

Report

Behavioral Change Of Pharmacists Towards ORT

An Evaluation of Pharmacists Training Program

**Prepared by:
Research Department
Social Marketing Company**

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BEHAVIOURAL CHANGE OF PHARMACISTS TOWARDS ORT

- An Evaluation of Pharmacists Training Programme

PREPARED

for

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THE REPORT

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Introduction:

SMC has started a training program in 1986 among the pharmacists with a view to motivate their behavioural instinct toward using ORS as a treatment for diarrhoea and thereby avoiding unnecessary prescription of drugs. In addition, knowledge on contraceptive use is also provided. To learn about their extent of knowledge, attitude towards and practice of ORS/ORT in case of diarrhoeal disease and family planning (contraceptives) measures, samples from two different categories, each from untrained (control) and trained (experimental) pharmacists, were interviewed to compare the variations between control and experimental segments.

Profile of the respondents:

Respondents were mostly within mid-age level. Above 90% of all the respondents were owner of the pharmaceutical outlets. Only a few were salaried employee/salesmen. The literacy level was comparatively high in the Bangladesh context. Majority of them are above SSC level. Beside their formal academic background, the pharmacists have undergone through various health related certificate/course like rural medical practitioners course (19% for experimental and 28% for control), para medical certificate course (17% for experimental and 10% for control), etc.

FINDINGS ON ORS & DIARRHOEA:

Treatment of different ailments:

It is evident from the study that the pharmacists, both in the experimental and control groups, normally prescribe drug/medicines for different physical ailments like diarrhoeal disease, family planning, fever, stomach pain, headache, skin disease etc. It is observed that both the groups have shown a common trend in prescribing drugs among the patients. Almost all the pharmacists in both the groups, specially the experimental one (97%) prescribe drug for diarrhoeal diseases and family planning.

Use of Drugs in diarrhoeal disease :

Almost all the pharmacists use drugs as a treatment for diarrhoea in all the cases. A very few prescribe only ORS/saline/ORS without drug. It is evident from this study that both the groups show a similar trend in prescribing 'medicine' as treatment to the diarrhoea affected patients. Where use of ORS/saline/ORS by experimental and control group was 8% and 4% respectively. Ofcourse 26-29% prefer IV fluid as precautionary measure. Two-third of the respondents prescribe antibiotic and other drugs as well. It is observed, out of many drugs, pharmacists prescribe mostly Metronidazole . Antibiotics like Tetracycline , sulphur group drug like Cotrimoxazole/Cotrim etc. are prescribed by both the groups, with a minimum variations. Remarkably it is found that a few pharmacists prescribe high power drugs like Oradexon (steroid group) which is never to be administered in simple diarrhoea.

Dispensing Antibiotics:

Experimental group (59%) has shown a significant favourable attitudes against the use of antibiotics as a treatment of diarrhoea in comparison to the control group (70%). Moreover, the pharmacists of experimental group know better use of antibiotics in serious physical situation of the diarrhoeal affected patient.

Meaning of diarrhoea:

According to World Health Organisation, diarrhoea may be defined as 3 or more times of loose motions per 24 hours. One big volume of loose motion/bowels showing the symptoms of dehydration may also be termed as diarrhoea. A question was asked to find out what the respondents mean by diarrhoea.

It is observed that majority of the respondents could not define diarrhoea. Ofcourse the experimental group have shown a better level of defining the meaning of diarrhoea in comparison to the control group. There has been an increase of 21% in the experimental group (26%) over the control group (5%) in correctly defining diarrhoea. Ofcourse, majority in both groups have provided a vague answer - 'loose motion occurs several times'.

Consequences of diarrhoea :

In determining the major consequences of diarrhoea, the trained pharmacists have shown a distinct margin of knowledge over the control group . The mostly stated major consequences are frequent loose motion, dry mouth, flaccid skin, sunken eyes, irritable physical condition etc.

Knowledge of dehydration :

Remarkably it is observed that both the groups could not show any significant level of knowledge about dehydration. Less than half of the respondents in both the groups could state clearly the concept of dehydration i.e loss of essential body fluid with electrolytes.

Symptoms of dehydration :

But when the respondents were asked to identify the symptoms of dehydration, they could well define various symptoms of dehydration. In identifying the symptoms, experimental group could not overcome the overall level of knowledge among the control group in this regard. The symptoms as reported are frequent thirst, dry mouth, sunken eyes etc.

Viability of prepared packaged saline :

Both the groups have similar level of knowledge about the duration of viability of the prepared packaged saline. Two third of the pharmacists could correctly state the stability of prepared oral saline. Of course about one fourth of the respondent might have confused the stability-period with the message related to home-made saline (of BRAC and other NGOs) which can be preserved for 6 hours, where as the packaged salines (ORSaline etc.) can be preserved for 12 hours.

Meaning of ORT/ORS/IVS:

The term and meaning of ORT is not very clear among the pharmacists. Both the groups, specifically, the experimental group (71%) could define ORS satisfactorily than the control group (56%). But there is a wide variations among 47% respondents from experimental groups who could define the meaning of IVS (Intra-venous saline/fluid).

Of course, both the groups show a similar trend in citing examples of ORS and IVS. ORSaline is the popular example of ORS to majority of the pharmacists.

Administration of ORS:

The study shows that the message of administering ORS as many times loose motion occurs has successfully reached to majority [above 85%] of the pharmacists. Experimental group is marginally ahead of the other group.

Dossage of oral saline:

It is observed that both the groups do not have significant knowledge level on specific ORS dosage, though the experimental groups have shown better indication in prescribing the accurate dossage for child and adult.

When ORS is ineffective ?

Child's life at stake:

Child's life may be at stake due to diarrhoea when there is severe dehydration with signs of shock or is unable to drink due to severe fatigue, convulsion, unconsciousness, prolonged oliguria or anuria with severe and persistent vomiting is observed. A question was asked to find their perception of this issue. It is observed that a large number of the pharmacists (both the groups) are not totally aware when the infants life may be at stake or in other word when ORS is ineffective during diarrhoea. Only about 40% could state one of the many reasons of becoming childs life miserable.

Administering IVS:

Intra-venous Saline (IVS) seems to be very much popular among the pharmacists. It is evident that 80% of the experimental groups and 72% of the control groups suggest to administer IVS to a patient of diarrhoea with vomiting. Moreover, the rationale of administering IVS is not very strong. Inadequate/shallow knowledge may lead to disastrous results to a patient.

Dietary Management:

The most important factor that normal diet should be continued during diarrhoeal episodes featured as the major responses made by the experimental groups (49%) which is 22% higher than the control group (27%). The trained pharmacists have better knowledge on dietary management than the other group of pharmacists.

Brand preference:

There are numerous brands of packaged branded ORS available in Bangladesh. It is observed that ORSaline - SMC brand preference among all the pharmacists is very high. ORSaline is preferred due to its essentially inhertent QUALITY and price-within-the-reach of the consumers.

Selling practice in reality:

This method was used to find out the actual attitude and practice of selling ORS to the consumers. This was done among the respondents from whom data was collected through quantitative questionnaire in both the experimental and control groups. Different set of investigators disguised as consumers were deployed to know the actual selling behaviour. It is observed from this approach of study that experimental group showed a better attitude towards ORT/ORS than the control group but the tendency of using drugs in both the groups was very distinct. Remarkably it is observed that no one (0%) has reported that only antibiotic can be a remedial measure. But in reality during mystery shopping 33% [experimental 24%, control 41%] dispensed only antibiotics.

DISCUSSIONS & RECOMMENDATIONS:

Antibiotics & other drug use:

Almost all the pharmacists use drugs as a treatment for diarrhoea in all the cases. A few prescribe only ORS/saline/ORS without drug. Two-third of the respondents prescribe antibiotic and other drugs as well. It is observed, out of many drugs, pharmacists prescribe mostly Metronidazole. Antibiotics like Tetracycline, sulphur group drug like Cotrimexazole/Cotrim etc. are prescribed by both the groups with a minimum variations. Remarkably it is found that a few pharmacists prescribe 'life saving drug' of high power like Oradexon (steroid group) which is never to be administered in simple diarrhoea. These drugs are to be prescribed after proper bacteriological investigation- 'Culture sensitivity' of stool. Culture sensitivity helps to find out the presence of micro organisms in the stool and degree of resistance (negative/positive) to drugs (tetracycline/ ampicillin/ cotrimexazole etc.). Without any sensitivity test, use of drugs only leads to development of more resistance to drugs.

Behavioral change through training:

It is observed that the knowledge level in dispensing antibiotics among experimental group is more favourable than the control group. Experimental group (59%) has shown a significant favourable attitude against the use of antibiotics as a treatment of diarrhoea in comparison to the control group (70%). Moreover, the pharmacists under experimental group knows better use of antibiotics in serious physical situation of the diarrhoeal affected patient. Similar trend is observed in defining and understanding the overall phenomenon of diarrhoea.

But actual COMMITMENT could not match the reported statement. The process of *mystery shopping* helped to know the actual selling practice showing better attitude towards ORT/ORS among the experimental group than the control group, but the tendency in using drugs in both the groups was clearly high.

It is quite significant that no one (0%) has reported that only antibiotic can be a remedial measure. But in reality during mystery shopping 33% [experimental 24%, control 41%] dispensed antibiotics.

Rationale in dispensing drugs:

The major rationale in dispensing drugs by the pharmacists may be:

-Profit motive: It is obvious that antibiotics and other drugs bringing in more profit ['super normal profit' to majority of the cases in rural Bangladesh] to the pharmacists encourages them to dispense drugs (even multiple drugs).

-Consumers demand and belief: In many cases consumers believe that quick recovery is only possible through drugs and this idea influences to demand for drugs. Moreover, false expectations that 'ORS stops diarrhoea' could have created severe consequences to some patients forcing them to act against ORS.

Conclusions:

It is quite clearly observed that training has changed to some extent [though not significantly] the level of knowledge on diarrhoea, its consequences and symptoms, its treatment etc. and actual selling practice.

Therefore,

more thoughts should be given on existing training curricula, duration and exposure of the learning materials, use of aids and credibility of the course instructor, as well, with a view to behavioural change of pharmacists towards ORS , not ANTIBIOTICS.

So,

CONTINUOUS TRAINING AND IEM CAMPAIGN ON THIS ISSUE MAY LEAD TO CHANGE THE BEHAVIOUR OF THE PHARMACISTS AND RURAL MEDICAL PRACTITIONERS -[THEY ARE THE MAJORITY-PRESCRIBER , MOSTLY IN THE RURAL BANGLADESH] TOWARDS ORS INSTEAD OF DRUGS.

INTRODUCTION

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF THE STUDY:

TRAINING--the imperative technology in enriching knowledge and thereby helping to motivate to bring about desired behavioural change. With this view under consideration, Social Marketing Company (SMC) has started a program to train the pharmacist from 1986. It is obvious, pharmacists are the 'real' salesmen of SMC products and have all the opportunity to push SMC products to the ultimate consumer. Moreover, the pharmacists also have to have knowledge on oral rehydration therapy and proper use of contraceptives. With this considerations, SMC has been conducting a one day training program. In this program pharmacists are defined as any non-medical graduate involved in prescribing and, or dispensing medicine from the pharmaceutical outlets.

Major objectives of this training program is to develop their knowledge of diarrhoeal disease, consequences of severe dehydration and its treatment. In addition to these, basic knowledge on contraceptive is also provided. All these aspects help to boost health management and uphold humanitarian aspect and thereby increases the good will of SMC to the nation.

Since 1986, about 11,000 pharmacists have been brought under this program. It should be mentioned here that, due to lack of fund, this program was suspended for 14 months from April 1989 and was re-introduced in June 1990.

In January 1987, i.e after about three months of introducing the program, Rapport Bangladesh Ltd. had conducted a study on Pharmacist Training Program for SMC. Based on the findings, SMC has expanded this program in all over Bangladesh. Since SMC is spending money and energy, therefore, the management is interested to know the impact of this training program.

A large number of the pharmacists have already been trained. Apparently, it seems, a large number of the target audience is covered. But how far have the objectives been fulfilled. Demand creation and execution of the desire in the positive direction may indicate the success level of any program. In any motivational program, AIDA model may be recalled. Ultimate action and conviction towards the attitude and desire indicates the level of success.

SMC is spending a huge amount of money in this field. Its management wants to see how far this spending has converted to INVESTMENT.

Therefore, some vital issue that emerges are :

- has the training 'mix' been right or does it demand any change ?
- has the training program been successful ?
- how far has it been successful in motivating the target trainee towards its objectives ?

1.2 THE OBJECTIVES:

Research Department of SMC conducted a study under the title : BEHAVIOURAL CHANGE ____ OF ____ PHARMACISTS TOWARDS ORT. To learn about their knowledge of, attitude towards and practice of ORS/ORT in case of diarrhoeal , samples from two different categories, each from untrained (control) and trained (experimental) pharmacists, was interviewed to compare the variations between control and experimental segments.

The general objective of the study was to evaluate the training program designed for the pharmacists conducted by SMC. In this part of the study, aspects related to diarrhoeal disease is focussed.

Therefore, the specific objectives were :

- 1/ To measure their knowledge of diarrhoeal disease, consequences and its treatment and basic idea on contraceptives.
- 2/ To evaluate the comparative use of antibiotics and oral saline as a remedial measure for diarrhoea.

1.3 DIARRHOEA AND DEHYDRATION: A POSITIVE CORRELATION

Diarrhoea may be recognised by having more than two unformed watery stools in any 24-hour period; or any watery stool if accompanied by fever, abdominal pain, and/or vomiting .Immediate consequences due to diarrhoea is the loss of body fluid together with electrolytes. More the intensity of diarrhoea (loose motion) severe the dehydration -- a positive correlation exists. Therefore, Oral Rehydration Therapy/Solution(ORT/ORS) must be started immediately to replenish fluid loss and thus preventing life threatening dehydration.

ORT/ORS should be the priority treatment for diarrhoea, specially for childhood diarrhoea. Majority of the patients can be successfully treated with ORT and continued feeding, and does not require the use of drugs. Widespread unnecessary use of drugs (even multiple) is dangerous to the patients, particularly to the children, because the drugs may cause side effects (even persistent side effects resulting to other chronic abdominal diseases), leads to high level resistance of drugs, and an uneconomic expensive approach of treatment.

Antibiotics are useful for diarrhoea treatment if faeces contain blood indicating the cause of *Shigella* or cholera suspects due to *V. Cholerae*, the patients has severe dehydration. Routine use of antibiotics to a patient may prolong an episode of diarrhoea and may lead towards resistance. Resistance of bacteria towards any antibiotics, resulting those drugs ineffective and drug tolerant. In many countries, most *E. colibacteria* are resistant to Cotrimoxazole, Tetracyclines and other antimicrobials and most *Shigella* to ampicillin. (1)

1.4 POSSIBLE TREATMENT FOR DIARRHOEA: ORS OR ANTIBIOTICS!

Diarrhoea may be caused by :

- Virus : mostly rotavirus
- Bacteria : virtually all are Gramnegative aerobic pathogens
- Protozoa : *Cryptospridia*, *Giardia* and amoebia.

Moreover, diarrhoea is spread by some causative organisms like *rotavirus* and *pathogenic Escherichia coli (E.coli)*, *Vibrio cholerae*, *Campylobacter yersinia*, *Entamoeba histolytica (E.histolytica)* and *Giardia lamblia*.

Treatment of diarrhoeal disease can usually be accomplished with ORS , but recently it is observed from different studies that there is a tendency of prescribing/dispensing antibiotics among the pharmacists.

Antibiotics are useful in cholera to reduce the volume and duration, to shorten the period during which the patients excretes infectious vibrio organism (to prevent spread), and to reduce the volume of rehydration fluids required. Tetracycline 4 times per day for 3 days, or Doxycycline (a single dose) are preferred. Where the *Vibrio cholerae* organisms have become resistant to tetracycline or tremethoprim/sulfamethoxazole may be substituted.(2)

Antibiotics should only be used for dysentery and suspected cholera. Otherwise, they are ineffective and should not be given. According to WHO antiparasitic drugs should be used for:

- Amoebiasis, after antibiotic treatment of bloody diarrhoea for *Shigella* has failed or trphozoites of *E.histolytica* containing red blood cells are seen in the faeces.
- Giardiasis, when diarrhoea has lasted for at least 14 days and cysts or trophozoites of *Giardia* are seen in faeces or small bowel fluid.
- Antidiarrhoeal drugs and Antimetics should never be used. (3)

But it is observed in many developing countries that Amoebiasis is rare in children less than five years of age . Shigelosis can commonly observed in rural Banglesh which can cause bloody diarrhoea without fever. WHO (5) does not advise metronidazole as initial treatment for bloody diarrhoea, but only when treatment of *Shigella* has failed or *E.histolytica* are seen in the faeces.

RESEARCH METHODOLOGY

CHAPTER 2

RESEARCH METHODOLOGY

2.1 METHODOLOGY:

This includes sampling technique, area coverage, sample size and instruments for data collection.

- * *Sampling Technique* : Multistage Random Sampling was adopted. There were 2 segments -- experimental and control. Stages for sampling were as follows:

Stage 1: All the upazilas (administrative unit) where training program were conducted by Training Section of SMC was listed chronologically since the starting of the program till date. A total of 241 upazilas were covered out of 460 upazilas.

Stage 2: Randomly 16 upazilas were selected from these 241 upazilas and another 16 upazilas from remaining 219 upazilas.

Stage 3: Random Selection of respondents from experimental group was done based on the list of trained pharmacists received from the Training section of Business Development Dept. SMC. Respondents for control group were randomly selected from the list of untrained upazila.

- * *Mystery Shopping:*

This method was used to find out the actual attitude and practice of selling ORS to the consumers. This was done among the respondents from whom data was collected through quantitative questionnaire in both the experimental and control groups. Different set of investigators posing as consumers were deployed to know the actual selling behaviour. The investigator acts as a diarrhoea patient demanding for treatment and the investigator purchased the medicine as prescribed by that pharmacists which was later recorded in a sheet. The investigator also seeks advice on dietary management as a diarrhoea patient.

- * *Respondent Category :*

- Sex : Male
- Respondent was a pharmacist having own pharmacy or paid pharmacist working in a pharmacy or Rural Medical Practitioner involved in prescribing or dispensing medicine from their own or hired (or/and paid) pharmaceutical outlets.
- Must had experience in this profession for a period of minimum three months.

2.2 SAMPLE SIZE & AREA COVERAGE:

A total of 32 upazilas were intercepted with a view to get a reasonable representation from all the 4 administrative divisions. Sample size was be as follows :

	Experimental	Control	Total
Quantitative:	300	300	600
Mystery Shopping:	50	50	100
Therefore, Experimental :	350		
Control :	350		
Total :	700		

STUDY AREA:

Experimental [Upazila]	Control [Upazila]
Savar	Rupganj (Narayanganj)
Sonargaon (Narayanganj)	Saturia (Manikganj)
Kishoreganj	Madan (Netrokona)
Gafargaon	Gouripur (Mym.)
Double Mooring (Ctg.)	Raipur (Laxmipur)
Satkania (Ctg.)	Companiganj (Noakhali)
Comilla	Akhaura (B.Barua)
Sonagachi (Feni)	Haimchar (Chandpur)
Boalia (Raj.)	Dhupchachia (Bogra)
Bagmara (Raj.)	Bagha (Raj.)
Saidpur (Nilphamari)	Pirgacha (Rangpur)
Akkelpur (Bogra)	Baliadangi (Thakurgaon)
Khulna	Tala (Satkhira)
Sailakupa (Jhenidah)	Chowgacha (Jessore)
Barisal	Golachipa (Patuakhali)
Basail (Tangail)	Swarapkathi (Barisal)

2.3 DATA COLLECTION & ANALYSIS:

The data was collected by using a well pretested semi structured questionnaire. A panel of experienced field investigator was deployed. The data, after scrutiny/ editing, was analyzed using both computer and mannual tabulation. Statistical interpretation (simple and chi-square analysis) was done.

2.4 STUDY PERIOD:

Data collection: OCT.-Nov. 1991

FINDINGS

CHAPTER 3
FINDINGS

3.1 PROFILE OF THE RESPONDENTS :

Respondents were mostly within mid-age level. Comparatively, the pharmacists of experimental group were marginally younger than the control group pharmacists.

Above 90% of all the respondents were owner of the pharmaceutical outlets. Only a few were salaried employee/salesmen.

The literacy level was comparatively high in the Bangladesh context. Majority of them are above SSC level. Beside their formal academic background, the pharmacists have undergone various health related certificate courses like rural medical practitioners course (19% for experimental and 28% for control), para medical certificate (17% for experimental and 10% for control), etc.

The pharmacists in both the groups, have long experience in pharmaceutical profession. The length of service in this profession is 5+ years of experimental and control groups are 81% and 69% respectively.

Profile: Age	[%]	
Age	Exptl	Control
20-25	8	13
26-30	24	15
31-35	28	27
36-40	22	20
41-45	8	10
46-50	3	5
50+	7	10
Base	300	300

Profile: Occupation [%]

Occupation	Exptl.	Control
Pharmacy Owner	93	90
Salaried Employee	7	10
Base	300	300

Profile: Education [%]

Education	Exptl.	Control
Below SSC	8	8
SSC	32	43
HSC	39	32
Graduate & above	21	17

In addition to above qualification, following % of respondents have been trained in different health related certificate course:

Rural Medical Practitioners course	19	28
Pharmacy certificate/Paramedic	17	10
Base	300	300

Profile: Length of service [in this profession] [%]

Years	Exptl.	Control
<1 year	3	10
1-3	6	9
4-5	10	12
5+	81	69
Base	300	300

3.2 TREATMENT AND DRUG USE:

3.2.1 Treatment for different ailments:

Pharmacists in Bangladesh generally prescribe medicines for different ailments. The scarcity of graduate physicians (doctor : patient ratio is 1 : 6169 [5]) is one of the causes of prescription of drug by the pharmacists, specially in the rural areas where this situation is very acute. It is evident from the study that the pharmacists, both in the experimental and control groups, normally prescribe drug/medicines for different health reasons like diarrhoeal disease, fever, stomach pain, headache, skin disease etc. and even family planning. It is observed in Table 1 that both the groups have shown a common trend in prescribing drugs among the patients. Almost all the pharmacists in both the groups specially the experimental one (97%) prescribe drug for diarrhoeal diseases and family planning.

Table 1: Drug/medicine normally prescribed for different ailments [%]

Ailments	Experimental			Control		
	UA	A	T	UA	A	T
Fever	90	6	96	87	6	93
Influenza	50	32	82	52	25	77
Diarrhoea	76	21	97	80	14	94
Family Planning	27	70	97	25	69	94
Stomach pain	44	45	89	49	40	89
Acidity	28	54	82	35	44	79
Headache	50	44	94	50	40	90
Skin	19	54	73	18	55	73
Base	300			300		

[Multiple Response]

[UA:Unaided, A:Aided, T:Total]

3.2.2 Use of Drugs in diarrhoeal disease :

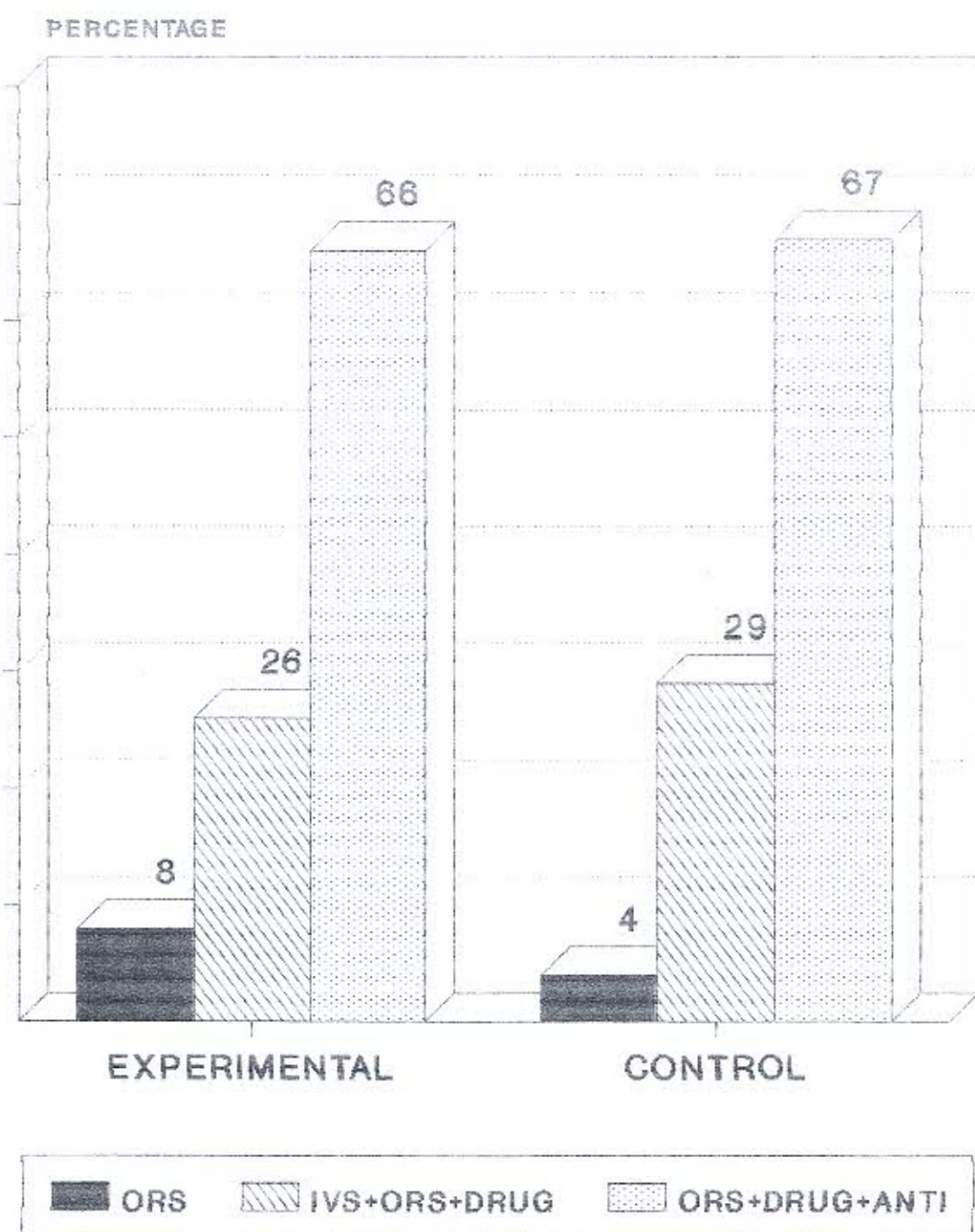
Almost all the pharmacists use drugs as a treatment for diarrhoea in all the cases. A very few prescribe only ORSaline/ORS without drug. It is evident from Table 2 that both the groups show a similar trend in prescribing medicine as treatment to the diarrhoea affected patients. Use of ORSaline/ORS by experimental and control group was 8% and 4% respectively. Ofcourse 26-29% prefer IV fluid as precautionary measure. Two-third of the respondents prescribe antibiotic and other drugs as well. It is observed, out of many drugs, pharmacists prescribe mostly

Metronidazole. Antibiotics like Tetracycline, Sulphur group drug like Cotrimexazole/Cotrim etc. are prescribed by both the groups with a minimum variations. It is also found that a few pharmacists even prescribe 'life saving drug' of high power like Oradexon (steroid group) which is never to be administered in simple diarrhoea. These drugs are to be prescribed after proper bacteriological investigation- 'Culture sensitivity' of stool. Culture sensitivity helps to find out the presence of micro organisms in the stool and degree of resistance (negative/positive) to drugs (tetracycline/ ampiciline/ cotrimexazole etc.). Without any sensitivity test, use of drugs only leads to develop more resistant, more drug-tolerant.

Table 2: Prescribed medicine as treatment for diarrhoea [%]

Medicine/Treatment	Exptl.	Control
ORS/ORS	8	4
IVS+ORS+Drug	26	29
ORS+Drug+Antibiotic	66	67
<i>Drugs are:</i>		
Metronidazole	53	65
Tetracycline	44	64
Teramycin	10	15
Nalidixine	2	7
Flagyl	7	14
Ampicilin	1	7
Stemitil	3	9
Avomin	8	20
Motilon	1	7
Imotil	22	17
Lopramide	5	11
Dexamycin	0	8
Cotrim	0	9
Hysomide	3	6
Doxicap	1	6
Oradexon	1	6
Base [Multiple Response]	300	300

USE OF ORS & ANTIBIOTIC AS A TRETMENT FOR DIARRHOEA



3.3 DIARRHOEA AS PERCEIVED BY PHARMACISTS :

3.3.1 Meaning of diarrhoea:

According to World Health Organisation, diarrhoea may be defined as 3 or more times of loose motions per 24 hours. One big volume of loose motion/bowels showing the symptoms of dehydration may also be termed as diarrhoea. A question was asked to find out what the respondents mean by diarrhoea.

It is evident from Table 3 that the experimental group have shown a better level of defining the meaning of diarrhoea in comparison to the control group. There has been an increase of 21% in the experimental group (26%) over the control group (5%) in correctly defining the meaning of diarrhoea. Ofcourse, majority in both groups have provided a 'vague' answer as loose motion occurs several times.

Table 3: Meaning of diarrhoea as perceived by pharmacists [%]

Meaning of Diarrhoea	Exptl.	Control
Loose motion occurs:		
-2 or more times/24 hours	26	5
-2 or more times/12 hours	4	3
-Several times	57	75
Loose motion+ vomit	10	8
Watery stool	3	3
Stomach pain+loose motion	0	6
Base	300	300

[Multiple Response]

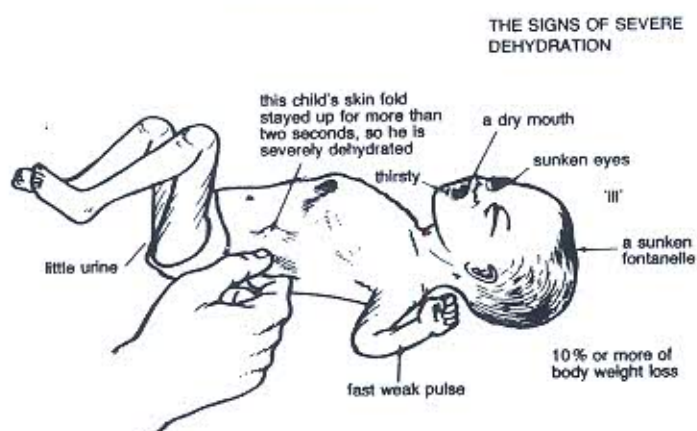
3.3.2 Consequences of diarrhoea :

In determining the major consequences of diarrhoea, the trained pharamcists have shown a distinct margin of knowledge over the control groups. Table 5 shows the difference of knowledge between the two groups.

Table 4: Major consequences of Diarrhoea

Consequences	[%]	
	Exptl.	Control
Frequent loose motion	66	62
Dry mouth	43	29
Flaccid skin	19	12
Stomach pain	24	19
Sunken eyes	29	26
Listlessness/Weakness	23	19
Sunken fontanelle [infant]	10	2
Restlessness/Irritable	10	2
Watery stool	9	3
Red & scant urine	8	2
No appetite	2	1
Can't say	1	8
Base [Multiple Response]	300	300

A SEVERELY DEHYDRATED CHILD



Source: Bangladesh Population & Health Consortium

3.3.3 Knowledge of dehydration :

According to ICDDR,B (6), dehydration causes loss of essential body fluids and electrolytes (salts) from the body. It may be mentioned here, loss of body fluid reduces the blood volume, causing blood to become more concentrated or thickened.

It is evident from the following table (Table 6) that both the groups could not show any significant level of knowledge about dehydration.

Table 5: Knowledge of dehydration [%]

Knowledge	Exptl.	Control
Loss of essential body fluid+salt	49	43
Loss of essential body fluid	50	50
Dry mouth/tongue	3	3
Sunken eyes	1	0
Weakness	3	2
Flaccid skin	0	2
Base [Multiple Response]	300	300

3.3.4 Symptoms of dehydration :

But when the respondents were asked to identify the symptoms of dehydration, they could well define various symptoms of dehydration. In identifying the symptoms, experimental groups could not overcome the overall level of knowledge in this regard over the control groups.

Table 6: Symptoms of dehydration [%]

Symptoms	Exptl.	Control
Frequent thirst	62	66
Sunken eyes	64	34
Dry mouth/tongue	61	54
Flaccid skin	55	53
Weakness	47	51
Sunken fontanelle [infant]	19	21
Red & scant urine	11	13
Cold palm	4	2
Restlessness	8	10
Can't say	3	4
Base [Multiple Response]	300	300

3.3.5 Dispensing Antibiotics:

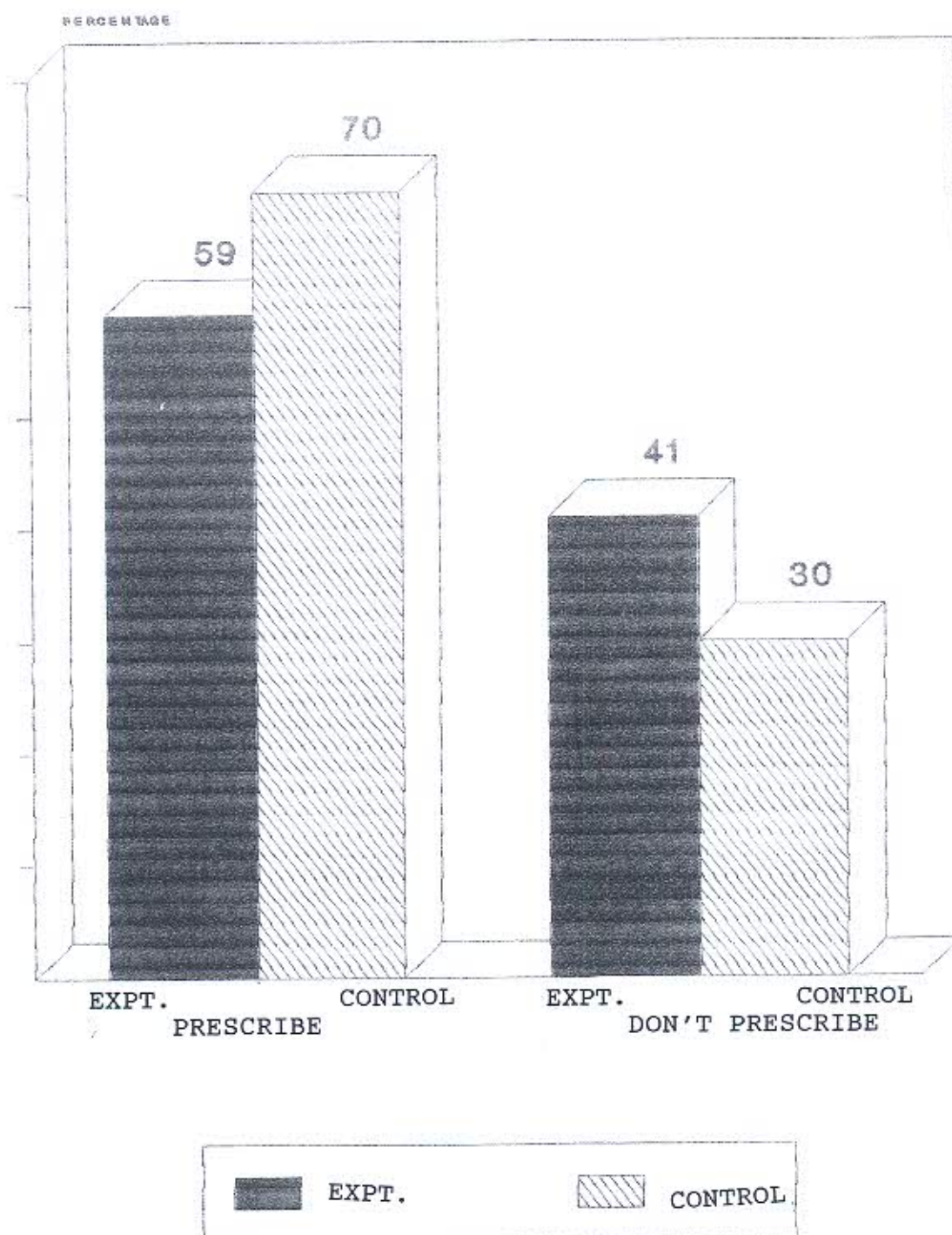
Experimental groups (59%) have shown a significant favourable attitude against the use of antibiotics as a treatment of diarrhoea in comparison to the control group (70%). Moreover, the pharmacists under experimental group knows better use of antibiotics in serious physical situation of the diarrhoeal affected patient.

Table 7: Administering/Dispensing antibiotic during
diarrhoea [%]

	Exptl.	Control
Prescribe antibiotic	59	70
Do not prescribe	41	30
When to prescribe:		
-patient is in serious situation	16	15
-bloody dysentery	7	4
-when ORS is ineffective	9	4
-any time during diarrhoea	2	12
-diarrhoea+ vomiting	3	4
-frequent loose motion	7	1
-eradicate bacteria/virus	13	13
-can't say	2	17
Base	300	300

[Multiple Response]

DISPENSING ANTIBIOTIC DURING DIARRHOEA
A COMPARISON BETWEEN EXPERIMENTAL AND
CONTROL GROUPS



3.4 ORAL REHYDRATION SOLUTION:

Oral Rehydration Solution (ORS) is the simplest means of treatment of diarrhoeal diseases. ORS helps to replace the salts and fluids lost from the body due to excessive loose motion. In his part of the study a few questions were asked to find out the variations in knowledge about ORS among the pharmacists of two groups.

3.4.1 Meaning of ORT/ORS/IVS:

The term and meaning of ORT is not very clear among the pharmacists. Both the groups, specifically, the experimental groups (71%) could define ORS satisfactorily than the control group (56%). But there is a wide variations among 47% respondents from experimental groups who could define the meaning of IVS (Intra-venous Saline/fluid).

Of course, both the groups have a similar trend in citing examples of ORS and IVS. ORS Saline is the popular example of ORS to majority of the pharmacists.

Table 8: Meaning of ORT/ORS/IVS [%]

Can say perfectly	Exptl.	Control
ORT	18	15
ORS	71	56
IVS	78	31
Base [Multiple Response]	300	300

Table 9: Example of ORS/IVS [%]

Examples:	Exptl.	Control
<u>ORS:</u>		
ORSaline	69	60
LJS	10	8
Saltoral	13	12
Medimet	2	1
Opsaline	1	1
<u>IVS:</u>		
Cholera Saline	16	0
Aqua	3	5
Sodium chloride	18	15
Dextrose	24	15
Base [Multiple Response]	300	300

3.4.2 Viability of prepared packaged saline :

Both the groups have similar level of knowledge about the duration of viability of the prepared packaged saline. Two third of the pharmacists could correctly state the stability of prepared oral saline. Of course about one fourth of the respondent might have confused the viability-duration with the one related to home-made saline (of BRAC and other NGOs) which can be preserved for 6 hours, where as packaged salines (ORSaline etc.) can be preserved for 12 hours.[Table 10]

Table 10:Duration of viability of prepared packaged saline [%]

Hours	Exptl.	Control
6 hours	23	24
12 hours	66	63
24 hours	6	4
Can't say	5	10
Base	300	300

3.4.3 Administration of ORS:

Table 11 shows that the message of administering ORS as many times loose motion occurs has successfully reached to majority [above 85%] of the pharmacists. Experimental group is marginally ahead of the other group.

Table 11: Administration of ORS during loose motion [%]

	Exptl.	Control
As many times loose motion occurs	90	85
After interval of 1/2 hour	2	2
Until rehydrated	6	12
Can't say	2	1
Base	300	300

3.4.4 Dossage of oral saline:

Table 12 reports pharmacists knowledge on dossage of ORS. It is observed that knowledge on specific ORS dosage is not clear with both the groups , though the experimental group have shown better indication in prescribing the accurate dossage for children and adult.

Table 12: Dossage of oral saline [%]

Dossage	Exptl.	Control
<u>Children:</u>		
-spoonful of ORS,several times	42	44
-as much as child will take	28	23
-more than the quantity of stool	11	5
-until loose motion stops	14	21
-can't say	5	7
<u>Adult:</u>		
-as long as as loose motion occurs	50	26
-more than the quantity of stool	16	17
-until loose motion stops	28	45
-as per doctor's advise	1	1
-can't say	5	11
Base	300	300

3.4.5 When ORS is ineffective ?

Child's life at stake:

Child's life may be at stake due to diarrhoea when there is severe dehydration with signs of shock or is unable to drink due to severe fatigue, convulsion, unconsciousness, prolonged oliguria or anuria with severe and persistent vomiting is observed. A question was asked to find their perception about this issue. It is observed that a large number of the pharmacists (both the groups) are not totally aware when the patient's life may be at stake or in other word when ORS is ineffective during diarrhoea. Only about 40% could state one of the many reasons of becoming childs life miserable.

Table 13: Childs/infants life at stake due to diarrhoea [%]

Life at stake when:	Exptl.	Control
Child is senseless due to diarrhoea	42	39
Frequent vomit+loose motion	14	18
ORS cant be given by mouth	11	13
Sunken fontanelle	12	16
Feeble pulse	12	16
Infant unwilling to take food/milk	8	6
Can't say	13	12
Base	300	300

[Multiple Response]

3.4.6 ADMINISTERING IVS:

Intra-venous Saline (IVS) seems to be very much popular among the pharmacists. It is evident that 80% of the experimental group and 72% of the control group suggests to administer IVS to a patient of diarrhoea with vomiting. Moreover, the rationale of administering IVS is not quite strong. Inadequate/shallow knowledge may lead to disastrous results to a patient.

Table 14: IVS can be administered during diarrhoea with vomiting [%]

Administering IVS	Exptl	Control
Yes	80	72
No	20	28

When to administer IVS:		
-when ORS can't be given to patient	35	24
-when patient is senseless	8	7
-when patient is very weak	10	12
-when loose motion occurs	9	9
-when ORS+antibiotic are ineffective	1	6
-flaccid skin	1	16
-when vomits	17	17
-when pulse falls down	1	6
-can't say	17	19
Base [Multiple Response]	300	300

3.5 DIETARY MANAGEMENT:

The most important factor that normal diet should be continued during diarrhoeal episodes featured as the major responses made by the experimental group (49%) which is 22% higher than the control group (27%). The trained pharmacists have better knowledge on dietary management than the other groups of pharmacists.

Table 15: Diet of the diarrhoea affected patient [%]

Diet given	Exptl.	Control
Normal diet	49	27
Diet with less spice	7	5
Soft diet	26	47
Liquid/Semi solid	18	20
Less food	0	1
Base	300	300

3.6 BRAND PREFERENCE:

There are numerous brands of packaged ORS available in Bangladesh. It is observed that ORSaline - SMC brand preferred by all the pharmacists. ORSaline is preferred due to its essentially inherent QUALITY and price-within-the-reach of the consumers.

Table 16: Prescribed packaged oral saline & Reasons of prescribing [%]

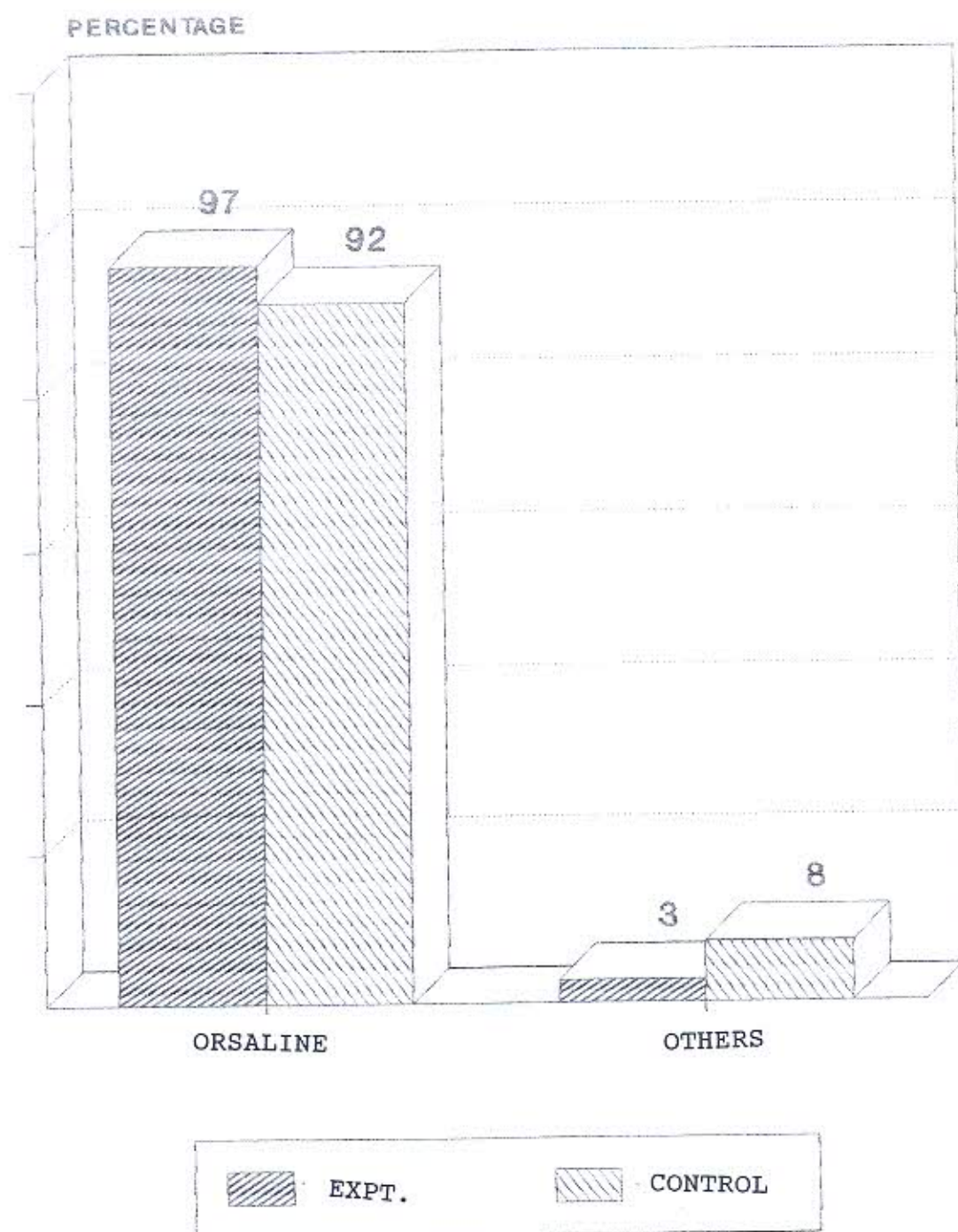
Brands prescribed:	Exptl.	Control
ORSaline	99	99
LJS	42	52
Saltoral	57	49
Opsaline	25	24
Orasol	15	15
Medimet	10	7
Reasons of prescribing:		
ORSaline: -of quality	77	78
-of taste	7	4
-have demand	16	17
-availability	6	2
-low price	4	3
Base [Multiple Response]	300	300

Other Brands: They (respondents-pharmacists) have to keep other brands to satisfy customers need, (if demanded).

Table 17: Preferred brand of packaged saline [%]

Brands	Exptl.	Control
ORSaline	97	92
Saltoral	2	5
Opsaline	1	1
Medimet	0	2
Base	300	300

BRAND PREFERENCE
PRESCRIBED PACKAGED ORAL SALINE



3.7 SELLING PRACTICE IN REALITY:

Observed through mystery shopping

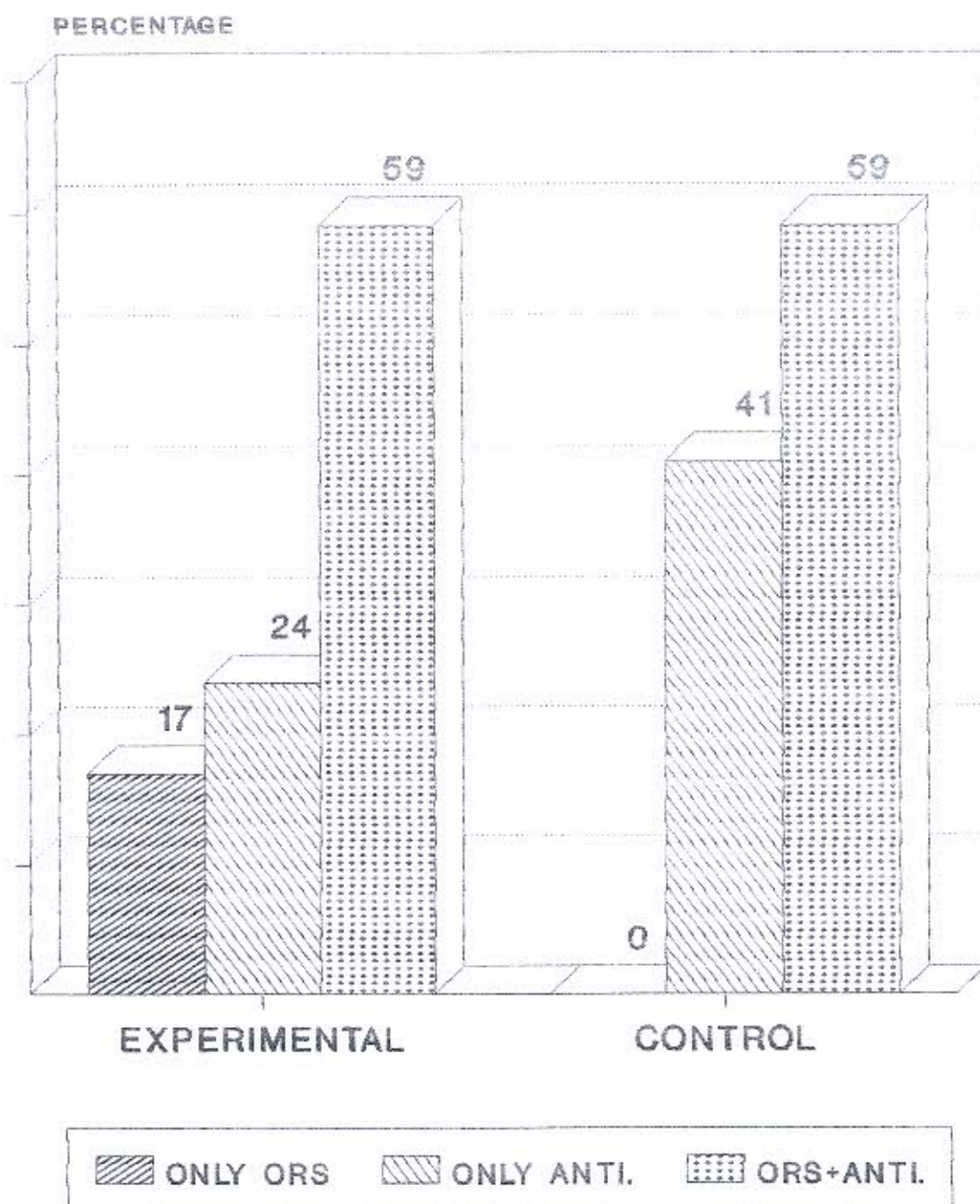
This method was used to find out the actual attitude and practice of selling ORS to the consumers. This was done among the respondents from whom data was collected through quantitative questionnaire in both the experimental and control groups. Different set of investigators posing as consumers deployed to know the actual selling behaviour. It is observed from this approach of study that experimental group showed a better attitude towards ORT/ORS than the control group but the tendency in using drugs in both the groups was very distinctly vivid. Remarkably it is observed that no one (0%) has reported that only antibiotic can be a remedial measure. But in reality during mystery shopping 33% [experimental 24%, control 41%] dispensed antibiotics.

Table 18: Remedial measures during diarrhoea

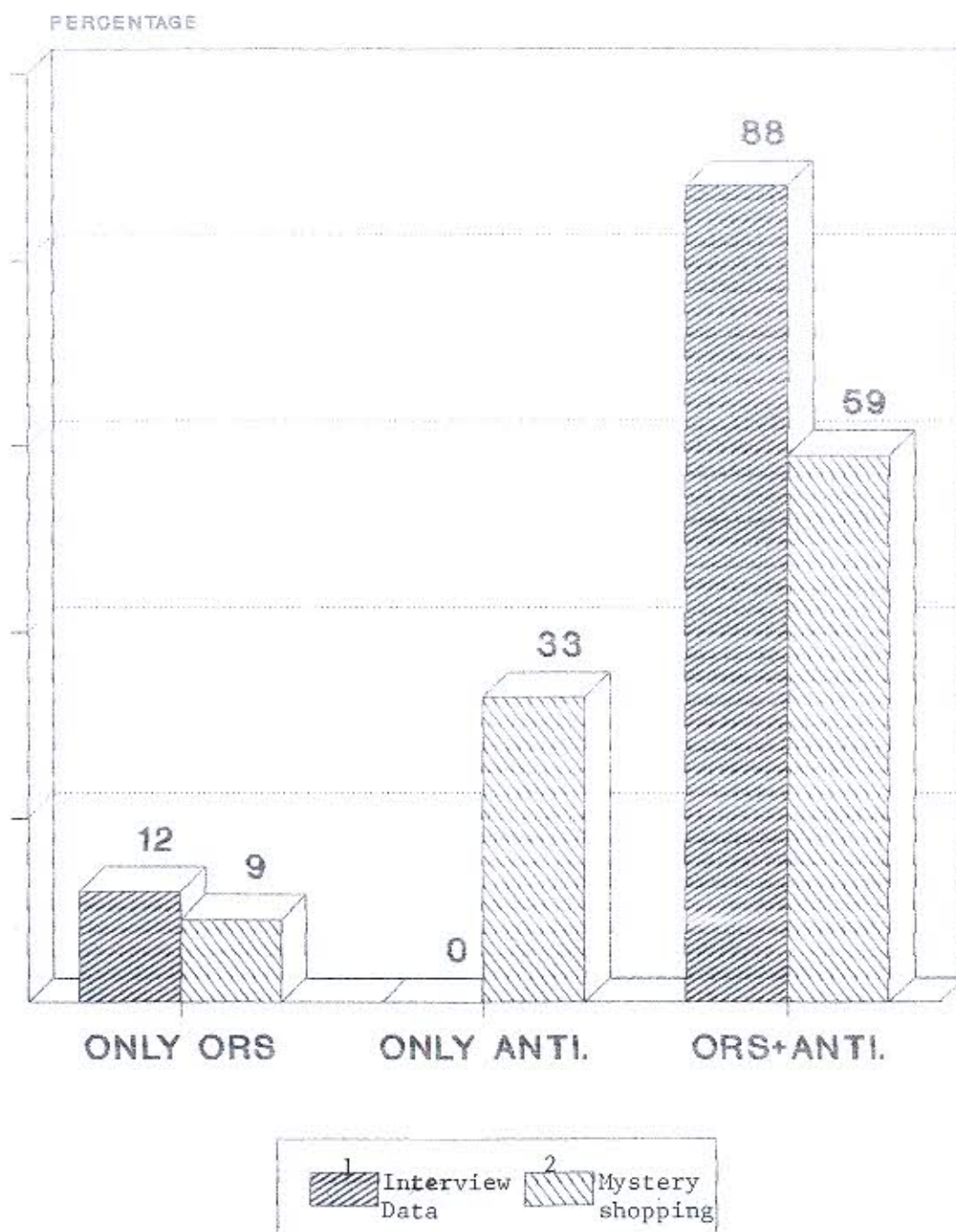
Measures	[%]					
	Experimental		Control		All [E+C]	
	DQ	MS	DQ	MS	DQ	MS
Only ORS	10	17	14	0	12	9
Only antibiotic	0	24	0	41	0	33
Both ORS+antibiotic	90	59	86	59	88	59
Base	50	50	50	50	100	100

[DQ:Data from Quantitative Study; MS:Data from Mystery Shopping]

REMEDIAL MEASURES DURING DIARRHOEA
(SELLING PRACTICE IN REALITY)
(Through Mystery Shopping)



REMEDIAL MEASURES DURING DIARRHOEA Comparison Between Interview & Reality



Note: 1 Data through questionnaire interview,

2 Actual selling behaviour (data through mystery shopping)

Table 19: Dosage of oral saline

[%]

Dosage	Experimental		Control		All [E+C]	
	DQ	MS	DQ	MS	DQ	MS
As long as loose motion occurs	55	28	38	28	49	28
More than the quantity of stools	3	3	0	14	2	9
Until diarrhoea stops	7	17	28	14	18	6
As much the patient can take	34	10	31	0	32	5
Can't say/unwilling	0	17	3	7	2	12
Base	50	50	50	50	100	100

[DQ:Data from Quantitative Study; MS:Data from Mystery Shopping]

Table 20: Diet given during diarrhoea

[%]

Diet	Experimental		Control		All [E+C]	
	DQ	MS	DQ	MS	DQ	MS
Normal diet	62	55	55	52	58	54
Soft diet	52	3	55	10	54	6
Liquid food	24	17	17	10	21	14
Food with less spice	7	7	3	10	5	8
No diet/less food	0	0	3	0	2	0
Base	50	50	50	50	100	100

[DQ:Data from Quantitative Study; MS:Data from Mystery Shopping]

INFORMATION ON FAMILY PLANNING

3.8 KNOWLEDGE ON FAMILY PLANNING :

3.8.1 Awareness of family planning methods :

Awareness level of family planning method particularly contraceptives were found to be very high among the pharmacists (Table-21) of both the groups.

Table 21: Awareness about methods of family planning [%]

Method	Exptl.	Control
Condom	95	86
Pill	98	96
Injection	54	49
IUD	58	48
Tubectomy	47	46
Vasectomy	62	61
Foam	13	16
Natural	3	8
Base [Multiple Response]	300	300

3.8.2 Mode of dispensing pill :

It is observed from the study that majority of the pharmacists both dispense and prescribe medicine to the consumers. Ofcourse, experimental groups do prefer doctors prescription in dispensing drug more than the control groups. 28% of the control group, dispense medicine based on self prescription in comparison to 17% of the other groups. It is remarkably observed that rationale of self prescribing drugs are generally as follows :

- considering patients health and economic condition, specific pills are prescribed.
- unavailability of graduate doctors forces the patients to accept the pharmacists prescription.
- poor/illiterate patients force the pharmacists to prescribe drug/pills.
- pharmacists consider themselves as having adequate experience in prescribing drugs/oral pills.

Table 22: Mode of dispensing pill to the consumers [%]

Mode	Exptl.	Control
As per doctor's prescription	18	15
Self prescription	17	28
Both self+doctor's prescription	61	55
As per consumers choice	28	24
Base	300	300

[Multiple Response]

3.8.3 Contra-indication to pill use :

The experimental groups have marginally more knowledge about possible contra -indication due to pill use than the other groups. Major complications, as stated are blood pressure, cardiac problem, liver disease, diabetes, cancer etc.

Table 23: Contra-indication to pill-use [%]

Contra-indication	Exptl.	Control
Blood Pressure	33	30
Heart disease/cardiac problem	13	7
Lever	2	4
Diabetes	13	9
Cancer	8	7
Kidney/Jaundice	5	11
Asthma	9	6
Pregnant	19	14
Above 40 years	3	8
TB	3	2
Ulcer	8	13
Dizziness	8	9
Unmarried	7	13
White discharge	4	7
Irregular menstruation	5	4
Can't say	20	16
Base	300	300

[Multiple Response]

3.8.4 Available brands at the outlets & perceived side effects:

OVACON- the product of SMC is the most available brand of contraceptives at the outlets (96% in the experimental group and 93% in the control group) followed by Ovostat and Maya.

Any side effect perceived by the pharmacists?

Most frequently stated side effects are nausea (vomiting tendency), dizziness, excessive bleeding/spotting etc.

Table 24 : Available brands at the outlets & perceived side effects [%]

Side Effects	Experimental								Control							
	Ova	Ovo	NQ	Maya	C-5	Mar	Lyn	Nrd	Ova	Ovo	NQ	Maya	C-5	Mar	Lyn	Nrd
Dizziness	22	46	27	57	1	32	31	7	15	36	20	42	1	15	16	2
Vomiting Tendency	43	37	26	44	0	27	26	6	41	33	19	32	1	15	15	2
Weakness	7	6	5	7	0	4	3	1	8	5	3	6	0	2	2	0
Excessive Bleeding	10	10	6	7	0	5	4	4	7	6	3	5	0	2	2	0
Gain in Weight	3	6	3	6	0	2	1	1	2	3	0	3	0	1	1	0
No side effect	23	21	20	15	1	18	16	4	21	23	14	11	1	19	14	1
Can't say	13	14	13	12	0	11	10	3	14	15	15	15	1	10	12	1
Base	288	277	197	264	8	198	177	45	280	254	155	227	12	147	130	12
% of Base:	96	92	66	88	3	66	59	15	93	85	52	76	4	49	43	4

[Multiple Response]

3.8.5 Preferred Brand:

Pharmacists prefer Ovacon followed by Ovostat and Norquest. Pharmacist perceives that the consumers prefer Ovacon followed by Ovostat and Maya.

It is interesting to observe that , in both the groups of preference (by pharmacists and consumers), control groups more prefer SMC brand than the trained experimental groups.

Table 25: Brands normally preferred by pharmacists [%]

Preferred Brand	Exptl.	Control
Ovacon	76	71
Ovostat	56	55
Norquest	26	25
C-5	1	5
Marvelon	17	17
Maya	30	34
Nordette	2	1
Lyndiol	10	17
Base	300	300

[Multiple Response]

Table 26 : Preferred brands & reasons for preferring [%]

31

Major Reasons	Experimental								Control							
	Ova	Ovo	NQ	Maya	C-5	Mar	Lyn	Nrd	Ova	Ovo	NQ	Maya	C-5	Mar	Lyn	Nrd
Good quality	13	11	6	2	0	2	1	1	10	10	4	2	0	2	2	0
Low dose	11	0	0	9	0	0	0	0	8	2	1	2	0	1	0	0
Low price+quality	37	21	8	15	1	5	5	1	35	16	6	24	4	6	7	0
High demand	4	5	1	1	0	1	1	0	5	4	1	1	0	1	0	0
No side effect	2	13	7	3	0	7	2	0	16	15	7	2	1	5	3	0
Base	228	167	79	90	3	51	29	6	213	166	74	102	19	50	51	2
[Multiple Response]																

Table 27: Most preferred brand among consumers perceived by pharmacists [%]

Preferred Brands	Exptl.	Control
Ovacon	46	60
Ovostat	44	30
Norquest	1	1
C-5	1	1
Marvelon	1	2
Maya	6	5
Nordette	1	0
Lyndiol	1	1
Base	300	300

3.8.6 Correlation between price and quality :

It is clearly stated that there is no correlation between high price brand and high quality of pill. The pharmacists (more than 72%) believe that high priced pill is not the pre-condition of high quality. Though the experimental groups (79%) are over the control group (72%) on this issue.

Table 28: High priced pill is of high quality [%]

	Exptl.	Control
Yes	21	28
No	79	72
Base	300	300

3.9.1 Training on health/diarrhoeal disease :

Only 33% of the control group have received training on different fields of family planning (14%), diarrhoea (11%) etc. All the respondents of the experimental groups were trained (100%) on topics like family planning (90%), diarrhoea (70%) etc.

Table 29: Ever received any training on health/diarrhoeal disease [%]

	Exptl.	Control
Receive training	100	33
Didn't receive any training	0	67
Base	300	300

Table 30: Training topics [%]

Topics	Exptl.	Control
Family Planning	90	14
Diarrhoea	78	11
RMP	4	1
Health Management	3	8
Can't say	1	2
Base	300	300

[Multiple Response]

3.9.2 Future Intention to receive training:

The pharmacists those who have received training (experimental) are all (100%) willing to receive further training in future. These pharmacists have visualised the necessity and UTILITY OF TRAINING in real life situation. Among the control group, 11% are reluctant to receive any training -- which may be due to their ignorance of training benefits.

Table 31: Future intention to receive training [%]

Intention	Exptl.	Control
Yes	100	89
No	0	11
Base	300	300

3.10 How to increase the practice of FP ?

The pharmacists believe that promoting specific knowledge about modern methods of family planning by disseminating appropriate knowledge of 'doing right thing as a wise man's decision' and by increasing IEM program and communication campaign may help boost the practice of family planning modern methods-specially in the rural Bangladesh.

Table 32: Suggestion to increase the practice of FP [%]

Suggestion	Exptl.	Control
Create awareness	7	6
Increase IEM program	14	6
Increase communication campaign	47	45
Reduce price	6	6
Can't say	26	37
Base	300	300

CONCLUSION: KNOWLEDGE ON FAMILY PLANNING :

Awareness of family planning methods :

Awareness level of family planning method particularly contraceptives were found to be very high among the pharmacists of both the groups.

Mode of dispensing pill :

It is observed from the study that majority of the pharmacists both dispense and prescribe medicine to the consumers. Ofcourse, experimental groups were found to prefer doctor's prescription in dispensing drug more than the control groups. 28% of the control group, dispense medicine based on self prescription in comparison to 17% of the other groups. It is remarkably observed that rationale of self prescribing drugs are generally as follows :

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- pharmacists consider themselves as having adequate experience in prescribing drugs/oral pills.

Contra-indication to pill use :

The experimental groups have marginally more knowledge about possible contra -indication due to pill use than the other groups. Major complications, as stated are blood pressure, cardiac problem, liver disease, diabetes, cancer etc.

Available brands at the outlets & perceived side effects:

OVACON- the product of SMC is the most available brand of contraceptives at the outlets (96% in the experimental group and 93% in the control group) followed by Ovostat and Maya.

Any side effect perceived by the pharmacists?

Most frequently stated side effects are nausea (vomiting tendency), dizziness, excessive bleeding/spotting etc. observed in different brand by both the groups.

Pharmacists prefer Ovacon followed by Ovostat and Norquest. Pharmacist perceives that the consumers prefer Ovacon followed by Ovostat and Maya.

It is interesting to observe that in both the groups (by pharmacists and consumers), control groups prefer SMC brand more than the trained experimental groups.

Correlation between price and quality :

It is clearly stated that there is no correlation between high price brand and high quality of pill. The pharmacists (more than 72%) believe that high priced pill is not the pre-condition of high quality. Though the experimental groups (79%) are over the control group (72%) on this issue.

How to increase the practice of FP ?

The pharmacists believe that promoting specific knowledge about modern family planning methods by disseminating appropriate knowledge of 'doing right thing as a wise man's decision ' and increase of IEM program and communication campaign may help boost the practice of modern family planning methods-specially in rural Bangladesh.

Training on health/diarrhoeal disease :

Only 33% of the control group have received training on different fields like family planning (14%), diarrhoea (11%) etc. All the respondents of the experimental groups are trained (100%) on topics like FP (90%), diarrhoea (70%) etc.

Future Intention to receive training:

Pharmacists who have received training (experimental) are all (100%) willing to receive further training in future. These pharmacists have visualised the necessity and UTILITY OF TRAINING in real life situation. Among the control group, 11% are reluctant to receive any training -- which may be due to their ignorance of training benefits.

CONCLUSION:

Both the groups are significantly aware about the modern methods of contraception. It is observed that the pharmacists dispense and prescribe drugs based on doctors advice and/ or self experience. Experimental groups have marginally more knowledge about possible contra-indication due to pill use than the control group. Ovacon is the most available and preferred brand among the pharmacists followed by Ovostat.

The pharmacists believe that appropriate IEM campaign may help to boost the practice of modern methods of family planning- specially in rural Bangladesh.

2. Technical Literature Update, PRITECH, Vol.VI, No.5, USA, 1991
3. WHO, 1990
4. Dialogue on Diarrhoea, Issue # 43, USA, 1990
5. BBS, GOB, 1990
6. ICDDR,B: Manual on Treatment & Prevention of Diarrhoea, 1984