Health: A Statistical Analysis of The Home-Made Medicine In Some Illnesses in Rural Assam With Special Reference to Majuli

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Abstract- *This study was about Majuli having lack of communication and lack of medical facilities and how they use homemade medicine to support and control their own health. The study is significant to research because it will contribute to the understanding and knowledge of people of Majuli and their use of homemade medicine. For Statistical Analysis we use chi-square test, percentage, proportion, bar-diagram and pie chart. The outcomes of this study may help to researcher's for their knowledge base, particularly contributing to information about rural people.*

Keywords- Home-made medicine, conventional medicine, p-value, Chi-square.

I. INTRODUCTION

Long ago the start of conventional medicine in India, traditional medicines, including the use of homemade medicines was the main remedy for nearly all ailments (WHO, 2008). Today, regardless of the growing use of modern medicine in India, homemade medicine use is also immensely practiced and many continue to depend on it for their health care. Homemade medicine is defined as medicine made exclusively from plants. Different people defined homemade medicines differently. Lucas (2010) defines homemade medicine as "the use of plant products to treat or prevent a disease". Nsowah-Nuamah *et al,* (2004) suggest that the treatment of homemade practitioners usually "takes the form of herbs, plant preparations, and prayers. The World Health Organization (WHO) defines homemade medicine as "a plant-derived material or preparation with therapeutic or other human health benefits which contains either raw or processed ingredients from one or more plants (WHO, 2008). On the other hand, the University of Maryland Medical Center (2010) gave a definition of homemade medicine as "plant's seeds, berries, roots, leaves, bark, or flowers for medicinal purposes." There are various types of herbs that can be used for medicinal purposes. Leaves, flowers, stems, roots, seeds, and berries are active parts of a plant (Woolf, 2003). One can take them internally as pills or powders; dissolved into tinctures or syrups, or brewed in teas and concoctions."Since 1970s globally interest in the use of homemade medicine increased. Homemade medicine treatments are the most popular form of traditional medicine, and are highly lucrative on the international market (WHO, 2008). Homemade Medicines have been used in both developed and developing countries, though the main reasons for use vary from country to country. 80% of the developing world's population still depends on homemade medicine. Homemade medicine has been in use in India since long time ago. However, it started being incorporated into India's national policy framework in the late 1983s.

There is no registration system for homemade medicines and they are not included on the essential drug list (WHO, 2008). However, homemade medicines in India are sold without restriction (WHO, 2015).

It is estimated that approximately 70%-80% of the world's population rely on traditional medicine, in one way or the other, for health care. According to Market Research Future (MRFR) the annual global market for home-made medicine will capture a CAGR of 5.88% in 2018 to 2023 and reach USD 129689.3 million by 2023.

China and Sri Lanka have achieved unbelievable success in developing their homemade medicine sector. In these countries, homemade medicines are highly developed, well documented, and practiced not only at the family, community, and primary health care levels, but also in hospitals where they provide secondary and tertiary care. Again, homemade practices in these countries are based on systematic knowledge, comprehensive methodology, and rich clinical experiences (Verma and Singh, 2008; WHO, 2008). 80% to 85% of the population in India depends on home-made medicine for their primary health care. In India 60% of the children with high fever resulting from malaria treated with home-made medicine (WHO, 2008). There is, on an average, one traditional medical practitioner for every 400 people, compared to one biomedical doctor to 1596 people in India

(WHO 2018). Home remedies are natural cures or medicines made at home from natural ingredients such as fruits, vegetables, and herbs and have given more attention due to its nature of cure and the bliss of being able to cure.

II. METHODOLOGY

2.1 Location of the study:

The study was carried out in Majuli located in Assam covering an area of approximately 550 square kilometers.

2.2 Sample size determination:

By using Fisher et al., (1998) formula, the size of the sample was determined as follows:

$$n = (z^2 pq)/d^2$$

Where,
n = the desired size of the sample
z = 1.96 (at 95% confidence interval)
d = confidence interval expressed as decimal = 0.05

The size of the sample is calculated assuming that 70% population of India use homemade medicine (NCBI, 2007).

Therefore,   p = probability of success = 0.7 and q = 1 - p = 0.3
d = 0.05 - which is the level of significance at 95% or acceptable margin of error

$$n = \frac{(1.96)^2(0.7)(0.3)}{(0.05)^2} = 322.69$$

Therefore, size of the sample is 323.

2.3 Sampling Technique:

In this study to collect data Multistage random sampling method was used to select representative sites. The five locations were used as the clusters from Majuli. Cluster sampling was chosen because it reduces costs per interview and increases the efficiency (Kerry and Bland, 2008). The number of patients within each stratum (location) was identified. To select the sample, Systematic random sampling was used to select the study samples (households). A table of random sampling was then used to identify the start point and rural links were contacted to assist in seeking people who consented to be interviewed. The process included first introduction to the respondents and then explain the theme of

the study. A table below shows the number of person and households in each location in the area of study.

Table 1: Number of population of households in the study area

Locations	No. of household	No. of person
Kamalabari	1542	1348
Garamur	1524	1206
Jengraimukh	1645	1305
Ratanpur	1803	2302
Borpamua	1573	1105
Total	8087	7266

Table 2: Sampling technique table

Stage-I Stratify villages in location Kamalabari Garamur Jengraimukh Ratanpur Borpamua selected	Kamalabari	Garamur	Jengraimukh	Ratanpur	Borpamua	Total
	1348	1206	1305	2302	1105	7266
Stage-II 323 were sampled and then PPS Sampling technique was used to determine no. of person	(1348x323)/ 7266=59.9 Nearest whole no. =60	(1206x323)/ 7266=53.6 Nearest whole no. =54	(1305x323)/ 7266=58.0 Nearest whole no. =58	(2302x323)/ 7266=102.3 Nearest whole no. =102	(1105x323)/ 7266=49.1 Nearest whole no. 49	
Stage-III 323 were selected by using the random number table	60 persons	54 persons	58 persons	102 persons	49 persons	323 persons

III. RESULTS

Data analysis was done by using SPSS (Statistical Package for the Social Sciences). A p-value less than 0.05 were considered as statistically significant for the analysis.

Socio-demographic and other characteristics associated with homemade medicine use:

Another objective of the study was to find out demographic characteristics that influence use of homemade medicine. These characteristics were sex, age and monthly income of household, education level, occupation and distance to the nearest health facility.

Table 3: Socio-demographic and other characteristics

Variable	Categories	No. of Respondents Homemade use		χ^2-Results
		Used	Not used	
Age	0 - 20 years	29	01	χ^2=15.00 df=12 p=0.241
	20 - 40 years	60	06	
	40 - 60 years	100	07	
	60 - 80 years	74	03	
	80 and above years	40	03	
Sex	Male	135	11	χ^2=2.00 df=1 p=0.157
	Female	168	09	
Education level	Below class V	22	01	χ^2=6.00 df=4 p=0.199
	Class V – Class X	34	02	
	Above Class X	247	17	
Occupation	farmer	228	17	χ^2=6.00 df=4 p=0.199
	Service	73	01	
	Business	01	02	
Household monthly income	≤20000	150	14	χ^2=8.00 df=6 p=0.238
	20001 - 40000	102	03	
	40001 - 60000	37	01	
	60001 - 80000	11	01	
	>80000	03	01	

In the above table 4 the results were presented of the study compared homemade medicine used and demographic characteristics of the respondents. The important factors to consider were age and corresponding respondents. There was a significant statistical difference (p = 0.241) between age and use of homemade medicine. Again, There was a significant statistical difference (p = 0.157) between sex and use of homemade medicine. In the study it is seen that there was a significant statistical difference (p = 0.199) between education level of respondents and use of homemade medicine. The study also show that there was a significant statistical difference (p = 0.238) between household monthly income and use of homemade medicine. There was a significant statistical difference (p = 0.199) between occupation and use of homemade medicine.

Table 4: Distribution of homemade medicine use by distance from the nearest health facility

Factors	Homemade use		χ^2 results
Distance from nearest facility	Yes	No	
< 5	32	14	χ^2=12.00 df=9 p=0.213
5 - 10	45	3	
10 -15	94	2	
>15	132	1	

From the above table, it is seen that with the increase of distance to the PHC's use of homemade medicine also increases.

Homemade medicine used in case of common ailments:

Different diseases or ailments may be treated efficiently with the roots, bark, leaves, fruits and flowers of plants.

Table 5: Diseases that educe use of homemade medicine

DISEASES	Respondents (n=303)	
	No of responses	Percent
Malaria	85	28.1
Respiratory diseases	98	32.3
Intestinal worms	78	25.7
Skin infection/trauma	95	31.4
Gastrointestinal diseases	107	35.3
Eye infection	31	10.2
Tooth ache	48	15.8
Vitamin supplements	38	12.5
Allergy	35	11.6
Immune boosters	57	18.8

Majority 107(35.3%) respondents used homemade medicine in gastrointestinal problems and few 31(10.2%) respondents used homemade medicine in eye infection.

Table 6: Diseases that extract use of homemade medicine with usual medicine simultaneously.

DISEASES	Responses n=303	
	No of responses	Percent
Gastrointestinal diseases	53	17.5
Malaria	35	11.6
Respiratory diseases	45	14.9
Worms	39	12.9
Skin infection/trauma	38	12.5
Tooth ache	22	7.3
Allergy	17	5.6
Eye infection	0	0

The most common conditions for which respondents reported use of homemade medicine and usual medicine simultaneously include gastrointestinal diseases (17.5%), worms (12.9%), Skin infections (12.5%), respiratory disorder (14.9%) and malaria (11.6%).

III. CONCLUSIONS

From the results discussed above the following conclusions can be made.

1. It is beyond any doubt that about (93.8%) used homemade medicine for treatment of diseases.
2. From the study it is evident that the socio-demographic characteristics level of education, occupation, distances to the nearest health facility and monthly income significantly contributed to the use of homemade medicines.
3. The most common situation for which homemade medicines were used included respiratory diseases and gastrointestinal.
4. Simultaneous use of homemade medicine with usual medicine was (51.8%).

5. The plants mostly used in the study have an existing scientific evidence and ayurveda-medical use.

IV. ACKNOWLEDGEMENT

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