SHORT ARTICLE

Prevalence & Practice of Self-Medication in Ernakulum District, southern India

Nimitha Paul[1], Rakesh Purushothama Bhat Suseela[2], Paul Therattil Francis[3], Leelamoni Kamalamma[4]

[1]Lecturer, [2]Assistant Professor,[3]Associate Professor, [4]Professor, Department of Community Medicine, Amrita Institute of Medical Sciences, Kochi, India

Corresponding Author

Address for Correspondence: Dr Rakesh Purushothama Bhat Suseela, Assistant Professor, Department of Community Medicine, Amrita Institute of Medical Sciences, Kochi, India
E Mail ID: rakeshrenjini@gmail.com

Citation

Nimitha P, Rakesh PS, Francis PT, Leelamoni K. Prevalence & Practice of Self-Medication in Ernakulum District, southern India. Indian J Comm Health. 2017; 29, 3: 282-286.

Source of Funding: Nil **Conflict of Interest:** None declared

Article Cycle

Received: 16/07/2017; **Revision:** 01/08/2017; **Accepted:** 10/09/2017; **Published:** 30/09/2017

Abstract

Background: Self-medication can lead to many problems and has many concerns associated with it including development of drug resistance. **Aims & Objectives**: To assess the prevalence of self-medication practices among people residing in selected urban and rural areas of Ernakulam district, to assess the pattern of use of self-medications and to determine the differences, if any, between the rural, urban and slum population in the prevalence and pattern of use of self-medications. **Material & Methods:** A community based cross-sectional study was conducted and 539 individuals from urban, rural and urban slums of Ernakulam district, Kerala were interviewed using a structured questionnaire. Data was tabulated in MS Excel and analysed using IBM Statistical Package for Social Science (SPSS) version 15. Descriptive statistics such as frequency and percentage was used to summarize the data. Univariate and multivariate analysis was done to assess the factors associated with self-medication. **Results:** In the study, 21.5% (114/539) reported that they practised self-medication within last three months. Major indications for self-medication were aches and pain (28.9%), fever (22.8%) and chronic diseases (13.7%). Among those who practised self-medication, 6.1% (7/114) used antibiotics. In the final logistic regression model, being in urban area [urban areas (OR 5.8, 95% CI 3.2-10.4), urban slums (OR 2.9, 95% CI 1.5-5.4)] and increasing age groups [18-59 years (OR 2.1 95% CI 1.1-3.8) and more than 60 years (OR 3.2 95% CI 1.6-6.5)] were associated with self-medication practices. **Conclusion:** Holistic approach should be taken to prevent the problem of self-medications, which includes proper awareness and education to public, improving access to care and regulation of pharmacies regarding sale of drugs.

Keywords

Self-medication; Drug Resistance; Prescription only drugs; Universal Health Care

Introduction

Self-medication refers to the consumption of medicines to treat disorders diagnosed by self without consulting a medical practitioner. (1) It will also include the use of the retention drugs and re-use of prescription drugs or the direct purchase of drugs which are not over the counter (OTC) drugs, without medical consultation. (1)

Responsible self-medication can reduce the burden on health care services and could be helpful in treating minor symptoms and illnesses that do not need consultation from a medical practitioner. However, many studies reports that self-medication

can lead to many problems like delay in health care seeking which in turn can lead to economic injuries. (2,3) Drug interactions, potential for addictions and abuse are some of the concerns in self-medications. (2,3) Frequent and many serious adverse effects have been reported following self-medication practice. (4) Practicing self-medication for drugs like Antibiotics is a major factor fuelling emergence of Drug Resistance.(5)

Many studies from India have shown a high prevalence of self-medication practices including antibiotics. (6-16) But most of the studies were done among medical or allied students or professionals or hospital attendees. There are only a few community based studies in India and those studies have shown a wide range of prevalence from 11.2% to 71% and diversity in the pattern of use. (6-16)

Despite having a low per capita income, Kerala, the southern Indian state has achieved better material conditions of living with many of its indicators of social development comparable to those of many developed countries. The state has a reasonably strong primary health care system with a good infrastructure of primary health centres. The state Government has committed to ensure Universal Health Coverage and has initiated many pilot projects for the same. Community based studies on use of self-medications are limited from Kerala. The objectives of the current study were to assess the prevalence of self-medication practices among people residing in selected urban and rural areas of Ernakulam district, to assess the pattern of use of self-medications and to determine the differences, if any, between the rural, urban and slum population in the prevalence and pattern of use of self-medications

Aims & Objectives

1. To assess the prevalence of self-medication practices among people residing in selected urban and rural areas of Ernakulam district,
2. To assess the pattern of use of self-medications and
3. To determine the differences, if any, between the rural, urban and slum population in the prevalence and pattern of use of self-medications

Material & Methods

Ernakulam district is the industrial capital of Kerala state situated on the coast of the Arabian Sea, with a population of 3.2 million. Nearly 65% of the populations reside in urban areas and 20% in unorganised settlements. Ernakulam has a sex ratio of 1028 females for every 1000 males and a literacy rate of 95.68%. Primary health care is provided by the Government through Primary Health Centres and is well established in rural areas, while in urban area it is predominantly by private sector.

Anybody who is a permanent resident of the area was eligible to be included in the study. People who cannot comprehend the questionnaire and people of unsound mind or emotionally compromised were excluded. For respondents <18 years of age, their mother was interviewed. With 95% confidence, 20% allowable error and expecting a prevalence of 15%, sample size was estimated to be 545. Assuming mean number of members in a house as 4, 150 houses were planned to be covered- 50 from Rural, 50 from Urban and 50 from urban slum. One rural and urban area each was chosen randomly from all the Local Self Government lowest political division and one slum from the list of 280 listed slums. In each ward, first house was selected randomly and then every third house was visited till we achieved desired sample size.

Data were collected using a standard questionnaire by interviewing those who were eligible to be included. Questionnaire was developed based on literature review, WHO 2000 guidelines on Self Medication behaviour, group consensus and expert opinion. The questionnaire was translated to Malayalam (the local language) and back translated to English to check for consistency. The translated questionnaire was pilot-tested before the survey. Self-medication was defined as the use of over the counter drugs or any allopathic drug for self-treatment, without prior consultation with a certified allopathic doctor with a minimum of MBBS degree. All information were collected for last three months.

Data on sociodemographic details (age, gender, education, occupation, and income), practice of self-medication, and reasons for use of self-medication were collected. In case the respondent had multiple use of self-medication, further details were collected for the last episode. Respondents who reported self-medication were further interviewed for their attitude and practice regarding self-medication.

Data was tabulated in MS Excel and analysed using IBM Statistical Package for Social Science (SPSS) version 15. Descriptive statistics such as frequency and percentage was used to summarize the data.

Chi-square statistic was used to assess statistical significance of association between variables. Using backward conditional method, logistic regression was done using variables with p<0.2 in univariate analysis to identify the independent predictors of medication self-adherence behaviour. A significance level of p<0.05 was used in the analysis

Results

A total of 539 people were interviewed, 38.6% from rural areas and 28.4% from urban slum. Of them 25.4% were below the age of 18 years and 18.6% above 60 years. Among the study participants 50.5% were males and 58.4% possessed an Above Poverty Line (APL) Public Distribution System card.

In the study, 21.5% (114/539) reported that they practised self-medication within last three months. Major indications for self-medication were aches and pain (28.9%), fever (22.8%) and chronic diseases (13.7%). Among those who practised self-medication, 6.1% (7/114) used antibiotics. When asked about the basis of selection of drugs for self-medication, majority (40.4%) said it was based on previous doctor's prescription. Of those practised self- medication,76.3% got it from community pharmacies. Study subjects reported that dosage of the drug was known by consulting a pharmacist in case of 39.5% of respondents and by previous experience in 31.6% of respondents. Self-medicated drugs were stopped after symptoms disappeared in 87.7% of respondents. Among them 10.5% reported some kind of adverse effects attributed to be due to drugs. The details of practices regarding self-medication in the study population were as shown in Table 1.

Out of the people practised self-medication, 52.6% of people considered self-medication as an "acceptable practice". When asked about major reasons for practising self-medication, lack of time to visit a doctor (32.4%) and the triviality of the illness (27.8%) were cited as the major reasons.

Prevalence of self-medication was higher among people from urban area (35.4%) and urban slums (21.6%) as compared to rural areas (8.7%) (p 0.001). In the study, 37.2% of people belonging to APL category consumed self-medications as compared to 12.7% in BPL category (p <0.05). Prevalence of self-medication was higher in the older age groups with the figures for less than 18 years as12.4%, 18-60 as 21.5% and more than 60 as 32. Details of univariate analysis about factors associated with self-medication were as shown in Table 2.

In the final logistic regression model, being in urban area [urban areas (OR 5.8, 95% CI 3.2-10.4), urban slums (OR 2.9, 95% CI 1.5-5.4)] and increasing age groups [18-59 years (OR 2.1 95% CI 1.1-3.8) and more than 60 years (OR 3.2 95% CI 1.6-6.5)] were associated with self-medication practices.

Discussion

Self-medication practices could be used as a proxy indicator of the access to health care services in a region. Studying prevalence and pattern of use will provide useful insight on the reasons for which patients resort to this practice and might help the policy makers and public health managers to streamline the process of drug regulations, updating the list of essential medicines, and safety issues of over the counter drugs.

In the current study, 21.15% of respondents had taken modern medicine drugs without advice from a medical practitioner in the past 3 months and among those who practiced self- medication, 6.1% of the respondents used Antibiotics. The figure seem to be much less when compared to majority of the studies done to estimate self-medication practices in India including studies by Kaushal et al in Haryana among middle class housewives (73%), Phalke et al in Maharashtra (81.5%), Balamurugan et al in coastal regions of southern India (71%), Lal et al in Delhi (31.2%) and Durgavalle et al in urban Delhi (34.5%).(7-16) It is also less as compared to studies from Nepal (59%). (17) A recent study from Sri Lanka had reported 12.2% and 7.9% prevalence of self-medication to allopathic drugs from urban and rural area, respectively, before two weeks of interviews. (18) All the studies on self-medication practices among medical students and allied professionals showed higher prevalence rates. The low prevalence of self-medication in Kerala could be due to the strong primary health care system and universal literacy. However, prevalence of self-medication could not be compared across different studies due to their varying nature of definitions used, recall period considered for definition, region selected, and methodology adopted.

The prevalence of self-medication was higher in urban areas and urban slum compared to rural areas. The primary care infrastructure is well developed in rural areas. Quality health services are provided near to their house at free of cost in rural areas. This could

contribute to the lesser prevalence of self-medication among people in rural area. Urban areas are characterized by abundance of pharmacies and lack of Government primary care health system. Common reason cited for practising self-medication was lack of time to visit a doctor. Threat by loss in opportunity cost from loss of earnings might also account for the higher prevalence of self-medication in urban areas. Strategies to make health care easily accessible to people especially in urban areas by strengthening primary care infrastructure in urban areas may have an impact on the self-medication behaviour. Prevalence of self-medication is more among higher age group compared with younger age group. These findings are consistent with findings from other studies. One third of the elderly had practised self-medication in this study. This need to be viewed seriously as self-medication has led to many frequent and serious adverse events in elderly. (4)

Recommendation

It is recommended that holistic approach should be taken to prevent the problem of self-medications, which includes proper awareness and education to public. Improved knowledge and understanding about self-medication may result in rationale use and thus limit emerging microbial resistance issues. Regulation of pharmacies for prohibiting sale of drugs other than OTC drugs without prescription should also be considered.

Limitation of the study

The study had many limitations including recall bias and not taken it to account the seasonal pattern of diseases and drug consumption. Despite these limitations, the study has got many public health implications.

Authors Contribution

All authors have contributed equally in this study.

References

1. World Health Organization. Guidelines for the regulatory assessment of Medicinal Products for use in self-medication. In., vol. WHO/EDM/QSM/00.1. Geneva, Switzerland: WHO;2000. Available from: http://apps.who.int/medicinedocs/en/d/ Jh1462e/6.html#Jh1462e.6.1.[last accessed on 2017 June 21].
2. Bennadi D. Self-medication: A current challenge. J Basic Clin Pharm. 2013 Dec;5(1):19-23. doi: 10.4103/0976-0105.128253. Review. PubMed PMID: 24808684; PubMed Central PMCID: PMC4012703.[PubMed]
3. Hughes CM, McElnay JC, Fleming GF. Benefits and risks of self medication. Drug Saf. 2001;24(14):1027-37. Review. PubMed PMID: 11735659.[PubMed]
4. Li LJ, Wang PS. Self-medication with antibiotics: a possible cause of bacterial resistance. Med Hypotheses. 2005;65(5):1000-1. PubMed PMID: 16002231.[PubMed]
5. Schmiedl S, Rottenkolber M, Hasford J, Rottenkolber D, Farker K, Drewelow B, Hippius M, Saljé K, Thürmann P. Self-medication with over-the-counter and prescribed drugs causing adverse-drug-reaction-related hospital admissions: results of a prospective, long-term multi-centre study. Drug Saf. 2014 Apr;37(4):225-35. doi: 10.1007/s40264-014-0141-3. PubMed PMID: 24550104.[PubMed]
6. Greenhalgh T. Drug prescription and self-medication in India: an exploratory survey. Soc Sci Med. 1987;25(3):307-18. PubMed PMID: 3629304.[PubMed]
7. Morgan DJ, Okeke IN, Laxminarayan R, Perencevich EN, Weisenberg S. Non-prescription antimicrobial use worldwide: a systematic review. Lancet Infect Dis. 2011 Sep;11(9):692-701. doi: 10.1016/S1473-3099(11)70054-8. Epub 2011 Jun 12. Review. PubMed PMID: 21659004; PubMed Central PMCID: PMC3543997.[PubMed].
8. Balamurugan E, Ganesh K. Prevalence and Pattern of self-medication use in coastal regions of South India. BJMP. 2011;4(3):a428.
9. Ahmad A, Parimalakrishnan S, Patel I, Kumar NV, Balkrishnan TR, Mohanta GP. Evaluation of selfmedication antibiotics use pattern among patients attending community pharmacies in rural India, Uttar Pradesh. J Pharm Res. 2012;5:765–8
10. Banerjee I, Bhadury T. Self-medication practice among undergraduate medical students in a tertiary care medical college, West Bengal. J Postgrad Med. 2012 Apr-Jun;58(2):127-31. doi: 10.4103/0022-3859.97175. PubMed PMID: 22718057.[PubMed]
11. Lal V, Goswami A, Anand K. Self-medication among residents of urban resettlement colony, New Delhi. Indian J Public Health. 2007 Oct-Dec;51(4):249-51. PubMed PMID: 18232170.[PubMed]
12. Samuel SS, Prakasam KC, Nandhakumar N. Assessment of self medication among patients attending community pharmacises in Erode, India. Int J Pharm Pharm Sci. 2011;3:258–62.
13. Phalke VD, Phalke DB, Durgawale PM. Self-medication practices in rural Maharashtra. Indian J Community Med. 2006;31:34–5
14. Sharma R, Verma U, Sharma CL, Kapoor B. Self-medication among urban population of Jammu city. Indian J Pharmacol. 2005;37:40.
15. Kaushal J, Gupta MC, Jindal P, Verma S. Self-medication patterns and drug use behavior in housewives belonging to the middle income group in a city in northern India. Indian J Community Med. 2012;37:16–9.
16. Banerjee I, Bhadury T. Self-medication practice among undergraduate medical students in a tertiary care medical college, West Bengal. J Postgrad Med. 2012;58:127–31
17. Shankar PR, Partha P, Shenoy N. Self-medication and non-doctor prescription practices in Pokhara valley, Western Nepal: A questionnaire-based study. BMC Fam Pract. 2002;3:17.
18. Wijesinghea PR, Jayakodyb RL, de A Seneviratnec R. Prevalence and predictors of self-medication in a selected urban and rural district of Sri Lanka. Who South-East Asia J Public Heal. 2012;1:28–41

Tables

TABLE 1 PATTERN OF USE OF SELF-MEDICATION AMONG THE STUDY SUBJECTS (N=114)

Factors	Responses	Number	Percentages
Indications for Self	Fever	26	22.8
Medication	Cough	5	4.4
	Aches and pain	33	28.9
	Others	15	13.2
	Chronic conditions	35	13.7
Basis of selection	Recommended by Pharmacist	27	23.7
Of self-medication	Opinion of family members	3	2.6
	Opinion of friends	5	4.4
	My own experience	19	16.7
	Previous doctor's prescription	46	40.4
	Others	14	12.3
Source of modern	Community pharmacies	87	76.3
Medicine drug for	Left over from previous prescriptions	4	3.5
Self-medication	Medical representatives	1	0.9
	Others	22	19.3
Source of information	Checking the package inside	2	1.8
Regarding dosage	Consulting the pharmacist	45	39.5
	Family members or friends	1	0.9
	From previous experience	36	31.6
	Guessing the dosage, oneself	13	11.4
	Others	17	14.9

TABLE 2 UNIVARIATE ANALYSIS OF FACTORS ASSOCIATED WITH SELF-MEDICATION

VARIABLES	SELF-MEDICATION		p VALUE	Odds Ratio (95% CI)
	YES	NO		
Place Of Residence				
Rural	18[8.7]	190[91.3]		1
Urban	63[35.4]	115[64.6]	0.001	3.9 (1.9-8.1)
Urban Slum	33[21.6]	120[78.4]		2.5 (1.3-4.7)
Gender				
Male	50[18.4]	222[81.6]		1
Female	64[24]	203[76]	0.112	1.6 (0.93-2.8)
Ses				
Apl	68[37.8]	112[62.2]		3.1 (1.7-5.5)
Bpl	40[12.7]	276[87.3]	0.001	1
Not Available	6[14]	37[86]		1.1 (0.38-2.9)
Age				
<18	17[12.4]	120[87.6]		1
19-60	65[21.5]	237[78.5]	0.001	3.7 (1.6- 8.8)
>60	32[32]	68[68]		4.5 (2.1-10.2)
Education				
No Education	6[15.8]	32[84.2]		1
Low Education	71[21.2]	264[78.8]	0.564	0.81(0.5 - 2.8)
High Education	21[25.9]	60[74.1]		0.7 (0.2 – 2.4)
University	16[18.8]	69[81.2]		0.9 (0.8 - 0.9)
Occupation				
Home Maker	25[22.9]	84[77.1]		1
Skilled	36[21.7]	130[78.3]	0.736	1.2 (0.5 -2.8)
Unemployed	41[19]	175[81]		1.6 (0.7 -3.5)
Unskilled	12[25]	36[75]		1.4 (0.5- 3.6)