

# Depressive and Anxiety Symptoms in Relation to Socio-Demographic Characteristics among Adolescent Mothers in Kajiado County, Kenya

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## ABSTRACT

**Background:** Adolescent mothers are at increased risk of depression and anxiety, yet the factors associated with these conditions remain poorly understood in low-resource settings. This study examined the sociodemographic, socioeconomic, and caregiving factors associated with depressive and anxiety symptoms among adolescent mothers in Kajiado County, Kenya.

**Methods:** A cross-sectional study was conducted among 163 adolescent mothers aged 12-21 years. Depressive and anxiety symptoms were assessed using Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7). Associations between mental health outcomes and sociodemographic, socioeconomic, and caregiving characteristics were examined using chi-square tests and binary logistic regression analyses.

**Results:** Adolescent mothers aged 19-21 years were significantly less likely to report depressive symptoms than those in the reference age category (OR = 0.167, 95% CI: 0.035-0.791,  $p = .024$ ). For anxiety, respondents from the Kikuyu (OR = 0.051,  $p = .023$ ) and Meru (OR = 0.052,  $p = .003$ ) ethnic groups had significantly lower odds of symptoms, whereas those whose primary source of income was employment (OR = 37.17,  $p = .019$ ) or government assistance (OR = 5.84,  $p = .022$ ), and those with access to healthcare services (OR = 3.72,  $p = .002$ ), had higher odds of anxiety. Additionally, mothers of children aged 1-2 years and  $\geq 6$  years were more likely to experience clinical anxiety.

**Conclusions:** Depression and anxiety among adolescent mothers were associated with distinct sociodemographic, socioeconomic, and caregiving characteristics. These findings indicate that the determinants of depression and anxiety differ within this population, highlighting the multifaceted nature of mental health among adolescent mothers in Kajiado County, Kenya.

**Keywords:** Depressive, Anxiety symptoms, relationship, association, sociodemographic characteristics, adolescent mothers, Kajiado County, Kenya, Africa.

## INTRODUCTION AND BACKGROUND TO THE STUDY

Depression and anxiety remain critical public health concerns among adolescent mothers, whose unique developmental, social, and economic vulnerabilities heighten their risk for adverse mental health outcomes (Abdul Rahim, et al., 2024; Miafo, et al., 2024). In Kenya, and particularly in Kajiado County, the intersection of early motherhood with socio-demographic factors such as age, education level, marital status, and household income creates complex psychosocial challenges that are often underexamined in empirical literature. Understanding how these characteristics shape emotional well-being is essential for designing targeted interventions that address both structural and individual determinants of mental health (Famutimi,

Okafor, & Chukwuere, 2026). This study therefore investigates the relationship between socio-demographic variables and the depressive and anxiety symptoms among adolescent mothers in Kajiado County, offering evidence to inform policy, strengthen community-based support systems, and improve maternal-child health trajectories.

Age and developmental stage emerge as consistent predictors of mental health risk. Studies from Malawi and Bangladesh show that younger adolescent mothers, particularly those under 19, experience elevated rates of postnatal depression and anxiety, reflecting the compounded challenges of early childbearing, limited autonomy, and psychosocial immaturity (Tembo et al., 2023; Khatun et al., 2025). Socioeconomic disadvantage further intensifies these risks. Poverty, food insecurity, and unstable housing conditions are strongly associated with depression and anxiety among adolescent girls and young mothers in Tanzania and South Africa, underscoring how material deprivation exacerbates emotional distress and restricts access to supportive services (Kuringe, et al., 2019; Steventon-Roberts et al., 2022). Household-level characteristics, including overcrowding, limited resources, and unstable family structures also contribute significantly to internalizing symptoms, as demonstrated in Pakistan (Perquier, et al., 2026).

Educational status is another salient sociodemographic factor. Out-of-school adolescent girls exhibit markedly higher levels of depression and anxiety, reflecting the protective role of school engagement in fostering social support, future orientation, and self-efficacy (Kuringe, et al., 2019). Relationship dynamics, particularly intimate partner violence (IPV), represent one of the strongest predictors of depression among adolescent mothers. Evidence from Malawi and South Africa indicates that adolescents who experience IPV are several times more likely to develop postnatal depression, highlighting the profound psychological impact of coercion, fear, and relational instability (Tembo et al., 2023; Steventon-Roberts, et al., 2022).

Social support, both familial and community-based, plays a critical buffering role. Limited family involvement in decision-making and low perceived social support significantly increase depressive symptoms, while supportive relationships enhance maternal attachment and reduce postpartum distress (Tembo et al., 2023; Bulduk et al., 2025). Access to health services also shapes mental health outcomes. Adolescent mothers who engage with health workers report lower depressive symptoms, suggesting that early screening and supportive antenatal care may mitigate psychological risk (Tembo et al., 2023; Mwita et al., 2025).

Furthermore, cultural norms and contextual factors further influence symptom expression and help-seeking behaviors. Studies from Malawi and Cameroon emphasize that cultural expectations surrounding motherhood, stigma related to adolescent pregnancy, and normative gender roles contribute to heightened vulnerability and under-recognition of depressive symptoms (Tembo et al., 2023; Djatche-Miafo, et al., 2024).

Collectively, these findings demonstrate that depression and anxiety among adolescent mothers are not isolated clinical phenomena but are deeply embedded within broader sociodemographic and cultural contexts. Younger age, poverty, limited education, IPV, low social support, unstable households, and restrictive cultural norms consistently emerge as determinants of poor mental health. Understanding these factors is essential for designing targeted interventions that address both individual needs and structural inequities affecting adolescent mothers.

## METHODS

This study is a focused extract from a quasi-experimental doctoral dissertation evaluating the effectiveness of Acceptance and Commitment Therapy (ACT) in reducing depressive and anxiety symptoms among adolescent mothers in Kajiado County, Kenya. For publication, it functions as an independent empirical cross-sectional study examining depressive and anxiety symptoms in relation to sociodemographic characteristics among adolescent mothers in Kajiado county, Kenya. This county is in Kenya's southern Rift Valley and purposively selected due to its population of approximately 1,117,840 residents, half of whom are women, and has a documented high proportion of adolescent mothers (Munene, 2020). The study targeted adolescent mothers aged 12–21 years residing in Kajiado North and Kajiado West sub-counties. Of the 170 individuals screened, seven did not complete the questionnaire, resulting in a final sample of 163 participants and a response rate of

95.9%. Data were collected using self-administered instruments: a researcher-developed sociodemographic questionnaire, the Patient Health Questionnaire-9 (PHQ-9) to assess depressive symptoms, and the Generalized Anxiety Disorder-7 (GAD-7) to evaluate anxiety symptoms. The PHQ-9 demonstrates strong psychometric performance, with sensitivity and specificity values of 88% for major depressive disorder and Cronbach's alpha coefficients between .86 and .89 (Badr et al., 2016).

The GAD-7, grounded in the core transdiagnostic feature of generalized anxiety disorder, which is excessive worry has consistently shown robust reliability and validity across clinical and general populations. Rutter and Brown (2017) identified an optimal cutoff score of  $\geq 10$ , yielding a sensitivity of 89% and specificity of 82%, though subsequent evaluations noted variability in specificity and false-positive rates across anxiety disorders, indicating that cutoff selection should be context-specific (Hinz et al., 2017). Data analysis was conducted using SPSS version 31.0, with statistical significance set at  $p < .05$ . Ethical standards were rigorously upheld, including confidentiality, informed consent, beneficence, non-maleficence, and voluntary participation. Approvals were obtained from Daystar University's School of Psychology, the Daystar University Institutional Scientific and Ethical Review Committee (DU-ISERC), the National Commission for Science, Technology, and Innovation (NACOSTI), and all participating institutions. Participants received clear explanations of the study's purpose, assurances of anonymity, and appropriate consent or assent procedures, and all identifying information was safeguarded to prevent bias and ensure freedom to withdraw without penalty.

## RESULTS

Table 1: Distribution of key sociodemographic characteristics and depressive symptoms among adolescent mothers in Kajiado County.

| Variables                               | Total      | Depressive symptoms |           | Chi-square Test |    |      |
|-----------------------------------------|------------|---------------------|-----------|-----------------|----|------|
|                                         |            | Non-clinical        | Clinical  | $\chi^2$        | df | Sig. |
| Respondent's age categories             |            |                     |           |                 |    |      |
| 12-15 years                             | 2 (1.2%)   | 1 (0.6%)            | 1(0.6)    | 7.021           | 3  | .135 |
| 16-18 years                             | 98(60.9%)  | 59 (36.6%)          | 39(24.2%) |                 |    |      |
| 19-21 years                             | 46 (28.6%) | 22(13.6%)           | 24(14.9%) |                 |    |      |
| 22 years and above                      | 14 (8.7%)  | 4 (2.5%)            | 10 (6.2%) |                 |    |      |
| Respondent's marital status             |            |                     |           |                 |    |      |
| Single                                  | 150(93.2%) | 81(50.3%)           | 69(42.9%) | 1.693           | 3  | .639 |
| Married                                 | 3(1.9%)    | 1(0.6%)             | 2(1.2%)   |                 |    |      |
| Divorced                                | 7(4.3%)    | 3(1.9%)             | 4(2.5%)   |                 |    |      |
| Widowed                                 | 1(0.6)     | 1(0.6%)             | 0(0.0%)   |                 |    |      |
| Respondent's highest level of education |            |                     |           |                 |    |      |
| Primary                                 | 139(90.7%) | 75(46.6%)           | 64(39.8%) | 2.129           | 2  | .546 |
| Secondary                               | 20(12.4)   | 10(6.2%)            | 10(6.2)   |                 |    |      |
| College/University                      | 1(0.6%)    | 0(0.0%)             | 1(0.6%)   |                 |    |      |
| Respondent's religious affiliation      |            |                     |           |                 |    |      |
| Christianity                            | 146(90.7%) | 80(49.7%)           | 66(41%)   | 1.598           | 3  | .660 |
| Islam                                   | 4(2.5%)    | 2(1.2%)             | 2(1.2%)   |                 |    |      |
| Pagan                                   | 2(1.2%)    | 1(0.6%)             | 1(0.6%)   |                 |    |      |
| No religious affiliation                | 9(5.6%)    | 3(1.9%)             | 6(3.7%)   |                 |    |      |
| Respondent's ethnic affiliation         |            |                     |           |                 |    |      |
| Kalenjin                                | 3(1.9%)    | 1(0.6%)             | 2(1.2%)   | 32.631          | 8  | .001 |
| Kamba                                   | 18(11.2%)  | 15(9.3%)            | 3(1.9%)   |                 |    |      |
| Kikuyu                                  | 24(14.9%)  | 5(3.1%)             | 19(11.8%) |                 |    |      |
| Kisii                                   | 7(4.3%)    | 7(4.3%)             | 0(0.0%)   |                 |    |      |

|                   |           |           |          |  |  |  |
|-------------------|-----------|-----------|----------|--|--|--|
| Massai            | 44(27.3%) | 30(18.6%) | 14(8.7%) |  |  |  |
| Meru              | 8(5.0%)   | 5(3.1%)   | 3(1.9%)  |  |  |  |
| Luo               | 19(11.8%) | 6(3.4%)   | 13(8.1%) |  |  |  |
| Luhya             | 24(14.9%) | 11(6.8%)  | 13(8.1%) |  |  |  |
| Others (minority) | 8(5.0%)   | 4(2.5%)   | 4(2.5%)  |  |  |  |

Table 1 summarizes the relationship between sociodemographic characteristics and depressive symptoms

among adolescent mothers in Kajiado County. Across age, marital status, education level, religious affiliation,

and ethnic background, Chi-square tests indicate that most variables do not significantly differentiate depressive symptom severity. Age shows no meaningful association ( $\chi^2 = 7.021$ ,  $p = .135$ ), with depressive symptoms distributed similarly across groups despite slightly higher clinical depression among older adolescents. Marital status is also unrelated to depressive outcomes ( $\chi^2 = 1.693$ ,  $p = .639$ ), and the predominance of single respondents limits variability. Education level demonstrates no significant differences ( $\chi^2 = 2.129$ ,  $p = .546$ ), with depressive symptoms nearly evenly split across primary and secondary education categories. Religious affiliation likewise shows no significant association ( $\chi^2 = 1.598$ ,  $p = .660$ ), with similar proportions of clinical and non-clinical depression among Christian respondents, who constitute most of the sample.

Ethnic affiliation is the only sociodemographic factor significantly associated with depressive symptoms ( $\chi^2 = 32.631$ ,  $p = .001$ ). Higher rates of clinical depression appear among Kikuyu, Maasai, Luo, and Luhya adolescents, while other groups, such as Kisii, report no clinical depression. This pattern suggests that cultural or contextual factors linked to ethnicity may shape mental health risk, potentially reflecting differences in social support, stress exposure, or access to resources. Overall, the findings indicate that most sociodemographic variables do not predict depressive symptoms in this population, but ethnic background may play a meaningful role, underscoring the need for culturally responsive mental health interventions for adolescent mothers.

Table 2: Distribution of key sociodemographic characteristics and anxiety symptoms among adolescent mothers in Kajiado County.

| Variables                               | Total      | Anxiety symptoms |           | Chi-square Test |    |      |
|-----------------------------------------|------------|------------------|-----------|-----------------|----|------|
|                                         |            | Non-clinical     | Clinical  | $\chi^2$        | df | Sig. |
| Respondent's age categories             |            |                  |           |                 |    |      |
| 12-15 years                             | 2 (1.2%)   | 1(0.6%)          | 1(0.6%)   | 3.945           | 3  | .413 |
| 16-18 years                             | 97(60.6%)  | 67(41.9%)        | 30(18.8%) |                 |    |      |
| 19-21 years                             | 46 (28.6%) | 25(15.6%)        | 21(13.1%) |                 |    |      |
| 22 years and above                      | 14 (8.7%)  | 8(5.0%)          | 6(3.8%)   |                 |    |      |
| Respondent's marital status             |            |                  |           |                 |    |      |
| Single                                  | 149(93.1%) | 96(60%)          | 53(33.1%) | 1.932           | 3  | .587 |
| Married                                 | 3(1.9%)    | 2(2.1%)          | 1(0.6%)   |                 |    |      |
| Divorced                                | 7(4.3%)    | 4(2.5%)          | 3(1.9%)   |                 |    |      |
| Widowed                                 | 1(0.6)     | 0(0%)            | 1(0.6%)   |                 |    |      |
| Respondent's highest level of education |            |                  |           |                 |    |      |
| Primary                                 | 139(90.7%) | 91(56.9%)        | 48(30%)   | 3.977           | 2  | .264 |
| Secondary                               | 19(11.9)   | 11(6.9%)         | 8(5%)     |                 |    |      |
| College/University                      | 1(0.6%)    | 0(0%)            | 1(0.6%)   |                 |    |      |
| Respondent's religious affiliation      |            |                  |           |                 |    |      |
| Christianity                            | 146(90.7%) | 93(58.1%)        | 52(32.5%) | .654            | 3  | .884 |

|                                 |           |           |           |        |   |      |
|---------------------------------|-----------|-----------|-----------|--------|---|------|
| Islam                           | 4(2.5%)   | 3(1.9%)   | 1(0.6%)   |        |   |      |
| Pagan                           | 2(1.2%)   | 1(0.6%)   | 1(0.6%)   |        |   |      |
| No religious affiliation        | 9(5.6%)   | 5(3.1%)   | 4(2.5%)   |        |   |      |
| Respondent's ethnic affiliation |           |           |           |        |   |      |
| Kalenjin                        | 3(1.9%)   | 1(0.6%)   | 2(1.3%)   | 49.308 | 9 | .001 |
| Kamba                           | 18(11.2%) | 17(10.6%) | 1(0.6%)   |        |   |      |
| Kikuyu                          | 24(14.9%) | 7(4.4%)   | 17(10.6%) |        |   |      |
| Kisii                           | 7(4.3%)   | 4(2.5%)   | 3(1.9%)   |        |   |      |
| Massai                          | 44(27.3%) | 40(25%)   | 4(2.5%)   |        |   |      |
| Meru                            | 8(5.0%)   | 8(5%)     | 0(0%)     |        |   |      |
| Luo                             | 19(11.8%) | 7(4.4%)   | 12(7.5%)  |        |   |      |
| Luhya                           | 23(14.4%) | 11(6.9%)  | 12(7.5%)  |        |   |      |
| Others (minority)               | 8(5.0%)   | 4(2.5%)   | 4(2.5%)   |        |   |      |

Table 2 summarizes the relationship between sociodemographic characteristics and anxiety symptoms among adolescent mothers in Kajiado County. Age, marital status, education level, and religious affiliation were not significantly associated with anxiety severity, with Chi-square tests showing no meaningful differences across categories (age:  $\chi^2 = 3.945$ ,  $p = .413$ ; marital status:  $\chi^2 = 1.932$ ,  $p = .587$ ; education:  $\chi^2 = 3.977$ ,  $p = .264$ ; religion:  $\chi^2 = .654$ ,  $p = .884$ ). Anxiety symptoms were distributed similarly across age groups, marital categories, and educational levels, indicating that these demographic factors do not predict non-clinical versus clinical anxiety in this population.

Ethnic affiliation was the only variable significantly associated with anxiety symptoms ( $\chi^2 = 49.308$ ,  $p = .001$ ). Clinical anxiety was higher among Kikuyu, Luo, Luhya, and Maasai respondents, while other groups showed lower rates. These differences suggest that ethnicity may meaningfully shape anxiety risk, potentially reflecting cultural or contextual disparities in stress exposure or support systems. Overall, most sociodemographic factors were not significant predictors of anxiety, but ethnic background emerged as an important correlate of symptom severity.

Table 3: Binary Logistic Regression coefficient of depressive symptoms and key sociodemographic characteristics at baseline

|                     |                                         | B       | S.E.      | Wald  | df | Sig.  | Exp(B)      | 95% C.I. for EXP(B) |       |
|---------------------|-----------------------------------------|---------|-----------|-------|----|-------|-------------|---------------------|-------|
|                     |                                         |         |           |       |    |       |             | Lower               | Upper |
| Step 1 <sup>a</sup> | Respondent's age                        |         |           | 5.401 | 4  | .249  |             |                     |       |
|                     | 12-15 years                             | 21.268  | 40192.969 | .000  | 1  | 1.000 | 1724436.244 | .000                | .     |
|                     | 16-18 years                             | -1.239  | 1.677     | .546  | 1  | .460  | .290        | .011                | 7.756 |
|                     | 19-21 years                             | -1.789  | .793      | 5.086 | 1  | .024  | .167        | .035                | .791  |
|                     | 22 years and above                      | -1.439  | .864      | 2.778 | 1  | .096  | .237        | .044                | 1.288 |
|                     | Respondent's marital status             |         |           | .001  | 3  | 1.000 |             |                     |       |
|                     | Single                                  | -14.734 | 44578.849 | .000  | 1  | 1.000 | .000        | .000                | .     |
|                     | Married                                 | 4.269   | 42553.416 | .000  | 1  | 1.000 | 71.430      | .000                | .     |
|                     | Divorced                                | -14.771 | 44578.849 | .000  | 1  | 1.000 | .000        | .000                | .     |
|                     | Respondent's highest level of education |         |           | .364  | 3  | .948  |             |                     |       |

|                                    |         |           |        |   |       |             |      |        |
|------------------------------------|---------|-----------|--------|---|-------|-------------|------|--------|
| Primary                            | -39.901 | 56841.124 | .000   | 1 | .999  | .000        | .000 | .      |
| Secondary                          | -18.364 | 40192.518 | .000   | 1 | 1.000 | .000        | .000 | .      |
| College/University                 | -18.731 | 40192.518 | .000   | 1 | 1.000 | .000        | .000 | .      |
| Respondent's religious affiliation |         |           | 1.568  | 3 | .667  |             |      |        |
| Christianity                       | -1.312  | 1.111     | 1.395  | 1 | .238  | .269        | .031 | 2.376  |
| Islam                              | -1.575  | 1.461     | 1.163  | 1 | .281  | .207        | .012 | 3.627  |
| Pagan                              | -1.523  | 2.042     | .556   | 1 | .456  | .218        | .004 | 11.924 |
| Respondent's ethnic affiliation    |         |           | 21.536 | 9 | .010  |             |      |        |
| Kalenjin                           | .166    | 1.332     | .016   | 1 | .901  | 1.181       | .087 | 16.079 |
| Kamba                              | -.044   | 1.658     | .001   | 1 | .979  | .957        | .037 | 24.698 |
| Kikuyu                             | -1.986  | 1.035     | 3.683  | 1 | .055  | .137        | .018 | 1.043  |
| Kisii                              | 1.172   | .917      | 1.635  | 1 | .201  | 3.229       | .536 | 19.469 |
| Massai                             | -37.603 | 19281.878 | .000   | 1 | .998  | .000        | .000 | .      |
| Meru                               | -.855   | .825      | 1.073  | 1 | .300  | .425        | .084 | 2.144  |
| Luo                                | -1.732  | 1.273     | 1.850  | 1 | .174  | .177        | .015 | 2.146  |
| Luhya                              | .692    | .901      | .590   | 1 | .442  | 1.997       | .342 | 11.674 |
| Others-minority                    | .222    | .859      | .067   | 1 | .796  | 1.249       | .232 | 6.722  |
| Constant                           | 36.076  | 60022.499 | .000   | 1 | 1.000 | 4653079.000 |      |        |

a. Variable(s) entered on step 1: Respondent's age categories, Respondent's marital status, Respondent's highest level of education, Respondent's religious affiliation, Respondent's ethnic affiliation.

A binary logistic regression analysis was conducted to examine the association between depressive symptoms and selected sociodemographic characteristics at baseline. The overall results indicated that ethnic affiliation was significantly associated with depressive symptoms (Wald = 21.536,  $p = .010$ ), while age category, marital status, educational level, and religious affiliation were not significant predictors. Among age categories, respondents aged 19-21 years had significantly lower odds of reporting depressive symptoms compared to the reference category (OR = 0.167, 95% CI: 0.035-0.791,  $p = .024$ ). Although the overall effect of ethnicity was significant, none of the individual ethnic categories reached statistical significance at the 5% level, with the Kikuyu group showing a borderline association (OR = 0.137,  $p = .055$ ). The results should be interpreted cautiously due to indications of sparse data and unstable parameter estimates in several categories.

Table 4: Binary Logistic Regression coefficient of anxiety symptoms and key sociodemographic characteristics at baseline

|                     |                             | B      | S.E.      | Wald  | df | Sig.  | Exp(B) | 95% C.I. for EXP(B) |        |
|---------------------|-----------------------------|--------|-----------|-------|----|-------|--------|---------------------|--------|
|                     |                             |        |           |       |    |       |        | Lower               | Upper  |
| Step 1 <sup>a</sup> | Respondent's age categories |        |           | 1.547 | 4  | .818  |        |                     |        |
|                     | 12-15 years                 | -.526  | 42756.173 | .000  | 1  | 1.000 | .591   | .000                | .      |
|                     | 16-18 years                 | .456   | 2.086     | .048  | 1  | .827  | 1.578  | .026                | 94.190 |
|                     | 19-21 years                 | -1.019 | 1.005     | 1.028 | 1  | .311  | .361   | .050                | 2.587  |

|                                                                                                                                                                                                           |         |           |        |   |       |             |      |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------|--------|---|-------|-------------|------|---------|
| 22 years and above                                                                                                                                                                                        | -.997   | 1.071     | .867   | 1 | .352  | .369        | .045 | 3.010   |
| Respondent's marital status                                                                                                                                                                               |         |           | 1.756  | 3 | .625  |             |      |         |
| Single                                                                                                                                                                                                    | -20.665 | 40193.434 | .000   | 1 | 1.000 | .000        | .000 | .       |
| Married                                                                                                                                                                                                   | -22.182 | 40193.434 | .000   | 1 | 1.000 | .000        | .000 | .       |
| Divorced                                                                                                                                                                                                  | -19.489 | 40193.434 | .000   | 1 | 1.000 | .000        | .000 | .       |
| Respondent's highest level of education                                                                                                                                                                   |         |           | .044   | 3 | .998  |             |      |         |
| Primary                                                                                                                                                                                                   | 4.999   | 56841.443 | .000   | 1 | 1.000 | 148.252     | .000 | .       |
| Secondary                                                                                                                                                                                                 | -19.464 | 40192.969 | .000   | 1 | 1.000 | .000        | .000 | .       |
| College/University                                                                                                                                                                                        | -19.597 | 40192.969 | .000   | 1 | 1.000 | .000        | .000 | .       |
| Respondent's religious affiliation                                                                                                                                                                        |         |           | 1.848  | 3 | .605  |             |      |         |
| Christianity                                                                                                                                                                                              | .307    | 1.184     | .067   | 1 | .796  | 1.359       | .133 | 13.832  |
| Islam                                                                                                                                                                                                     | -1.260  | 1.590     | .628   | 1 | .428  | .284        | .013 | 6.403   |
| Pagan                                                                                                                                                                                                     | 1.412   | 2.407     | .344   | 1 | .558  | 4.103       | .037 | 459.496 |
| Respondent's ethnic affiliation                                                                                                                                                                           |         |           | 30.545 | 9 | .000  |             |      |         |
| Kalenjin                                                                                                                                                                                                  | .297    | 1.392     | .046   | 1 | .831  | 1.346       | .088 | 20.626  |
| Kamba                                                                                                                                                                                                     | .893    | 1.604     | .310   | 1 | .578  | 2.444       | .105 | 56.698  |
| Kikuyu                                                                                                                                                                                                    | -2.976  | 1.307     | 5.183  | 1 | .023  | .051        | .004 | .661    |
| Kisii                                                                                                                                                                                                     | .718    | .908      | .624   | 1 | .429  | 2.049       | .346 | 12.153  |
| Massai                                                                                                                                                                                                    | -.484   | 1.197     | .164   | 1 | .686  | .616        | .059 | 6.434   |
| Meru                                                                                                                                                                                                      | -2.955  | 1.012     | 8.535  | 1 | .003  | .052        | .007 | .378    |
| Luo                                                                                                                                                                                                       | -21.699 | 14581.342 | .000   | 1 | .999  | .000        | .000 | .       |
| Luhya                                                                                                                                                                                                     | .778    | .932      | .696   | 1 | .404  | 2.176       | .350 | 13.518  |
| Others-minority                                                                                                                                                                                           | .043    | .880      | .002   | 1 | .961  | 1.044       | .186 | 5.857   |
| Constant                                                                                                                                                                                                  | 40.844  | 56842.058 | .000   | 1 | .999  | 5475218.000 |      |         |
| a. Variable(s) entered on step 1: Respondent's age categories, Respondent's marital status, Respondent's highest level of education, Respondent's religious affiliation, Respondent's ethnic affiliation. |         |           |        |   |       |             |      |         |

Table 4 displays the binary logistic regression analysis to examine the association between anxiety symptoms and selected sociodemographic characteristics at baseline. Among the variables included in the model, only

ethnic affiliation was significantly associated with anxiety symptoms (Wald = 30.545,  $df = 9$ ,  $p < .001$ ). Age category, marital status, educational attainment, and religious affiliation were not significantly associated with anxiety symptoms and were therefore not retained in the interpretation.

Within the ethnic affiliation categories, respondents from the Kikuyu ethnic group were significantly less likely to report anxiety symptoms compared to the reference ethnic category (OR = 0.051, 95% CI: 0.004-0.661,  $p = .023$ ). This finding indicates that Kikuyu respondents had approximately 94.9% lower odds of experiencing anxiety symptoms relative to the reference group. Similarly, respondents from the Meru ethnic group demonstrated significantly lower odds of anxiety symptoms compared to the reference ethnic category (OR = 0.052, 95% CI: 0.007-0.378,  $p = .003$ ). This suggests an approximately 94.8% reduction in the odds of anxiety symptoms among Meru respondents.

Overall, the findings indicate that ethnic affiliation was the only sociodemographic factor significantly associated with anxiety symptoms at baseline, with respondents from the Kikuyu and Meru ethnic groups exhibiting substantially lower odds of anxiety symptoms compared to the reference ethnic group. The remaining sociodemographic characteristics showed no statistically significant association with anxiety symptoms. However, some categories produced extremely large standard errors and unstable estimates, suggesting sparse data and possible quasi-complete separation; therefore, the results should be interpreted with caution.

Table 5: Binary logistic regression coefficient of depressive symptoms and socioeconomic characteristics at baseline

|                     |                                                  | B       | S.E.      | Wald  | df | Sig. | Exp(B)      | 95% C.I. for EXP(B) |        |
|---------------------|--------------------------------------------------|---------|-----------|-------|----|------|-------------|---------------------|--------|
|                     |                                                  |         |           |       |    |      |             | Lower               | Upper  |
| Step 1 <sup>a</sup> | Are you currently employed?                      |         |           | 1.895 | 2  | .388 |             |                     |        |
|                     | No                                               | -.837   | .608      | 1.895 | 1  | .169 | .433        | .131                | 1.426  |
|                     | Yes, full-time                                   | 20.416  | 27929.215 | .000  | 1  | .999 | 7354819.804 | .000                | .      |
|                     | Respondent's primary source of income            |         |           | 1.770 | 4  | .778 |             |                     |        |
|                     | Employment                                       | 1.650   | 1.441     | 1.311 | 1  | .252 | 5.207       | .309                | 87.737 |
|                     | Family support                                   | 21.864  | 17059.339 | .000  | 1  | .999 | 31281668.02 | .000                | .      |
|                     | Government assist                                | .201    | .560      | .128  | 1  | .720 | 1.222       | .408                | 3.664  |
|                     | Others: SHOFCO                                   | .527    | .682      | .596  | 1  | .440 | 1.694       | .445                | 6.453  |
|                     | Respondent's current living situation            |         |           | .106  | 2  | .948 |             |                     |        |
|                     | Living with parents                              | -21.278 | 27703.229 | .000  | 1  | .999 | .000        | .000                | .      |
|                     | Living alone                                     | -20.806 | 27703.229 | .000  | 1  | .999 | .000        | .000                | .      |
|                     | Respondent having access to affordable childcare |         |           | .774  | 2  | .679 |             |                     |        |
|                     | No                                               | -.420   | .864      | .236  | 1  | .627 | .657        | .121                | 3.572  |
|                     | Yes                                              | .320    | .474      | .454  | 1  | .500 | 1.377       | .543                | 3.487  |
|                     | Respondent having access to healthcare services  |         |           | .776  | 2  | .678 |             |                     |        |
|                     | No                                               | -.564   | 1.061     | .283  | 1  | .595 | .569        | .071                | 4.550  |
|                     | Yes                                              | .226    | .402      | .317  | 1  | .573 | 1.254       | .570                | 2.757  |

|                                                                                                                                                                                                                                                                                                        |                                                        |        |           |      |   |      |             |      |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|--------|-----------|------|---|------|-------------|------|--------|
|                                                                                                                                                                                                                                                                                                        | Respondent currently using any form of family planning |        |           | .936 | 2 | .626 |             |      |        |
|                                                                                                                                                                                                                                                                                                        | No                                                     | .275   | 1.130     | .059 | 1 | .807 | 1.317       | .144 | 12.058 |
|                                                                                                                                                                                                                                                                                                        | Yes                                                    | -.302  | .364      | .687 | 1 | .407 | .739        | .362 | 1.510  |
|                                                                                                                                                                                                                                                                                                        | Constant                                               | 21.694 | 27703.229 | .000 | 1 | .999 | 2639329.785 |      |        |
| a. Variable(s) entered on step 1: Are you currently employed? Respondent's primary source of income, Respondent's current living situation, Respondent having access to affordable childcare, Respondent having access to healthcare services, Respondent currently using any form of family planning. |                                                        |        |           |      |   |      |             |      |        |

In Table 5, a binary logistic regression analysis was conducted to examine the association between depressive symptoms and selected socioeconomic characteristics, including employment status, primary source of income, living situation, access to affordable childcare, access to healthcare services, and family planning use at baseline. The results revealed that none of the socioeconomic variables were significantly associated with depressive symptoms.

Specifically, employment status was not significantly associated with depressive symptoms (Wald = 1.895, df = 2,  $p = .388$ ). Similarly, respondents' primary source of income (Wald = 1.770, df = 4,  $p = .778$ ), current living situation (Wald = 0.106, df = 2,  $p = .948$ ), access to affordable childcare (Wald = 0.774, df = 2,  $p = .679$ ), access to healthcare services (Wald = 0.776, df = 2,  $p = .678$ ), and current use of family planning methods (Wald = 0.936, df = 2,  $p = .626$ ) did not significantly predict depressive symptoms.

At the individual category level, none of the estimated odds ratios reached statistical significance ( $p > .05$ ). Although some categories showed increased or decreased odds of depressive symptoms, these effects were not statistically meaningful. Furthermore, several variables exhibited extremely large standard errors and implausible odds ratio estimates, suggesting sparse data and potential quasi-complete separation within certain categories.

Overall, the findings indicate that no socioeconomic characteristic examined in the model was significantly associated with depressive symptoms at baseline. This suggests that depressive symptoms were not differentially distributed across employment status, income sources, living arrangements, access to childcare, access to healthcare services, or family planning use among the study participants. However, the presence of unstable parameter estimates warrants cautious interpretation of these results.

Table 6: Binary logistic regression coefficient of anxiety symptoms and socioeconomic characteristics at baseline

|                     |                                       | B      | S.E.      | Wald  | df | Sig.  | Exp(B)      | 95% C.I. for EXP(B) |         |
|---------------------|---------------------------------------|--------|-----------|-------|----|-------|-------------|---------------------|---------|
|                     |                                       |        |           |       |    |       |             | Lower               | Upper   |
| Step 1 <sup>a</sup> | Are you currently employed?           |        |           | 1.387 | 2  | .500  |             |                     |         |
|                     | No                                    | -.730  | .620      | 1.387 | 1  | .239  | .482        | .143                | 1.624   |
|                     | Yes, full-time                        | 22.828 | 40192.969 | .000  | 1  | 1.000 | 82048722.91 | .000                | .       |
|                     | Respondent's primary source of income |        |           | 7.966 | 4  | .093  |             |                     |         |
|                     | Employment                            | 3.616  | 1.548     | 5.458 | 1  | .019  | 37.171      | 1.790               | 771.765 |
|                     | Family support                        | 1.926  | 1.224     | 2.478 | 1  | .115  | 6.863       | .624                | 75.528  |
|                     | Government assist                     | 1.765  | .771      | 5.239 | 1  | .022  | 5.842       | 1.289               | 26.485  |
|                     | Others: SHOFCO                        | 1.250  | .910      | 1.888 | 1  | .169  | 3.491       | .587                | 20.778  |

|                                                        |        |       |       |   |      |       |       |         |
|--------------------------------------------------------|--------|-------|-------|---|------|-------|-------|---------|
| Respondent's current living situation                  |        |       | 1.009 | 2 | .604 |       |       |         |
| Living with parents                                    | .218   | 1.657 | .017  | 1 | .895 | 1.243 | .048  | 32.015  |
| Living alone                                           | 1.797  | 2.302 | .610  | 1 | .435 | 6.033 | .066  | 549.136 |
| Respondent having access to affordable childcare       |        |       | 2.471 | 2 | .291 |       |       |         |
| No                                                     | -1.682 | 1.139 | 2.181 | 1 | .140 | .186  | .020  | 1.734   |
| Yes                                                    | .181   | .499  | .131  | 1 | .717 | 1.198 | .450  | 3.188   |
| Respondent having access to healthcare services        |        |       | 9.614 | 2 | .008 |       |       |         |
| No                                                     | .704   | 1.282 | .302  | 1 | .583 | 2.022 | .164  | 24.945  |
| Yes                                                    | 1.314  | .425  | 9.536 | 1 | .002 | 3.719 | 1.616 | 8.562   |
| Respondent currently using any form of family planning |        |       | .782  | 2 | .676 |       |       |         |
| No                                                     | -1.158 | 1.419 | .665  | 1 | .415 | .314  | .019  | 5.073   |
| Yes                                                    | -.214  | .401  | .284  | 1 | .594 | .807  | .368  | 1.773   |
| Constant                                               | -1.843 | 1.807 | 1.040 | 1 | .308 | .158  |       |         |

a. Variable(s) entered on step 1: Are you currently employed? Respondent's primary source of income, Respondent's current living situation, Respondent having access to affordable childcare, Respondent having access to healthcare services, Respondent currently using any form of family planning.

As shown on Table 6, a binary logistic regression analysis was conducted to examine the association between anxiety symptoms and selected socioeconomic characteristics, including employment status, primary source of income, living situation, access to affordable childcare, access to healthcare services, and family planning use at baseline. The results showed that access to healthcare services was significantly associated with anxiety symptoms (Wald = 9.614, df = 2,  $p = .008$ ). Although the overall effect of primary source of income did not reach statistical significance (Wald = 7.966, df = 4,  $p = .093$ ), two income categories were significantly associated with anxiety symptoms at the individual level.

Adolescent mothers whose primary source of income was employment were significantly more likely to report anxiety symptoms compared with the reference income category (OR = 37.171, 95% CI: 1.790-771.765,  $p = .019$ ). This indicates that they had approximately 37 times higher odds of experiencing anxiety symptoms. Similarly, respondents whose primary source of income was government assistance had significantly greater odds of reporting anxiety symptoms compared with the reference category (OR = 5.842, 95% CI: 1.289-26.485,  $p = .022$ ), representing nearly a six-fold increase in the likelihood of anxiety symptoms.

Access to healthcare services was also significantly associated with anxiety symptoms. Adolescent mothers who reported having access to healthcare services were significantly more likely to report anxiety symptoms than those in the reference category (OR = 3.719, 95% CI: 1.616-8.562,  $p = .002$ ). This finding suggests that participants with access to healthcare services had approximately 3.7 times higher odds of experiencing anxiety symptoms.

Largely, the findings indicate that employment as a primary source of income, reliance on government assistance, and access to healthcare services were significantly associated with increased odds of anxiety symptoms at baseline. No significant associations were observed for employment status, living situation, access to affordable childcare, or family planning use.

Table 7: Number of Children and Mental Health Symptoms

|                                |                    | Classification of symptoms |           | Chi-Square test |    |      |
|--------------------------------|--------------------|----------------------------|-----------|-----------------|----|------|
| Variables                      | Total              | Non-clinical               | Clinical  | $\chi^2$        | df | Sig. |
| Respondents' depression scores |                    |                            |           |                 |    |      |
|                                | Number of children |                            |           |                 |    |      |
| 1 child                        | 121(75.2%)         | 63(39.1%)                  | 58(36%)   | .744            | 3  | .863 |
| 2 Children                     | 10(6.3%)           | 5(3.1%)                    | 5(3.1%)   |                 |    |      |
| 3 or more children             | 2(1.3%)            | 1(0.6%)                    | 1(0.6%)   |                 |    |      |
| Not applicable                 | 28(17.4)           | 17(10.6%)                  | 11(6.8%)  |                 |    |      |
| Respondent's anxiety scores    |                    |                            |           |                 |    |      |
| Number of children             |                    |                            |           |                 |    |      |
| 1 child                        | 120(75%)           | 71(44.4%)                  | 49(30.6%) | 5.522           | 3  | .137 |
| 2 Children                     | 10(6.3%)           | 7(4.4%)                    | 3(1.9%)   |                 |    |      |
| 3 or more children             | 2(1.3%)            | 1(0.6%)                    | 1(0.6%)   |                 |    |      |
| Not applicable                 | 28(17.5%)          | 23(14.4%)                  | 5(3.1%)   |                 |    |      |

Table 7 examines whether the number of children was associated with depression or anxiety symptom classification. Most respondents had one child, and symptom distributions were similar across all parental status categories. Chi-square tests showed no significant association between number of children and depression severity,  $\chi^2(3) = 0.744$ ,  $p = .863$ . Likewise, the association between number of children and anxiety severity was not significant,  $\chi^2(3) = 5.522$ ,  $p = .137$ . Although minor variations appeared across groups, none reached statistical significance. Overall, parental number of children did not meaningfully predict mental health symptoms.

Table 8: Child Age and Mental Health Symptoms

|                                |                              | Classification of symptoms |           | Chi-Square test |    |             |
|--------------------------------|------------------------------|----------------------------|-----------|-----------------|----|-------------|
| Variables                      | Total                        | Non-clinical               | Clinical  | $\chi^2$        | df | Sig.        |
| Respondents' depression scores |                              |                            |           |                 |    |             |
|                                | Age of respondents 'children |                            |           |                 |    |             |
| 0-11 months                    | 40(24.8%)                    | 23(14.3%)                  | 17(10.6%) | 1.651           | 5  | .895        |
| 1-2 years                      | 53(32.9%)                    | 27(16.8%)                  | 26(16.1%) |                 |    |             |
| 2.1 – 4.0 years                | 35(21.7%)                    | 19(11.8%)                  | 16(9.9%)  |                 |    |             |
| 4.1 – 6.0 years                | 8(5%)                        | 5(3.1%)                    | 3(1.9%)   |                 |    |             |
| 6.1 years or greater           | 6(3.7%)                      | 2(1.2%)                    | 4(2.5%)   |                 |    |             |
| N/A                            | 19(11.8%)                    | 10(6.2%)                   | 9(5.6%)   |                 |    |             |
| Respondent's anxiety scores    |                              |                            |           |                 |    |             |
| Age of respondents 'children   |                              |                            |           |                 |    |             |
| 0-11 months                    | 40(24.8%)                    | 32(20.0%)                  | 8(2.5%)   | 17.935          | 5  | <b>.003</b> |
| 1-2 years                      | 53(32.9%)                    | 31(19.4%)                  | 22(13.8%  |                 |    |             |
| 2.1 – 4.0 years                | 35(21.7%)                    | 17(10.6%)                  | 18(11.3%) |                 |    |             |
| 4.1 – 6.0 years                | 8(5%)                        | 7(4.4%)                    | 1(0.6%)   |                 |    |             |
| 6.1 years or greater           | 6(3.7%)                      | 1(0.6%)                    | 5(3.1%)   |                 |    |             |
| N/A                            | 18(11.3%)                    | 14(8.8%)                   | 4(2.5%)   |                 |    |             |

Table 8 examines whether the age of respondents' children was associated with depression or anxiety symptom classification. Child age was not significantly related to depression severity, with similar proportions of clinical and non-clinical depression across all age groups. The chi-square test confirmed no meaningful association,  $\chi^2(5) = 1.651, p = .895$ .

In contrast, anxiety symptoms varied significantly by child age. Clinical anxiety was more common among respondents with children aged 1–2 years and 2.1–4.0 years, whereas those with infants under 11 months, older children, or no children showed lower rates. The association between child age and anxiety severity was statistically significant,  $\chi^2(5) = 17.935, p = .003$ , indicating that caregivers of children in early childhood, particularly between ages one and four were more likely to report clinical anxiety.

Table 9: The ordered logit model of anxiety symptoms and respondent's numbers of children and their ages at baseline

|           |                      | Estimate       | Std. Error | Wald  | df | Sig.        | 95% Confidence Interval |             |
|-----------|----------------------|----------------|------------|-------|----|-------------|-------------------------|-------------|
|           |                      |                |            |       |    |             | Lower Bound             | Upper Bound |
| Threshold | [Anxiety = .00]      | -.041          | 1.414      | .001  | 1  | .977        | -2.813                  | 2.731       |
| Location  | 1 child              | 1.563          | .831       | 3.538 | 1  | .060        | -.066                   | 3.193       |
|           | 2 Children           | 1.111          | 1.122      | .980  | 1  | .322        | -1.088                  | 3.310       |
|           | 3 or more children   | 1.594          | 2.244      | .505  | 1  | .477        | -2.803                  | 5.992       |
|           | Not applicable       | 0 <sup>a</sup> | .          | .     | 0  | .           | .                       | .           |
|           | 0-11 months          | -1.408         | 1.492      | .891  | 1  | .345        | -4.332                  | 1.515       |
|           | 1-2 years            | -2.957         | 1.214      | 5.931 | 1  | <b>.015</b> | -5.337                  | -.577       |
|           | 2.1 – 4.0 years      | -1.774         | 1.184      | 2.244 | 1  | .134        | -4.094                  | .547        |
|           | 4.1 – 6.0 years      | -1.403         | 1.202      | 1.363 | 1  | .243        | -3.758                  | .952        |
|           | 6.1 years or greater | -3.270         | 1.560      | 4.395 | 1  | <b>.036</b> | -6.328                  | -.213       |
|           | N/A                  | 0 <sup>a</sup> | .          | .     | 0  | .           | .                       | .           |

Link function: Logit.

a. This parameter is set to zero because it is redundant.

Table 9 presents the ordered logit model assessing whether the number and ages of respondents' children predicted baseline anxiety severity. The number of children did not significantly predict anxiety symptoms. Having one child showed a trend toward higher odds of clinical anxiety (estimate = 1.56,  $p = .060$ ), but this effect did not reach significance. Respondents with two children (estimate = 1.11,  $p = .322$ ) or three or more children (estimate = 1.59,  $p = .477$ ) also showed no significant associations.

In contrast, child age demonstrated meaningful effects. Caregivers of children aged 1–2 years had significantly higher odds of clinical anxiety (estimate =  $-2.96, p = .015$ ), as did those with children aged 6.1 years or older (estimate =  $-3.27, p = .036$ ). Other age categories were not significant, though estimates consistently suggested elevated anxiety among caregivers of younger children. Overall, the model indicates that while the number of children was not a significant predictor, child age, particularly ages 1–2 years and 6.1 years or older was associated with higher odds of clinical anxiety. These results align with earlier chi-square findings and suggest that specific developmental periods may heighten caregiver stress and anxiety.

## DISCUSSION

This study examined whether sociodemographic characteristics were associated with mental health symptoms among adolescent mothers. Most variables: age, marital status, education, and religious affiliation were not significant predictors of depression. However, ethnic affiliation showed a strong association ( $p = .001$ ), indicating that cultural and contextual factors meaningfully shape mental health outcomes. This pattern aligns with large cohort studies in the United States, United Kingdom, and Canada, which consistently report higher depression rates among Black, Hispanic, South Asian, and African immigrant teenage mothers compared to

White peers, even after adjusting for socioeconomic status (Nguyen et al., 2023; Ceballos et al., 2024; Rahman & Williams, 2025; Okafor & Mensah, 2022). These studies emphasize ethnic identity, discrimination, and structural inequities as key mechanisms linking ethnicity to depression.

Similarly, findings from binary logistic regression analysis showed notable variation in clinical anxiety across ethnic groups. Adolescent mothers from both the Kikuyu (OR = 0.051, 95% CI: 0.004-0.661,  $p = .023$ ) and Meru (OR = 0.052, 95% CI: 0.007-0.378,  $p = .003$ ) ethnic groups were significantly less likely to report anxiety symptoms compared to the reference ethnic category. Specifically, Kikuyu and Meru respondents had approximately 94.9% and 94.8% lower odds, respectively, of experiencing anxiety symptoms relative to the reference group. These findings mirror evidence from Malawi and the UK showing that cultural norms, ethnic identity, and minority status significantly influence anxiety severity (Tembo et al., 2024; Martinez & Choudhury, 2026). Together, these results highlight ethnicity as a meaningful predictor of both depression and anxiety, underscoring the need for culturally sensitive assessment and intervention frameworks (Allemand et al., 2022).

Age demonstrated selective effects. Adolescent mothers aged 19-21 years had significantly lower odds of reporting depressive symptoms compared to the reference category (OR = 0.167, 95% CI: 0.035-0.791,  $p = .024$ ). This finding contradicts recent studies showing heightened vulnerability among younger adolescent mothers (Yang et al., 2024; Williams & Simons, 2022), the current findings may reflect contextual buffering such as stronger family involvement and fewer cumulative stressors rather than true developmental protection. Broader literature indicates that adolescent pregnancy is generally associated with elevated psychiatric and psychosocial risk, particularly at younger ages (Abdul Rahim et al., 2024; Hsu et al., 2025; De la Calle et al., 2021; Bulduk, Kurt Can, Can, & Aysin, 2025; Poulin et al., 2026).

In this study, educational attainment was not a significant predictor of depressive and anxiety symptoms. There were no statistically significant differences in depressive and anxiety symptoms across education levels. However, these findings contrast with extensive literature showing higher education as protective against depression (Afolabi, 2024; Ferrara et al., 2024; Liu et al., 2024; Tedla et al., 2026). However, recent evidence suggests a more complex pattern for anxiety: lower education predicts co-occurring anxiety and depression, whereas higher education is associated with greater reporting of anxiety alone, likely due to academic pressure, social comparison, and heightened psychological awareness (Östberg et al., 2023; Ahadi-Yulghunlu et al., 2026). This underscores the context-dependent nature of education's relationship with mental health.

Socioeconomic factors were not significantly predictive of depressive symptoms. On the contrary, Findings from the binary logistic regression in this study showed that adolescent mothers whose primary source of income was employment were significantly more likely to experience anxiety symptoms than those in the reference income category (OR = 37.171, 95% CI: 1.790-771.765,  $p = .019$ ), indicating approximately 37-fold higher odds of anxiety symptoms. Similarly, respondents who relied on government assistance as their primary source of income had significantly increased odds of anxiety symptoms (OR = 5.842, 95% CI: 1.289-26.485,  $p = .022$ ), representing nearly six times higher odds compared to the reference group. In addition, access to healthcare services was significantly associated with anxiety symptoms, with participants who reported having access to childcare demonstrating 3.7 times greater odds of anxiety symptoms than those in the reference category (OR = 3.719, 95% CI: 1.616-8.562,  $p = .002$ ). These findings suggest that sources of income and childcare access were important socioeconomic factors associated with anxiety symptoms at baseline. These findings align with studies showing that poverty, limited opportunities, and reliance on informal support systems increase anxiety and depression among adolescent mothers (Tsabedze, 2020; Govender et al., 2020; Hussain et al., 2025; Ojeleye et al., 2024; Tembo et al., 2024).

Healthcare access was another significant predictor: adolescent mothers without access to healthcare had higher odds of severe anxiety. This is consistent with research demonstrating that limited access to reproductive, prenatal, and mental health services increases psychological distress due to unmet medical needs and heightened vulnerability (Lesinskiene, Andruskevici, & Butvilaite, 2025); Ibworo et al., 2024; Famutimi, Okafor, & Chukwuere, 202; De Castro et al., 2023).

Finally, child age was significantly associated with anxiety and severity. Mothers of children aged 1–2 years and those with children aged 6 years or older had higher odds of clinical anxiety, reflecting increased caregiving demands during toddlerhood and early school age. This pattern is supported by studies showing heightened anxiety during periods of increased supervision, behavioral regulation, and school-related responsibilities (Mehta et al., 2026; Ahadi-Yulghunlu, et al., 2026; Pan et al., 2025).

## CONCLUSION

Overall, this study demonstrates that while most sociodemographic factors: age, marital status, education, and religious affiliation, do not consistently predict depressive or anxiety symptoms among adolescent mothers, ethnicity, education level, socioeconomic conditions, healthcare access, and child age emerge as meaningful determinants of mental health. Ethnic minority adolescent mothers showed higher vulnerability to depression and anxiety, reflecting broader structural and sociocultural inequities. Education displayed a complex, context-dependent relationship with mental health, and financial dependence, lack of income, and limited healthcare access significantly increased anxiety severity. Caregiving demands during toddlerhood and early school age further heightened anxiety risk. These findings underscore the need for culturally responsive, developmentally informed, and context-specific interventions that address structural barriers, strengthen healthcare access, and provide targeted psychosocial support for adolescent mothers. Programs should prioritize ethnic minority groups, economically dependent mothers, and caregivers of young children, while integrating mental health screening into reproductive and maternal health services to ensure early identification and intervention.

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