

Environmental Health Risk Analysis of Hydrogen Sulphide (H₂S) Exposure On Communities Around Broiler Farms

Aria Gusti

Andalas University, Padang, Indonesia

ABSTRACT

INTRODUCTION: The development of broiler farm sector contributed to the air pollution in the form of odour due to the formation of hydrogen sulphide gas (H₂S). This study aims to analyse the level of risk of H₂S exposure in the community near broiler farms PT. Ciomas Padang. **METHODS:** The study used Environmental Health Risk Assessment (EHRA) method. Population consists of 160 people and 66 sample respondents with accidental sampling technique. Four-point air samples taken on the settlement around broiler farms PT. Ciomas used gas sampler impinger. **RESULTS:** Four-point air samples were lower than odor threshold (0.0ppm or 0.027mg/m³), H₂S concentration was 0.015mg/m³, 0.018 mg/m³, 0,022 mg/m³ and 0.023mg/m³. The calculation of the largest real-time intake and lifetime intake found at location C. The average real-time intake value was 0,00135 mg/kg/day and intake lifetime were 0.00406mg/kg/day. RQ value of real-time and lifetime, obtained all point of measurement has RQ>1 which means that H₂S exposure is unsafe and risk management is necessary. **CONCLUSION:** The required risk management by limiting safe concentration and limiting the duration of exposure. Other efforts that can be done is by adding lime and prebiotic on chicken manure to reduce the release of H₂S gas and cleaning the dirt under the cage once a week.

KEYWORDS: EHRA, H₂S, Farm, Community

Exploring Contributing Factors of Depression Among Inmates in a Local Prison Malaysia: A Mixed Methods Study

Halimatus Sakdiah Minhat, Gunenthira Rao

ABSTRACT

INTRODUCTION: Globally, there is a rapid increase in the prison population, and being a marginalized population put them at risk of depression. The objective of this study is to determine and explore the contributing factors of depression among adult prison inmates in a local prison. Malaysia. **METHODS:** A mixed methods sequential explanatory study was undertaken using the Biopsychosocial model at a medium security prison in Malaysia. In the first quantitative phase, 460 inmates were selected using the probability proportional to size using stratified random sampling. A cross-sectional data was collected using a validated and pre-tested questionnaire, which depression was screened using the Center for Epidemiologic Studies Depression Scale. Multiple logistic regression analysis was applied to identify predictors using SPSS. In the follow up qualitative phase, a semi-structured interview was undertaken with 16 inmates to help explain and deepen understanding of the quantitative results. The conversations were recorded, transcribed as verbatim, and analysed using a thematic analysis. **RESULTS:** The prevalence of depression was 40.7%. Depression was predicted by perceived having stress, longer duration of sentences, being non-Muslim, presence of communicable disease, and history of childhood abuse. Qualitative phase explained that accessibility, stigma, dissatisfaction, inadequate social support, perceived misjudgement, the uncertainty of future, and internal states including guilt, shame, and regret as a contributing factor of depression. **CONCLUSIONS:** Study showed a high prevalence of depression among inmates. There is a need for more significant investment in strengthening mental health services, improvement in the prison environment, and the criminal justice system.

KEYWORDS: Depression, Adult, Inmates, Prison