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Assessing the feasibility of collaborating with factories to improve work safety in Kamrangirchar, Dhaka, Bangladesh: participatory before-and-after intervention study

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Introduction

Addressing occupational injury and disease has been declared a national priority in Bangladesh. However critical gaps remain in improving work safety in small-scale peri-urban factories. We aimed to assess the feasibility of collaborating with owners and workers to design and implement interventions to improve work safety in two metal factories in Kamrangirchar, Dhaka.

Methods

We implemented a participatory mixed methods before-and-after study with four phases. Phase 1 explored the dynamics of injuries, hazards, and risks using hazard assessments, surveillance, in-depth interviews, and focus group discussions. Triangulation of phase 1 findings informed design and implementation of intervention packages implemented in phase 2. In phases 3 and 4, we repeated hazard assessments and used qualitative methods to document changes in hazards and perspectives at 6- and 12-months post-intervention. Observations captured by field notes complemented data generated throughout the study.

Ethics

The study was approved by the MSF Ethical Review Board (ERB) and by the ERB of the Centre for Injury Prevention and Research, Bangladesh.

Results

Overall 136 workers in two factories (A and B) participated in the study (with a turnover of 41.5%). Surveillance captured 129 injuries during phase 1 (from 10th March 2019 in factory A and 30th April 2019 in factory B, to 31st July 2019), and all workers aged under 18 years experienced incidents. Hazard assessments documented hazard risk scores (HRS) of 54% in factory A and 36% in factory B. Qualitative data indicated workers perceived their work as risky, but explained it was prioritised over their health due to financial necessity. Phase 2 intervention packages included engineering controls, personal protective equipment, infrastructure safety and training. Factory owners and workers actively participated in design and implementation. Phase 3 showed a two-fold reduction in HRS in factory A (24%) and a 1.5-fold reduction (21%) in factory B. Phase 4 hazard assessment revealed that improvement was sustained in one factory; the final HRS was 27% in factory A, but returned to the pre-intervention score of 36% in factory B. Workers explained they observed improvements in workplace safety but noted challenges in sustainability due to owner commitment and worker turnover. Observation and qualitative data revealed complex power dynamics in the factories, as well as power imbalances and risks faced by female and young workers.

Conclusion

It was feasible to collaborate with workers and owners to implement interventions aimed at improving work safety. However, sustainability was mixed, and long-standing structural inequities that contribute to poor safety remain. Findings indicate urgent action is needed to improve safety and build an inclusive model of occupational health, including social and protection components, with particular attention for female workers and workers aged under 18.

Conflicts of interest

None declared.