

## Grant Awardees

📅 Sun. Sep 28, 2025 9:50 AM - 10:30 AM JST | Sun. Sep 28, 2025 12:50 AM - 1:30 AM UTC 🏛️ Session Room 1  
(Main Hall A)

**WACP Grant Award Session**

[GA-2-01]

Leveraging Financial Metrics as Predictive Biomarkers for Suicide Risk: An Integrative Machine Learning Study on Economic and Mental Health Interactions

\*Sahnaz Vivinda Putri<sup>1</sup>, Prihantini Prihantini<sup>2</sup>, Andi Nursanti Andi Ureng<sup>3</sup>, Asfirani Zahaz<sup>4</sup>, Rifaldy Fajar<sup>5</sup> (1. International University Semen Indonesia (Indonesia), 2. Bandung Institute of Technology (Indonesia), 3. Andini Persada College of Health Sciences (Indonesia), 4. Bonto-Bonto General Hospital (Indonesia), 5. Yogyakarta State University (Indonesia))

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[GA-2-02]

Attitude, Awareness and Clinical Competency Among Physicians of the National Center for Mental Health Towards the Lesbian, Gay, Bisexual, and Transgender (LGBT) Community

\*Charisse Jae Rongcal Faa<sup>1</sup>, Sharlene Mae Palma Ongoco<sup>1</sup> (1. National Center for Mental Health (Philippines))

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### [GA-2-01] Leveraging Financial Metrics as Predictive Biomarkers for Suicide Risk: An Integrative Machine Learning Study on Economic and Mental Health Interactions

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Keywords : Suicide Risk Prediction、Financial Distress、Machine Learning、Economic and Mental Health Integration、Risk Stratification

**Background and Aim:** The interplay between financial distress and mental health is well-established, yet its predictive role in suicide risk remains underexplored. This study investigates financial metrics, such as unemployment trends and debt-to-income ratios, as biomarkers for suicide risk. By integrating economic and mental health data, the aim is to develop a machine learning model for early identification of high-risk individuals, enabling proactive interventions tailored to economically vulnerable populations.

**Methods:** Datasets utilized include the American Community Survey (ACS, 2018–2023) for employment and income metrics, the Behavioral Risk Factor Surveillance System (BRFSS, 2018–2023) for mental health indicators, and the Federal Reserve Economic Data (FRED, 2018–2023) for macroeconomic trends such as bankruptcy rates. A cohort of 150,000 individuals was constructed by harmonizing these datasets using geographic and temporal alignment across U.S. counties. Predictors included unemployment duration (>6 months), income-to-debt ratio, and self-reported mental distress. A machine learning pipeline was implemented, integrating Gradient Boosting Machines (GBMs), Random Forests (RFs), and Neural Networks (NNs), with hyperparameter tuning via grid search. Model performance was evaluated using 10-fold cross-validation, with precision-recall area under the curve (PR-AUC) as the primary metric for assessing predictive accuracy.

**Results:** Unemployment lasting >6 months increased suicide risk by 46% (OR: 1.46; 95% CI: 1.41–1.52;  $p < 0.001$ ), while income-to-debt ratios >50% raised risk by 58% (OR: 1.58; 95% CI: 1.52–1.65;  $p < 0.001$ ). High self-reported mental distress was the strongest predictor, increasing risk by 87% (OR: 1.87; 95% CI: 1.80–1.94;  $p < 0.001$ ). Younger individuals (18–34 years) and single-income households faced disproportionately higher risks. The ensemble model achieved strong performance (PR-AUC: 0.92; AUROC: 0.90) and showed a 27% improvement over logistic regression models, with Gradient Boosting Machines contributing most to accurate predictions.

**Conclusions:** This study establishes financial distress as a quantifiable predictor of suicide risk. The findings emphasize the importance of integrated economic and mental health strategies to prevent suicide in high-risk populations.

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## WACP Grant Award Session

### [GA-2-02] Attitude, Awareness and Clinical Competency Among Physicians of the National Center for Mental Health Towards the Lesbian, Gay, Bisexual, and Transgender (LGBT) Community

\*Charisse Jae Rongcal Faa<sup>1</sup>, Sharlene Mae Palma Ongoco<sup>1</sup> (1. National Center for Mental Health (Philippines))

Keywords : LGBT healthcare, LGBT-DOCCS, Physician attitudes, Medical education, Mental health

#### Introduction:

LGBT Filipinos continue to face a multitude of minority stressors from society due to the continuous clash between their values and those of the dominant culture which contribute to high rates of depression, anxiety and stress. Mental health requirements of LGBT Filipinos are difficult to address due to the dearth of service providers who respect SOGIE.

#### Objective:

This study investigated physicians' clinical competency, attitudes, and awareness regarding the LGBT community at the National Center for Mental Health (NCMH), a level 3 special research and training center and hospital in the Philippines. It aimed to identify the sociodemographic factors influencing these variables and the relationships between them. NCMH physicians are in a unique position intervene and enhance subpar mental health outcomes of the LGBT community.

#### Methods:

A survey-based quantitative methodology was employed using a descriptive correlational research design. The study included a total of 58 psychiatrists and 115 medical physicians working at the National Center for Mental Health. The study assessed physician demographics, training, and their attitude, awareness, and clinical competency. Participants were recruited through non-probability convenience sampling based on their available time. Data was collected through LGBT-DOCSS survey questionnaire.

#### Results:

The results indicated that years of practice, specialty (psychiatry vs. other medical fields), and LGBT-related training hours were significantly associated with differences in physician attitudes, awareness, and preparedness. Younger physicians, those in psychiatry, and those with more LGBT-related training demonstrated higher levels of awareness and more favorable attitudes.

#### Conclusion:

The study concluded that structured LGBT health education in medical curricula and specialized training programs are essential to improve physician competency and promote inclusive healthcare practices. Direct patient exposure alone is insufficient without formal training. The findings highlight the need for targeted interventions to address gaps in knowledge and promote positive attitudes towards the LGBT community among healthcare professionals.