Invited Speaker Presentations

IS - 01

Randomized controlled trials of community interventions

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Objective: Agricultural pesticide self-poisoning is a major public health problem in rural Asia. Multiple small studies have suggested that improved household pesticide storage might be effective at preventing pesticide self-poisoning and suicide, but there is no clear evidence of effectiveness. We aimed to test the effectiveness of lockable household containers for preventing pesticide self-poisoning.

Methods: We performed a community-based cluster randomised controlled trial in Sri Lanka with 180 rural villages allocated to intervention (n=90) or usual practice control (n=90). Intervention arm households using pesticides were given a lockable storage container. Further interaction was restricted to community posters and six-monthly reminders during routine community meetings. Primary outcome was the incidence of pesticide self-poisoning in people aged 14-years and over during a three-year follow-up. Secondary outcomes included the incidence of pesticide poisoning, all self-harm (fatal and non-fatal), all self-poisoning, and paediatric pesticide poisoning.

Results: We enrolled 223,861 people in 53,382 households; 20,200 household pesticide storage containers were distributed. After three-years, surveys of 13,999 (26.2%) households indicated that 53.3% and 5.0% of intervention and control households, respectively, were locking pesticides away at least some of the time. The intervention had no significant effect on pesticide self-poisoning: intervention 293.3 vs. control 318.0 per 100,000 years of follow-up (RR 0.93 [95%CI 0.80-1.08], p=0.33). There was no evidence that the intervention was more effective during the first year, when appropriate usage was maximal. We found no evidence of switching from pesticide self-poisoning to other forms of self-harm, with no significant difference in fatal (intervention 82 vs control 67, RR 1.22 [0.88-1.68]) or non-fatal (1135 vs 1153, RR 0.97 [0.86-1.08]) self-harm events involving all methods.

Conclusion: We found no evidence that means reduction through improved household pesticide storage reduces pesticide-self-poisoning. Other approaches, particularly removal of highly hazardous pesticides from agricultural practice, are likely to be more effective for suicide prevention in rural Asia.