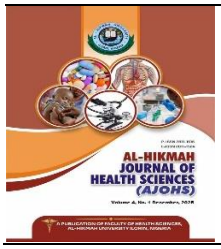
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Prevalence, Sources, and Social Predictors of Self-Medication Practices among Young People Aged 15-24 Years in Ilorin Metropolis, Kwara State, Nigeriatate, Nigeria: A Mixed-Methods Study

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ABSTRACT

Background: Self-medication is a widespread health behaviour in Nigeria, with risks of misuse and antimicrobial resistance. This study examined the prevalence, sources and social predictors of self-medication among young people aged 15–24 years in selected wards of Ilorin Metropolis, Kwara State, Nigeria.

Methods: A descriptive cross-sectional survey of 384 young people used multistage sampling (random selection of six wards; convenience sampling of households) and a structured four-point Likert questionnaire. Data were analysed using descriptive statistics, chi-square tests and binary logistic regression ($\alpha = 0.05$).

Results: Overall, 59.1% were classed as self-medicators ($\chi^2(1) = 12.76$ against 50%, $p < .001$); analgesics without medical advice were most common (mean = 3.23). Patent medicine vendors (3.12) and community pharmacies (3.10) were the leading sources. High social-factor exposure was associated with self-medication (68.8% vs 48.6%; $\chi^2(1) = 15.35$, $p < .001$). In the logistic model ($\chi^2(5) = 31.62$, $p < .001$; Nagelkerke $R^2 = .107$), only peer norms were independently associated (OR = 1.34, 95% CI 1.04–1.72).

Conclusion: Self-medication is common and is linked to informal medicine sources and peer norms in the sampled wards. Stricter enforcement of prescription-only sales and peer-education approaches are recommended; convenience sampling limits generalisability.

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Introduction

Self-medication, the use of medications to treat self-diagnosed illnesses or symptoms without professional guidance, risks incorrect dosing, drug interactions and inappropriate duration of treatment (World Health Organization, 2000). Reported prevalence is high in Nigeria and elsewhere in Africa: 79.2% among health-science students in Eritrea (Araia *et al.*, 2019), 81.8% among undergraduates of a private Nigerian university (Esan et al., 2018) and 85% among hospital outpatients in south-western Nigeria (Omolase *et al.*, 2007).

Young people aged 15–24 years are a large and growing share of Nigeria's population, and health behaviours formed at this age are thought to persist into adulthood. Esan et al. (2018) found that 81.8% of

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undergraduates at a private Nigerian university self-medicated, mostly with analgesics, largely because of the unfriendly attitude of clinic health workers, lack of time and distance to the clinic. Osemene and Lamikanra (2012) found that self-medication among university students in south-western Nigeria was associated with age, gender and class level, and Omolase et al. (2007) found that hospital outpatients mainly cited minor complaints (54.7%) and financial constraint (22.4%).

The sources of medicines are central to regulatory design. Most drugs used for self-medication by students in Gondar, Ethiopia, came from pharmacies or drug shops (Abay & Amelo, 2010). In Nigeria during the COVID-19 pandemic, drugs for self-medication were bought mainly from pharmacies (73.9%), and 21% cited pharmacy proximity as a reason (Wegbom et al., 2021). In Ogun State, perceived availability of health services predicted self-medication most strongly (Otun, 2016).

This study is anchored on Social Learning Theory (Bandura, 1977, 1997), which holds that people learn health behaviours by observing and modelling significant others, such as family, peers and trusted contacts, and that self-efficacy shapes whether observed behaviours are adopted. Family and peer self-medication norms, self-diagnosis confidence, perceived medical knowledge and encouragement from trusted others therefore provide a lens for examining the social predictors of self-medication.

Nigerian studies of self-medication among young people have mostly been conducted in single institutions or among hospital or health-science populations (Esan et al., 2018; Omolase et al., 2007; Osemene & Lamikanra, 2012), and those reviewed here examined mainly demographic correlates, not social factors such as peer and family norms. Community-based evidence from Ilorin Metropolis remains scarce.

This study therefore determined the prevalence, sources, and social predictors of self-medication practices among young people aged 15-24 years in Ilorin Metropolis, Kwara State, Nigeria, with the following specific objectives: to determine the prevalence of self-medication practices among young people aged 15-24 years in Ilorin Metropolis; to identify the sources of medications among young people aged 15-24 years who engage in self-medication practices in Ilorin Metropolis; and to examine the social factors that predict self-medication practices among young people aged 15-24 years in Ilorin Metropolis.

Research Methodology

Research Design

This study used a descriptive cross-sectional survey design, which provides point-in-time data on a defined population and is suitable for estimating prevalence and examining associations (Setia, 2016).

Population of the Study

The population comprised all young people aged 15–24 years resident in Ilorin Metropolis, male and female, from varied educational, occupational and socioeconomic backgrounds, in households across its three LGAs, estimated at 399,084 (Kwara State Bureau of Statistics, 2025).

Sample Size Determination and Sampling Techniques

The sample size followed Research Advisors (2006), which gives a minimum of 384 for populations above 10,000 at a 95% confidence level and 5% margin of error; 400 questionnaires were distributed to allow for incomplete returns, and 384 were correctly completed and analysed. A multistage procedure combining probability and non-probability selection was used. First, Ilorin Metropolis was stratified into its three LGAs (Ilorin East, Ilorin West and Ilorin South). Second, two wards per LGA were selected by simple random sampling (ballot): Ogidi and Adewole (Ilorin West), Gambari Ward 1 and Gambari Ward 2 (Ilorin East), and Balogun Fulani 1 and Akanbi 2 (Ilorin South). Third, households meeting the inclusion criteria were selected by convenience sampling, and all eligible young people aged 15–24 years available in each selected household at the time of data collection were recruited. The final stage was therefore non-random, so the sample is not a probability sample of young people in Ilorin Metropolis; this introduces selection bias and limits generalisability, and the findings are interpreted as applying to the sampled wards.

Research Instrument

Data were collected with a researcher-structured questionnaire with six sections: A (demographics), B (prevalence of self-medication), C (sources), D (social factors), E (environmental factors) and F (healthcare accessibility). It was a closed-ended four-point Likert instrument, using Always (4)/Often (3)/Rarely (2)/Never (1) for frequency items and Strongly Agree (4)/Agree (3)/Disagree (2)/Strongly Disagree (1) for attitudinal items.

Validity of the Instrument

The questionnaire was reviewed for face and content validity by three experts in the Department of Community Medicine and Public Health, Al-Hikmah University, and their comments were used to improve

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it before the reliability assessment and final administration.

Reliability of the Instrument

Reliability was assessed by the test-retest method. Twenty questionnaires were administered to respondents in Moro LGA, an area outside the main study, and the same respondents were re-administered the questionnaire two weeks later; the two sets of scores were correlated using Pearson Product Moment Correlation, giving r = 0.84 which shows that all the items in the instrument were reliable.

Method of Data Analysis

Data were coded and analysed using SPSS version 27.0, with frequencies, percentages, means and standard deviations. Because four-point Likert items are ordinal, full item distributions are reported (Tables 2, 4 and 5), and item means are used as descriptive summaries judged against a criterion mean of 2.50 (the scale midpoint), treating the scale as approximately interval. For H_{01}, each prevalence item was dichotomised (Engaged = Always + Often; Not engaged = Rarely + Never) and tested against an expected 50:50 split by chi-square goodness-of-fit; the seven items come from the same respondents and are not pooled, and overall prevalence was tested at the respondent level. The binary outcome self-medicates (1 = yes, 0 = no) was defined as a mean Section B score of at least 2.50. For H_{02}, respondents were classed as having high or low social-factor exposure by a mean score on the five social-factor items of at least 2.50 and compared by chi-square test (Yates' continuity correction). A binary logistic regression entered the five social-factor items together as continuous 1–4 predictors, so each odds ratio refers to a one-point increase in agreement. Significance was set at 0.05.

Ethical Consideration

The study followed the Declaration of Helsinki. Ethical approval was obtained from the Kwara State Ministry of Health Research Ethics Committee on 6th of July, 2026 (ERC/MOH/2026/06/796) before data collection began. Participants gave informed consent after verbal explanation of the objectives, procedures, risks, benefits, voluntary nature and right to withdraw. Questionnaires were anonymised with unique codes, and no direct identifiers were recorded.

Results

Demographic Characteristics of Respondents

Table 1: Demographic Characteristics of Respondents (N = 384)

Variable	Category	Frequency (%)
Age (completed years)	15-19 years	171 (44.5%)
	20-24 years	213 (55.5%)
Sex	Male	190 (49.5%)
	Female	194 (50.5%)
LGA of Residence	Ilorin East	107 (27.9%)
	Ilorin West	154 (40.1%)
	Ilorin South	123 (32.0%)
Highest Educational Level	No formal education	11 (2.9%)
	Primary	16 (4.2%)
	Secondary	141 (36.7%)
	Tertiary (ongoing)	156 (40.6%)
	Tertiary (completed)	60 (15.6%)
Current Occupation	Full-time student	200 (52.1%)
	Part-time student	43 (11.2%)
	Employed	55 (14.3%)
	Self-employed	50 (13.0%)
	Unemployed	36 (9.4%)
Monthly Income or Allowance (₦)	Below 20,000	131 (34.1%)
	20,001-50,000	98 (25.5%)
	50,001-100,000	63 (16.4%)
	Above 100,000	35 (9.1%)
	No regular income	57 (14.8%)

Table 1 shows that 55.5% of respondents were aged 20–24 years, 50.5% were female, 40.1% lived in Ilorin West, 40.6% were in tertiary education, 52.1% were full-time students, and 59.6% had a monthly income or allowance below ₦50,000.

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Research Question One: What is the prevalence of self-medication practices among young people aged 15-24 years in Ilorin Metropolis, Kwara State, Nigeria?

Table 2: Descriptive Statistics of Prevalence of Self-Medication Practices

Item	Always	Often	Rarely	Never	Mean	SD
Takes medications for an illness without first seeing a doctor or pharmacist	158 (41.1%)	107 (27.9%)	72 (18.8%)	47 (12.2%)	2.98	1.04
Uses leftover medications from a previous prescription to treat a new/recurring illness	84 (21.9%)	110 (28.6%)	66 (17.2%)	124 (32.3%)	2.40	1.15
Purchases medications from a pharmacy or patent medicine vendor without a prescription	167 (43.5%)	108 (28.1%)	54 (14.1%)	55 (14.3%)	3.01	1.07
Treats fever/malaria-like symptoms with antimalarial drugs without laboratory confirmation	46 (12.0%)	105 (27.3%)	98 (25.5%)	135 (35.2%)	2.16	1.04
Takes antibiotics without a doctor's prescription to treat infections	52 (13.5%)	81 (21.1%)	91 (23.7%)	160 (41.7%)	2.07	1.08
Uses analgesics (e.g. paracetamol, ibuprofen) without medical advice	205 (53.4%)	93 (24.2%)	55 (14.3%)	31 (8.1%)	3.23	0.97
Self-medicates rather than visits a health facility, believing the illness is minor	124 (32.3%)	108 (28.1%)	80 (20.8%)	72 (18.8%)	2.74	1.10
Grand Mean					**2.65**	

Decision Mean = 2.50; S.D. = standard deviation. Always = 4, Often = 3, Rarely = 2, Never = 1.

Table 2 shows a grand mean of 2.65, above the criterion mean of 2.50, so self-medication is common. Analgesics without medical advice had the highest mean (3.23), followed by buying medications without a prescription (3.01). Antibiotics without a prescription had the lowest mean (2.07), although 34.6% did so always or often, which is concerning given antimicrobial resistance.

H_{01}: The proportion of young people aged 15–24 years in Ilorin Metropolis who engage in self-medication does not differ significantly from 50%.

Table 3: Chi-Square Goodness-of-Fit Test for Prevalence of Self-Medication Practices

Item	Engaged	Not Engaged	Total	χ^2
Takes medications without consulting a doctor/pharmacist	265 (69.0%)	119 (31.0%)	384	55.51
Uses leftover medications from a previous prescription	194 (50.5%)	190 (49.5%)	384	0.04
Purchases medications without a prescription	275 (71.6%)	109 (28.4%)	384	71.76
Treats fever/malaria-like symptoms without lab confirmation	151 (39.3%)	233 (60.7%)	384	17.51
Takes antibiotics without a prescription	133 (34.6%)	251 (65.4%)	384	36.26
Uses analgesics without medical advice	298 (77.6%)	86 (22.4%)	384	117.04
Self-medicates because illness is perceived as minor	232 (60.4%)	152 (39.6%)	384	16.67
Overall self-medicators (respondent level)	**227 (59.1%)**	**157 (40.9%)**	**384**	**12.76**

Note. Engaged = Always + Often; Not Engaged = Rarely + Never. Expected = 50% Engaged / 50% Not Engaged; χ^2 df = 1 for every row. The overall row is at the respondent level (self-medicators as defined in Section 2.7). Items are not pooled because they come from the same respondents. Critical value $\chi^2(1) = 3.841$ at $p = .05$.

Table 3 shows that engagement differed significantly from an even split for six of seven items ($p < .001$ for each; the exception was use of leftover medications, 50.5% vs 49.5%, $\chi^2(1) = 0.04$, $p = .84$). Overall, 227 of 384 respondents (59.1%, 95% CI 54.2–64.0%) were classed as self-medicators, more than 50%, $\chi^2(1) = 12.76$, $p < .001$, so H_{01} is rejected. Because households were selected by convenience, this estimate describes the sampled wards.

Research Question Two: What are the sources of medications among young people aged 15-24 years who engage in self-medication practices in Ilorin Metropolis, Kwara State, Nigeria?

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Table 4: Mean Ranking of Sources of Medications Used for Self-Medication

Item	Always	Often	Rarely	Never	Mean (Rank)
Patent medicine vendors (PPMVs) or roadside drug sellers	181 (47.1%)	110 (28.6%)	50 (13.0%)	43 (11.2%)	3.12 (1st)
Community pharmacies or chemist shops without a prescription	172 (44.8%)	118 (30.7%)	55 (14.3%)	39 (10.2%)	3.10 (2nd)
Drug-selection advice from a patent medicine vendor or pharmacist (not a doctor)	137 (35.7%)	135 (35.2%)	69 (18.0%)	43 (11.2%)	2.95 (3rd)
Medications stored at home from a previous doctor's prescription	109 (28.4%)	103 (26.8%)	108 (28.1%)	64 (16.7%)	2.67 (4th)
Medications from friends or family members	77 (20.1%)	122 (31.8%)	113 (29.4%)	72 (18.8%)	2.53 (5th)
Medications ordered online or through social media without a prescription	27 (7.0%)	55 (14.3%)	137 (35.7%)	165 (43.0%)	1.85 (6th)

Table 4 shows that patent medicine vendors or roadside drug sellers ranked first as sources (mean = 3.12), closely followed by community pharmacies or chemist shops dispensing without prescription (3.10) and advice from a vendor or pharmacist rather than a doctor (2.95). Stored home medications ranked fourth (2.67) and medications from friends or family fifth (2.53). Online or social-media ordering ranked lowest (1.85), the only item below the criterion mean, so informal retail channels dominate medication sourcing in the sampled wards.

Research Question Three: What social factors predict self-medication practices among young people aged 15-24 years in Ilorin Metropolis, Kwara State, Nigeria?

Table 5: Descriptive Statistics of Social Factors Predicting Self-Medication

Item	SA	A	D	SD	Mean	S.D.
My family members regularly treat illnesses at home with medications without seeing a doctor	110 (28.6%)	98 (25.5%)	102 (26.6%)	74 (19.3%)	2.64	1.09
My close friends and peers usually self-medicate rather than visit a health facility	86 (22.4%)	102 (26.6%)	100 (26.0%)	96 (25.0%)	2.46	1.10
I feel confident in my ability to correctly identify my own illness and choose the right medication	122 (31.8%)	112 (29.2%)	76 (19.8%)	74 (19.3%)	2.73	1.10
I self-medicate because I believe my level of education gives me sufficient medical knowledge	66 (17.2%)	109 (28.4%)	100 (26.0%)	109 (28.4%)	2.34	1.07
People I trust (family or friends) have encouraged me to use specific medications without a prescription	104 (27.1%)	99 (25.8%)	98 (25.5%)	83 (21.6%)	2.58	1.10
Grand Mean					**2.55**	

Decision Mean = 2.50; S.D. = standard deviation. SA = Strongly Agree (4), A = Agree (3), D = Disagree (2), SD = Strongly Disagree (1).

Table 5 shows a grand mean of 2.55, only just above the criterion mean of 2.50, so social factors are weakly endorsed. Self-diagnosis confidence had the highest mean (2.73), followed by family norms (2.64) and encouragement from trusted others (2.58); perceived medical knowledge from education had the lowest (2.34), below the criterion.

H_{02}: Social factors do not significantly predict self-medication practices among young people aged 15-24 years in Ilorin Metropolis, Kwara State, Nigeria.

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Table 6: Chi-Square Test of Independence: Social Factors and Self-Medication Status

Group	Self-Medicates n (%)	Does Not n (%)	Total
High Social Factor Exposure	137 (68.8%)	62 (31.2%)	199
Low Social Factor Exposure	90 (48.6%)	95 (51.4%)	185
Total	227 (59.1%)	157 (40.9%)	384

Note. *$\chi^2(1) = 15.35$, $p < .001$ (Yates' continuity correction; uncorrected Pearson $\chi^2(1) = 16.18$, $p < .001$); $\varphi = 0.21$; odds ratio = 2.33 (95% CI 1.54–3.54). High/low exposure as defined in Section 2.7. Critical value $\chi^2(1) = 3.841$ at $p = .05$.*

Table 6 shows that self-medication was more common with high social-factor exposure (68.8%) than with low exposure (48.6%), $\chi^2(1) = 15.35$, $p < .001$, a small-to-moderate association ($\varphi = 0.21$; odds ratio = 2.33). A binary logistic regression then identified which factors were independently associated.

Table 7: Binary Logistic Regression: Social Factors Predicting Self-Medication

Predictor	B	S.E.	Wald	df	Sig.	OR (Exp B)
Family self-medication norms	0.009	0.128	0.01	1	.942	1.009
Peer self-medication norms	0.293	0.128	5.27	1	.022*	1.341
Self-diagnosis confidence	0.158	0.121	1.70	1	.192	1.172
Perceived medical knowledge	0.082	0.126	0.43	1	.514	1.086
Trusted others' encouragement	0.153	0.124	1.51	1	.220	1.165
Constant	-1.366	0.351	15.18	1	< .001	0.255

Note. *B = unstandardised coefficient; OR = odds ratio (Exp B) per one-point increase in agreement (1–4); *p < .05. 95% CIs for OR: family norms 0.79–1.30; peer norms 1.04–1.72; self-diagnosis confidence 0.92–1.48; perceived medical knowledge 0.85–1.39; trusted others' encouragement 0.91–1.49. Nagelkerke $R^2 = .107$; model $\chi^2(5) = 31.62$, $p < .001$; $N = 384$.*

Table 7 shows that the model was significant, $\chi^2(5) = 31.62$, $p < .001$, but explained little variation (Nagelkerke $R^2 = .107$). Peer self-medication norms were the only independent predictor (B = 0.293, Wald = 5.27, p = .022, OR = 1.34, 95% CI 1.04–1.72): each one-point increase in agreement that close friends and peers usually self-medicate was associated with about 34% higher odds of self-medicating, holding the other factors constant. The other four items were not significant, although all had positive coefficients and confidence intervals including 1. H_{02} is rejected, with peer norms the only factor independently associated with self-medication.

Discussion

Prevalence of Self-Medication Practices

Classing 59.1% of respondents as self-medicators is within the high range reported in African studies: 79.2% among health-science students in Eritrea (Araia et al., 2019), 81.8% among undergraduates at a private Nigerian university (Esan et al., 2018) and 85% among hospital outpatients in south-western Nigeria (Omolase et al., 2007). The lower figure here may reflect a community sample of mixed education and occupation and differences in how a self-medicator was defined. Analgesics were the most common medicines (mean = 3.23), as in Esan et al. (2018), and perceiving the illness as minor scored above the criterion (2.74), in line with Omolase et al. (2007), who found this the main reason (54.7%).

Sources of Medications for Self-Medication

Patent medicine vendors and community pharmacies dispensing without prescription were the leading sources of medicines. This agrees with Abay and Amelo (2010), who found that most drugs for self-medication came from pharmacies or drug shops, and with Wegbom et al. (2021), who found that Nigerians bought such drugs mainly from pharmacies (73.9%), 21% citing pharmacy proximity as a reason. Otun (2016) found that perceived availability of health services predicted self-medication in Ogun State.

Social Factors Predicting Self-Medication

Social factors were associated with self-medication, and peer norms were the only independent predictor (OR = 1.34, 95% CI 1.04–1.72), a modest effect with a lower confidence limit close to 1. This is consistent with Social Learning Theory (Bandura, 1977, 1997), but direct comparison is limited because the studies reviewed here examined demographic correlates such as age, sex, class level and income (Araia et al., 2019; Esan et al., 2018; Osemene & Lamikanra, 2012), not peer norms. The weak endorsement of social factors (grand mean = 2.55) and low explained variance ($R^2 = .107$) suggest that other influences, such as access to health services (Otun, 2016), also matter. These are associations, not evidence of causation.

Conclusion

Self-medication is common among young people aged 15–24 years in the sampled wards of Ilorin Metropolis (59.1% classed as self-medicators), most often with

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analgesics. Patent medicine vendors and community pharmacies operating outside prescription requirements were the dominant sources of medicines. Social factors were associated with self-medication, with peer norms the only independent predictor, consistent with Social Learning Theory, although the effect was modest. Because households were selected by convenience, the findings describe the sampled wards and should not be generalised to all young people in Ilorin Metropolis without further study.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are made:

1. The Kwara State Ministry of Health, with the Pharmacists Council of Nigeria and NAFDAC, should intensify enforcement of prescription-only sale rules among patent medicine vendors and community pharmacies in Ilorin Metropolis, the leading sources of medicines.
2. Because peer norms were the only independent social predictor, health education for young people should consider peer-education models, which should be evaluated.
3. The Ministry of Health should run risk-communication campaigns on non-prescribed antibiotic and antimalarial use among young people.
4. Primary healthcare facilities and school health programmes should consider routine screening for self-medication within youth health services.

Limitations of the Study

The final sampling stage used convenience selection of households, so the sample is not a probability sample; this introduces selection bias and limits generalisability to the wider youth population of Ilorin Metropolis. The cross-sectional design does not permit causal inference, and self-reported data may be affected by social-desirability and recall bias. Likert items were treated as approximately interval, and the classification of self-medicators and of social-factor exposure depends on the cut-offs used. The logistic model explained little variance (Nagelkerke $R^2 = .107$) and omitted other likely influences, such as the environmental and healthcare-access factors measured in Sections E and F.

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