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Assessment of Pesticides Handlers' Knowledge, Practices and Self-Reported Toxicity Symptoms: A Survey of Kisumu County, Kenya

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ABSTRACT

Pesticide use in modern agriculture have not only increased productivity, but also brought negative health effects on human and the environment due to mishandling. This study assessed the knowledge, practices and self-reported toxicity symptoms among 464 pesticides handlers in Kisumu County, Kenya. Data were collected by use of questionnaires and observational checklists. Chi-square test (χ^2 -test) was used to test the associations between independent and dependent variables. The study found that 97% of the participants knew pesticides have negative effects on human health while 96% could read and understand instructions on pesticides labels. There was significant association between the age and awareness on pesticides exposure level ($p < 0.001$), knowledge on exposure through contact ($p < 0.02$) and dust mask use ($p < \text{value } 0.03$). A Majority (82%) of handlers changed clothing before and after pesticide exposure whereas 92% never ate or drank while handling pesticides. A majority, 66% and 61 % of stockists lacked firefighting equipment and first aid kits respectively. Itching eyes (79%), skin itching (74%) and coughing (68%) were the most reported acute symptoms. Handlers' degree of knowledge was associated with safety practices and acute symptoms. Their safety practices were also associated with toxicity symptoms. In conclusion, the null hypotheses were rejected because education and experience influenced gloves and dust masks wearing. Skin itching, itching eyes and excessive sweating were associated with skin disease. Respiratory disease was associated with sore throat, stuffy nose, nose bleeding, chest tightness and shortness of breath. Age, gender and type of workplace were the main predictors of the odds of an increase in high degree of knowledge. Education, experience, and hours of working per day were significant to the prediction of the odds of an increase in good practices. Shortness of breath was significant to the prediction of the odds of an increase in developing Asthma. It is recommended that special trainings on Integrated Pest Management (IPM) and pesticide safety be introduced to help minimize exposure to pesticides risks.