PREVALENCE OF SELF-MEDICATION FOR ACUTE RESPIRATORY INFECTIONS IN NAMIBIA; FINDINGS AND IMPLICATIONS

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Abstract

Background: Acute respiratory infections (ARIs) are a leading cause of morbidity and mortality among under-fives. However, self-medication and "self-care" care practices remain common especially among informal settlements in Namibia. Consequently, we sought to ascertain the rationale for this to guide future activities. *Method:* Mixed method approach among residents in an informal settlement in Namibia to determine the extent of health seeking behaviors and the rationale for any self-medication. *Results:* Of the 100 informal households surveyed, 60% used self-medication for ARIs including cold/flu medication, paracetamol and decongestants. There was no self-purchasing of antibiotics. The main drivers of self-medication were a perceived diagnosis of ARI as "minor or mild" as well as long waiting times and queues to receive care at public health facilities. *Conclusion:* The majority of households in this settlement self-medicate for ARIs. There is need for outreach primary health care services in the future in townships to screen and appropriately manage ARI to address concerns. This can include increasing pharmacy services.

Key words: self-medication; prevalence; ARIs; Namibia

1. Introduction

There are increasing concerns with rising rates of antimicrobial resistance across countries driven by inappropriate use of antibiotics especially for viral infections such as acute respiratory infections (ARIs).[1-3] Self-purchasing of antibiotics is a key driver of their inappropriate use especially among developing countries with poor regulatory practices despite legislation banning this.[4-6] This can change with financial penalties and greater enforcement as well as with increased knowledge among pharmacists to recommend appropriate management enhanced by the availability of guidelines.[2,7-9] Equally, there are concerns if high-risk patients such as children are self-medicated at home without any professional input.[10] Pharmacists are often the first healthcare professional patients contact for the management of ARIs for themselves or their children in view of their access and issues of affordability, especially if patients cannot afford to see a physician and purchase their recommended medicines.[2,8] Alternatively, patients cannot afford travel costs and/ or take time off work to attend distant public healthcare clinics (PHCs) even if physician costs and medicines are provided free within a universal healthcare system.[11] Similarly, if there are long waiting times in PHCs, which again may

adversely affect patients' income and consequently they seek care from private physicians or community pharmacists.[12,13] The increasing role of pharmacists in managing patients with ARIs is recognized in a number of countries leading to the development of guidelines and other activities to improve subsequent patient care.[8,14] Despite this, patients may still wish to self-medicate for their ARIs if they have difficulties affording even antipyretics and there are still considerable difficulties accessing healthcare professionals. This is a concern especially in children where ARIs are a leading cause of mortality.[10,15]

Consequently, the principal objective of this study was to assess self-medication practices for patients with ARIs within an informal settlement in a township in Namibia. This includes the types of medicines kept for self-medication and their storage as well as factors influencing self-medication. Informal settlements were chosen as typically they have higher rates of ARIs due to issues of overcrowding exacerbated by extended families, poor housing, and household air pollution. In addition, where self-medication is likely to be highest as there can be issues with distances and access to healthcare services including medicines in the public healthcare system with limited numbers of patients on medical aid.[16] We hypothesize there will be considerable self-medication for ARIs but limited self-purchasing of antibiotics for ARIs even in informal settlements as this is illegal in Namibia coupled with regular inspections in pharmacies. This is different to the situation in an appreciable number of LMICs where there is extensive self-purchasing of antibiotics despite the legal regulations.[6,17,18] The findings will be used to suggest pertinent initiatives for the future in Namibia and wider.

2. Methods

A cross sectional study design was used among residents at the Tobias Hainyeko informal settlement in the Outapi Township, which is a typical informal settlement in Namibia although there can be ethnic variations between the different informal settlements in Namibia. All households in this informal settlement were initially approached for the survey (120 in total) although we are aware that household numbers are lower than the 200 households included in the study of Kibuule et al assessing the extent of self-medication with antibiotics among children under five in Uganda.[5]

Quantitative data was collected on the socio-demographics of participants as well as the extent of ARIs among households. Qualitative data was collected via open ended questions, which included data on attitudes, practices and behaviors for the management of ARI within households, with the instrument pre-tested before use. To qualify for this study, at least one member of the household should have suffered an ARI in the past 6 months, should have self-medicated, and the head of the household must be an adult. The interviewers went back during different times of the day to improve the chance of a range of ages and employment among the participants to enhance the robustness of the findings, e.g. in the evening or weekends to include those in employment.

The quantitative data was analysed using descriptive statistics. Inferential statistics were used to analyze the data collected regarding factors influencing self-medication. Overall, the methodology complied with STROBE guidelines.[19]

Ethical approval to conduct the study was obtained from the Ministry of Health and Social Services, Namibia, and all participating households gave their consent to be involved (Appendix 1).

3. Results

100 households eventually participated giving a response rate of 80%. The vast majority of participants were living in shacks (99%) with only 1% living in concrete dwellings, headed mainly by middle aged parents or guardians (<40 years) - 72%. 79% of the respondents were female (79%). 46% of respondents were mothers, 15% fathers and 39% others including guardians. 94% of households did not have access to medical aid (additional insurance); consequently, they were reliant on the public healthcare system for their needs or alternatively self-pay in retail pharmacies. The majority of respondents were self-employed (43%), with only 9% in formal employment. Other demographics are included in Table 1.

Table 1: Demographic characteristics of the study population (n=100)

Characteristics		Percent
Age of respondent	24-30 years	24.0
	31-35 years	29.0
	36-40 years	19.0
	41-45 years	11.0
	46-50 years	7.0
	51-55 years	8.0
	56-60 years	1.0
	71-75 years	1.0
Number of adults in the dwelling	one adult	40.0
	two adults	40.0
	three adults	17.0
	four adults	2.0
	five adults	1.0
Children <5 years	none	75.0
	one child	22.0
	two children	2.0
	three children	1.0
Children >5 years	none	51.0
	one child	33.0
	two children	13.0
	three children	3.0
Family size total (total members)	one	25.0
	two	21.0
	three	21.0
	four	19.0
	five	11.0
	six	1.0
	seven	2.0
Number of school going children	none	51.0
	one	32.0
	two	12.0
	three	4.0
	four	1.0
	Total	100.0
Respondent's highest level of education	no education	3.0
	primary	15.0
	secondary	80.0
	tertiary	2.0
Number of household members that are employed	none	6.0
	one	66.0
	two	20.0
	three	7.0
	four	1.0

60% of the respondents self-medicate at the household level for ARIs and other ailments, with homemade remedies including gargling with salt water and inhaling vapour from dissolving menthol-containing ointments in water the most common form (36% - Table 2). There was also use of herbal medicines for ailments. 29% of respondents sought medical help at the hospital or clinic for their ARIs with 11% ignoring their symptoms including ARI.

Table 2 - Prevalence of self-medication practices among households for ailments including ARIs

Treatment Approach	Percentage
Treated with herbs grown at home	1%
Treated with herbs locally purchased	2%
Ignored the symptoms	11%
Treated with medication including tablets or syrups	21%
Sought medical help at a Clinic or Hospital	29%
Given home remedies including gargling with salt water or inhaling vapours from dissolving menthol-containing ointments in water	36%

Irritants and menthol preparations were the most common treatments for managing ARIs specifically (Table 3). There was limited use of other preparations.

Table 3 – Common remedies used for managing ARIs

Remedies used to manage ARIs	Percentage
Herbs	2%
Cough syrups	2%
Common cold medications	6%
Inhaled herbs (uuhutu)	6%
Antipyretics (such as paracetamol)	6%
Gargle with salt water	12%
Irritants and menthol preparations	66%

The most medicines, including homemade medicines, were from supplies at home (63%) with only a minority of participants obtaining medicines directly from the pharmacy (27%), primary care clinic (7%) or hospital. Respondents (87%) commonly stored their medicines in boxes on shelves out of sunlight and away from children.

From those who responded, common reasons for self-medicating without seeking professional help including principally for ARIs was that the condition was minor and could be managed at home (54.8%) - Table 4.

Table 4 – Factors influencing self-purchasing

Factors	Percentage	Quotes
Assists with first aid	29%	*'It is my go-to treatment'*
Common minor ailment/ can be treated at home	54.8%	*'I can manage it a home'*
The hospital has no medicines	3.2%	*'The hospital never has medicines'*
Distance to the hospital	3.2%	*'the hospital is far'*
Long queues at the clinics/ hospital	9.7%	*'the clinic is always full'*

4. Discussion

It was encouraging to see no self-purchasing of antibiotics to treat ARIs in this study in Namibia unlike the situation in a number of other African countries or those in Asia.[5,6,18,20-22] This confirms our hypothesis. We believe this lack of self-purchasing was helped by strict policies regarding obtaining antibiotics in Namibia, which can only be dispensed with a valid prescription with community pharmacies regularly monitored. In addition, the costs of antimicrobials may have been prohibitive among some of the participants given their low economic status and the majority lacked additional medical insurance cover. However, further research is needed before we can make more definitive statements.

As expected, there was appreciable self-medication of ARIs in this informal settlement in Namibia, which needs to be addressed. The medicines that were obtained from the hospital and/or clinic and used to manage ARIs were reported to be leftovers from the last visit to a healthcare provider, similar

to studies in other countries.[23] This is also a concern as it means either patients were provided with excessive medication or they did not finish their earlier course of treatment. This will again be investigated further.

A number of recommendations can be made from this study given the extent of self-medication of ARIs in this study. Firstly, the need for greater availability and access to healthcare workers in the public healthcare system in ambulatory care to address issues of long waiting times in clinics and long distances to access care. This includes pharmacists working in the public healthcare system to help educate patients regarding ARIs given the high rate of self-medication among children. Secondly, having trained pharmacists can help reinforce the message about the viral origin of most ARIs to help reduce inappropriate prescribing and dispensing of antibiotics. However, pharmacists need to be vigilant if such infections persist especially given high rates of community acquired pneumonia and other serious respiratory infections in Namibia.

Thirdly, the supplies of medicines to public healthcare clinics also needs to be improved where there are concerns with medicine availability (Table 4), building on examples in other African countries including South Africa.[24] Fourthly, educational campaigns are also needed among patients to alert them to take the full course of any prescribed medicine. This alongside warnings of the dangers of self-medication and directing patients to pharmacists and other professionals in the healthcare system to appropriately manage their ARIs, building on initiatives in other countries.[2,8] This includes addressing concerns with any knowledge gaps of pharmacists regarding ARIs and antibiotics generally where there are identified issues.[25,26] We will be monitoring possible developments in the future.

We are aware of a number of limitations with this study. This includes the fact that we only conducted the study in one informal settlement in Namibia and not wider. Despite this limitation, we believe our findings are robust and provide direction for the future.
In conclusion, the majority of households in this informal settlement in Namibia self-medicate for ARIs for a number of reasons which is a concern. This includes irritants and menthol preparations. Encouragingly, there was no self-medication with antibiotics in our study. Given the potential concerns with self-medicating for ARIs especially in children, it is recommended that there is an increase in outreach primary health care services to help screen and appropriately manage patients with ARIs, with appreciable input from pharmacists. We will be monitoring this in the future to improve the care of these patients.

Competing Interests
The authors declare that they have no competing interests.

Authors' Contributions
MK and DK developed the study design, with MK undertaking the data collection and analysis principally under the supervision of DK. MK prepared the first draft of the manuscript while BBG and DK provided a critical review to the manuscript. All authors read and approved the final manuscript.

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Appendix

<u>Appendix I Consent Form</u>

I,Monika Kamati, a BPharm IV student from the University of Namibia's School of Pharmacy is conducting a research on how individuals treat signs and symptoms of flu and cold ,where they get these medicines and how they store these medicines in their respective homes. The research also intends to find out which other medicines (apart from the flu and cold) are kept in the household. The information obtained is highly confidential and will not be used against the subject and/or given to a third party whatsoever. Your participation in this study will therefore be highly appreciated.

I…………………………. read and understood the consent form and therefore agree to participate in this study. The researcher has explained everything clearly and I understand my rights as a participant. By signing this form I agree to all the terms and conditions.

Researcher's signature………………………. Date………………..

Participant's signature……………………… Date………………..