ORIGINAL RESEARCH

Assessing the Reasons and Adverse Effects of Self-Medication in the Context of the COVID-19 Pandemic in Sierra Leone. A Case Study of Moriba Town Section

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Background: The impact of COVID-19 pandemic on healthcare resources has led to an increase in self-medication as a coping mechanism. The purpose of the study is to investigate the prevalence of self-medication, the reasons behind it, and its potential consequences during the pandemic.

Methods: A community-based cross-sectional study was conducted in Moriba Town, Bo City, Southern Sierra Leone. Using a multistage systematic sampling technique, 246 adult participants were selected. Data were collected using Kobo collect electronic platform and analyzed using SPSS version 26.0.

Results: Out of the 246 adult residents who were sampled, 63 (26%) practiced self-medication. Among them, females (33 or 52%) were more prevalent than males (30 or 48%). The most dominant age groups for self-medication were 38–47 (22 or 35%) and 28–37 (18 or 29%). The major reasons for self-medication were fear of infection (189 or 77%), fear of quarantine (199 or 81%), and stigma (189 or 77%). Delays in treatment (113 or 46%) and unavailability of Covid-19 medications (92 or 37%) were also cited. However, a majority of respondents (162 or 66%) denied the influence of friends or media (168 or 68%) on their decision to self-medicate. Reasons like "delay in receiving treatment" and "influence of friends" showed significant association with self-medication (pValue <0.05). More than half of the respondents 177 (72%) did not practice self-medication before the pandemic. Adverse reactions due to self-medication included skin rashes and blisters 29 (45%) and drowsiness 24 (38%).

Conclusion: The prevalence of unsupervised medication before and after the pandemic was minimal suggesting little impact of the pandemic. Fear and social stigma were the main drivers for self-medication. To promote safety and informed health decisions, regulatory measures, and awareness campaigns are essential to control unsupervised medication sales, improve drug labeling, and educate the public about the dangers of self-medication.

Keywords: COVID-19, self-medication, Moriba town, cross-sectional study, fear of infection

Introduction

The outbreak of the COVID-19 pandemic in late 2019 triggered a worldwide health disaster of unmatched magnitude[1–3] accompanied by the virus's overwhelming mortality and morbidity.[4] The virus's fast spread, coupled with the absence of urgent treatment approaches, has left healthcare systems throughout the world struggling with an increasing number of cases and fatalities.[5–9] Countries implemented broad lockdowns, quarantine measures, and outreach initiatives in response to this global health emergency to mitigate the virus's spread.[10,11] As the pandemic progressed, hospitals and healthcare personnel became overburdened, prompting many people to seek alternate forms of treatment and prevention.[12,13] For instance, there was a drastic decline in outpatients and inpatient hospital admissions in Sierra Leone during the pandemic.[14]

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Another of these responses to the pandemic have been an increase in self-medication among people around the world.[15,16] Self-medication, or the practice of using medications, herbal remedies, or other substances without professional advice or prescription, is not a new phenomenon.[17–19] It is also the desire and ability of people/patients to play an intelligent, independent, and informed role, not only in making choices but also in the management of those preventive, diagnostic, and therapeutic activities that concern them.[18,19]

Self-treatment has historically been reported in several societies across the globe and is frequently prompted by factors like accessibility, cultural beliefs, or economic restrictions.[20,21] However, the COVID-19 epidemic has introduced new dimensions to this execution, with a combination of fear, disinformation, and optimism leading people to self-administered therapies.[22,23]

In Sierra Leone, both self-medication practice and the healthcare system have been significantly impacted by the Covid-19 outbreak. As shown in a case study by Jones-Konneh et al[24], multisectoral leadership, collaboration, and community awareness were all strengthened by the health system changes implemented in the wake of the 2014–2016 Ebola crisis, which helped manage COVID-19 in Sierra Leone. However, during the epidemic, the shortcomings of Sierra Leone's pharmaceutical industry were brought to light. The industry's vulnerability and weakness led to a shortage of essential medications and increased insecurity due to import restrictions.[25] This situation might have contributed to the spike in the prevalence of self-medication practices as shown among undergraduate students in Freetown, particularly for common ailments such as malaria, pain, fever, coughing, and diarrhea.[26] Nevertheless, limited studies have been done to showcase the extent of self-medication practices and its factors in Sierra Leone especially among community residents especially in Moriba town section Bo city, a community with no healthcare facility nor any active regulatory policies for unsupervised medication.

The main issues with self-medication include resource waste, boosting pathogen resistance, and significant risks to health such as adverse effects, drug interactions, abuse, and extended pain are just a few of the problems that come with unsupervised medication.[27,28] Antimicrobial resistance is a worldwide issue attributed to self-medication, particularly in underdeveloped nations where drugs are readily accessible.[26]

The prevalence of self-medication has been on the rise globally, with numerous factors contributing to its growing popularity. Advances in technology, the widespread availability of information on the internet, and the proliferation of over-The-counter medications have all facilitated easier access to various treatments, leading people to take health matters into their own hands.[29]

Self-medication is commonly sourced from close relatives, acquaintances, neighbors, the chemist, a previously prescribed substance, or recommendations from advertisements in newspapers or popular periodicals.[28–30] The rise in self-medication during the epidemic period has alarmed health experts and lawmakers.[31] While some people believe that such acts provide alleviation or preventive measures against the virus, the lack of standardized advice and supervision creates an array of possible risk factors.[30] Self-medication is becoming increasingly common and there are numerous explanations for it.[31,32] The desire for self-care, pity for ailing family members, a lack of time, a lack of health services, a financial restriction, ignorance, deception, widespread advertising, and the availability of pharmaceuticals in places other than pharmacies are all factors contributing to the rising trend of self-medication.[33]

This study aims to investigate the causes for the increasing incidence of self-medication during the COVID-19 pandemic, as well as the potential negative consequences of such practices. We hope that by casting light on this issue, we will be able to assist policymakers, healthcare professionals, and the general public with insights that will help guide future health campaigns, education promotions, and regulatory measures.

Methodology
Study Design and Setting

A community-based cross-sectional study was designed to capture a snapshot of self-medication behaviors during the peak of the COVID-19 pandemic.

The study was conducted in Moriba Town section Bo, located on latitude 7.95806 or 75729 " north and longitude −11.73515 or 11447" west, Southern Sierra Leone, a local that represents both urban and semi-urban lifestyles.

Study Population, Sample Size Calculation and Sampling Technique

The study consented to only adult residents of the selected setting. The study's minimum sample size was determined using Cochrane formula, which is typically used in cross-sectional studies to generate sample size.[34] The formula is as follows:

$$n = N^*p(1-p) \div (N-1)^*e^2 + p(1-p)$$

Where:

n = sample size

e = margin of error (eg, for a 95% confidence level, e is 0.05)

p = Assumed prevalence (eg, the proportion of residents that self-medicated during COVID-19)

The formula can be used to determine the minimum sample size in a finite population.[35] For this study, the adult population size of the study setting was taken from the National Electoral Commission Sierra Leone website 2018 (14,907),[36] margin of error was 5% at 95% confidence level and the expected prevalence was assumed at 22% due to the fact that the prevalence of self-medication in the study community was unknown. A sample size of 246 participants was obtained.

The study used a multistage systematic sampling technique, which selects smaller and smaller units at each stage using a systematic method.[37] This technique is often used to collect data from a large and geographically dispersed population, such as the residents of Moriba Town Section.[37] The sampling involved three stages:

(I) The population was divided into primary sampling units (PSUs), which were the streets within Moriba Town Section. A systematic sample of PSUs was selected using a random starting point and a fixed interval.
(II) Each selected PSU was divided into secondary sampling units (SSUs), which were the households within each street. A systematic sample of SSUs was selected using the same method as the first stage.
(III) One ultimate sampling unit (USU) was selected from each selected SSU, which was an adult respondent within each household. A simple random sample of USUs was selected using a lottery method.

Data Collection and Questionnaire

Three enumerators were trained to collect field data for a period of seven days. Electronic questionnaires were administered using Kobo-collect, a mobile data collection tool that allows offline data entry, data validation, and data synchronization.

The questionnaire was developed by a group of three public health expert based on post literature reviews and discussions.[38–40]The questionnaire consisted of closed-ended questions focusing on: Participants socio-demographic variables consisting of sex, age, marital status, occupational status, educational status and economic level; Reasons for resorting to self-medication; and any adverse effects experienced post-medication. Adverse drug reactions (ADRs) due to self-medication refer to negative effects from taking medications without medical guidance.[41]

The validity of the tool was reviewed by three experts in the public health department to assess its clarity, feasibility, and applicability. The experts also provided feedback and suggestions to improve the content and format of the questions. Before data collection commenced, the tool was pretested for two days with a pilot sample of 20 participants, who were similar to the target population in terms of demographic and socio-economic characteristics. The pretest aimed to enhance the consistency and reliability of the tool, as well as to identify and correct any errors, ambiguities, or biases in the questions. The reliability of the tool was measured using Cronbach's alpha, a statistical measure of internal consistency that ranges from 0 to 1, with higher values indicating higher reliability. The Cronbach's alpha value of the tool was 0.85, which indicated a good level of reliability.

Data Analysis

The data was analyzed using the Statistical Package for Social Sciences (SPSS) version 26.0, a widely used program for statistical analysis in social science and other fields.[42] Descriptive statistics, including frequencies and percentages, were

calculated to summarize the characteristics and responses of the participants. Respondent economic level was calculated based on the number of meals consumed a day. Those that reported less than three meals a day were denoted economically poor. The chi-squared test was used to assess associations between variables. This is a statistical hypothetical test used to examine whether two categorical variables are independent in influencing the test statistic. The test is valid when the test statistic is chi-squared distributed under the null hypothesis, which is usually the case when the sample size is sufficient. The test can be used for contingency tables with both large and smaller sample sizes.[43] The level of significance was set at 0.05, meaning that the null hypothesis would be rejected if the p-value of the test was less than or equal to 0.05.

Ethical Consideration

Our research followed an approach that aligns with the ethical guidelines of the Declaration of Helsinki for medical research involving human subjects. We sought and received ethical clearance from the Research and Ethical Institute at Njala University's School of Postgraduate and Community Health Sciences before beginning the project. In addition, local authorization was secured for community engagement and respect for local authority in Moriba Town Section, particularly important in community-based studies. Participants were thoroughly briefed on the research goals, community benefits, confidentiality, and questionnaire procedures to ensure full understanding and informed consent. Informed consent, a crucial ethical requirement, was obtained from each participant, emphasizing voluntary participation with a clear understanding of the research and their rights. This approach embodies the principles of respect, beneficence, and justice, reflecting a commitment to ethical research practices and the protection of human dignity and participant rights.

Results

Summary

As soon as the two weeks data collection period ended, all 246 (N) samples were uploaded into the Kobocollect humanitarian server where it was downloaded and then imported into Microsoft Excel 2016 for data cleaning. All bilateral responses (Yes/No) in the case categorical where numerically encoded as "1" for "Yes" and "0" for "No" and "Do not know". The data was then imported into the statistical package for social science student version 26.0 for further analyzes. The dependent variable was self-medication practice in the last three months prior to data collection and the independent variables included: socio-demographic characteristics such age, sex, marital, educational status, occupation, and economic status; and reasons for self-medication.

The mean and median ages were 46.87 and 47.25 years respectively with a standard deviation of 12.27 years.

Demographic Characteristics of Study Participants

According to Table 1, the majority of the study participants were females, with 141 (57%) women and 105 (43%) men. The age groups of 18–27 years 64 (26%) and 28–37 years 63 (26%) were the most common age ranges in the study. However, a significant number of participants from other age groups also took part in the study, with more than half of the study population being married 125 (51%). The most significant contributions were from participants who were illiterate 100 (41%) or had attained a high school level of education 64 (26%). Additionally, those engaged in business 88 (36%) or unemployed 77 (31%) participated more in the study. Finally, those who consumed two 128 (52%) or three 66 (27%) meals per day were the most participating groups.

Prevalence of Self Medication During the Pandemic

With a 100% response rate, a considerable majority 183 (74%) of respondents did not self-medicate for COVID-19 without the prescription of medically trained individuals in the previous three months, whereas 63 (26%) did (Table 1). In addition, females 33 (52%) self-medicate without a prescription more than males 30 (48.0%). Age 38–47 22 (35%) and 28–37 18 (29%), had the largest percentages of self-medication without a prescription for females and males respectively (Table 1). Married and cohabiting individuals showed higher self-medication tendencies, reaching up to 29 (46%) and 12 (19%), respectively. Furthermore, individuals with lower educational levels, such as literate with no formal education 25

Table 1 Demographic Distribution of Self-Medicated Participants

Variables	Did you Self-Medicate for Covid-19 in the Last Three Months Without a Prescription from Medically Qualified Personnel? N (%)		
	N (246)	**Yes** **n (%) = 63(26)**	**No** **n (%) = 183 (74)**
Sex			
Female	141 (57)	33 (52)	107 (59)
Male	105 (43)	30 (48)	75 (41)
Age			
18–27	63 (26)	9(14)	54 (30)
28–37	64 (26)	18 (29)	46 (25)
38–47	61 (25)	22 (35)	39 (21)
48 and above	58 (24)	14 (22)	44 (24)
Marital Status			
Cohabiting	25 (10)	12 (19)	13 (7)
Divorce	8(3)	5(8)	3(2)
Married	125 (51)	29 (46)	96 (52)
Single	66 (27)	11 (18)	55 (30)
Widow	22 (9)	6(9)	16 (9)
Educational Level			
High School	64 (26)	14 (22)	50 (27)
Illiterate	107 (43)	25 (40)	82 (45)
Literate with no formal education	26 (11)	13 (21)	13 (7)
Primary	18 (7)	5(7)	13 (7)
Tertiary	31 (13)	6(10)	25 (14)
Occupational Status			
Business	88 (36)	20 (32)	68 (37)
Employed	26 (11)	15 (24)	11 (6)
Housewife	23 (9)	4(6)	19 (10)
Student	32 (13)	7(11)	25 (14)
Unemployed	77 (31)	17 (27)	60 (33)
Economic Status			
No meal a day	1(100)	0(0)	1(0)
One Meal a day	51 (21)	15 (24)	36 (20)
Three Meals a day	66 (27)	10 (16)	56 (31)
Two meals a day	128 (52)	38 (60)	90 (49)

Note: N = Sample Size; n = Frequency; % = Percentages.

(40%), high school 14 (22%) and primary education 13 (21%), demonstrated higher self-medication rates. More so, business 20 (32%) and unemployed 17 (27%) individuals reported a higher self-medication rate, along with significant percentages of employed individuals 15 (24%) also involved in self-treatment practices. Participants facing economic challenges, specifically those having two meals daily 38 (60%) and one meal a day 15 (24%), depicted notable rates of self-medication. However, participants also having three meals a day also reported a significant rate of self-medication 15 (24%) (Table 1).

Reasons for Self-Medication During the Pandemic

Furthermore, during the COVID-19 pandemic, the main reasons people gave for self-medication were fear of infection or their own case of COVID-19189 (77.0%), fear of being quarantined or self-isolation if in contact with the disease 199 (80.9%), and fear of stigma or discrimination, indicating a prevalent concern 189 (77.1%). Concerns about delays receiving treatments in health facilities 113 (46.0%), as well as the availability of medications and therapy 92 (37.4%), were also key motivations for self-medication practices during the pandemic (Table 2). However, more than half of respondents 162 (66.0%) do not believe that the impact of friends on self-medication to avoid COVID-19 and the effect of television, radio, newspaper, and social media on self-medication for COVID-19168 (68.0%) contribute to the act of self-treatments. Nonetheless, a sizable proportion were uncertain about the highlighted claims for self-medication practices (Table 2).

Association Between Self Medication and Reasons

A Chi-square test was used to determine the relationship between self-medication during the COVID-19 pandemic and the reasons for self-medication; "delay in receiving treatment at health facilities", "influence of friends to use self-medication to prevent COVID-19", and "influence of television, radio, newspaper & social media" were all significantly associated with the dependent variable (p-values 0.05) (Table 3). More so, the significantly associated reasons; "delay in receiving treatment at health facilities" and "influence of friends to use self-medication to prevent COVID-19" have relatively higher Cramér's V values compared to the other reasons, suggesting stronger associations with the dependent variable (Table 3).

Prevalence of Self Medication Before the Pandemic

Moreover, when asked if they or their family used self-medication prior to the pandemic, more than half 177 (72%) said "NO", suggesting that neither they nor their relatives used self-medication. However, 69 (28%) of respondents said "Yes", suggesting that they or a family member engaged in self-medication (Table 4).

Table 2 Reasons for Self-Medication

Reason	YES n (%)	No n (%)	Do not Know n (%)
Fear of infection or own case of COVID-19	189 (76.8)	55 (22.4)	2(1.8)
Fear of being quarantined or self-isolation if I contract the disease	199 (80.9)	45 (18.3)	2(0.8)
Fear of stigma or discrimination if I contract the disease	189 (77.1)	53 (21.6)	3(1.2)
No drugs and treatment for COVID-19 in the health facilities	92 (37.4)	120 (48.8)	34 (13.8)
Delay in receiving treatment at health facilities	113 (45.9)	75 (30.5)	58 (23.6)
Influence of friends to use self-medication to prevent COVID-19	79 (32.1)	162 (65.9)	5(2.0)
Influence of television, radio, newspaper and social media can lead to self-medication for COVID-19	75 (30.5)	168 (68.3)	3(1.2)

Note: n = Frequency; % = Percentages.

Table 3 Association Between Reasons Influencing Self-Medication and Self-Medication Practice During the Pandemic

Reason	X^2 Value	p-Value	Cramer's V Values
Fear of infection or own case of COVID-19	3.24	0.52	0.0000
Fear of being quarantined or self-isolation if I contract the disease	5.32	0.26	0.0368
Fear of stigma or discrimination if I contract the disease	1.25	0.87	0.0000
No drugs and treatment for COVID-19 in the health facilities	8.57	0.07	0.0686
Delay in receiving treatment at health facilities	42.28	0.001*	0.1988
Influence of friends to use self-medication to prevent COVID-19	22.56	0.0002*	0.1384
Influence of television, radio, newspaper and social media can lead to self-medication for COVID-19	14.74	0.005*	0.1053

Note: X^2 = chi-square *= Statistical significance.

Table 4 Prevalence of Self-Medicated Before COVID-19 Pandemic

Response	Frequency	Percentage (%)
No	177	72.0%
Yes	69	28.0%

Table 5 Distribution of Adverse Effects Following Self-Medication

Adverse Side Effect	Frequency	Percentage (%)
Skin rash and blisters	29	45.0
Drowsiness	24	38.0
Stomachache	9	14.0
Rapid heartbeat	2	3.0

Adverse Effect Following Self Medication Among the Study Subjects

"Skin rash/blisters" 29 (45%) and "drowsiness" 24 (38%) were the most adverse effects reported due to self-medication (Table 5). It is worth mentioning that the symptoms mentioned are different and may not be the typical COVID-19 symptoms (such fever, breathlessness or cough), implying a wide range of experiences among the respondents.

Discussion

The study's findings provide an integrated picture of self-medication activities during the COVID-19 outbreak, revealing different habits, intentions, and experiences across demographic groups. Infection, quarantine, and public embarrassment were all prevalent concerns that led to self-medication across the world.[44–46] People's health-related fears have likely been heightened as a result of the COVID-19 outbreak, driving them to seek immediate relief or protection through self-medication.[47] Because of Sierra Leone's recent Ebola outbreak, citizens may be anxious of self-medication and rely on recognized health advice.[48–51]

However, in Asia and America, fear may be impacted by media depiction and government policy.[52,53] In Africa, particularly West Africa and Sierra Leone, these fears could be amplified by memories of past epidemics.[54,55] Nevertheless, limited healthcare infrastructure might push some towards self-medication.[56,57] Self-medication is

a common practice in many African countries, but the prevalence varies significantly. A study done in Nigeria found that 30.3% of people use herbal products for COVID-19 prevention and treatment.[58] Another study done in Nigeria also reported a prevalence of 41% for self-medication, which was influenced by factors such as fear of stigmatization, quarantine, and infection.[39] A third study found that during the COVID-19 pandemic, 62.7% of participants in various African countries practiced self-medication. The highest prevalence was in Egypt (72.1%), while the lowest was in Palestine (40.4%).[59] Compared to current research, only 26% of individuals engaged in self-medication practices, despite advancements in healthcare services, larger sample sizes, and improved methods of data collection employed in the studies above. Other studies conducted in Columbia and Saudi Arabia also showed a higher prevalence of self-treatment,[60,61] pointing to the necessity for addressing the factors that drive individuals to self-medicate of which the most common were fears related to infection, quarantine, and societal stigma were the predominant motivations for self-medication.[62,63] However, studies done on self-medication during COVID-19 pandemic in: United States 13%, Australia 11%, Germany 11%, Spain 9%, United Kingdom 9%, Mexico 8%, and Italy 8%[64] showed disparity with the current report which may be due to drug policies and better health infrastructure. Nonetheless, this reflects the heightened anxiety and concerns prevalent during the pandemic, emphasizing the need for clear communication and support mechanisms.[27,65] Furthermore, self-medication practices have been reported during the pandemic, especially in regions where access to healthcare is limited or there's mistrust in the healthcare system.[27,66,67] The current report aligns with findings from other studies, especially in the early stages of the pandemic when fear and uncertainty were high[68,69] regardless the large sample frame. Additionally, studies from various African countries have reported a rise in self-medication during the pandemic, particularly due to limited access to healthcare facilities and services compared to the current result of 26% prevalence.[61,70–72]

The West African context could be closer to the broader African trend but might be influenced by regional factors like the memory of the Ebola crisis and its impact on trust in health advisories. The reasons unraveled are consistent with the general sentiment of self-medication during the pandemic. Fear of infection, quarantine, and stigma were dominant themes globally.[16,72] Studies from various regions might also report these fears as primary drivers for many behaviors, including self-medication.[73,74]

Sierra Leone's gender disparities in self-medication practices are influenced by socio-cultural factors, historical events, economic challenges, traditional gender roles, rural areas, educational disparities, and cultural practices, particularly among women.[75]

This reflects the present findings that showed a higher percentage of females self-medicated compared to males, and certain age groups, notably 38–47 and 28–37, exhibiting higher tendencies to self-medicate. This underscores the importance of targeted awareness and interventions for specific demographic groups. Gender differences might vary across countries. For instance, patriarchal societies might observe higher self-medication rates among males. The gender differences in self-medication might be less in some African contexts due to socio-cultural factors.[76] Age-related trends, especially the higher rates among middle-aged individuals, might be consistent given the concern for severe COVID-19 outcomes in older age groups. The present research is nevertheless in disagreement with a community survey conducted in Nigeria and India that detailed 54.5% and 54.1% female and ages such as 20–24 (53.4%) and 15–19 (52.6%) having the highest cut.[67,77] Gender differences could align with your study, with varying age-related trends based on healthcare access and education. These findings shed light on the self-medication practices of various demographic groups for COVID-19. Deeper study, maybe integrating other factors or qualitative insights, may offer a better understanding of the causes underlying these behaviours, so proceed with care. Gender dynamics could be influenced by roles in healthcare decision-making within families, especially in Sierra Leone.[78,79] Despite a majority dismissing the influence of friends and media on self-medication, these factors, along with delays in receiving treatment, were significantly associated with self-medication, indicating potential areas for intervention and public health messaging according to the present findings. This report can be compared to other studies that reported that, friends, neighbors, pharmacists, previous drug prescriptions and mass media are the primary sources of self-medication especially in low- and middle-income nations.[80,81] A study conducted in Sierra Leone also showed that pharmacies (84%), drug stores or peddlers (80.1%), left-over drugs from friends and relatives (56.3%) and hospital pharmacies (22.9%) are the common sources of self-medication.[82]

The discovery that females were more likely to self-medicate than males is intriguing. Research suggests that women are more likely to make health-conscious decisions and take preventive measures.[83] However, another study finds no gender difference or even the opposite trend.[20] The age group differences in the present report align with some global studies where middle-aged individuals showed higher tendencies to self-medicate, possibly due to greater health concerns.[84,85]

A chi-square test was conducted to investigate the relationship between self-medication during the COVID-19 pandemic and certain factors, including the influence of friends, social media, and delays in receiving healthcare. The results showed that all these factors were significantly associated with self-medication, with p-values less than 0.05. This finding is consistent with previous studies in the field. Many studies that used the same analytical approach found that social media has a significant impact on self-medication behaviors during the pandemic, especially in urban populations.[66,86–88] Their results suggested that exposure to certain types of health information on social media platforms is correlated with the likelihood of self-medicating, which is similar to the current findings. Moreover, a study done in Bangladesh revealed delayed as another driver to self-treatment[89] and is consistent with the present study. Additionally, another study done in Ethiopia revealed a consistent finding with the latest study showcasing a strong association between recommendations from friends and the tendency to self-medicate, especially in situations where there was fear of contracting COVID-19 in a healthcare setting.[90]

Furthermore, the study looked at self-medication practises prior to the pandemic. According to the findings, 28% had used self-medication before to the pandemic, indicating an existing habit pattern. This report is in agreement with studies published in BMC Public Health prior to the COVID-19 pandemic which revealed self-medication prevalence ranged from 11.2% to 93.7% depending on the population and country studied.[59,67,70] However, it is important to understand that self-medication can be hazardous and may result in severe health issues. However, comparing the prevalence of self-medication before and during the pandemic, it was found that the pandemic had little to no impact on self-medication among the studied population. The observed side effects, such as skin rash and sleepiness, highlight the potential dangers of self-medicating and the importance of seeking medical advice.[91,92] The current finding also revealed stomach pain as a notably adverse effects reported and is in agreement with a systematic review published in the journal of Annals of Medicine and Surgery which reported gastrointestinal problem and fever as the most side effect due to self-medication.[72] Some worldwide research may also show a similar pattern, showing that self-medication behaviour during the pandemic may be impacted by previous experiences.[70,72] The documented adverse effects may be compared to worldwide statistics on self-medication usage during the pandemic, particularly antimalarials and antibiotics.[93,94]

Conclusion

The prevalence of self-medication without medical prescription in Sierra Leone was 28% before the COVID-19 pandemic and 26% during the pandemic, indicating minimal impact. The study identified several factors driving self-medication, such as fear of infection, concerns surrounding quarantine, social stigma, delayed access to medical care, and medication availability. Demographic differences and media influence also contribute to self-medication. However, the study group reported several adverse effects due to self-treatment, notably skin rash and drowsiness. These findings can help develop evidence-based strategies for responsible healthcare practices in Sierra Leone.

Recommendations

To mitigate the risks of self-medication during the COVID-19 pandemic in Sierra Leone, policymakers and healthcare professionals should implement public awareness campaigns, community engagement, improved healthcare accessibility, and strengthened infrastructure. Media literacy programs, peer education, telehealth services, regulatory measures, and mental health support services can also help. Collaboration with NGOs and international organizations can foster responsible healthcare-seeking behavior when done at community level.

Consent

All authors read and approved the final draft of the manuscript and also agreed on the journal for publication. Also, research subjects were duly informed of the results and the goal to publish it; they all consented.

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Author Contributions

Each author significantly contributed to the reported work, encompassing conception, study design, execution, data acquisition, analysis, and interpretation. They provided final approval for the publication version, unanimously selected the journal for submission, and jointly agreed to be responsible for all facets of the work.

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