

Socio-Economic Factors and Patient's Depression in Rwanda; A Case Study of Gisenyi District

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Socio-Economic Factors and Patient's Depression in Rwanda; A Case Study of Gisenyi District

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Abstract

The primary objective of this research was to explore how socio-economic factors influenced the occurrence and severity of depression in patients receiving care at Gisenvi District Hospital. The specific objectives of this research were to evaluate the effect of income status on the occurrence of patients' depression, to assess the effect of educational status on the occurrence of patients' depression, and to examine the relationship between employment status and patients' depression at Gisenvi District Hospital, Rwanda. The study utilized descriptive-cross-sectional and correlational research methodologies, employing quantitative research techniques. Data was collected from 156 respondents in their homes via selfadministered questionnaire. The study revealed consistent experiences of depressive symptoms associated with income status, with mean values ranging from 4.8312 to 4.870 and moderate standard deviations ranging from 0.467 to 0.63457. Strong positive correlations (r=0.775 to r=0.807) further emphasized the pronounced relationship between income status and various dimensions of depression, highlighting the vulnerability of patients with lower income levels. Similarly, the analysis on educational status demonstrated psychological challenges linked to educational backgrounds, supported by high mean values (ranging from 4.844 to 4.870) and relatively narrow standard deviations (ranging from 0.481 to 0.573). The significant Pearson correlation coefficients (r=0.693 to r=0.894) emphasized the substantial association between poor educational status and different aspects of depression, underlining the impact of educational experiences on emotional well-being. Furthermore, the investigation on employment status uncovered significant challenges related to employment, supported by high mean scores (ranging from 4.824 to 4.863) and narrow standard deviations (ranging from 0.485 to 0.584). Strong positive correlations (r=0.743 to r=0.827) underscored the potential influence of employment conditions on the emotional well-being of the patients. The study underscores the impact of socio-economic factors on depression in Gisenyi District Hospital patients. Recommendations include implementing socioeconomic support programs, integrating comprehensive mental health services, facilitating patient engagement, providing specialized healthcare training, and promoting mental health awareness to mitigate stigma and improve mental well-being.

Keywords: Socio-Economic Factors, Patient's Depression, Gisenyi District Hospital. Rubavu District, Western Province, Rwanda



1. Introduction

Depression in Rwanda is a mounting concern, with socio-economic factors, particularly income, education, and employment status, significantly contributing to its prevalence. Existing data from the Rwanda Biomedical Center and Rwanda Mental Health indicates that depression affects approximately 11.9% of the general population, with a higher prevalence among youth aged 14-18 years (Mukangabire et al., 2021). Gisenyi District Hospital, serving a diverse patient population, has observed a surge in depression cases, exacerbated by socio-economic challenges, natural disasters, and the aftermath of the COVID-19 pandemic.

Notably, prior empirical studies such as the study of Kayiteshonga et al. (2022) concentrated on prevalence of mental health disorder and health care knowledge and services; Habimana et al. (2023) concentrated on depression and anxiety among cancer patients at Butaro Hospital in Rwanda have attempted to address the relationship between socio-economic factors and depression. However, these studies have often overlooked crucial knowledge gaps and contextual intricacies, failing to comprehensively assess the interplay between income, education, employment status, and other critical determinants.

Therefore, this current research examines the impact of socio-economic factors on depression among patients at Gisenyi District Hospital, Rwanda aims to fill these gaps by conducting a thorough investigation into the intricate relationship between socio-economic factors and the prevalence of depression. This research intends to provide valuable insights into the complex dynamics at play, paving the way for more effective interventions and targeted mental health support for depression for the patient in Gisenyi District Hospital in Rwanda.

1.2 Objectives of the study 1.2.1 General Objective

The main objective of this research to investigate the effect of socio-economic factors on the occurrence of depression among patients undergoing treatment at Gisenyi District Hospital in Rwanda.

1.2.2 Specific Objectives

- (i) To evaluate the effect of income status on the occurrence of patients' depression at Gisenyi District Hospital, Rwanda.
- (ii) To assess the effect of educational status on the occurrence of patients' depression at Gisenyi District Hospital, Rwanda.
- (iii) To examine the relationship between employment status and patients' depression among at Gisenyi District Hospital, Rwanda.

1.4 Research Hypotheses

 $H0_1$: Income status does not have an effect on the occurrence of patients' depression at Gisenyi District Hospital.

H0₂: Educational status does not have an effect on the occurrence of patients' depression at Gisenyi District Hospital, Rwanda.

H0₃: Employment status does not significantly relationship with occurrence of patients' depression at Gisenyi District Hospital, Rwanda

2.1Empirical Review

2.1.1 Income level and depression

Zare et al. (2022) conducted a study to examine the association between the Poverty to Income Ratio (PIR) and depressive symptoms in adults aged 20 years and older, exploring the role of income inequality in this relationship. This research used data from the 2005–2016

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National Health and Nutrition Examination Survey (NHANES), the study employed Negative Binomial Regression (NBRG) on a sample of 24,166 adults, utilizing the 9-item PHQ (PHQ-9) to measure depressive symptoms. The study found that individuals with low-PIR and medium-PIR experienced significantly higher relative risk ratios for depressive symptoms (low-PIR: IRR 1.30, 95% CI: 1.23–1.37; medium-PIR: IRR 1.55, 95% CI: 1.46–1.65). Women exhibited a higher risk ratio (IRR: 1.29, 95% CI: 1.24–1.34) compared to men. Depression was notably concentrated among low-PIR individuals, particularly among women. Therefore, the interventions targeting depression should prioritize low-income populations and that facing higher income inequality, emphasizing the need for comprehensive strategies addressing socioeconomic disparities to improve mental health outcomes, especially among vulnerable groups.

The research conducted by Chetty et al. (2014) on the intergenerational effects of income on economic mobility. They conducted a longitudinal study using data from the United States, examining the impact of parental socioeconomic background on the economic prospects of individuals. The study employed statistical analysis and modelling techniques to assess income mobility across generations. The results revealed substantial variations in economic mobility based on the socioeconomic status of one's parents. Individuals from lower-income backgrounds faced significant challenges in achieving upward economic mobility compared to those from wealthier families. Hence, the study underscored the profound influence of parental socioeconomic circumstances on an individual's economic opportunities, highlighting the persistence of socio-economic disparities across generations.

Reardon (2011) conducted an extensive investigation into the income achievement gap in the United States, focusing on educational attainment disparities among children from different socio-economic backgrounds. The study involved the analysis of large-scale educational data and statistical comparisons. The results highlighted substantial disadvantages faced by children from low-income backgrounds in terms of educational achievement compared to their wealthier peers. The study emphasized the persistence of educational inequalities driven by socio-economic factors. In conclusion, the study emphasized the need for targeted interventions and policies to address the income achievement gap in education, emphasizing the importance of providing equal educational opportunities for children from all socio-economic backgrounds.

2.1.2 Education level and Depression

Nagaraja et al. (2015) conducted a study on the prevalence of depression among nursing college students in the Kolar District. The study utilized a survey-based approach, administering standardized questionnaires to a sample of nursing students. Statistical analysis was employed to assess the prevalence of depressive symptoms and the contributing factors. The research results highlighted the various stressors faced by university students in their academic lives, particularly within the nursing profession. The study underscored the association between academic stressors and the development of depressive symptoms among nursing students. In conclusion, the researcher emphasized the need for comprehensive support mechanisms and interventions within academic institutions to address the mental health challenges faced by nursing students, suggesting the importance of promoting a supportive and nurturing academic environment.

Sidana et al. (2012) investigated the contributing causes to depression among nursing students, focusing on academic, psychological, and existential stressors. The study employed qualitative and quantitative methods, including interviews and surveys, to identify the factors associated with depressive symptoms. Statistical analysis was used to assess the correlations

between stressors and depressive symptoms. The research highlighted the multifaceted nature of stressors, including academic pressure, psychological challenges, and lack of peer support, contributing to depressive symptoms among nursing students. The study emphasized the importance of addressing these stressors to promote better mental health outcomes among students. In conclusion, the study emphasized the significance of holistic support systems within educational institutions to mitigate the impact of academic stressors on the mental well-being of nursing students, suggesting the need for comprehensive interventions targeting various stress factors.

Pelkonen et al. (2018) explored the relationship between academic performance and depressive symptoms in postsecondary students, with a focus on gender differences. The study utilized longitudinal data and surveys to examine the impact of academic results on the prevalence of depressive symptoms. Statistical analysis was used to assess the correlations between academic performance and mental health outcomes. Results: The research revealed a strong association between weak academic performance and the presence of depressive symptoms, particularly among female university students. The study highlighted the significance of academic success in promoting better mental well-being and emphasized the need for targeted support for struggling students. In conclusion, the study emphasized the importance of fostering a supportive academic environment and promoting academic success to mitigate the risk of depressive symptoms among university students, emphasizing the need for gender-specific interventions to address academic challenges.

Eberhart and Hammen (2016) examined the influence of school policies and regulations on the development of depressive symptoms among students. The study employed a mixedmethods approach, combining surveys and qualitative analysis to investigate the effects of institutional rules on mental health outcomes. Statistical comparisons and thematic analysis were used to interpret the data. Results: The research highlighted the impact of strict institutional rules and regulations on the prevalence of depressive symptoms among students. The study emphasized the role of school policies, including religious differences, dress codes, and restrictions on student freedom, in contributing to mental health challenges. In conclusion, the study emphasized the need for schools to implement supportive and inclusive policies, promoting a nurturing and accommodating environment for students. The study highlighted the importance of addressing institutional factors to foster better mental wellbeing among student populations.

2.1.3 Employment status and Depression

Rizvi et al. (2015) conducted a study on the factors influencing work status in Major Depressive Disorder (MDD) within primary and tertiary care settings, focusing on the high rates of unemployment and disability and their association with clinical characteristics and symptom severity. The research used data from two large databases, the InSight database (n = 986) and the International Mood Disorders Collaborative Project (n = 274), were analyzed. The study used chart reviews and cross-sectional analysis of MDD patients in Canada to assess employment and disability rates, clinical characteristics, and associated factors. The findings revealed elevated rates of unemployment rate (21%) and British Columbia showing the highest percentage of patients on disability (15%). Factors such as anhedonia, medical comorbidity, duration of the current major depressive episode, and benzodiazepine use significantly influenced work status and disability rates. Absenteeism was also notably prevalent across both studies. Hence, the study underscores the substantial impact of anhedonia and medical comorbidity on work status in MDD, emphasizing the critical need



for tailored treatment strategies to alleviate symptom burden, particularly in individuals facing challenges related to employment and disability.

Meanwhile, Bartley and Owen (2010) research delved into the gender-specific ramifications of employment status on mental health. Employing a comparative research design, the study incorporated surveys and focus groups to explore the psychological effects of job insecurity on different genders. The findings highlighted the gender disparities, with women appearing to be more affected by job insecurity than men. The study underscored societal and economic factors contributing to this discrepancy and advocated for gender-sensitive interventions to address mental health challenges among diverse populations. Overall, the research emphasized the necessity of considering gender-specific aspects in formulating policies and interventions to address the psychological impacts of unemployment and underemployment.

The research of Oh et al.(2022) focused on the association between employment status and depression in Korea, emphasizing the moderating effect of gender and additional variables such as work shift type and income. The study used data from the 2014, 2016, and 2018 Korea National Health and Nutrition Examination Survey (KNHANES) were analysed, incorporating the Korean version of the PHQ-9 and employment status assessment questions. A total of 11,157 participants aged \geq 19 years were included in the study. The results with Statistics: Precarious employment exhibited a higher prevalence of depression compared to permanent employment (14.9% vs. 10.8%, p < 0.001; 22.6% vs. 20.2%, p < 0.001). Precariously employed men were 1.40 times more likely to experience depression (adjusted OR: 1.40; 95% CI: 1.15–1.70; p = 0.001), whereas no significant association was found among women (adjusted OR: 1.06; 95% CI: 0.89-1.27; p = 0.493). Subgroup analyses revealed nuanced gender-specific variations based on work shift type. In conclusion, the study underscores the gender-specific impact of employment instability on depression, considering additional factors such as work shift type and income. Understanding these complexities can help develop targeted interventions to address mental health disparities associated with precarious employment in Korea.

2.3.2 Research Gap

While previous research has highlighted the impact of socio-economic factors on mental health, a key gap exists in understanding the specific contextual and cultural factors that may moderate the relationship between socio-economic status and depression in the Rwandan context. Freeman et al. (2016) emphasized the association between SES and depression across developed countries but did not consider the unique socio-cultural aspects relevant to Rwanda. Similarly, studies focusing on the effects of events like the COVID-19 pandemic and the aftermath of the genocide have not specifically examined the socio-economic causes of depression among clients at Gisenyi District Hospital.

The current research at Gisenyi District Hospital aims to fill this gap by exploring the nuanced interplay between socio-economic factors and depression, considering the influence of social support networks and coping strategies within the local Rwandan context, thus providing insights directly applicable to the population in Gisenyi (Kalisa et al., 2020; Kayiteshonga et al., 2022). In addition, it seeks to offer a comprehensive understanding of the specific socio-economic challenges contributing to depression, thus facilitating the development of tailored interventions for the local community (Adler & Rehkopf, 2008; Smith et al., 2020).



2.3 Conceptual Framework

The conceptual framework shows the link between independent variables and dependent variables and also mediating factors. An indicator of the independent variables is socioeconomic factors including income level, education level, employment status and the dependent variable is presence and severity of depression among patients which could be measured using low mood, changes in appetite and loss of interest. It will examine the relationship between a patient's socio economic background and their experience of depression



Source: Researcher, 2023

Figure 2. 1: Conceptual framework

The Figure 2.1 of conceptual framework demonstrates that there is a relationship between variables, so the independent variable is socioeconomic factors; the dependent variable is patient's depression. The socioeconomic factors are measured by income level, educational level and employment status while depression is measured by low mood, changes in appetite and loss of interest.

3. Materials and Methods

The research at Gisenyi Hospital adopted a descriptive and correlational research design, utilizing a quantitative approach to objectively depict the leading causes of depression. With 256 depressed clients undergoing psychotherapy targeted for their valuable insights, the study aimed to comprehensively explore the intricate relationship between socio-economic factors and depression while maintaining strict adherence to ethical guidelines. The sample size of 156 was determined using the Taro Yamane formula, balancing statistical significance with practicality, and simple random sampling was employed to ensure a representative sample.



Data collection involved the distribution of self-administered bilingual questionnaires after obtaining necessary permissions, with a keen focus on ethical considerations, informed consent, and data privacy (Fleming & Zegwaard, 2018). The reliability and validity of the research instrument were ensured through a pre-test using the Statistical Package for Social Scientists (SPSS), aiming for a reliability coefficient of 0.7 or higher and a Content Validity Index (CVI) of at least 0.60.

The quantitative data analysis, conducted using SPSS software, encompassed descriptive and inferential techniques such as measures of central tendency, dispersion, frequencies, percentages, Pearson coefficient of determination, and stepwise regression analysis (Guetterman, 2019). Attention was paid to error detection, data quality, and accurate interpretation throughout the data analysis process, ensuring robust and meaningful conclusions aligned with the study's objectives.

Ethical considerations were paramount, with confidentiality and anonymity maintained for all participants. Voluntary participation and informed consent were strictly upheld, and scientific integrity was maintained throughout the research process. The study complied with all national research regulations in Rwanda, ensuring data protection and copyright adherence. Participants were provided with clear information about the study's objectives, procedures, and implications, guaranteeing the utmost respect for their rights and well-being. Ethical principles formed the foundation of the research, ensuring the study was conducted with integrity and respect.

4.1 Presentation of findings

This section presents the comprehensive findings of the study, investigating into the interconnections between socioeconomic factors and depression. The analysis highlights the significant impact of income, educational, and employment statuses on various depressive symptoms, elucidating the need for tailored interventions to address these complex relationships. The regression analysis further emphasizes the substantial influence of these socioeconomic factors on patients' mental well-being, calling for holistic support strategies to mitigate depressive symptoms among patients at Gisenyi District Hospital in Rwanda.

4.1.1 Income status and depression

This section examines the relationship between income status and depression among patients at Gisenyi District Hospital in Rwanda. Descriptive analysis in Table 4.1 illustrates how various income-related stressors contribute to depression, while Table 4.2 outlines the prevalence of specific depressive symptoms. The correlation analysis in Table 4.3 highlights a strong positive correlation between income status and diverse depressive manifestations, emphasizing the significance of socioeconomic factors in influencing patients' mental health. **Table 4 1: Descriptive results of income status and depression**

| Statements | Mean | SD |
|---|--------|--------|
| My struggle with unpaid bills or debt increased my depression | 4.850 | 0.557 |
| Lack of household public assistance affect my depression status | 4.870 | 0.481 |
| Lack of enough food at home depresses me | 4.837 | 0.599 |
| Lack of sufficient food and skip meals affects me | 4.870 | 0.467 |
| The money problems make me stressed. | 4.850 | 0.533 |
| Lack of health insurance coverage depresses me | 4.850 | 0.533 |
| I was depressed by natural disasters like volcanic eruptions | 4.8312 | .63457 |

Source: Field Data, 2023



Table 4.1 outlines the impact of income status on depression, revealing the participants' responses to various statements. The mean values, ranging from 4.8312 to 4.870, suggest a consistent experience of depressive symptoms related to financial hardships. The corresponding standard deviations, varying from 0.467 to 0.63457, indicate a moderate level of variability in the participants' responses to these financial stressors. The reported statements highlight the detrimental influence of financial constraints, including struggles with unpaid bills, lack of household public assistance, inadequate food supply, financial stress, and the absence of health insurance coverage. In addition, the participants' sensitivity to natural disasters such as volcanic eruptions underscores the interplay between income status and external factors in contributing to depression. These findings underscore the need for comprehensive support mechanisms to address the complex relationship between financial stress and patients' depression at Gisenyi District Hospital in Rwanda.

Table 4. 2: Depression occurrence

| Statements | Mean | SD |
|--|-------|-------|
| I have thoughts of self-harm or suicide in the past month | 4.766 | 0.569 |
| I lose appetite for no particular reason. | 4.772 | 0.577 |
| I lose interest and pleasure of working. | 4.831 | 0.495 |
| I most of the time have low mood | 4.831 | 0.495 |
| I always have little interest or pleasure in doing things. | 4.831 | 0.495 |
| I feel down, depressed, or hopeless. | 4.831 | 0.495 |
| I have trouble falling or staying asleep or sleeping too much. | 4.831 | 0.495 |

Source: Field Data, 2023

Table 4.2 presents the assessment of depression based on the frequency of specific symptoms experienced over the past two weeks. The mean values, ranging from 4.766 to 4.831, indicate a moderate level of various depressive symptoms among the participants. The relatively low standard deviations, varying from 0.495 to 0.577, suggest a consistent experience of these depressive manifestations. The reported symptoms, such as thoughts of self-harm, loss of appetite, decreased interest and pleasure in work, persistent low mood, and disrupted sleep patterns, collectively highlight the prevalence of depressive tendencies among patients. These findings underscore the need for targeted interventions and mental health support to address the diverse range of depressive symptoms experienced by the patients at Gisenyi District Hospital in Rwanda.

| | | Low mood | Changes in appetite | Loss of interest |
|---------------|---------------------|----------|---------------------|------------------|
| | Pearson Correlation | .775** | .807** | .712** |
| Income status | Sig. (2-tailed) | .000 | .000 | .000 |
| | Ν | 154 | 154 | 154 |

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Field Data, 2023

The results in Table 4.3 showed Pearson correlation analysis which revealed strong positive correlations between income status and various symptoms of depression. The correlation coefficients are r=0.775 for low mood, r=0.807 for changes in appetite, and r=0.712 for loss of interest. All correlations are statistically significant at the (p < .01). This suggests that patients at Gisenyi District Hospital with lower income levels are more likely to experience



negative mood, appetite changes, and a decreased interest in activities. Hence, based on these results HO_1 is rejected.

4.1.2 Educational status and depression

This section investigates the influence of educational status on depression among patients at Gisenyi District Hospital in Rwanda. Descriptive analysis in Table 4.4 outlines the significant psychological challenges associated with educational backgrounds, including feelings of pressure, social isolation, and concentration difficulties. Correlational analysis in Table 4.5 demonstrates a strong positive relationship between educational status and depressive symptoms among patients at Gisenyi District Hospital in Rwanda.

| able 4. 4. Descriptive results of educational status and depression | | | | | | | |
|---|--|--|--|--|--|--|--|
| Mean | SD | | | | | | |
| 4.850 | 0.533 | | | | | | |
| 4.863 | 0.485 | | | | | | |
| 4.850 | 0.557 | | | | | | |
| 4.870 | 0.481 | | | | | | |
| 4.850 | 0.557 | | | | | | |
| 4.844 | 0.573 | | | | | | |
| | Mean 4.850 4.863 4.850 4.850 4.850 4.850 4.850 4.850 4.844 | | | | | | |

Table 4. 4: Descriptive results of educational status and depression

Source: Field Data, 2023

Table 4.4 presents the descriptive results of educational status and depression. The mean values, ranging from 4.844 to 4.870, suggest a high level of psychological distress related to educational status. The relatively narrow standard deviations, varying from 0.481 to 0.573, imply a consistent experience among the participants. The high mean scores indicate that patients faced challenges such as social alienation, familial issues, and feelings of pressure due to their educational background. The reported difficulties in concentration during educational or work-related activities suggest the impact of educational status on cognitive functioning. Moreover, the prevalence of trust issues and limited participation in educational programs highlights the psychological toll of their educational experiences on the patients' overall well-being at Gisenyi District Hospital in Rwanda.

| | | Low mood | Changes in appetite | Loss of interest |
|--------------------|---------------------|----------|---------------------|------------------|
| Educational status | Pearson Correlation | .795** | .693** | .894** |
| | Sig. (2-tailed) | .000 | .000 | .000 |
| | Ν | 154 | 154 | 154 |

| Table 4. 5: | Correlational | analysis b | etween edu | ucational st | tatus and d | epression |
|--------------------|---------------|------------|------------|--------------|-------------|-----------|
| | | | | | | |

. Correlation is significant at the 0.01 level (2-tailed). **Source: Field Data, 2023

The correlational analysis between educational status and depression indicates a strong positive relationship, as evidenced by the high Pearson correlation coefficients (r=0.795, r=0.693, and r=0.894) for low mood, changes in appetite, and loss of interest, respectively. The statistical significance (p < .01) of all correlations suggests that these relationships are significant. These findings suggest that poor educational status is closely linked to various aspects of depression, emphasizing the potential impact of educational experiences and challenges on an individual's emotional well-being. Hence, based on these results HO₂ is rejected.



4.1.3 Employment status and depression

This section investigates the relationship between employment status and depression among patients at Gisenvi District Hospital in Rwanda. Descriptive analysis in Table 4.4 highlights the significant psychological challenges associated with employment, including stress, health issues, and emotional strain. Correlational analysis in Table 4.7 demonstrates strong positive correlations between employment status and various depressive symptoms, emphasizing the significant impact of work-related factors on patients' mental well-being at Gisenvi District Hospital in Rwanda.

| Table 4. 6: Descriptive results of employment status and depression | Table 4. 6: Descriptive results of employment status and depression | | | | | | |
|--|---|-------|--|--|--|--|--|
| Statements | Mean | SD | | | | | |
| I feel stressed when I do not live up to my own standards. | 4.863 | 0.485 | | | | | |
| The relationship with others adds stress to my life. | 4.851 | 0.516 | | | | | |
| I have a persistent disease. | 4.837 | 0.577 | | | | | |
| I have trouble breathing when I remember my employment status | 4.850 | 0.508 | | | | | |
| I have bad memories about my previous work | 4.824 | 0.584 | | | | | |
| I have little interest or pleasure concentrating to work or studying | 4.857 | 0.553 | | | | | |
| I feeling tired or have little energy while at work or studying. | 4.863 | 0.485 | | | | | |

Source: Field Data, 2023

In Table 4.4, the mean scores ranging from 4.824 to 4.863 suggest that the participants experienced a high level of psychological distress related to their employment status. The consistency of the means, indicated by the narrow standard deviations ranging from 0.485 to 0.584, suggests that the participants generally shared similar experiences. The high mean values reflect the prevalence of stress, persistent diseases, and negative memories associated with work. In addition, the reported challenges in maintaining personal standards and managing relationships highlight the psychological toll of their employment status. Moreover, the feelings of fatigue, lack of interest, and difficulties in breathing while recalling their employment status underscore the substantial emotional and physical strain experienced by the patients at Gisenvi District Hospital in Rwanda.

| | 8 | | š | |
|-------------------|---------------------|----------|---------------------|------------------|
| | | Low mood | Changes in appetite | Loss of interest |
| Employment status | Pearson Correlation | .827** | $.780^{**}$ | .743** |
| | Sig. (2-tailed) | .000 | .000 | .000 |
| | Ν | 154 | 154 | 154 |

Table 4. 7: Correlation analysis between employment status and depression

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Field Data, 2023

The results in Table 4.7 showed strong positive correlations between employment status and the various aspects of depression, including low mood (r=0.827), changes in appetite (r=0,780), and loss of interest (r=0.743), are highly significant (p < .01). The results suggest that there is a substantial relationship between employment status and the indicators of depression, highlighting the potential impact of employment conditions on patients' emotional well-being in Gisenvi District Hospital, Rwanda. Hence, based on these results HO₃ is rejected.

4.1.4 Regression analysis

This regression analysis investigates the relationship between socioeconomic factors and symptoms such as low mood, changes in appetite, and loss of interest in patients at Gisenyi District Hospital, Rwanda. The results highlight the substantial impact of variables like employment status, educational status, and income status on these mental health indicators. The analysis aims to clarify the intricate influence of socioeconomic aspects on patients' wellbeing at Gisenyi District Hospital in Rwanda.

Table 4. 8: Model summary of socioeconomic factors and low mood

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------------|-------------------|----------|-------------------|----------------------------|
| | .853 ^a | .728 | .722 | .29994 |
| D 11 | | ~ | | |

a. Predictors: (Constant), Employment status, Educational status, Income status **Source: Field Data, 2023**

The results in Table 4.8 showed the R value of 0.853 indicates a strong positive correlation between the socioeconomic factors (employment status, educational status, and income status) and the outcome variable of low mood. The R-squared value of 0.728 suggests that 72.8% of the variability in the low mood can be explained by the combined influence of these socioeconomic factors. The adjusted R-squared value of 0.722 accounts for the model's complexity, while the standard error of the estimate at 0.29994 reflects the accuracy of the predictions made by the model.

Table 4. 9: Analysis of Variance (ANOVA) of socioeconomic factors and low mood

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|------------|----------------|-----|-------------|---------|-------------------|
| Regression | 36.089 | 3 | 12.030 | 133.713 | .000 ^b |
| Residual | 13.495 | 150 | .090 | | |
| Total | 49.584 | 153 | | | |

a. Dependent Variable: Low mood

b. Predictors: (Constant), Employment status, Educational status, Income status

Source: Field Data, 2023

In Table 4.9, the analysis of variance (ANOVA) illustrates the impact of socioeconomic factors on low mood. The regression model results indicate a highly significant F-value of 133.713, denoting the collective significance of the predictors such as employment status, educational status, and income status in explaining the variance in low mood. With a mean square error of 0.090, the model showcases a good fit, signifying the robust influence of these socioeconomic factors on the occurrence of low mood.

| Model | Unstandardized | | Standardized | Т | Sig. |
|--------------------|----------------|------------|--------------|--------|------|
| | Coeffici | ents | Coefficients | | |
| | В | Std. Error | Beta | | |
| (Constant) | .457 | .261 | - | 1.753 | .082 |
| Income status | 324 | .163 | 317 | -1.988 | .049 |
| Educational status | .414 | .091 | .349 | 4.535 | .000 |
| Employment status | .799 | .163 | .841 | 4.906 | .000 |
| | | _ | - | _ | |

Table 4. 10: Regression coefficients of socioeconomic factors and low mood

a. Dependent Variable: Low mood

Source: Field Data, 2023

The results in Table 4.10 presents the multiple regression analysis indicate that both educational status ($\beta = .349$, p < .01) and employment status ($\beta = .841$, p < .01) significantly predicted low mood among the participants. While income status showed a negative association ($\beta = .317$, p = .049), it was statistically significant but comparatively weaker in

predicting low mood. The overall model was significant (F = 18.89, p < .01), suggesting that educational and employment statuses played more substantial roles in explaining the variance in low mood compared to income status. These findings highlight the importance of addressing educational and employment-related factors in mitigating low mood.

| Table 4 | . 11: M | odel summ | ary of socioeconomic | factors and changes in appetite |
|---------|-------------------|-----------|----------------------|---------------------------------|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| | .811 ^a | .657 | .650 | .34152 |

a. Predictors: (Constant), Employment status, Educational status, Income status Source: Field Data, 2023

In Table 4.11, the model summary indicates that the R value of 0.811 demonstrates a strong positive correlation between the socioeconomic factors (employment status, educational status, and income status) and the dependent variable of changes in appetite. The R-squared value of 0.657 suggests that approximately 65.7% of the variability in changes in appetite can be explained by the collective influence of these socioeconomic factors. The adjusted R-squared value of 0.650 accounts for the model's complexity, while the standard error of the estimate at 0.34152 reflects the accuracy of the predictions made by the model.

Table 4. 12: Analysis of variance (ANOVA) of socioeconomic factors and changes in appetite

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|------------|----------------|-----|-------------|--------|-------------------|
| Regression | 33.550 | 3 | 11.183 | 95.885 | .000 ^b |
| Residual | 17.495 | 150 | .117 | | |
| Total | 51.045 | 153 | | | |

a. Dependent Variable: Changes in appetite.

b. Predictors: (Constant), Employment status, Educational status, Income status

Source: Field Data, 2023

Table 4.12 depicts the analysis of variance (ANOVA) results for the relationship between socioeconomic factors, including employment status, educational status, and income status, and the dependent variable changes in appetite. The regression model produced a significant F-value of 95.885, suggesting the overall model's significance. With a small mean square error of 0.117, the model demonstrates a good fit. Hence, the combined influence of the predictors such as employment status, educational status, and income status significantly explains the variance in changes in appetite.

| | Table 4. | 13: Re | egression | coefficients | of socioeco | onomic factor | s and chan | ges in ap | petite |
|--|----------|--------|-----------|--------------|-------------|---------------|------------|-----------|--------|
|--|----------|--------|-----------|--------------|-------------|---------------|------------|-----------|--------|

| Model | Unstandar | dized Coefficients | Standardized Coefficients | Т | Sig. |
|--------------------|-----------|--------------------|---------------------------|-------|------|
| | В | Std. Error | Beta | | |
| (Constant) | .457 | .297 | | 1.540 | .126 |
| Income status | .801 | .186 | .773 | 4.316 | .000 |
| Educational status | .164 | .104 | .136 | 1.575 | .017 |
| Employment status | .176 | .186 | .178 | 1.808 | .014 |

a. Dependent Variable: Changes in appetite.

Source: Field Data, 2023

The results of the multiple regression analysis revealed that income status significantly predicted changes in appetite among the participants ($\beta = .773$, p < .01). However, the standardized coefficients for educational status ($\beta = .136$, p = .017) and employment status ($\beta = .178$, p = .014) were relatively smaller, indicating weaker associations. The overall model was marginally significant (F = 3.323, p = .029), suggesting that income status played a more



substantial role in explaining the variance in changes in appetite compared to educational and employment statuses.

Table 4. 14: Model summary of socioeconomic factors and loss of interest

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| | .894 ^a | .800 | .796 | .22409 |

a. Predictors: (Constant), Employment status, Educational status, Income status Source: Field Data, 2023

Table 4.14 presents the model summary for the relationship between socioeconomic factors (employment status, educational status, and income status) and the dependent variable of loss of interest. The high R value of 0.894 indicates a strong positive correlation between the variables. The R-squared value of 0.800 suggests that 80% of the variability in loss of interest can be accounted for by the combined effect of the socioeconomic factors. The adjusted R-squared value of 0.796 reflects the model's strength, while the standard error of the estimate at 0.22409 signifies the precision of the model's predictions.

| Table 4. 15: Analysis of variance (ANOVA) of socioeconomic factors and loss inter | est |
|---|-----|
|---|-----|

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|------------|----------------|-----|-------------|---------|-------------------|
| Regression | 30.078 | 3 | 10.026 | 199.650 | .000 ^b |
| Residual | 7.533 | 150 | .050 | | |
| Total | 37.610 | 153 | | | |

a. Dependent Variable: Loss of interest.

b. Predictors: (Constant), Employment status, Educational status, Income status

Source: Field Data, 2023

Table 4.15 shows the results of the analysis of variance (ANOVA) for the relationship between socioeconomic factors (employment status, educational status, and income status) and the dependent variable of loss of interest. The regression model yielded a significant F-value of 199.650, suggesting that the overall model is significant. The low mean square error of 0.050 indicates a good fit of the model. Consequently, the predictors, including employment status, educational status, and income status, collectively contribute significantly to explaining the variability in the loss of interest.

| 8 | | | | | |
|--------------------|----------|---------------------|------------------------------|--------|------|
| Model | Unstanda | rdized Coefficients | Standardized Coefficients | t | Sig. |
| | В | Std. Error | Beta | | |
| (Constant) | .376 | .195 | | 1.930 | .055 |
| Income status | .660 | .122 | .750 | 9.546 | .006 |
| Educational status | .927 | .068 | .900 | 13.609 | .000 |
| Employment status | .540 | .122 | .650 | 7.444 | .007 |

Table 4. 16: Regression coefficients of socioeconomic factors and loss of interest

a. Dependent Variable: Loss of interest.

Source: Field Data, 2023

The results in Table 4.16 showed multiple regressions analysis indicated that income status, educational status, and employment status significantly predicted the loss of interest among the respondents. The standardized coefficients demonstrated that educational status had the strongest impact ($\beta = .900$), followed by income status ($\beta = .750$), and employment status ($\beta = .650$). This suggests that educational status is the most influential factor, followed by income and employment status, in explaining the variance in the loss of interest. The overall model was significant (F = 31.603, p < .01), highlighting the combined impact of these socioeconomic factors on patients' depression at Gisenyi District Hospital in Rwanda.

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4.2 Discussion of findings

The current study's findings regarding the impact of income status on depression are consistent with the research conducted by Chetty et al. (2014), Their study emphasized the intergenerational effects of income on economic mobility, highlighting the persistent influence of parental socioeconomic background on an individual's economic opportunities. Similarly, Marmot and Wilkinson's research underscored the association between income inequality and health outcomes, emphasizing the detrimental impact of socio-economic disparities on overall well-being. These studies provide support for the current study's assertion that financial constraints and income disparities significantly contribute to the experience of depressive symptoms.

In terms of the relationship between educational status and depression, the current study's findings align with Reardon's (2011), Nagaraja et al. (2015), and Sidana et al. (2012) research. Reardon's study highlighted the educational attainment disparities among children from different socio-economic backgrounds, emphasizing the persistent educational inequalities driven by socio-economic factors. Similarly, Nagaraja et al. and Sidana et al.'s studies underscored the various stressors faced by university and nursing students, respectively, indicating the significant impact of academic challenges on the development of depressive symptoms among students. These studies complement the current research findings, emphasizing the substantial contribution of educational experiences and challenges to the manifestation of depressive symptoms.

Regarding the relationship between employment status and depression, the current study's results are consistent with the works of Rizvi et al. (2015). Their study emphasized the psychological impact of job insecurity and the consequences of unemployment and underemployment on mental health. Bartley and Owen's research highlighted the gender-specific implications of job insecurity on mental health, emphasizing the differential effects experienced by men and women. In addition, Oh et al.(2022) study shed light on the detrimental impacts of chronic workplace stress on mental well-being, emphasizing the importance of job satisfaction and a healthy work-life balance. These studies provide further support for the current study's findings, emphasizing the critical role played by employment conditions in contributing to depressive symptoms.

While the current study aligns with previous research, it is essential to acknowledge that some studies might present differing perspectives. Some research may emphasize additional contributing factors to depression or highlight unique contexts that might alter the relationship between socio-economic factors and mental health outcomes. Therefore, a comprehensive understanding of the relationship between socio-economic factors and depression necessitates a nuanced consideration of various research findings, acknowledging the complexity and multifaceted nature of these associations.

5.1 Conclusion

The first objective's findings revealed a strong positive correlation between income status and depression, with mean values ranging from 4.8312 to 4.870 and moderate standard deviations ranging from 0.467 to 0.63457. The correlations were substantial, with a correlation coefficient (r) of 0.775 for low mood, 0.807 for changes in appetite, and 0.712 for loss of interest, indicating the pronounced relationship between lower income levels and various dimensions of depression.



In the second objective, the analysis highlighted a strong positive relationship between educational status and depression, with mean values ranging from 4.844 to 4.870 and relatively narrow standard deviations ranging from 0.481 to 0.573. Pearson correlation coefficients (r) were high, at 0.795 for low mood, 0.693 for changes in appetite, and 0.894 for loss of interest, emphasizing the significant association between poor educational status and different aspects of depression (p < .01).

The third objective's findings indicated a strong positive correlation between employment status and depression, with high mean scores ranging from 4.824 to 4.863 and narrow standard deviations ranging from 0.485 to 0.584. Correlation coefficients (r) were significant, at 0.827 for low mood, 0.780 for changes in appetite, and 0.743 for loss of interest, highlighting the potential influence of employment conditions on the patients' emotional well-being.

5.3 Recommendations

Based on the research findings, it is recommended that the Rwandan government implement targeted socioeconomic support programs and improve access to mental health resources for individuals with lower income levels. Gisenyi District Hospital should integrate comprehensive and affordable mental health services, while patients should actively engage with available services and adhere to treatment plans. Health workers should receive specialized training for empathetic care, and families should foster supportive environments and open discussions about mental health to reduce stigma.

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