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A PILOT STUDY TO ASSESS THE PREVALENCE AND ASSOCIATED FACTORS OF SELF MEDICATION AND EFFECTIVENESS OF NURSE LED VS PEER LED HEALTH EDUCATION ON KNOWLEDGE REGARDING ADVERSE EFFECTS OF SELF MEDICATION AMONG MOTHERS OF UNDERFIVE CHILDREN IN SELECTED RURAL COMMUNITY OF SALEM

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ABSTRACT

The most important aspect influencing a child's growth is their health, particularly during the first five years of life. Due to this age group's comparatively weakened immune system, illnesses and disease outbreaks have occurred recently. Using medication to cure or prevent illnesses without first visiting a doctor is known as self-medication. Self-medication carries a number of hazards that make it potentially dangerous. These concerns include drug interactions, antibiotic resistance, erroneous self-diagnosis, habituation, allergic responses, and the potential for dependence and misuse. Self-medication by mothers under five may be encouraged for a variety of reasons. To facilitate learning, these components need to be given the attention they deserve. The purpose of the study is to evaluate the prevalence of self-medication among mothers of children under five and the characteristics that are linked with it. 1270 mothers of children under five in a few villages in the Mallur block of the Salem District participated in a cross-sectional survey to determine the prevalence and contributing variables. The Demographic Proforma, Prevalence Questionnaire, and Checklist were utilized as data collection tools to evaluate the parameters related to self-medication. There were 1115 (87.79%) cases of self-medication overall. The majority of women who had children under five who had fever 261 (23.4) were also self-medicating. In 99% of cases, parental self-medication by children under five years old was linked to factors such as immediate symptom relief during an emergency, easy access to pharmacies without a valid prescription, low income, loss of wages, and high costs for medical consultations at health care facilities. Nurse-led and Peer-led health education groups were assigned to the villages of Nalikalpatti and Vengampatti, respectively. The study found that while the Nurse Led Health Education group's pre-test score

was unsatisfactory at 11 (36.7%), the second post-test score was moderately adequate at 21 (70%) following the intervention. Following the pretest in the peer-led health education group, health education on adverse effects of self medication were given by peer educator. After the intervention, the second post-test score was somewhat sufficient at 24 (80%), indicating a low level of understanding. The study comes to the conclusion that since mothers of children under five had a high prevalence of self-medication and a high practice of it prior to the pretest and after the intervention, they had sufficient knowledge about the negative effects of self-medication and had reduced their practice level to the maximum. Health education sessions led by nurses and peers are equally important. Health systems must be put in place in order to strengthen the policies that would restrict self-medication. The results point to the necessity of regular, ongoing health education on the dangers and risks associated with self-medication at the community level.

INTRODUCTION:

In India, the prevalence of self-medication was found at 47% in urban areas and 53% in rural areas. It has been shown that 76% of literate people are more likely to self-medicate than 0.5% of illiterate people**.** The trend of using self-medication is high in India, particularly among youth, adults, and parents.

In several studies, it has been shown that due to uncontrolled use of self-medication, signs and symptoms of underlying diseases are suppressed, hence the incidence of delayed diagnosis, complications, treatment failure, and drug resistance is increasing. In India, it is possible to buy prescribed and non-prescribed drugs with or without prescriptions from a wide variety of sources. Those drugs, if not fully used, may be kept for future use.

Mothers should play an active role in carrying their children to healthcare facilities during illness and get information from healthcare facilities regarding their child, understanding the purpose of medication, their adverse drug reactions (ADRs), and when to seek medical attention. It is crucial to educate the mothers regarding their medication usage, dose, and adverse effects.To have a better understanding of the use of self-medication among mothers, a detailed study needs to be done by creating awareness using educational packages for the mothers to preserve and promote the health of their children.

STATEMENT OF THE PROBLEM:

A PILOT STUDY TO ASSESS THE PREVALENCE AND ASSOCIATED FACTORS OF SELF MEDICATION AND EFFECTIVENESS OF NURSE LED VS PEER LED HEALTH EDUCATION ON KNOWLEDGE REGARDING ADVERSE EFFECTS OF SELF MEDICATION AMONG MOTHERS OF UNDERFIVE CHILDREN IN SELECTED RURAL COMMUNITY OF SALEM.

OBJECTIVES:

1. To assess the prevalence and associated factors of self medication among mothers of underfive children.

2. To assess the level of knowledge regarding adverse effects of self medication among mothers of underfive children.
3. To evaluate and compare the effectiveness of Nurse Led Health Education and Peer Led Health Education on the level of knowledge regarding adverse effects of self medication among mothers of underfive children.
4. To associate the level of knowledge regarding adverse effects of self medication among mothers of underfive children with their selected demographic variables.

TESTING OF THE TOOLS:

Content Validity of the Tool :

Seven experts in the fields of paediatrics, pharmacology, and nursing were consulted to determine the content validity of the instruments. They asked the experts to evaluate the items based on readability, measurability, appropriateness, accuracy, and clarity of language in the content organization. After analysis, the tools' Content Validity Index (CVI) was determined to be 97%, which is satisfactory. The experts' recommendations were taken into consideration and the tools were adjusted as a result [12].

Translation of the Tool :

Tamil translations of the structured interview schedule were used to evaluate respondents' understanding of the risks associated with self-medication. An expert in Tamil reviewed the translation for appropriateness, and a back translation was used to confirm its accuracy.

Reliability of the Tool:

Ten mothers of children under five were given the Tamil version of the Structured Interview schedule, which was tested using the test-retest method to determine its reliability in assessing knowledge about the negative effects of self-medication. The knowledge questionnaire's obtained reliability coefficient (Cronbach's Alpha) was r= 0.96 [13].

RESEARCH APPROACH:

The research approach used for the present study is quantitative approach.

RESEARCH DESIGN:

The design used for the present study is quasi experimental research design with two group pre and post-test design.

Random selection of group	**Pretest**	**Intervention**	**Posttest (on day 7 and 30)**
E_1	O_1	X_1	O_2, O_3
E_2	O_1	X_2	O_2,$O3$

E_1: Experimental Group – 1

E_2: Experimental Group – 2

O_1: Pretest on knowledge regarding adverse effects of self medication to mothers of underfive children

X_1: Administration of Nurse Led Health Education

X_2: Administration of Peer Led Health Education

O_2: Post-test on Day-7 of the Intervention

O3: Post-test on Day -30 of the Intervention

SETTING:

There are two HUDs (Health Unit District) in Salem District, namely Salem HUD and Attur HUD. From the two HUDs, Attur HUD was randomly selected to conduct the present study. Under Attur HUD, there are eight rural Block PHCs, (Attur, Ayyothiyapattinam, Thammapatty, Panamarathupatti, Ariyapalayam, Thalaivasal, Belur and yercaud), among eight rural block PHCs, Panamarathupatti Block PHC was randomly selected through lottery method.

Under the Panamarathupatti Block PHC, there are four PHCs functioning (Panamarathupatti PHC, Thumbalpatti PHC, Mallur PHC and Kondalampatti PHC). Panamarathupatti PHC area was randomly selected using lottery method to conduct the main study. From the rest of three PHCs under Panamarathupatti block, the investigator has randomly chosen Mallur PHC to conduct Pilot study.

Under Mallur PHC, there are six HSCs namely, Ammapalayam, Nalikalpatti, Parapatti, Seivanthapatti, Vazhakuttapatti and Veingampatti, investigator randomly selected two HSC - Nalikalpatti and Veingampatti through lottery method. By flipping the coin, Nalikalpatti allotted for Experimental group – I: Nurse Led Health Education and Veingampatti for Experimental group – II: Peer Led Health Education.

Sample:

Mothers of underfive children who fulfill the sampling criteria were chosen for the present study.

Sample size:

The sample size was 30 in Experimental Group I and 33 in Experimental Group II. Among the mothers of Experimental Group II, 3 mothers whose scores were 70% and above in their Pretest and who met the desired criteria were chosen as Peer Led Health Educator and trained by the researcher, and the remaining 30 were considered as samples in Experimental Group-II.

Part-I: Prevalence of Self Medication

The prevalence of self medication among mothers of underfive children in Experimental group I and II. The total prevalence in the pilot study areas was 88.93% in Experimental group I and 86.80% in Experimental group II.

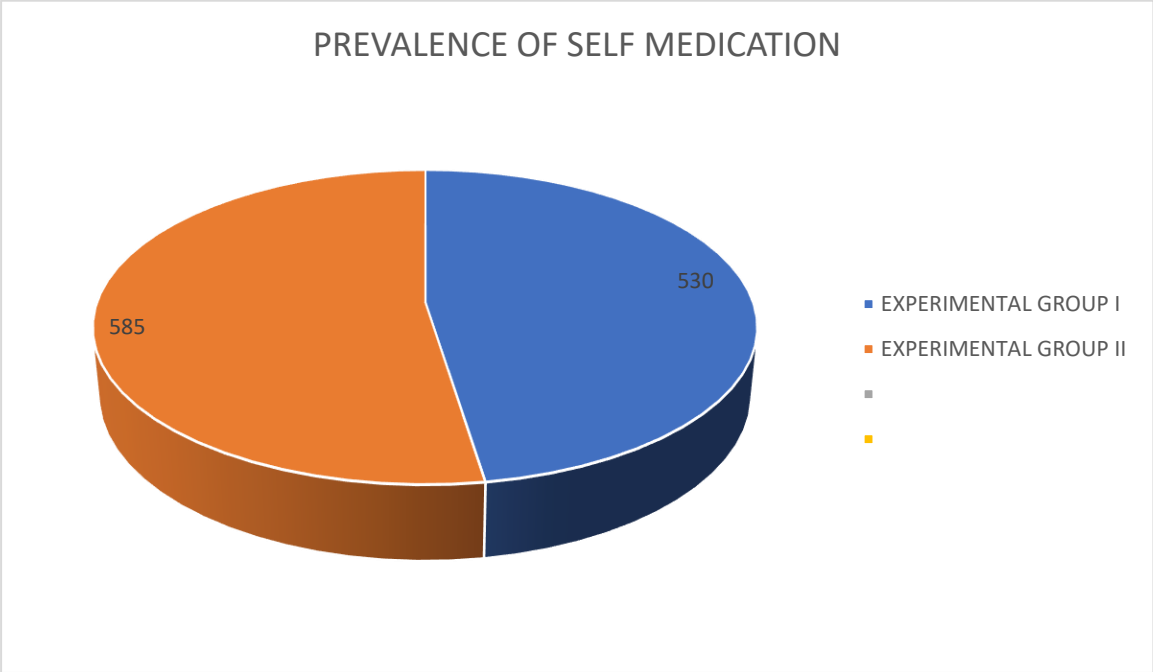


Table 2: Distribution of Mothers of underfive children in Experimental group I and II according to their practices related to self medication.

n=1115

s.no	Practices related to self medication	Experimental Group-I	Experimental Group-II	TOTAL (n=1115)	Homogeneity test $\chi 2$ value

		Community Area (n=530)		Community Area (n=585)				p-value
		f	%	f	%	f	%	
1.	**Frequency of self-medication**							
	a. One time	149	28.11	164	28.03	**313**	**28.07**	
	b. Two time	160	30.19	189	32.31	**349**	**31.30**	**$\chi 2$ =1.46**
	c. Three time	158	29.81	157	26.84	**315**	**28.25**	**p=0.690**
	d. >3 times	63	11.89	75	12.82	**138**	**12.38**	**(NS)**
2.	**Time duration of administering self medication**							
	a. Within past 3 months	237	44.72	247	42.22	**484**	**43.41**	
	b. Between 4-6 months	97	18.30	109	18.63	**206**	**18.48**	**$\chi 2$ =3.43**
	c. Between 7month-1 year	166	31.32	206	35.21	**372**	**33.36**	**p=0.330**
	d. More than 1 year	30	5.66	23	3.93	**53**	**4.75**	**(NS)**
3.	**Illnesses for which self-medication was used:**							
	a. Fever	124	23.3	137	25.84	**261**	**23.4**	
	b. Cough & cold	117	22.07	121	22.83	**238**	**21.34**	**$\chi 2$ =6.35**
	c. Headache	12	2.26	8	1.5	**20**	**1.7**	**p=0.385**
	d. Body pain	66	12.45	72	13.58	**138**	**12.37**	**(NS)**
	e. Diarrhea	112	21.13	124	23.39	**236**	**21.16**	
	f. Vomiting	56	10.56	79	14.9	**135**	**12.1**	
	g. Stomach pain	43	8.11	44	8.3	**87**	**7.8**	
4.	**Medicines used for self-medication:**							
	a. Drug to reduce fever	112	21.13	124	21.19	**236**	**21.16**	
	b. Drug to reduce cough	66	12.45	82	15.09	**148**	**13.27**	
	c. Drug to reduce cold	58	10.94	56	0.95	**114**	**10.22**	**$\chi 2$ =4.08**
	d. Drug to reduce pain	22	4.15	26	4.4	**48**	**4.3**	**p=0.538**
	e. Drug to reduce diarrhea	109	20.56	117	20	**226**	**20.26**	**(NS)**
	f. Drug to reduce vomiting	46	8.67	58	9.9	**104**	**9.32**	
	g. Drug to reduce infection	38	7.16	22	3.76	**60**	**5.38**	
	h. Drug to improve vitamin level	29	5.47	32	5.47	**61**	**5.47**	
	i. Drug to improve mineral level	8	1.5	11	1.88	**19**	**1.70**	
	j. Drug to improve electrolyte level	42	7.92	57	9.74	**99**	**8.87**	
5.	**Occurrence of side effects of self medication to the child:**							
	a. Yes	448	84.53	503	85.98	**951**	**85.29**	**$\chi 2$ =0.469**
		82	15.47	82	14.02	**164**	**14.71**	**p=0.493**

	b. No							**(NS)**
5.1	**Side effects of self medication to the child:**							
	a. Diarrhea	137	25.8	141	24.1	**278**	**24.9**	
	b. Dizziness	12	2.26	18	3.07	**30**	**2.69**	**$\chi 2$ =25.29**
	c. Drowsiness	4	0.75	8	1.36	**12**	**1.07**	**p=0.032***
	d. Fatigue	72	13.58	68	11.62	**140**	**12.55**	**(S)**
	e. Heart related issues	9	1.69	7	1.19	**16**	**1.43**	
	f. Nausea	8	1.50	11	1.88	**19**	**1.70**	
	g. Rashes	42	7.92	47	8.03	**89**	**7.98**	
	h. Worsening of the diseases	67	12.64	87	14.87	**154**	**13.81**	
	i. Vomiting	152	28.67	167	28.54	**319**	**28.6**	
	j. Excessive sleep	27	5.09	31	5.29	**58**	**5.20**	
6.	**Sources of drugs for self-medication:**							
	a. Pharmacy	290	54.71	296	50.59	**586**	**52.55**	
	b. Using left over medicines from previous prescription	136	25.66	152	25.98	**288**	**25.82**	**$\chi 2$ =42.72** **p=0.002**** **(HS)**
	c. Neighbours& friends & relatives	70	13.20	90	15.38	**160**	**14.34**	
	d. Petty shops	16	3.01	20	3.41	**36**	**3.22**	
	e. Online pharmacy shops	18	3.39	27	4.61	**45**	**4.03**	

The above mentioned table- 2 shows that regarding frequency of self medication highest percentage of mothers 160(30.19%) in Experimental group I and in Experimental group II 189(32.31%) had self medicated their children two times. Only 63(11.89%) of mothers in Experimental group I and 75(12.82%) in Experimental group II had self medicated more than three times.

Regarding time duration of administering self medication highest percentage of mothers 237(44.72%) in Experimental group I and 247(42.22%) mothers in Experimental group II had administered within the past three months. Only least percentage of mothers in Experimental group I 30(5.66%) and 23(3.93%) in Experimental group II had administered more than a year ago.

Regarding illness for which self medication was used, highest percentage of mothers self medicated their children for fever both in Experimental group I 124(23.3%) and

Experimental group II 137(25.84%) and least percentage used for headache both in Experimental group I 12(2.26%) and in Experimental group II 8 (1.5%).

Regarding medicines used for self medication, highest percentage of mothers used drugs to reduce fever both in Experimental group I 112 (21.13%) and in Experimental group II 124 (21.19%). However lowest percentage of them used drugs to improve mineral level both in Experimental group I 8(1.5%) and in Experimental group II 11(1.88%).

Regarding the occurrence of side effects related to self medication, majority of them both in Experimental group I 448 (84.53%) and in Experimental group II 503 (85.98%) have responded as "Yes" and lowest percentage of them in Experimental group I 82(15.47%) and in Experimental group II 82 (14.02%) have responded as "No".

With regard to side effects of self medication which has occurred in the child, highest percentage of mothers both in Experimental group I 152(28.67%) and in Experimental group II 167(28.54%) responded as vomiting and lowest percentage of them in Experimental group I 4(0.75%) responded drowsiness and in Experimental group II 7(1.19%) responded heart related issues.

Regarding sources of drugs for self medication almost half of the samples in Experimental group I 290 (54.71%) and 296 (50.59%) in Experimental group II responded that they received the drug from the pharmacy.

Part-II: Associated factors of self medication

Table-3: Frequency and percentage wise distribution of the mothers of underfive children in Experimental group I and II according to their Personal associated factors of self medication.

n=1115

S.no	Personal factors for Self Medication	Experimnetal group-I (n=530)		Experimnetal group-II (n=585)		Total (n=1115)		Homogeneity test $\chi 2$ value p-value
		f	%	f	%	f	%	
1.	Perceiving illness as mild**:**							
	Yes	292	55.09	336	57.44	**628**	**56.32**	**$\chi 2$ =0.619**
	No	238	44.09	249	42.56	**487**	**43.68**	**p=0.431 (NS)**

2.	Being knowledgeable about medication**:** Yes No	 149 381	 28.11 71.89	 190 395	 32.48 67.52	 **339** **776**	 **30.40** **69.60**	 **χ2 =2.50** **p=0.114** **(NS)**
3.	Lack of time to visit health care facilities**:** Yes No	 392 138	 73.96 26.04	 431 154	 73.68 26.32	 **823** **292**	 **73.81** **26.19**	**χ2 =0.01** **p=0.913** **(NS)**
4.	Fear of hospitalization**:** Yes No	 252 278	 47.55 52.45	 316 269	 54.02 45.98	 **568** **547**	 **50.94** **49.06**	**χ2 =4.65** **p=0.03*** **(S)**
5.	For quick relief of the symptoms and to use at the time of emergency illness**:** Yes No	 528 2	 99.62 0.38	 585 0	 100 0	 **1113** **2**	 **99.82** **0.18**	**χ2 =2.21** **p=0.137** **(NS)**
6.	Easy to use the old prescriptions of same child or siblings for reappearance of similar symptoms in the same child**:** Yes No	 528 2	 99.62 0.38	 585 0	 100 0	 **1113** **2**	 **99.82** **0.18**	**χ2 =2.21** **p=0.137** **(NS)**
7.	Easy to use leftover medicines and believing that medicine has no side effects: Yes No	 528 2	 99.62 0.38	 585 0	 100 0	 **1113** **2**	 **99.82** **0.18**	**χ2 =2.21** **p=0.137** **(NS)**
8.	Easy to use the prescription of other child who is having similar symptoms Yes No	 526 4	 99.25 0.75	 582 3	 99.49 0.51	 **1108** **7**	 **99.37** **0.63**	**χ2 =0.261** **p=0.610** **(NS)**
9.	Positive outcome of Previous self-medication for similar illness Yes No	 474 56	 89.43 10.57	 487 98	 83.25 16.75	 **961** **154**	 **86.19** **13.81**	**χ2 =8.94** **p=0.003**** **(HS)**

10.	Non availability of leave at working place Yes No	 334 196	 63.02 36.98	 382 203	 65.30 34.70	 **716** **399**	 **64.22** **35.78**	 **χ2 =0.629** **p=0.428** **(NS)**
11.	Thinking that drugs prescribed are ineffective Yes No	 403 127	 76.04 23.96	 463 122	 79.15 20.85	 **866** **249**	 **77.67** **22.33**	 **χ2 =1.54** **p=0.213** **(NS)**
12.	Suggestion by relative/friend/family members to take the drug Yes No	 470 60	 88.68 11.32	 522 63	 89.23 10.77	 **992** **123**	 **88.97** **11.03**	 **χ2 =0.086** **p=0.769** **(NS)**
13.	Advertisement about over the counter medicines from television, newspaper and other mass medias Yes No	 300 230	 56.60 43.40	 348 237	 59.49 40.51	 **648** **467**	 **58.12** **41.88**	 **χ2 =0.949** **p=0.330** **(NS)**
14.	Lack of information about harmful effect of self-medication Yes No	 317 213	 59.81 40.19	 383 202	 65.47 34.53	 **700** **415**	 **62.78** **37.22**	 **χ2 =3.81** **p=0.051** **(NS)**
15.	Dissatisfaction of the services provided by health care system Yes No	 415 115	 78.30 27.70	 474 111	 81.03 18.97	 **474** **226**	 **79.73** **20.27**	**χ2 =1.276** **p=0.259** **(NS)**

The above mentioned table-3 illustrate that distribution of mothers according to their Personal associated factors of self medication reveals that highest percentage of mothers 628 (56.32%), both in Experimental group I 292 (55.09%) and in Experimental group II 336 (57.44%) were perceiving the illness as mild.

Majority 776 (69.60%) of them reported that they were not knowledgeable about the medicine in both Experimental group I 381 (71.89%) and in Experimental group II 395 (67.52%). Most of the mothers 823 (73.81%) opined that they had lack of time to visit health care facilities in both Experimental group I 392 (73.96%) and in Experimental group II

431(73.68%), majority expressed they had fear of hospitalisation in Experimental group 252 (47.55%) and in Experimental group II 316(54.02%).

Almost all of the mothers 1113 (99.82%) reported that they had self medicated for quick relief of symptoms both in Experimental group I 528 (99.62%) and in Experimental group II 585 (100%). Also it was easy to use the old prescriptions of same child or siblings was told by almost all of the mothers in Experimental group I 528 (99.62%) and in Experimental group II 585 (100%). Almost all of them in both Experimental group I 528 (99.62%) and Experimental group II 585 (100%) said that it was easy to use leftover medicines and easy to use the prescription of other child who is having similar symptoms was also reported by almost all in Experimental group I 526(99.25%) and in Experimental group II 528 (99.49%).

Majority 961(86.19%) of them cited that there were positive outcome of previous self medication for similar illness in both Experimental group I 474(89.43%) and in Experimental group II 487 (83.25%).

Highest percentage 716(64.22%) of mothers cited non-availability of leave at working place as the reason for self medication both in Experimental group I 334(63.02%) and in Experimental group II 382 (65.30%).

Highest percentage of mothers 866(77.67%) in Experimental group I 403(76.04%) and in Experimental group II 463(79.15%) thinks that drugs prescribed are ineffective. Most of the mothers 992(88.97%) got suggestion from relative, friend and family members to take the drug in Experimental group I 470(88.68%) and in Experimental group 522(89.23%).

Regarding the advertisement about over the counter medicines from television, newspaper and other mass medias, majority of them 648(58.12%) both in Experimental group I 300 (56.60%) and in Experimental group II 348 (59.49%) have responded as “Yes”. Highest percentage of mothers 700 (62.78%) in Experimental group I 317 (59.81%) and 383 (65.47%) in Experimental group II reported lack of information about harmful effect of self medication.

Majority of the mothers 474 (79.73%), 415 (78.30%) in Experimental group I and 474 (81.03%) in Experimental group II said that there is dissatisfaction of the services provided by health care system.

Table 4: Frequency and percentage wise distribution of the mothers of underfive children in Experimental group I and II according to their Socio economic associated factors related to self medication.

n=1115

s.no	Socio economic factors for self medication:	Experimental Group-I (n=530)		Experimental Group-II (n=585)		Total (n=1115)		Homogeneity test χ2 value p-value
		f	%	f	%	f	%	
1.	Self medication is cheaper**:** Yes No	 378 152	 71.32 28.68	 432 153	 73.85 26.15	 810 305	 72.65 27.35	**χ2 =0.89 p=0.345 (NS)**
2.	Low income to the parents or caretakers**:** Yes No	 525 5	 99.06 0.94	 582 3	 99.49 0.51	 1107 8	 99.28 0.72	**χ2 =0.723 p=0.395 (NS)**
3.	Loss of wages to the parents or caretakers**:** Yes No	 525 5	 99.06 0.94	 582 3	 99.49 0.51	 582 3	 99.49 0.51	**χ2 =0.72 p=0.395 (NS)**
4.	High cost of medical consultation at health care centres**:** Yes No	 525 5	 99.06 0.94	 582 3	 99.49 0.51	 1107 8	 99.28 0.72	**χ2 =0.72 p=0.395 (NS)**
5.	High cost of drugs prescribed in health care facilities**:** Yes No	 438 92	 82.64 17.36	 504 81	 86.15 13.85	 942 173	 84.48 15.52	**χ2 =2.62 p=0.106 (NS)**

The table 4 highlights that distribution of mothers according to their socioeconomic factors related to self medication depicts that majority of mothers 810 (72.65%), in Experimental group I 378 (71.32%) and in Experimental group II 432 (73.85%) said that self medication is cheaper.

Almost all mothers 1107 (99.28%) cited that it was due to low income of the parents both in Experimental group I 525 (99.06%) and in Experimental group II 582 (99.49%). Almost all mothers said self medication was due to loss of wages of the parents and high cost of medical

consultation at health care centres in Experimental group I 525 (99.06%) and in Experimental group II 582 (99.49%).

Majority 942 (84.48%) said it was due to high cost of drugs prescribed in healthcare facilities both in Experimental group I 438 (82.64%) and in Experimental group II 504 (86.15%).

Table 5: Frequency and percentage wise distribution of the mothers of underfive children in Experimental group I and II according to their Environmental factors of the health care facility related to self medication.

n=1115

s.no	Environmental factors of the health care facility	Experimental group-I (n=530)		Experimental group-II (n=585)		Total (n=1115)		Homogeneity test $\chi 2$ value p-value
		f	%	f	%	f	%	
1.	Long distance to health care facilities:							
	Yes	288	54.34	330	56.41	618	55.43	**$\chi 2$ =0.48**
	No	242	45.66	255	43.59	497	44.57	**p=0.487**
								(NS)
2.	Inaccessibility to Doctors at health care facilities:							
	Yes	467	88.11	519	88.72	986	88.43	**$\chi 2$ =0.094**
	No	63	11.89	66	11.28	129	11.57	**p=0.753**
								(NS)
3.	Long waiting time for doctor consultation:							
	Yes	406	76.60	466	79.66	872	78.21	**$\chi 2$ =1.52**
	No	124	23.40	119	20.34	243	21.79	**p=0.217**
								(NS)
4.	Owning a pharmacy by family members or relatives:							
	Yes	275	51.89	327	55.90	602	53.99	**$\chi 2$ =1.80**
	No	255	48.11	258	44.10	513	46.01	**p=0.180**
								(S)

5.	Easy access of pharmacy without a valid prescription**:** Yes No	 528 2	 99.62 0.38	 585 0	 100 0	 1113 2	 99.82 0.18	**χ2 =2.21 p=0.137(NS)**

The table 5 state that distribution of mothers according to their environmental factors of the health care facility related to self medication depicts that majority of mothers 618(55.43%) in Experimental group I 288 (54.34%) and in Experimental group II 330(56.41%) said that long distance to health care facilities. Almost all mothers 986(88.43%) cited that it was because of inaccessibility to doctors at health care facilities both in Experimental group I 467(88.11%) and in Experimental group II 519 (88.72%). Majority 872 (78.21%) said that it was due to long waiting time for doctor consultation both in Experimental group I 406(76.60%) and in Experimental group II 466 (79.66%). Majority 602 (53.99%) mothers cited that owning a pharmacy by family members or relatives in Experimental group I 275(51.89%) and in Experimental group II 327 (55.90%). Almost all mothers 1113 (99.82%) said that easy access of pharmacy without a valid prescription in Experimental group I 528 (99.62%) and in Experimental group II 585 (100%).

Part-III: Demographic variables of mothers of under five children

Table 6: Distribution of mothers of underfive children in Experimental group I and II according to their demographic variables.

n=60

s.no	**Demographic variables**	**Experimental Group-I (n=30)**		**Experimental Group-II (n=30)**		**Homogeneity test χ2 value p-value**
		f	**%**	**f**	**%**	
1.	**Age of the mother** a. 21-25 years b. 26-30 years c. 31-35 years d. 36-40 years e. >40 years	 13 1 2 7 7	 43.3 3.3 6.67 23.3 23.3	 9 7 4 7 3	 30 23.3 13.3 23.3 10	**χ2 =7.49 p=0.112 (NS)**

2.	**Educational status of mother**					
	a. No formal education	7	23.3	3	10	
	b. Primary school education	4	13.3	6	20	
	c. High school education	13	43.3	12	40	**$\chi 2$ =4.37**
	d. Higher secondary education	1	3.3	4	13.3	**p=0.626**
	e. Diploma	3	10	2	6.7	**(NS)**
	f. Graduate	1	3.3	2	6.7	
	g. Post graduate	1	3.3	1	3.3	
3.	**Occupation of mother**					
	a. Home maker	10	33.3	10	33.3	
	b. Daily wages	5	16.7	2	6.7	
	c. Agriculture & farming	9	30	9	30	**$\chi 2$ =4.619**
	d. Private employee	1	3.3	2	6.7	**p=0.464**
	e. Government employee	2	6.7	6	20	**(NS)**
	f. Own business	3	10	1	3.3	
4.	**Religion**					
	a. Hindu	17	56.7	20	66.7	**$\chi 2$ =1.67**
	b. Christian	6	20	3	10	**p=0.644**
	c. Muslim	1	3.3	2	6.7	**(NS)**
	d. Others	6	20	5	16.7	
5.	**Monthly income**					
	a.Rs.50001 and above	4	13.3	2	6.7	
	b. Between Rs.25001toRs.50000	5	16.7	10	33.3	
	c. Between Rs.20001toRs.25000	8	26.7	7	23.3	**$\chi 2$ =4.68**
	d. Between Rs.15001toRs.20000	4	13.3	1	3.3	**p=0.456**
	e. Between Rs.10001toRs.15000	4	13.3	5	16.7	**(NS)**
	f. Less than Rs.10000	5	16.7	5	16.7	
6.	**Type of family**					
	a. Nuclear	6	20	7	23.3	**$\chi 2$ =1.42**
	b. Joint	12	40	10	33.3	**p=0.700**
	c. Extended	12	40	13	43.3	**(NS)**
7.	**Source of information**					
	a. No information	9	30	3	10	
	b. Health professional & pharmacist	8	26.7	13	43.3	
	c. Previously prescribed medicine	6	20	2	6.7	**$\chi 2$ =7.52**
	d. Social media	6	20	10	33.3	**p=0.111**
	e. Relative and friends	1	3.3	2	6.7	**(NS)**

Theabove table-6 shows that the highest percentage of the mothers of underfive children belongs to the age group of 21- 25 years in experimental group I 13(43.3%) and in experimental group II 9(30%). However, the lowest percentage of them were in the age group of 26-30 years in Experimental group I 1(3.3%) and above 40 years age group in experimental group II 3(10%).

According to educational status of the mothers of underfive children, highest percentage of the mothers were in high school education, in experimental group I 13(43.3%) and in experimental group II 12(40%). However, the lowest percentage of the post graduated mothers were equally distributed to experimental group I and experimental group II 1(3.3%).

With regard to the occupation of mothers, the highest percentage were home makers in both experimental group I and experimental group II 10(33.3%). Lowest percentage of them in experimental group I 1(3.3%) were private employee, whereas in experimental group II 1(3.3%), had their own business.

Distribution of mothers of underfive children according to religion depicits that majority of them belonged to hindu religion in both experimental group I 17(56.7%) and experimental group II 20(66.7%). Only very few among the experimental group I 1(3.3%) and experimental group II 2(6.7%) belongs to Islam.

According to family monthly income, highest percentage of mothers in experimental group I 8(26.7%) earn Rs.20001-25000/month and experimental group II 10(33.3%) earns Rs.25001-50000/month. Only few mothers in experimental group I 4(13.3%) and experimental group II 1(3.3%) have monthly income of Rs.15001-20000/month.

With regards to the type of family nearly similar percentage of them belongs to extended family nad joint family in experimental group I 12(40%) and experimental group II 13(43.3%) belongs to extended family. At the same time, the lowest percentage were in nuclear family in experimental group I 6(20%) and experimental group II 7(23.3%).

According to the source of information, the highest percentage of mothers in experimental group I 8(26.7%) and experimental group II 13(43.3%) received information from health professional and pharmacist. Similarly the lowest percentage in experimental group I 1(3.3%) and experimental group II 2(6.7%) received information from relatives and friends.

Table 7: Distribution of underfive children in Experimental group I and II according to their personal data.

n=60

s.no	Demographic variables	Experimental Group-I (n=30)		Experimental Group-II (n=30)		Homogeneity test χ2 value p-value
		f	%	f	%	
10.1	**Age of the child in months (under five years)**					
	a. 0-12 months	4	12.5	4	12.9	**χ 2 =1.11 p=0.292 (NS)**
	b. 13-24 months	6	18.75	5	16.12	
	c. 25-36 months	7	21.87	5	16.12	
	d. 37-48 months	8	25	8	25.80	
	e. 49-60 months	7	21.87	9	29.03	
10.2	**Personal Data of Child Birth Order of under five children**					**χ2 =0.48 p=0.488 (NS)**
	a. Birth order -I	12	40	14	46.7	
	b. Birth order -II	10	33.3	13	43.3	
	c. Birth order -III	6	20	3	10	
	d. Birth order -IV	2	6.7	0	0	
10.3	**Sex of the child**					**χ2 =1.071 p=0.301 (NS)**
	a. Male	13	40.6	16	51.6	
	b. Female	19	59.4	15	48.4	

The above table-7 illustrate that distribution of underfive children according to their age shows that in Experimental group I 8(25%) between 37 to 48 months and in Experimental group II 9 (29.03%) between 49 to 60 months.

With regards to the child birth order, highest percentage of the children were in birth order I in Experimental group I 12(40%) and Experimental group II 14(46.7%). Under birth order IV & III, the lowest percentage of children were equally distributed in Experimental group I and Experimental group II 2(6.7%) and 3(10%) respectively.

In terms of gender of under five children,majority of the children were females in Experimental group I 19(59.4%), whereas in Experimental group II 16(51.6%) were males.

Thus the groups were comparable and homogeneous.

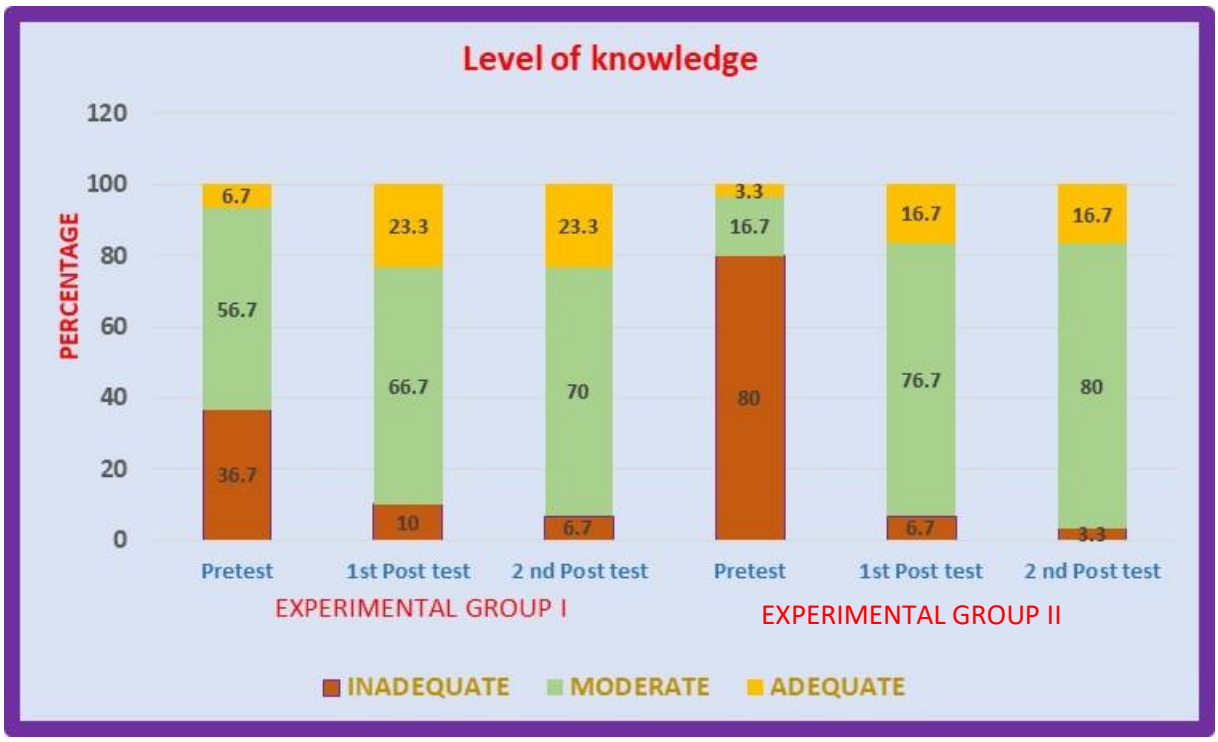
Part IV: Level of knowledge regarding self medication among mothers of underfive children

Table 8:Frequency and percentage wise distribution of mothers of underfive in Experimental group I and II on knowledge regarding adverse effects of self medication.

n=60

Level of Knowledge	Experimental Group-I						Experimental Group-II					
	Pre test		1st Post test		2nd post test		Pre test		1st Post test		2nd post test	
	f	%	f	%	f	%	f	%	f	%	f	%
Inadequate	17	56.7	3	10	2	6.7	24	80	2	6.7	1	3.3
Moderately Adequate	11	36.7	20	66.7	21	70	5	16.7	23	76.7	24	80
Adequate	2	6.7	7	23.3	7	23.3	1	3.3	5	16.7	5	16.7
Overall	30	100	30	100	30	100	30	100	30	100	30	100

The given table 8 illustrate that in Experimental group I, majority of the mothers of underfive children were having inadequate level of Knowledge in Pretest17 (56.7%) and in post test I majority were having moderately adequate level of knowledge 20 (66.7%), whereas in Post test II 21(70%) mothers were in moderately adequate level of knowledge. In Experimental group II, majority of the mothers of under five children were having inadequate pretest knowledge score of 24 (80 %), where as in post test I 23(76.7%) mothers had moderately adequate knowledge, in post test II 24(80%) were having moderately adequate level of Knowledge. It reveals that Nurse Led and Peer Led Health Education has enhanced the knowledge regarding adverse effects of self medication among mothers of underfive children.



HYPOTHESIS TESTING

Part V- Effectiveness of Nurse Led Health Education Vs Peer Led Health Education

H_1: There is a significant difference between mean pretest and posttest Knowledge regarding adverse effects of self medication among mothers of underfive children who undergo Nurse Led Health Education at P $\leq$0.05 level.

Table-9: Effectiveness of Nurse Led Health Education on knowledge regarding adverse effects of self medication among mothers of underfive children in Experimental group I

n=30

Experimental group I	**Maximum scores**	**SCORE**		**Pre Vs 1st post test**		**Pre Vs 2nd post**	
		Mean	**SD**	**Mean Difference**	**'t' value p-value**	**Mean difference**	**'t' value p-value**
pre test	20	11.53	2.55	**2.17**	**t=5.286 p<0.001*** (HS)**	**2.37**	**t=5.758 p<0.001*** (HS)**
1st post test	20	13.7	2.69				
2nd post test	20	13.9	2.46				

-P<0.05 : significant and **-P<0.01 &, P<0.001 : Highly significant**

The above mentioned table reveals that, in Experimental group I the pre test - mean, SD was 11.53±2.55 and the first post test mean, SD was 13.7±2.69, the second post test - mean, SD was 13.9±2.46, the obtained t value is 5.286 in post test I and whereas in II post test the p value is 5.758 which is greater than the table value(P<0.001) which indicates Nurse Led Health Education was effective in improving knowledge regarding adverse effect of self medication among mothers of underfive children. Hence the research hypothesis H_1 is accepted at p <0.001.

Table-10: Effectiveness of Peer Led Health Education on knowledge regarding adverse effects of self-medication among mothers of underfive children

H_2: There is a significant difference between mean pretest and post-test Knowledge regarding adverse effects of self-medication among mothers of underfive children who undergo Peer Led Health Education at P ≤0.05 level

n=30

Experimental Group II	**Maximum scores**	**SCORE**		**Pre Vs 1st post test**		**Pre Vs 2nd post**	
		Mean	**SD**	**Mean Difference**	**'t' value p-value**	**Mean difference**	**'t' value p-value**
pre test	20	9.37	2.51	**3.40**	**t=10.388 p<0.001*** (HS)**	**4.20**	**t=9.424 p<0.001** * (HS)**
1st post test	20	12.77	2.21				
2nd post test	20	13.57	1.92				

-P<0.05, significant and **-P<0.01 &-P<0.001 , Highly significant**

The above table reveals that the pretest, I post test and II posttest mean scores on knowledge regarding adverse effects of self medication wer 9.37±2.51, 12.77 ±2.21 and 13.57±1.92 respectively depicting a mean difference of 3.40 and 4.20 between pretest and I post test and pretest and II post test respectively. The obtained t values were greater than the table values both in I post test (t= 10.388) and II post test (t= 9.424). This shows that the Peer Led Health Education was effective in improving knowledge regarding adverse effect of self medication among mothers of underfive children. Hence the research hypothesis H_2 is retained P ≤0.05 level.

Table-11: Comparison of effectiveness of Nurse led health education Vs Peer Led Health Education on knowledge regarding adverse effects of self-medication among mothers of underfive children.

H_3: There is a significant difference in mean post-test Knowledge regarding adverse effects of self-medication between mothers of underfive children who undergo Nurse Led Health Education and those who undergo Peer Led Health Education at P ≤0.05 level.

n=60

Knowledge Domains	**TEST**	**Maximum scores**	**Experimental group I (n=30)**		**Experimental group II (n=30)**		**Mean Difference**	**'t' value**	**p-value**
			Mean	**SD**	**Mean**	**SD**			
Meaning of self medication	pre test	1	0.87	0.34	0.53	0.5	**0.34**	2.97	0.004*
	1st post test	1	0.9	0.31	0.8	0.41	**0.1**	1.07	0.286
	2nd post test	1	0.9	0.31	0.8	0.41	**0.1**	1.07	0.285
Reason for self-medication	pre test	1	0.36	0.49	0.47	0.51	**0.11**	0.776	0.441
	1st post test	1	0.63	0.49	0.6	0.49	**0.03**	0.261	0.795
	2nd post test	1	0.63	0.49	0.67	0.47	**0.04**	0.266	0.791
Common conditions for administering self medication	pre test	1	0.77	0.43	0.5	0.51	**0.27**	2.193	0.032*
	1st post test	1	0.8	0.41	0.8	0.41	**0**	0	1
	2nd post test	1	0.8	0.41	0.83	0.37	**0.03**	0.328	0.743
Adverse effects of self medication	pre test	7	3.57	1.16	3.1	1.21	**0.47**	1.519	0.134
	1st post test	7	4.43	1.5	4.73	1.11	**0.3**	0.879	0.382
	2nd post test	7	4.47	1.31	5.23	1.19	**0.76**	2.372	0.021*
Side effects of drugs	pre test	6	3.6	1.22	2.8	1.88	**0.8**	1.953	0.056*
	1st post test	6	4.23	1.16	3.7	1.66	**0.53**	1.438	0.155
	2nd post test	6	4.4	1.13	3.93	1.41	**0.47**	1.411	0.164
Dangers of self medication	pre test	1	0.23	0.43	0.53	0.51	**0.3**	2.470	0.016*
	1st post test	1	0.5	0.51	0.53	0.51	**0.03**	0.510	0.612
	2nd post test	1	0.5	0.51	0.57	0.5	**0.07**	0.510	0.612

Right practice to administer the drugs	pre test	3	2.13	0.86	1.43	0.89	**0.7**	3.084	0.003*
	1st post test	3	2.2	0.76	1.57	0.86	**0.63**	3.02	0.003*
	2nd post test	3	2.2	0.76	1.53	0.89	**0.67**	3.099	0.003*
overall	pre test	20	11.53	2.55	9.37	2.51	**2.16**	3.312	0.002*
	1st post test	20	13.7	2.69	12.77	2.21	**0.93**	1.468	0.147
	2nd post test	20	13.9	2.46	13.57	1.92	**0.33**	0.583	0.562

Df -58 *P≤0.05 - Significant

The above table shows that there is a significant difference ($p<0.01$) in the overall mean pretest knowledge and significant difference was found in right practice to administer drugs between Experimental group I (11.53±2.55) and Experimental group II (9.37±2.51), whereas there were no significant differences found in the mean post test-1 and mean post test-2 knowledge scores between Experimental group I (13.7±2.69, 13.9±2.46) and Experimental group II (12.77±2.21, 13.57±1.92). This shows that both the Nurse Led and Peer Led Health Education was equally effective in improving the knowledge of mothers regarding adverse effects of self-medication. Thus the differences found in mean scores were not true difference. Hence the H_3 is rejected.

Part VII - Association of pretest and posttest knowledge of mothers with their demographic variables.

Table No 12: Association between pretest level of knowledge regarding adverse effects of self-medication among mothers of underfive children in Nurse Led Health Education (Experimental Group-I) and Peer Led Health Education (Experimental Group-II) with Selected Demographic data.

n=60

	Pretest (level of knowledge)

Demographic variables	Experimental group I				Experimental group II			
	df	χ2	Table Value	p-value	df	χ2	Table Value	p-value
1. Age of the mothers	6	11.50	12.59	0.175 NS	8	11.24	15.50	0.188 NS
2. Educational status of mothers	12	9.736	21.02	0.639 NS	12	10.83	21.02	0.54 NS
3. Educational status of father	10	9.687	18.30	0.486 NS	12	12.73	21.02	0.389 NS
4. Occupation of mother	10	4.837	18.30	0.9.02 NS	10	10.96	18.30	0.361 NS
5. Occupation of father	10	9.642	18.30	0.472 NS	10	7.514	18.30	0.676 NS
6. Religion	6	7.641	12.59	0.266 NS	6	1.813	12.59	0.936 NS
7. Monthly income	10	6.504	18.30	0.771 NS	10	12.91	18.30	0.229 NS
8. Type of family	4	5.09	9.48	0.434 NS	10	12.91	18.30	0.229 NS
9. Source of information	8	2.795	15.50	0.947 NS	8	11.09	15.50	0.196 NS
10. Age of the child	2	1.857	5.99	0.395 NS	2	1.071	5.99	0.585 NS

11. Child birth order	8	6.495	15.50	0.592 NS	8	4.158	15.50	0.843 NS
12. Child sex	10	0.489	18.30	0.783 NS	2	1.563	5.99	0.458 NS

NS- Not significant, S-Significant HS- Highly significant at p<0.05 level

The above table elicit that there was no significant association found between the Pre-test level of knowledge in the Experimental group I and II with the demographic variables. Hence the difference found in the mean scores is not true difference.

Table No 13: Association between 2nd posttest knowledge scores of Experimental Group-I & II and Selected Demographic data.

H_4: There is a significant association between knowledge regarding adverse effects of self medication among mothers of underfive children in both Nurse Led and Peer Led Health Education groups with their selected demographic variables at P ≤0.05 level

n=60

Demographic variables	**2nd Posttest (level of knowledge)**							
	Experimental group I				**Experimental group II**			
	df	**χ2**	**Table value**	**p-value**	**df**	**χ2**	**Table value**	**p-value**
1. Age of the mothers	8	2.716	15.50	0.951 NS	8	21.30	15.50	0.006* HS
2. Educational status of mothers	12	4.07	21.02	0.980 NS	12	9.188	21.02	0.687 NS

3. Educational status of father	10	7.619	18.30	0.666 NS	12	11.045	21.02	0.525 NS
4. Occupation of mother	10	7.968	18.30	0.632 NS	10	11.184	18.30	0.344 NS
5. Occupation of father	10	6.017	18.30	0.814 NS	10	6.420	18.30	0.779 NS
6. Religion	6	4.902	12.59	0.559 NS	6	1.813	12.59	0.936 NS
7. Monthly income	10	8.96	18.30	0.535 NS	10	10.746	18.30	0.378 NS
8. Type of family	4	7.61	9.48	0.268 NS	4	4.04	9.48	0.400 NS
9. Source of information	8	2.53	15.50	0.960 NS	8	5.523	15.50	0.700 NS
10. Age of the child	2	6.43	5.99	0.04* S	2	1.741	5.99	0.419 NS
11. Child birth order	8	5.0	15.50	0.758 NS	8	4.202	15.50	0.838 NS
12. Child sex	2	2.449	5.99	0.294 NS	2	1.741	5.99	0.419 NS

NS- Not significant, S-Significant HS- Highly significant at $p<0.05$ level

The above table reveals that, the age of the child in Experimental group-I and age of the mothers in Experimental group –II has got significant association with II post test level

of Knowledge of mothers of underfive children. Hence the hypothesis H_4 is accepted at $p< 0.05$ level for the above demographic variables. There is no significant association found between the II Post test level of knowledge in the Experimental group I and II with the demographic variables. Hence hypothesis (H_4) is rejected.

CONCLUSION:

The present study revealed that there is an increased prevalence of parental self-medication among under-five children and many factors are associated with self-medication. The results of the present study shed light on the need for a strong awareness program for the community to prevent mortality and morbidity related to self-medication among the under-five population. This pilot research studied the feasibility, acceptability, and effectiveness of Nurse-Led and Peer Led Health Education programs on the adverse effects of self-medication among mothers of under five children. It was found that the health education program was acceptable and feasible to implement among mothers of underfive children since many of them were not aware of it. Health education programs and mass media education and health campaigns have a high impact on chasing away the self-medication practice of the community regarding their health care making the public more aware of the consequences of self-medication and conducting further research focusing several participants and addressing various aspects on self-medication.

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Conflicts of interest

There are no conflicts of interest.

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