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RESEARCH ARTICLE

Determinants of Adolescent Mental Health Literacy in Selected South African Secondary Schools: The Roles of Socioeconomic and Demographic Status, and School Level Context

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Introduction: Parental employment, school grade, and location significantly influence learners' mental health literacy (MHL), impacting early detection and help-seeking behaviors.
Aim: This study investigates the determinants of adolescent MHL in selected secondary schools in Tshwane, South Africa.
Methods: A secondary data analysis was conducted using 529 secondary school learners selected through stratified random sampling from five different schools: four in townships and one in an urban area. Ordinal logistic regression was performed to identify significant predictors of MHL, with a p-value less than .05 considered statistically significant.
Results: The study findings indicated that school level factors were statistically significant. Learners attending urban schools were three times more likely to demonstrate higher mental health literacy than those attending township schools (OR = 3.03, 95% CI [2.02, 4.55], p < .001). Moreover, Grade 12 learners exhibited significantly higher odds of mental health literacy compared to those in lower grades (OR = 6.24, 95% CI [2.24, 17.39], p < .001). The effect of parental employment status was evident: learners whose parents were employed showed significantly higher odds of mental health literacy compared to learners from other parental employment categories (OR = 1.65, 95% CI [1.30, 2.09], p < .001).
Conclusions: School-level factors (urban location and Grade 12) and parental employment were significant predictors, emphasizing the role of contextual and socioeconomic influences on learners' MHL.

Keywords: access to services, mental health literacy, ordinal logistic regression, school location, socio-economic inequalities

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Introduction

Mental health literacy (MHL), operationalized as the ability to recognize mental disorders, knowledge of sources of help, and the ability to administer first aid support, is increasingly recognized as a crucial factor in adolescent well-being and resilience (Jorm, 2012; Kutcher et al., 2016; Özbıçakçı & Salkim, 2024). Despite growing awareness of MHL evidenced in the literature (Mahmoodi et al., 2022; Nguyen Thai et al., 2018; Seboka et al., 2022), disparities often influenced by underlying socioeconomic conditions and school-level factors (Alsaraireh et al., 2023; Kookal et al., 2025; Singh et al., 2022; Zhang et al., 2023) persist in low-resource settings. Several studies have demonstrated the effectiveness of school-based mental health curricula for learners in three Asian countries: the Philippines, Indonesia, and Japan (Shibuya et al., 2025). In the United States, Kirnan et al. (2025) discussed the effectiveness of the *coming up for AIR* program in improving MHL and help-seeking behaviors at the school level. In Canada, Haight et al. (2023) emphasized the effectiveness of *All in for Youth*, a wraparound support model for addressing learners' mental health needs during the pandemic. In South Africa and other low- and middle-income countries, such programs, interventions, and policy implementations at the school level remain largely inaccessible, making it difficult for schools in townships and rural communities to effectively address mental health-related issues.

South Africa's mental health context differs materially from that of United States of America and Canada, among other countries. It faces a severe workforce shortage, with approximately 1.5 psychiatrists per 100,000 population, rural deficits, and most specialists concentrated in private sectors, constraining service reach even before demand is considered (Baker & Naidu, 2021; Beath et al., 2023; Wolvaardt et al., 2025). Public spending on mental health is low and hospital-skewed. About 5% of the public health budget is spent on mental health, yielding large treatment gaps that community and school settings struggle to bridge (Docrat et al., 2019; Shisana et al., 2024). By contrast, high-income country systems, while far from perfect, generally report higher baseline access, coverage, and spending on mental health services, even as unmet need among youth persists (Ndlovu et al., 2025; Patel et al., 2025). Consequently, mental health issues must be problematized differently in South Africa considering township and urban inequities, health professional constraints, and underfunding as central structural drivers.

Factors such as school location have been well-documented in literature, particularly that learners in urban schools consistently outperform those in non-urban schools (He et al., 2024; Kookal et al., 2025; Zhang et al., 2023). Urban areas are formally planned cities or towns with relatively high population density, well-developed infrastructure, and broad access to services such as education, healthcare, transport, and employment. Township areas, in contrast, are historically marginalized residential zones, typically located on the peripheries of urban centres, and are characterized by lower household incomes, under-resourced infrastructure (Arvin et al., 2025), and persistent service inequalities rooted in apartheid-era spatial planning in South Africa. These studies associate urban advantages with an abundance of access to mental health resources and information infrastructure. Similarly, Madlala et al. (2022) observed this urban-rural divide in the South Africa setting. However, Zhao et al. (2020) contrast this narrative by showing evidence of low MHL even in urban community dwellings, suggesting that urbanicity alone is insufficient. Furthermore, the findings by Mwambwa-Johnson (2021) diverge from previous evidence, revealing higher MHL among rural youth in Mongu compared to urban Lusaka. These variations highlight the mediating roles of context and culture in MHL beyond geographic settings. Several studies also support school grade as a predictor of MHL (Alrashdi et al., 2025; Shakya et al., 2025), indicating that MHL increases with the level of education. Others challenge this view, with studies reporting a decrease in MHL with higher school grades (Abonassir et al., 2021; Kookal et al., 2025; Özbıçakçı & Salkim, 2024). These inconsistencies reflect differences in curriculum design, cultural attitudes toward MHL, and variations in MHL assessment tools, inviting further exploration into whether educational advancement universally boosts MHL or if mediating factors have a more significant impact.

The extensive body of research on the effect of parental employment on child MHL has so far produced mixed results, leading to different conclusions. Studies have highlighted the impact of household income on MHL, reporting a tendency for higher levels among students from medium to high-income families (Alsaraireh et al., 2023; Kookal et al., 2025; Singh et al., 2022). Duwal et al. (2024) support this finding by showing that economic involvement, whether through parental or personal experience, may improve MHL. Interestingly, Kopp et al. (2024) offer further insight into the positive and negative relationships between parental employment and MHL. Their results show that factors such as job stability, working conditions, and time spent with children affect behavioural outcomes, especially internalizing and externalizing behaviour issues. Majdi (2024), on the other hand, emphasizes the different effects of parental employment on children's MHL, indicating that children with

employed mothers and self-employed fathers tend to have higher MHL. These findings highlight how socioeconomic factors influence MHL among learners and suggest the need for targeted interventions that address disparities in MHL education and access to resources in townships and rural areas. Additional factors such as age, gender, history of mental disorders, and family living conditions, among others, are also supported by existing literature (Abonassir et al., 2021; Alsaraireh et al., 2023; Duwal et al., 2024; Seboka et al., 2022).

Understanding how socioeconomic and demographic status and school context influence mental health literacy among learners is therefore essential. Such insights can inform the development of targeted educational programs aimed at increasing awareness and understanding of mental health disorders in rural and township schools. This study therefore intends to apply ordinal logistic regression to capture the predictive utility of individual, school level, and parental covariates on learners' MHL.

Methods

Procedure and Participants

A quantitative, descriptive, cross-sectional study design was used, employing secondary data collected from July to September 2023. The study took place in Region 1 of the City of Tshwane Metropolitan Municipality, which covers 6,368 square kilometres and has about 3 million residents (Mokebe, 2018).

Ethical approval was obtained from the Sefako Makgatho Health Sciences University Research Ethics Committee (Ref: SMUREC/S/173/2024:PG), and data access was granted by the custodian after clearance from the University of Pretoria Research Ethics Committee (Ref: 5/2023). Informed consent was obtained from parents and guardians, and learners provided assent before participation.

The target population included male and female secondary school learners aged 13 to 21 years, enrolled in five randomly selected schools within the region. Eligibility criteria consisted of learners being present on the day of data collection whose parents or guardians had given prior written consent. Learners outside the specified age range without parental consent or deemed unable to participate were excluded. The sample size was calculated using RaoSoft. Based on a population of 4,918 learners, a 50% response distribution, 95% confidence level, 5% margin of error, a design effect of 1.5, and a 10% non-response rate, the final target sample size was determined to be 590 participants, which includes a 10% non-response buffer.

Stratified sampling with probability proportional to school size was used. Within each school, two classes per grade (Grades 8–12) were randomly chosen, and at least 10 learners per class were consecutively recruited. Although the same number of classes was selected per grade, the total number of participating students varied across grades due to differences in class size and attendance patterns. In particular, Grades 9 and 12 had fewer students, reflecting smaller class enrolments and, in the case of Grade 12, reduced attendance associated with exam preparation and subject specialization. Consequently, equal class selection did not result in equal numbers of students across grades.

In this study, an initial total of 591 learners were included; however, 62 of the participating learners had incomplete information and were excluded from the study. A final total of 529 secondary school learners yielding a 90% response rate was included for further analysis, with a mean age of 15.6 (SD = 1.63), ranging from 13 to 21 years. The sample was predominantly female, comprising 376 (71.0%) of the participants, while males accounted for 153 (29.0%). The total number of participants was approximately evenly distributed. 148 (28.0%) were enrolled in Grade 8, followed closely by those in Grades 10 and 11, each representing 138 (26.0%) of the sample. Smaller proportions were observed in Grades 9 and 12, with 79 (15.0%) and 26 (5.0%), respectively. A significant majority of the participants, 369 (69.7%), attended township schools, which are typically located in underprivileged communities and often face challenges such as limited resources, support, and funding. Regarding living arrangements, 237 (44.8%) of the learners resided with both parents, 216 (40.8%) lived with a single parent, and 76 (14.4%) had other living conditions. 328 (62.0%) of the participants indicated that their parent or guardian was employed. A detailed summary of the demographic characteristics is presented in Table 1.

Table 1. Summary of Participants' Demographic Profiles (*N* = 529)

Variables		*n*	%
Gender	Male	155	29.3
	Female	374	70.7
Age	13-17	460	87.0
	18-21	69	13.0
Current grade	8	146	27.6
	9	79	14.9
	10	140	26.5
	11	136	25.7
	12	28	5.3
School location	Township	369	69.7
	Urban	160	30.3
Current living conditions	Stay with both parents	237	44.8
	Stay with one parent	216	40.8
	Stay with an adult guardian	61	11.5
	Child-headed family - guardian is an older sibling	15	2.9
Employment status of parent/guardian	Unemployed	199	37.6
	Employed	330	62.4

Measurements

Data collection was carried out using a structured questionnaire with two sections. Section A gathered the socio-demographic characteristics of learners and their parents. Section B evaluated MHL through three fictitious case vignettes aligned with the DSM-5 diagnostic criteria for Major Depressive Disorder (MDD), Substance-Induced Psychotic Disorder (SIPD), and Social Anxiety Disorder (SAD), chosen based on their prevalence in South Africa (Herman et al., 2009). The participants were given these three clinical case studies and asked to respond to each case study respectively. Learners were asked to identify the disorder depicted in each vignette; correct responses were scored as 1, while incorrect responses were scored as 0. If a participant correctly identified one condition but swapped the other two, the participant scored 1. The responses from the three separate cards were categorized into a three-level variable in the following manner: 3 was categorized as "High MHL", 2 as "Moderate MHL", and ≤ 1 as "Poor MHL". Learners with high MHL were those who had correct responses for all three vignettes; otherwise, learners were classified as having moderate (two correct responses) and low (no more than one correct response) HML. Table 2 provides a description of the vignette-related questions together with a list of possible options.

Table 2. Questions About the Cases

What type of illness do you think the people in the vignette are suffering from?
Major Depressive Disorder (MDD)
a) Physical illness (An illness of the body)
b) Mental illness (An illness of the mind)
c) Depression*
d) Social phobia
e) Psychosis due to substance
f) I don't know
Substance-Induced Psychotic Disorder (SIPD)
a) Physical illness (An illness of the body)
b) Mental illness (An illness of the mind)
c) Depression
d) Social phobia
e) Psychosis due to substance*
f) I don't know
Social Anxiety Disorder (SAD)
a) Physical illness (An illness of the body)
b) Mental illness (An illness of the mind)
c) Depression
d) Social phobia*
e) Psychosis due to substance
f) I don't know

Note. *Correct response for each vignette.

Data Analysis

Data analysis was conducted using STATA. Descriptive statistics (frequencies and percentages) summarized categorical variables. Chi-square tests examined associations between categorical variables and MHL, with significance set at $p < .05$.

An ordinal logistic regression model was employed to examine the effects of learners' age, gender, household, school, and parental covariates on learners' MHL, which was measured as an ordered outcome. Model estimates were reported as odds ratios (*OR*s) with 95% confidence intervals (CIs) and exact *p*-values, alongside likelihood-ratio χ^2 statistics, changes in model fit, and pseudo-R^2 indices to evaluate overall model performance. This approach preserves the ordinal structure of the MHL measure and enables a comprehensive assessment of how socioeconomic, demographic, and school-related factors are associated with progressively higher levels of MHL.

Results

Bivariate Associations Between Participants' Socioeconomic and Demographic Covariates and MHL

Among the 529 participants in the study, 200 (37.81%) correctly recognized all of the mental disorders presented, while 199 (37.62%) recognized one mental health disorder, and 130 (24.57%) recognized two mental health disorders. Overall, participants demonstrated an average ability to correctly identify mental health disorders 306 (57.84%). A total of 343 participants (64.84%) accurately recognized MDD as a mental disorder. More than half of the participants, 272 (51.81%), correctly identified SIPD as a mental disorder. Additionally, SAD was accurately recognized as a mental health disorder by 308 (58.22%) participants.

Table 3 presents the bivariate associations between participants' socioeconomic, demographic, and school context covariates with MHL levels (poor, moderate, and high). School location was strongly associated with MHL ($p < .001$). Learners in urban schools were more likely to reach High MHL (54.4%) compared with those in township schools (30.6%), with the reverse pattern observed for Poor MHL (urban: 21.3% vs. township: 44.7%). Moreover, parent/guardian employment status also showed a significant association ($p < .001$).

45.5% of learners with employed parents/guardians were categorized as High MHL (vs. 25.1% when unemployed), while rates of Poor MHL were correspondingly lower (29.7% vs. 50.8%). Furthermore, the current living conditions variable was statistically significant but weak in magnitude ($p = .012$). The small *V* suggests that more unstable living arrangements (e.g., child-headed households) tend to align with lower MHL, though the effect size is minimal. Notably, living with both parents corresponded to the highest proportion of High MHL (40.5%).

Ordinal Logistic Regression Analysis

Univariate ordinal logistic regression analyses were conducted to examine associations between participant characteristics and the odds of MHL. Gender and age were not statistically associated with MHL: compared to males, females did not differ in odds (*OR* = 0.91, $p = .599$), and participants aged 18–21 did not differ from those aged 13–17 (*OR* = 1.00, $p = .984$). Learners in Grade 12 had higher odds of MHL relative to Grade 8 (*OR* = 2.42, $p = .025$). School location was associated with MHL: compared to township schools, learners in urban schools had higher odds of MHL (*OR* = 2.81, $p < .001$). Current living conditions also showed associations. Relative to living with both parents, living with an adult guardian was not associated with MHL (*OR* = 0.80, $p = .412$). Living with one parent was associated with lower odds of MHL (*OR* = 0.68, $p = .025$), and living in a child headed household was also associated with lower odds of MHL (*OR* = 0.26, $p = .015$). Parental/guardian employment status was associated with MHL: compared to participants with unemployed parents/guardians, those with employed parents/guardians had higher odds of MHL (*OR* = 2.46, $p < .001$).

In the multivariate model, several effects were statistically significant. The fitted model showed significant improvement over the intercept-only model, with the log likelihood increasing from −571.54 (intercept-only) to −538.24 (omnibus) and a likelihood ratio test of LR $\chi^2 = 66.61$, $p < .001$. The model deviance was 1,076.48 (i.e., −2 × log likelihood), consistent with the reported fit.

Table 3. Bivariate Associations Between Participants' Socioeconomic, Demographic, and School Context Covariates with MHL

	Variables	MHL			χ^2	*V*	*p*
		Poor (*n* = 199)	Moderate (*n* = 130)	High (*n* = 200)			
Gender	Male	60 (38.7%)	30 (19.4%)	65 (41.9%)	3.49	.08	.175
	Female	139 (37.2%)	100 (26.7%)	135 (36.1%)			
Age	13–17	175 (38.0%)	109 (23.7%)	176 (38.3%)	1.47	.05	.479
	18–21	24 (34.8%)	21 (30.4%)	24 (34.8%)			
Current grade	8	65 (44.5%)	33 (22.6%)	46 (32.9%)	11.76	.11	.162
	9	27 (34.2%)	26 (32.9%)	26 (32.9%)			
	10	53 (37.9%)	28 (20.0%)	59 (42.1%)			
	11	47 (34.6%)	37 (27.2%)	52 (38.2%)			
	12	7 (25.0%)	6 (21.4%)	15 (53.6%)			
School location	Township	165 (44.7%)	91 (24.7%)	113 (30.6%)	32.99	.25	<.001
	Urban	34 (21.3%)	39 (24.4%)	87 (54.4%)			
Current living conditions	Stay with both parents	71 (30.0%)	70 (29.5%)	96 (40.5%)	16.33	.12	.012
	Stay with one parent	95 (44.0%)	43 (19.9%)	78 (36.1%)			
	Stay with an adult guardian	23 (37.7%)	15 (24.6%)	23 (37.7%)			
	Child-headed family - guardian is an older sibling	10 (66.7%)	2 (13.3%)	3 (2.0%)			
Employment status of parent/guardian	Unemployed	101 (50.8%)	48 (24.1%)	50 (25.1%)	28.23	.23	<.001
	Employed	98 (29.7%)	82 (24.9%)	150 (45.5%)			

Note. V: Cramer's V; χ^2: Pearson Chi-square.

Table 4. Summary of Ordinal Logistic Regression Analysis

	Variables	Univariate Analysis			Multivariate Analysis		
		OR (95%CI)	*p*	Wald χ^2 Statistic	*OR* (95%CI)	*p*	Wald χ^2 Statistics
Gender	Male	1.00		1.00			
	Female	0.91 (0.64, 1.29)	.599	0.28			
Age	13-17	1.00	1.00	1.00			
	18-21	1.00 (0.63, 1.57)	.984	<.01			
Current grade	8	1.00	1.00	1.00	1.00	1.00	1.00
	9	1.26 (0.76, 2.07)	.370	0.81	1.37 (0.82, 2.31)	.229	1.44
	10	1.42 (0.92, 2.19)	.118	2.43	1.59 (1.02, 2.50)	.042*	4.12
	11	1.39 (0.90, 2.14)	.135	2.22	1.69 (1.07, 2.65)	.023*	5.15
	12	2.42 (1.12, 5.25)	.025*	5.02	4.62 (2.02, 10.59)	<.001**	13.10
School location	Township	1.00	1.00	1.00	1.00	1.00	1.00
	Urban	2.81 (1.97, 4.00)	<.001**	32.38	2.39 (1.63, 3.50)	<.001**	19.89
Current living conditions	Stay with both parents	1.00	1.00	1.00	1.00	1.00	1.00
	Stay with an adult guardian	0.80 (0.48, 1.35)	.412	0.67	0.92 (0.52, 1.62)	.772	0.08
	Stay with one parent	068 (0.48, 0.95)	.025*	5.02	0.82 (0.57, 1.18)	.292	1.10
	Child-headed family – guardian is an older sibling	0.26 (0.09, 0.77)	.015*	5.90	0.39 (0.13, 2.96)	.096	2.79
Employ-ment status of parent/ guardian	Unemployed	1.00	1.00	1.00	1.00	1.00	1.00
	Employed	2.46 (1.76, 3.43)	<.001**	27.56	2.05 (1.41, 2.96)	<.001**	14.44

Note. CI: confidence interval; *OR*: odds ratios; *Statistical significance ($p < .05$); **Statistical significance ($p < .01$).

Pseudo R^2 indices indicated modest explanatory power, typical for ordinal logistic regression models: McFadden R^2 = .058 (adjusted = .039), McKelvey and Zavoina R^2 = .127, Cox–Snell R^2 = .118, and Cragg–Uhler/Nagelkerke R^2 = .134. Relative to Grade 8, learners in Grade 10 had higher odds of being in a higher outcome category (OR = 1.59; p = .042), as did those in Grade 11 (OR = 1.69; p = .023). The difference was largest for Grade 12 (OR = 4.62; p < .001), indicating a clear gradelevel increase in MHL. School location was also a strong predictor of high MHL: learners in urban schools had more than double the odds compared with those in township schools (OR = 2.39; p < .001). Additionally, having an employed parent/guardian was also a predictor of higher MHL, with higher odds relative to unemployed parent/guardian (OR = 2.05; p < .001).

Gender (female vs. male: OR = 0.91; p = .599) and age (18–21 vs. 13–17: OR = 1.00; p = .984) were not associated with higher MHL. Living arrangements showed no statistically significant associations with MHL in the multivariate model. Compared to those living with both parents, individuals living with an adult guardian (OR = 0.92, p = .772), a single parent (OR = 0.82, p = .292), or in a child-headed household (OR = 0.39, p = .096) appeared to have lower odds of high MHL, though none of these reached the threshold for statistical significance. Table 4 summarizes the ordinal logistic regression output.

Discussion

The study investigated the determinants of adolescent MHL in selected secondary schools in Tshwane, South Africa. The study found that school-level factors, especially location, grade, and parent/guardian employment status significantly influenced learners' MHL. Urban students consistently outperformed their township peers, a pattern supported by previous research (He et al., 2024; Kookal et al., 2025; Zhang et al., 2023). These studies associate urban benefits with better access to mental health resources and information infrastructure. Similarly, Madlala et al. (2022) observed this urban-rural gap in South Africa, although the focus was not entirely on learners going to school. However, the findings are contradicted by Zhao et al. (2020), who found low MHL even in urban communities, indicating that urbanicity alone does not guarantee higher MHL. Interestingly, Mwambwa-Johnson (2021) reports higher MHL among rural youth in Mongu compared to urban Lusaka, questioning the assumed urban advantage seen in this study and others. This variation highlights the need to consider cultural and contextual factors influencing MHL beyond geographic boundaries. Moreover, raising MHL in township schools may be most efficiently achieved by school-embedded interventions that mimic the exposure pathways suggested by the grade level increase, rather than relying on urban migration.

Regarding grade level, the study showed that school grade was a significant predictor of higher MHL. This finding aligns with previous research (Alrashdi et al., 2025; Shakya et al., 2025), suggesting that MHL tends to increase with education level. However, it contrasts with studies reporting a decrease in MHL with higher school grades, although these results were not statistically significant (Abonassir et al., 2021; Kookal et al., 2025; Özbıçakçı & Salkim, 2024). These differences may reflect variations in curriculum, cultural attitudes toward mental health, or differences in MHL assessment tools. Such divergence highlights the need for further research to determine whether educational progression universally boosts MHL or if other factors play a more significant role. The reason for the finding could be that as learners progress through school levels, they are likely to be exposed to increasing cognitive demands, more advanced health-related content, and greater opportunities for discussion, reflection, and critical thinking. Moreover, higher grades may also coincide with increased engagement in life-orientation curricula, school-based guidance services, or examination preparation contexts where stress, coping, and mental well-being are more explicitly addressed. Learners whose parents were employed demonstrated significantly higher levels of MHL. This was consistent with findings by Abonassir et al. (2021). Similarly, several other studies (Alsaraireh et al., 2023; Kookal et al., 2025; Singh et al., 2022) also highlight the influence of household income, reporting that learners from medium to high-income families tend to exhibit higher MHL compared to their counterparts. The reason for this finding could be that employment is often linked to higher and more stable household income, which facilitates access to informational resources relevant to mental health. Employed parents/guardians may be better positioned to afford internet connectivity, smartphones, printed materials, and educational media, all of which increase exposure to mental health information for adolescents.

These outcomes are likely shaped by greater exposure to health-related information, reduced financial stress, and improved access to educational and psychological services. Duwal et al. (2024) support this idea by showing that adolescents engaged in part-time employment also reported higher MHL, suggesting that economic engagement, whether through parental or personal experience, may foster MHL. Moreover, Kopp et al. (2024) provide

further insight into the connection between parental employment and MHL. Although their study focused on a different population, their findings reveal that maternal employment characteristics such as job stability, working conditions, and time spent with children can influence behavioral outcomes, including internalizing and externalizing behavior problems. Interestingly, Majdi (2024) highlights the differential effect of parental employment on child MHL, especially children with employed mothers and self-employed fathers, who tend to have higher MHL.

Family structure also emerged as an important predictor factor of high MHL, though the results were not significant in the multivariate ordinal regression model, with learners living with both parents generally demonstrating higher levels of MHL than those living with a single parent, legal guardian, or in child-headed families. Studies such as that of Mbatsane (2014) was consistent with our finding. In contrast with our study finding, Davids and Roman (2013) showed that children raised by a single parent had higher health outcomes than those raised by both parents. The reason for the finding may be that two-parent households may provide greater emotional support, shared caregiving responsibilities, and more consistent supervision, creating an environment conducive to open discussions about mental health. In contrast, single-parent households, among others, often face increased economic pressure, abuse, time constraints, and caregiving stress, which may limit opportunities for mental health-related communication and guidance (Behere et al., 2017; Kim et al., 2023). These structural inequalities may reduce adolescents' exposure to MHL and help-seeking behaviors. These converging findings emphasize the importance of examining how socioeconomic factors shape MHL among adolescents and highlight the need for targeted interventions to address disparities in mental health education and access to resources for this vulnerable population.

Strengths and Limitations

While this study provides valuable insights into the influence of school location, grade, and parental employment on learners' MHL, it is important to acknowledge its limitations. Due to financial constraints and time limitations, the sample did not include all schools within Tshwane Region 1. Consequently, the findings should be interpreted with caution and may not be generalizable to the entire region. Nonetheless, these results offer a meaningful foundation for understanding MHL among secondary school learners and can inform future research and intervention strategies aimed at improving mental health outcomes in similar educational and social contexts.

Conclusion, Implications, and Future Directions

The use of ordinal logistic regression in this study highlights the complex relationships between individual attributes as well as broader environmental and parental influences on MHL, offering a more comprehensive understanding. The study findings highlight the importance of addressing structural inequalities and tailoring mental health interventions to the unique needs of learners from socioeconomically disadvantaged backgrounds, particularly township areas. The significant influence of school location, grade level, and parental employment on learners' MHL suggests that interventions should be contextually tailored. Specifically, township schools require targeted mental health education programs that address the unique challenges faced by learners.

The findings of this study carry significant implications for both educational policy and practice. Firstly, the Department of Basic Education, in collaboration with school principals and teachers, should prioritize the integration of mental health education into the curriculum, beginning in earlier grades. This is particularly important in township schools, where learners often exhibit lower levels of MHL. Moreover, targeted professional development programs should be implemented to equip teachers with the knowledge and skills necessary to identify early signs of mental health problems and facilitate earlier referrals. Furthermore, township schools should collaborate to develop and sustain school based MHL programs that address the needs of learners from socioeconomically disadvantaged backgrounds. Mental health professionals and community-based organizations should also initiate outreach programs that consider the educational and familial contexts of learners, especially in areas with high rates of parental unemployment. These coordinated efforts can contribute to a more supportive environment for adolescent mental health development and literacy.

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Declaration of interest statement
The authors have no conflicts of interest to disclose.

Ethical statement
This manuscript is the authors' original work.
All participants engaged in the research voluntarily and anonymously.
Their data are stored in coded materials and databases without personal data.
This study was reviewed and approved by the Sefako Makgatho Health Sciences University Research Ethics Committee (Ref: SMUREC/S/173/2024:PG), and data access was granted by the custodian after clearance from the University of Pretoria Research Ethics Committee (Ref: 5/2023).

Data availability statement
Datasets presented in this article are available from the corresponding author upon reasonable request.

Declaration on using artificial intelligence in research and manuscript preparation
The authors have used AI technologies in the preparation of the manuscript, but not in their research. They have used AI-based language assistance tools (Copilot) in the proofreading stage for language editing. The authors proofread the final version and cross-checked all AI-generated suggestions.

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