



INTEGRATED ASSESSMENT OF SELF-REPORTED PESTICIDE TOXICITY, FARMER'S KNOWLEDGE AND PRACTICES, AND OCCUPATIONAL HEALTH SAFETY

A Mixed Method Study in Farming Communities



BACKGROUND



- In Nepal, agriculture relies heavily on chemical fertilizers, with 227,836 metric tons used in the fiscal year 2077/2078, Banke alone contributed 4,582 metric tons.
- Pesticide consumption is also high, with 142 gm per hectare used in Banke
- According to Ministry of Agriculture and Livestock Development pesticide import has increased 5 times in a decade (2007-2018)
- Although the government has introduced Integrated Pest Management (IPM) program to reduce pesticide usage, farmers continue to engage in improper and excessive application practices. This raises significant public health and environmental concerns.



OBJECTIVES

To understand the perceived health effects of chemical pesticides used among farmers of Banke district.

SPECIFIC

Assess self-reported toxicity of frequently used pesticides among farmers

Assess farmers' pesticide usage knowledge and practice

Analyze adaptation of alternative farming methods (IPM/Organic)

Gather and analyze Occupational Health Safety (OHS) consultation data from respective Health Facilities



METHODOLOGY

CONCURRENT MIXED METHOD STUDY DESIGN

QUANTITATIVE

To assess the self-reported toxicity of frequently used pesticides used by farmers, especially among vegetable pockets, and for the situational analysis of the alternative farming methods like IPM / organic among projects

QUALITATIVE

In-depth Interview Guidelines were developed to the knowledge and practice of pesticides among farmers and their coping mechanisms

STUDY SITE: NEPALGUNJ SUB-METROPOLITAN CITY, DUDUWA & KHAJURA RURAL MUNICIPALITY

SAMPLE SIZE: 322 (QUANTITATIVE: 299, QUALITATIVE: 23)- 95% CI, 5% MOE

RESULT



- Headaches affected the largest portion of participants (20.93%), followed by muscle and back pain (20.33% each)
- Hypertension was the most common chronic condition reported, affecting 13.33% of participants, followed by neuropathic pain (11.4%) and Chronic Obstructive Pulmonary Disease (10%)
- Occupational Health and Safety (OHS) consultation data showed that one-third of the participants had an ongoing health problem, with a notable prevalence of various types of pain, including arm, leg, and epigastric pain and required the medical prescription
- Majority of participants reported having health insurance, underscoring its importance as a financial safety net for healthcare expenses
- Participants were aware of the harmful effects of pesticide use but tended to ignore minor health issues after pesticide application

RESULT



- Participants used personal protective equipment (PPE) and spray tanks, but disposal of these items was often haphazard, though some were recycled.
- When 63.33% farmers were currently using IPM in vegetable cultivation, only 27.74% had received IPM training
- Around three quarters (74.39%) of participants observed benefits from IPM or Organic Farming, including improved crop quality (73.77%), reduced chemical use (57.38%), and improved water quality (9.84%)
- 95% faced IPM adoption challenges, 44% noted limited organic output availability, 33.33% faced cost challenges, and only 4.88% were satisfied with IPM/Organic Farming support/resources.

CONCLUSION



- The study highlights the prevalence of various health issues among farmers, both acute and chronic.
- It also underscores the positive impact of farmers' knowledge of IPM and organic farming on health and pesticide exposure contributing to better health, crop quality, and reduced pesticides exposure.
- Awareness of safety practices like PPE usage, pesticide color coding and pesticide disposal is also evident. These findings emphasize the importance of continued education and support for farmers to promote their health and well-being.
- Mainstreaming and sustainability of OHS consultation at primary level health facilities for farmers helps to identify their problem on time resulting in better prognosis

WAY FORWARD/ RECOMMENDATION



- Advocacy for integrating occupational health services into routine healthcare and ensuring collaboration, resource allocation, and feedback mechanisms for better health outcomes for informal workers, including farmers, in Nepal
- Promotion of Urban health promotion Center (UHPC) is key intervention to reach urban poor population
- Supporting ultra poor families for enrollment in National Health Insurance scheme helps them to reduce out of pocket expenditure
- Engaging pesticide retailers to educate farmers on safe pesticide handling and disposal practices, crucial for minimizing environmental and health risks in agriculture
- Expansion of IPM and organic farming training and support across regions for farmers and consumers health



AUTHORS

- Sandhya Subedi, Medical Coordinator, Medecins Du Monde (MdM)-France
- Basanta Thapa, Program Manager, MdM- France
- Shreelata Rana, Monitoring & Evaluation Officer, MdM- France
- Ganesh Karki, Public Health Officer, MdM – France
- Sailaja Ghimire, Planetary Health Research Center
- Bishal Dahal Khatri, Planetary Health Research Center



ACKNOWLEDGMENT

- GIZ/S2HSS
- AFD
- Nepalgunj Sub metropolitan city
- Duduwa Rural Municipality
- Khajura Rural Municipality
- UHPC and health facilities
- Study participants
- Local agriculture cooperatives
- Bheri Environmental Excellency group



THANK-YOU!



PROFILE

Ms. Sandhya Subedi is a Medical Coordinator at Médecins Du Monde France, holding degrees in Nursing (BSc) and Public Health (Masters). Her professional focus centers on adeptly managing humanitarian, health projects and research.



+977 9810199237



MEDCO.NEPAL@MEDECINSDUMONDE.NET



WWW.MEDECINSDUMONDE.ORG



PULCHOWK RD, LALITPUR 44600





PICTURES



Quantitative Data Collection



Qualitative data collection with health worker



Qualitative data collection with farmer