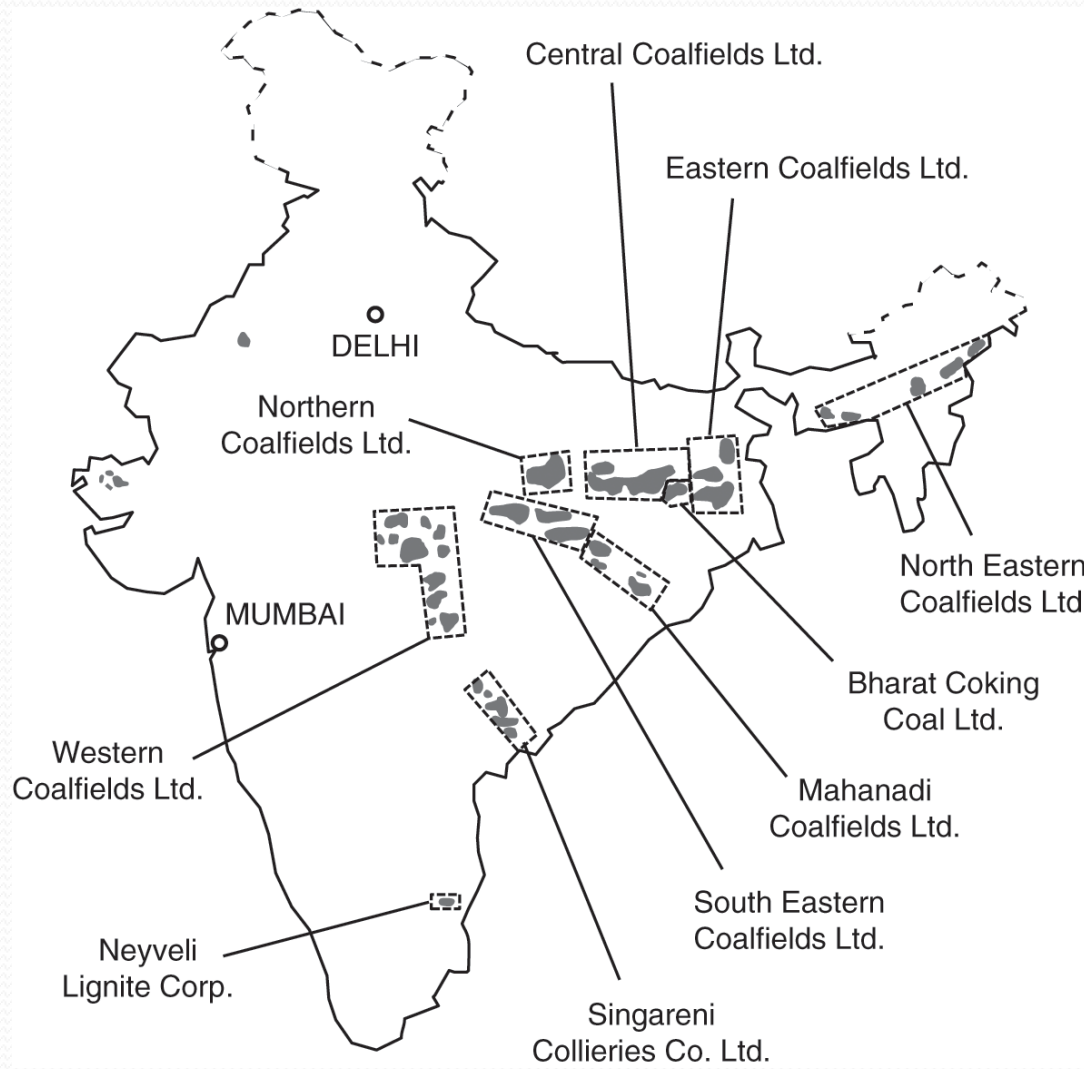
- Mental health is an under-recognized area in occupational health in India, although principles of occupational health and safety includes enhancement of mental well-being of workers.
- Tobacco and alcohol have higher prevalence rates among different occupational groups as compared to general population in India.
- Both lead to significant occupational harm in terms of absenteeism, injuries, sickness and lost productivity.

Population

- Coal industry in India is one of the largest with a turnover of INR 80,000 crore (US\$ 13 billion) and worker strength of approximately 3,60,000.
- However, regular consumption of tobacco and alcohol among workers in mining higher among occupational groups (almost 40%) increasing to almost 70% among workers with occupational injuries.
- In absolute terms, at least 1,10,000 workers in Indian coal mines are prone to adverse consequences of harmful substance use.

Study Site & Participants

- Coal mine workers engaged in mining activities (skilled/semi-skilled/unskilled) ≥ 18 years of age of either sex are recruited from the Raniganj – Asansol coal mining areas of Eastern Coalfields Ltd. (ECL).
- During the initial phase of the study workers from Nimcha coal mine area, Satgram area and Ningha coal mine area are screened.
- All study procedures are community or primary care based.



Objectives

- ASSIST screening to identify patterns of tobacco, alcohol and cannabis use among coal mine workers.
- Brief intervention as secondary prevention among “hazardous and harmful” users.
- Brief intervention along with referral for “dependent” users.
- Identify other common mental health problems in this population, particularly anxiety and depression as well as externalizing disorders.

Primary Screening

- Have you consumed alcohol, cannabis in any form (eaten/beverage/smoked) and / or tobacco (smoked/smokeless) in any form during past one year?
- Have you consumed alcohol, cannabis in any form (eaten/beverage/smoked) and / or tobacco (smoked/smokeless) in any form during the past 30 days?
- Any worker responding “yes” to both questions for any or more than one substance recruited.
- Any worker responding “no” to any of the questions excluded.

Allocation

- On recruitment all participants administered ASSIST.
- “Low-risk” for all substances provided general health advice & excluded.
- “Hazardous and harmful” participants randomly allocated:
- a) “Only screening” (ASSIST and biomarker screening and general health advice) or
- b) “Screening and brief intervention (BI)” group (ASSIST and biomarker screening and general health advice with add-on brief intervention).
- “Dependent” users with alcohol as the main problem receive ASSIST and biomarker screening; general health advice; brief intervention along with referral.

Assessments

- GENACIS (Gender, Alcohol and Culture: An International Study) modified questionnaire with Harms to Others (H₂O).
- WHO Health and Work Performance Questionnaire (HPQ).
- SF-36 questionnaire – Quality of life – 11 items.
- Hospital Anxiety and Depression Scale (HADS) for primary screening for anxiety & depression, consists of 14 items with 7 items each to screen anxiety and depression.
- Strengths & Difficulties Questionnaire (SDQ) – Adult – 25 items.
- Biomarker screening – EDTA whole blood PEth; and urinary cotinine and THC-COOH measured by ELISA.
- Health screening: Physical – All systems physical; Biochemical (LFT).

Follow Up & Outcome Measures

- General health advice and brief intervention on recruitment; & at 3 and 6 months.
- ASSIST, Harms to Others (H₂O), HPQ (Work Performance domain only), SF-36, biomarker screening, health screening (physical & biochemical) after 3 and 6 months.
- Outcome measures will be ASSIST score; biomarker status; health status (physical, biochemical); absenteeism, injury, sickness, lost productivity, quality of life, harms to others.

Community Engagement

- At administrative level: Felt need.
- At community level: Engage community leaders / opinion builders.
- At family level: Spouses & adolescent kids.
- At primary care level: Encourage probing, empowerment & referral.
- Constant interaction with community.
- Dissuade fear of coercion.
- Positive feedback regarding effectiveness.

Observations

- Out of n=74 with primary screening 94% (n=70) eligible.
- Age range is 25 to 58 years and the mean age approximately 46 years.
- Most subjects (almost 80%) are illiterate or have only primary education.
- Interestingly workers earn at least INR 18,000 / month and most have more than one asset in their household.

Figure 1. Patterns of tobacco use among coal mine workers (n=70)

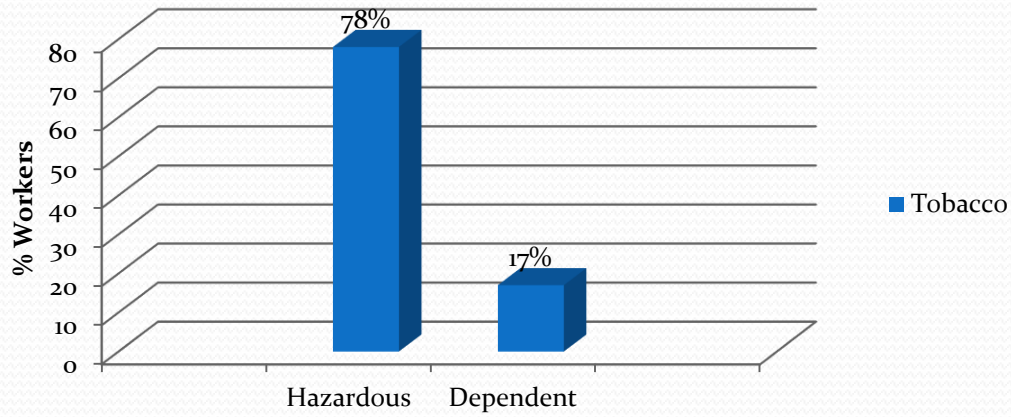
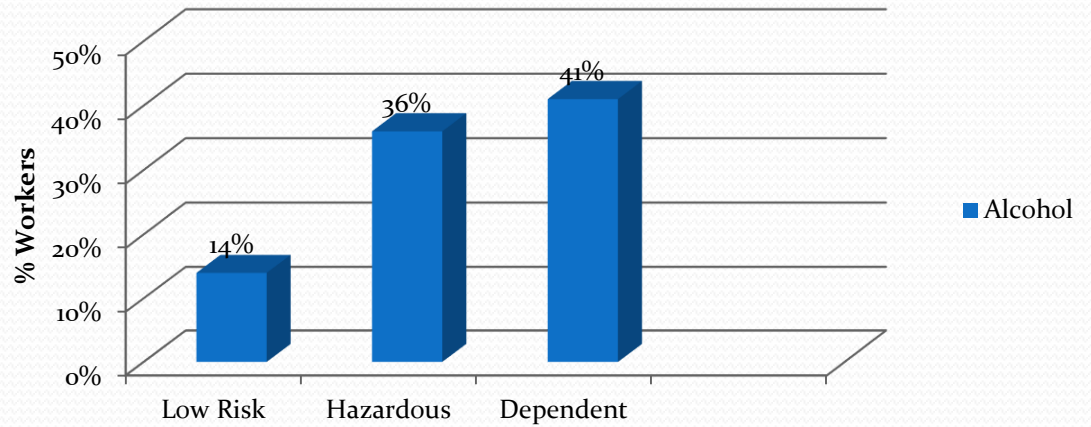


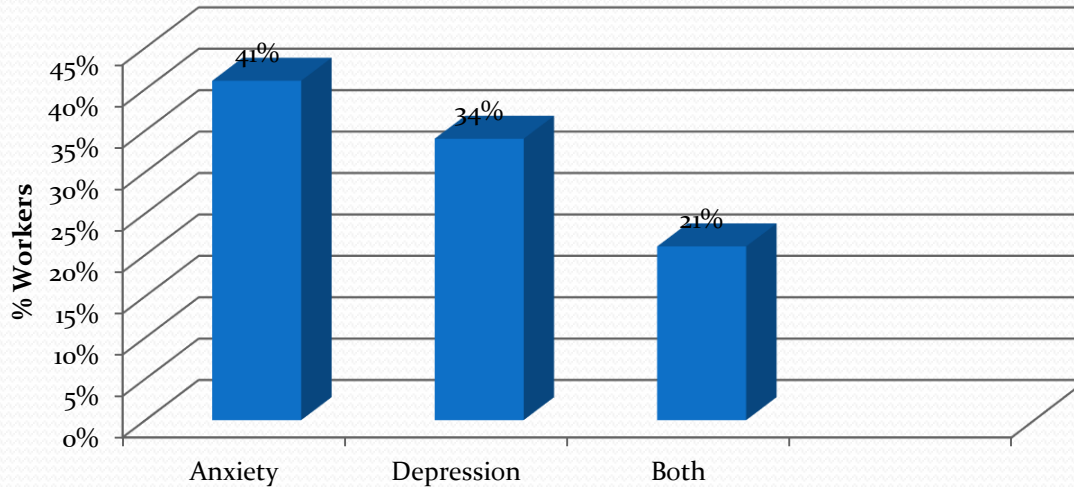
Figure 2. Patterns of alcohol consumption among coal mine workers (n=70)



Cont.

- 73% (n=51) have both tobacco and alcohol problems.
- Only 11 (16%) identified with cannabis use with 4% (n=3) in “low-risk” & 10% (n=7) in “hazardous and harmful” category.
- n=1 each also had lifetime use of inhalants and sleeping pills and n=2 subjects are under DOTS treatment for pulmonary TB.
- Out of 53 workers screened for levels of work related stress almost 34% (n=18) reported moderate to high levels of stress.

Figure 3. Common mental health problems among coal mine workers (n=29)



Almost 55% (n=16) out of n=29 screened were identified with either anxiety or depression or both.

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