

RESEARCH ARTICLE

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Morbidity Profile and Self-medication Practice among the Non-Medical Workers Employed at a Private Health Care Institute in Mangaluru: A Cross Sectional Study

Sudarshan Pai U^{1,*}, Sneha Rachel Alexander²

¹Assistant Professor, Department of Community Medicine, Father Muller Medical College, Father Muller Road, Kankanady, Mangaluru- 575002, Karnataka, INDIA.

²Undergraduate Medical Intern (MBBS), Father Muller Medical College, Father Muller Road, Kankanady, Mangalore, Karnataka, INDIA.

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*Correspondence to:

Dr. Sudarshan Pai U, MBBS, MD,

Assistant Professor, Department of Community Medicine, Father Muller Medical College, (Affiliated to Rajiv Gandhi University of Health Sciences: Karnataka, Bengaluru) Father Muller Road, Kankanady, Mangaluru- 575002, Karnataka, INDIA.

Email: sudarshanpai@hotmail.com

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Abstract

Background: Self medication is a public health concern at global level considering the rise of drug resistance cases. There are no published studies in India regarding the burden of self medication among Non medical workers employed at a private health care institute. So this study was undertaken with the following objectives: (1) To know morbidity profile and to find out preferential condition for self medication, (2) To identify the portal of access to drugs for self medication among the Non medical workers employed at a private health care institute. **Materials and Methods:** An interview based descriptive cross sectional study was conducted among the Non medical workers employed at a prominent private health care institute of Mangalore city. Non-medical workers were assessed for their: (1) Morbidity (health condition suffered in last one year) status, (2) Preferential health condition for self-medication and (3) Portal of access to drugs for self medication. The data was analysed using SPSS Software for windows, version 16.0. The results are presented as frequencies and proportions in appropriate tables. **Results:** Three hundred twenty Non medical workers had participated in the study. More than half (53.8%) of the respondents were between 25 to < 45 years age group. Respiratory illness was common (44.7%) reported health condition in them. More than half (53.3%) of them had self medicated prior to their interview and it was preferred for pain (40.6%) and cold (34.7%). Retail pharmacy outlets were preferred (46.9%) for procuring medicines for self medication. **Conclusion:** Self medication was prevalent in Non medical workers and it decreased with their duration. There is an urgent need to regulate the retail pharmacy outlet in Mangaluru to prevent the illegal dispensation of drugs to curb self-medication.

Key words: Non-medical workers, Self-medication, Morbidity, Private health care institute.

INTRODUCTION

Self-medication is an important concern for health authorities at global level.

[1] Self-medication is defined as the consumption of medicinal products with the purpose of treating diseases or symptoms, or even promoting health, without a prescription provided by a medical professional.[2-3] Self-medication itself results in wastage of resources, increases resistance to pathogens and generally entails serious health hazards such as adverse drug reactions, prolonged suffering and drug dependence syndromes.[4-6]

The factors such as nature of disease, educational qualifications of the individual and non-availability of the study participants (due to reasons such as travel or other such conditions) play a vital role in determining the prevalence of the practice of self-medication.[7] Self-medication has increased over the past two decades, which could be linked to the increase in chronic diseases, the urge of self-care, the feeling of sympathy towards family members and also other reasons such as lack of health services, ignorance, extensive advertisement, usage of drugs from informal sectors etc.[5,8]

Even though there are few studies reported with respect to proportions of self-medication among the various sub groups of population,[9] but there are no reported studies when it comes to finding out the same among the non

medical workers employed at health care institute in India both in public and private sector.

Hence this study was undertaken with the following

Objectives: 1. To know the Socio-demographic and morbidity profile of Non-medical workers who are employed at a private health care institute. 2 To find out the preferential conditions for self medication practice among those non-medical workers and 3. To identify the portal of access to self-medication among them.

MATERIALS AND METHODS

Study Area (Background): The study was conducted in Mangaluru, a prominent financial and educational city of Karnataka state located in coastal part of southern India. The city has population of 4.9 lakhs as per 2011 census.[10] The city has 7 private allopathic medical colleges in addition to corporate hospitals, multispecialty hospitals, general hospitals, nursing homes and polyclinics which cater to health care needs of Mangalorean population.

Study setting: Father Muller health care institute, a prominent health care institute of Mangaluru city providing health care service for last 100 years.

A multifaceted educational and health care institute where various disciplines of health sciences are practiced under one roof.^[11]

Study Design: This is a questionnaire based descriptive cross sectional study where the following components were studied: 1. Socio-demographic and systemic morbidity profile of the non medical workers who were employed, 2. Health conditions for which self medication was preferred and 3. Portal of access to drugs for self medication among them.

Study subjects: Non medical workers who are working at Father Muller medical college hospital and its affiliated health care institutes. Inclusion criteria: 1. All non medical workers who are working at Father Muller medical college hospital and its affiliated health care institute, 2: Those who are willing to participate. Exclusion criteria: 1. Non medical worker who can't talk (dumb), 2. A non medical worker who did not provide written informed consent to this study.

Sample size: A published study by Balamurugan and Ganesh K on prevalence and patterns of self medications usage in coastal region of south India, reported to have self medication in 71% of their study respondents.^[12] Assuming that atleast 50% (least prevalence) of people in Mangaluru city are suffering from one or the other minor health problems at one point or other in a given year for the power of $(1 - \beta)$ of 89% at 95% of Confidence interval (CI) the calculated sample size is found to be 320.

Sampling techniques: A sampling frame was created containing list of all non medical workers employed at Father Muller hospital and its affiliated health care institutes from its institutional human resource development department. A simple random sampling technique was used to select the study participants. This was repeated until the desired samples were obtained.

Operational definitions: Any personnel not involved, involving in, related to, used in, or concerned with medical care or the field of Medicine directly in a health care setting is a Non Medical worker.^[13] The first used of this word with the above mentioned meaning came into existence in 1834.^[13] The Oxford English Dictionaries defines Non Medical worker as one who neither has medical basis and objectives nor the required professional medical experience in a health care setting.^[14] Non medical department in a health care setting consists of the following personnel: hospital attenders, stenographers, drivers, housekeeping staff, bio-medical waste carriers, accounting and maintenance staff etc.^[15]

Study Tools: A structured questionnaire had two components: 1. Information pertaining to socio-demographic status like age, gender, education, economic status, family, type and the nature of job, work experience, practice with duration of self-medication and conditions for which they are preferred. 2. Information pertaining to the portal of access to self medication was obtained.

Instrument Development and Pretesting: A questionnaire based interview schedule containing two components was pretested in the hospitals and health care institute of the neighbouring city to assess the feasibility of its use. Some changes were made to suite our circumstances like questions pertaining to preferential conditions for self medication and portal of access to self medication which were reframed and more options were provided.

Ethical approval and Data collection: The study protocol was approved by Father Muller Institutional Ethics committee, Mangaluru, India (FMMC/FMIEC/4191/2017) dated 21/02/2017. A list of Non medical workers employed at the study area was obtained from the human resource department of Father Muller Charitable Institution, Mangaluru. Necessary permissions

were obtained from the hospital and nursing chiefs prior to data collection. The study protocol followed the tenets of the declaration of Helsinki. Non medical workers (study participants) were approached, the purpose of the study was explained and informed written consent was taken from all the respondents for their voluntary participation either in English (official language), Kannada and Malayalam (local language), Hindi (national language) for the indigenous and the migrant non medical workers prior to the interview.

Duration of data collection: 10 months (March to December 2017)

Statistical (Data) analysis: The data thus collected was entered in MS Excel spreadsheet were analysed using statistical package for social sciences (SPSS) for windows, version 16.0 Chicago, SPSS Inc.^[16] Results were expressed as frequencies and proportions in appropriate tables.

RESULTS

Among the Non medical workers (320 eligible study participants) interviewed, 165 (51.6%) were females and 155 (48.4%) were males and male: female ratio was 0.93. More than half {n, (%): 172, (53.8)} of the respondents were between 25 to < 45 years of age group. Workers from general/ others category were the majority {n, (%): 198, (61.9)} followed by the other backward caste (OBC) category {n, (%): 98, (30.6)}. The detailed breakup of socio-demographic and health insurance policy profile of non medical workers (320 study respondents) are shown in Table 1. Most {n, (%): 225, (70.3)} of the study respondents had suffered from acute health related events (in last one year) as shown in Table 2. The male: female ratio with respect to the occurrence and type (acute) of health related events (last one year) was 0.86 and 0.82 respectively.

Morbidity profile revealed that most {n, (%): 143, (44.7)} of the non medical workers had suffered from respiratory related condition in last one year. A detailed system wise morbidity profile (health related events in last one year) of non medical workers is shown in Table 3. More than half {n, (%): 177, (55.3)} of the respondents had indulged in self medication and their proportion decreased with the time (duration of self medication) as shown in Table 4. Self-medication was preferred for cold {n, (%): 111, (34.7)} and pain {n, (%): 130, (40.6)} in the majority among the respondents (320 eligible non medical workers) interviewed. A detailed breakup regarding conditions preferred for self medication among non medical workers (n = 320) are shown in Table 5.

Retail pharmacy outlet was preferred for procuring medicines (without prescription) for self medication in majority {n, (%): 150, (46.9)} among the interviewed (n= 320) non medical workers. The detailed breakup of portal of access to desired medicines for self medication among the study respondents are shown in Table 6.

DISCUSSION

Morbidity pattern among Non-medical workers: Respiratory illness (44.7%) was common morbid condition reported among the interviewed Non medical workers (320 study participants) in last one year, followed by neurological (20.9%), musculoskeletal (6.6%) and gastrointestinal (4.7%) causes. This is in similarity with the study conducted by Datta A *et al.* (2017) where acute respiratory illness (31.10%) and musculoskeletal disorders (17.78%) topped the list as per their order of magnitude.^[17] The percentage difference in its occurrence can be explained by the fact that our study was conducted in Non medical workers (of an urban health care institute), whereas the comparative study (Datta A *et al.* 2017) was conducted among the urban residents of a field practice area of health care institute. This clearly suggests that the health burden among Non medical workers is relatively less than that in the general population owing to the age of the employers hired by

Table 1: Socio-demographic and stated health insurance policy profiles of the non medical workers (study participants) of health care institute in Mangaluru, India, March – December 2017 (n = 320).

Study Variable	Male	%	Female	%	Total	%
Age Group (In years)						
<18	1	0.6	0	0	1	0.3
18 - <25	40	25.8	30	18.2	70	21.9
>25 to <35	45	29.0	40	24.2	85	26.6
35 to <45	29	18.7	58	35.2	87	27.2
45 to <60	38	24.5	36	21.8	74	23.1
60 (and Above)	2	1.3	01	0.6	3	0.9
Religion						
Christian	70	45.2	93	56.4	163	50.9
Hindu	80	51.6	70	42.4	150	46.9
Muslim	3	1.9	1	0.6	4	1.2
Others	2	1.3	1	0.6	3	0.9
Caste						
SC	7	4.5	1	0.6	8	2.5
ST	7	4.5	2	1.2	9	2.8
OBC	50	32.3	48	29.1	98	30.6
Others	88	56.8	110	66.7	198	61.9
Not Aware	3	1.9	4	2.4	7	2.2
Educational Status						
Illiterate	3	1.9	2	1.2	5	1.6
Just Literate	2	1.3	0	0	2	0.6
Primary School	15	9.7	16	40.0	31	9.7
Higher Primary	37	23.9	31	18.8	68	21.2
Secondary Completed	38	24.5	35	21.2	73	22.8
PUC	33	21.3	15	9.1	48	15.0
Graduate and above	27	17.4	66	40.0	93	29.1
Family Type						
Nuclear	110	71.0	98	59.4	208	65.0
Joint	30	19.4	34	20.6	64	20.0
Extended	5	3.2	12	7.3	17	5.3
Three Generation	7	4.5	11	6.7	18	5.6
Broken Family	0	0	1	0.6	1	0.3
Single Parent Family	3	1.9	9	5.5	12	3.8
Economic Status						
APL	60	38.7	95	57.6	155	48.4
BPL	78	50.3	64	38.8	142	44.4
Not aware	17	11.0	06	3.6	23	7.2
Type of Non- Medical Job						
Stenographers	1	0.6	28	17.0	29	9.1
Attenders	60	38.7	3	1.8	63	19.7
Housekeeping staff	5	3.2	65	39.4	70	21.2
Drivers	4	2.6	0	0	4	1.2
Gardeners	3	1.9	0	0	3	0.9
Biomedical waste carriers	4	2.6	0	0	4	1.2
Physical trainers	1	0.6	0	0	1	0.3
Others	77	49.7	69	41.8	146	45.6
Work Experience (in years)						
< 5	83	53.5	75	45.5	158	49.4
5 to <10	34	21.9	35	21.2	69	21.6
10 to <15	16	10.3	21	12.7	37	11.6
15 to <20	12	7.7	17	10.3	29	9.1
>20	10	6.5	17	10.3	27	8.4
Health Insurance Coverage						
Yes	111	71.6	112	67.9	223	69.7
No	44	28.4	53	32.1	97	30.3
Type of Policy Holding						
General/ Commercial	26	16.8	32	19.4	58	18.1
Institutional insurance	2	1.3	1	0.6	3	0.9
Govt health insurance	2	1.3	1	0.6	3	0.9
ESI	81	52.3	78	47.3	159	49.7
Not Applicable	44	28.4	53	32.1	97	30.3

SC: Schedule Caste, ST: Schedule Tribe, OBC: Other Backward Caste, Others: General Category

PUC: Pre university College, APL: Above Poverty Line, BPL: Below Poverty Line,

ESI: Employment State Insurance

Table 2: Profile and nature of stated health related event (last 1 year) among the non medical workers (study participants) of health care institute in Mangaluru, India, March- December 2017 (n= 320)

Study Variable	Male	%	Female	%	Total	%
Health Related Event in Last one year						
Yes	113	72.9	131	79.4	244	76.2
No	42	27.1	34	20.6	76	23.8
Type of Health Related events in Last one year						
Acute						
Chronic	102	65.8	123	74.5	225	70.3
Not Applicable	11	7.1	8	4.8	19	5.9
	42	27.1	34	20.6	76	23.8

Table 3: Profile of Health related event (System wise) among the non medical workers (study participants) of a health care institute in Mangaluru, India, March – December 2017 (n = 320)

System Involved (In last 1 year)	n	%
Cardio Vascular system		
Yes	2	0.6
No	242	75.6
Not Applicable	76	23.8
Gastrointestinal		
Yes	15	4.7
No	229	71.6
Not Applicable	76	23.8
Respiratory		
Yes	143	44.7
No	101	31.6
Not Applicable	76	23.8
Musculoskeletal		
Yes	21	6.6
No	223	69.7
Not Applicable	76	23.8
Neurology		
Yes	67	20.9
No	177	55.3
Not Applicable	76	23.8
Urogenital		
Yes	2	0.6
No	242	75.6
Not Applicable	76	23.8
Mental		
Yes	0	0
No	244	76.3
Not Applicable	76	23.8
Skin		
Yes	5	1.6
No	239	74.7
Not Applicable	76	23.8
Endocrine		
Yes	5	1.6
No	239	74.7
Not Applicable	76	23.8
Others		
Yes	43	13.4
No	201	62.8
Not Applicable	76	23.8

Table 4: Profile of stated self medication practice among the non medical workers (study participants) of a health care institute in Mangaluru, India, March- December 2017 (n = 320)

Self-Medication Practice	n	(%)
Have you taken any medication on your own?		
Yes	177	55.3
No	143	44.7
Duration of self medication (for how long)		
< 1 month		
1 to < 3 month	170	53.1
3 to < 6 month	0	0
6 to < 1 year	1	0.3
1 Year and above	1	.3
Not Applicable	5	1.6
	143	4.7

medical workers) had self medicated (within one year from the date prior to their interview) and majority (96.04%) in them did not continue beyond one month. This is in similarity to the study findings conducted by Kumar V *et al.* (2015) where the average duration for self medication (with antibiotics) was 3.17 days.^[18] This variation of 3.17 days (average antibiotic usage duration as reported by Kumar V *et al.* in 2015) when compared to the present study finding (less than one month) can be explained by the fact that antibiotic course are not prescribed beyond one week under normal circumstances and our study had taken other medications (apart from antibiotics) into consideration where their duration exceeds beyond one week. The duration of self medication/ drug use was arrived at by asking the respondents (stated duration) and hence “recall bias” may be a confounding factor. Since this comparative study (Kumar V *et al.* 2015) was conducted in different population (urban residents of Delhi), the difference in their socioeconomic profiles and geographic distribution makes the study comparison difficult.

The most common health reasons (among the health condition suffered by the respondents) for preferring self medication in this present study was Pain (40.6%) and cold (34.7%). This is in similarity with the findings of the study conducted by Jain M *et al.* (2015) where fever (75.31%), headache (62.04%), cough/common cold (43.21%) and body ache (34.88%) were the preferential conditions for self-medication.^[19] A similar health conditions was also reported in other studies which were influential in determining outcome of self medication in their study respondents.^[12,18,20-23] This suggests that self medications are not only preferred for minor health ailments but also in conditions where there are no immediate complications.

Portal of access to drugs for self medication among Non medical workers: Retail pharmacy outlets were preferred by many (46.9%) for procuring medicines for self medication in this study. These outlets had dispensed medicines without asking for any valid physician prescription. This is similar to the findings of the study conducted by Adhikary M *et al.* (2014) where most (79.5%) of its study participants had preferred chemist

the institute. (18 years to < 50 years). There is no published study on burden of health among Non medical workers in India to compare; nor there are any public database pertaining to the same.

Self-medication practice (duration and preference) among Non-medical workers: More than half (55.3%) respondents (among 320 interviewed Non

Table 5: Conditions for preference of self medication among the Non Medical Workers (Study participants) of a health care institute in Mangaluru, India, March – December 2017 (n = 320)

Conditions	n	%
Cold		
Yes	111	34.7
No	66	20.6
Not applicable	143	44.7
Relief of pain		
Yes	130	40.6
No	47	14.7
Not applicable	143	44.7
Migraine		
Yes	3	0.9
No	174	54.4
Not applicable	143	44.7
Cough		
Yes	14	4.4
No	163	50.9
Not applicable	143	44.7
Weight Loss		
Yes	0	0
No	177	55.3
Not applicable	143	44.7
Tiredness		
Yes	1	0.3
No	176	55.0
Not applicable	143	44.7
Low Mood and Depression		
Yes	0	0
No	177	55.3
Not applicable	143	44.7
Sleep Disorder		
Yes	0	0
No	177	55.3
Not applicable	143	44.7
Stress and Anxiety		
Yes	0	0
No	177	55.3
Not applicable	143	44.7
Nausea and Vomiting		
Yes	3	0.9
No	174	54.4
Not applicable	143	44.7
Heartburn		
Yes	2	0.6
No	175	54.7
Not applicable	143	44.7
Constipation		
Yes	0	0
No	177	55.3
Not applicable	143	44.7
Diarrhoea		
Yes	2	0.6
No	175	54.7
Not applicable	143	44.7
Bloating of stomach		
Yes	0	0
No	177	55.3
Not applicable	143	44.7
Itching and Skin disorders		
Yes	3	0.9
No	174	54.4
Not applicable	143	44.7

Table 5: Cont'd.

Conditions	n	%
Urinary tract infection		
Yes	0	0
No	177	55.3
Not applicable	143	44.7
Body building supplements		
Yes	0	0
No	177	55.3
Not applicable	143	44.7
For smoke cessation		
Yes	0	0
No	177	55.3
Not applicable	143	44.7

Table 6: Portal of access to the desired medication preferred for self among the Non Medical workers (study participants) of a Health care institute in Mangaluru, India, March – December 2017 (n = 320)

Portal of access	n	(%)
Dispensation by nurse in Hospital counter/ wards		
Yes	2	0.6
No	175	54.7
Not applicable	143	44.7
Hospital Pharmacy without valid prescription		
Yes	19	5.9
No	158	49.4
Not applicable	143	44.7
Retail Pharmacy outlet without prescription		
Yes	150	46.9
No	27	8.4
Not applicable	143	44.7
Retail Pharmacy outlet upon submission of outdated/Non Valid prescription		
Yes	16	5.0
No	161	50.3
Not applicable	143	44.7
Online pharmacy portal market		
Yes	0	0
No	177	55.3
Not applicable	143	44.7
Other sources		
Yes	3	0.9
No	174	54.4
Not applicable	143	44.7

shop for procuring medicines for self-medication.^[20] Similar findings were also reported in other studies across India in various subgroup populations.^[19,21,22] This situation can be explained by the fact that most of these retail pharmacy outlets (including local chemist shops) in India are not only unregulated but also unaccountable, where over the counter (OTC) drugs/ medicinal products are made available to the consumer (patient) at their own risk. It is the responsibility and moral duty of pharmacists (including their employers/shop owners) employed at retail pharmacy outlets to stop dispensing medicines without any prescription (including invalid prescriptions) even for a minor health ailments. Pharmacist may have a sound knowledge about medicines but they lack sufficient knowledge with regards to diagnosis and disease identification. Government should regulate the retail pharmacy outlets by insisting them to dispense the drugs upon submission of valid physician prescription. The government and its agencies need to bring and implement strict drug control policy, thus rationally restricting the availability of drugs to the public.

Limitations of the study

Considering feasibility, Non medical workers employed at a health care (private) institute of Mangaluru City were considered. There could be a certain amount of response bias on the part of the study respondents in spite of assurance of anonymity.

CONCLUSION

Self medication was prevalent (55.3%) in non medical workers and it decreased with time (proportions of respondents decreased with increase in duration of self-medication). Pain and cold were the most common health conditions for which self medication was preferred. Retail pharmacy outlet was preferred for procuring drugs/ medicinal products for self-medication without any prescription.

Recommendation

There is a need for sensitizing and educating the public (including non medical workers) regarding self-medication practice and its ill effects considering the emergence and rise of drug resistance case. A national policy on self medication has to be developed with specific guidelines to both public and private health care provider regarding its sensitization to the public and steps to curb the same. Strict legislation regarding regulation of the retail pharmacy outlets to prevent illegal dispensation of drugs (without prescription) to the public will bring an immediate change in the overall situation.

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Authors' Contributions

SPU - Conceived, planned and conducted the study. SPU - Drafted the study/ research protocol, SRA: Organized data collection work, SPU: Statistical/ data analysis, SPU and SRA: Drafted the scientific manuscript.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ABBREVIATIONS USED

CI: Confidence Interval; **FMMC:** Father Muller Medical College; **FMIEC:** Father Muller Institutional Ethics Committee; **MS Excel:** Microsoft Word Excel; **SPSS:** Statistical Package for Social Sciences; **SC:** Schedule Caste; **ST:** Schedule Tribe; **OBC:** Other Backward Caste; **Others:** General Category; **PUC:** Pre university College; **APL:** Above Poverty Line; **BPL:** Below Poverty

Line; **ESI:** Employment state Insurance; **OTC:** Over The Counter.

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