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SELF-MEDICATION AND ITS IMPACT ON ESSENTIAL DRUGS SCHEMES IN NEPAL:

A SOCIO-CULTURAL RESEARCH PROJECT

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Much research work, particularly in developing countries, at present goes unreported. The reasons for this include the intense competition to publish in the scientific press, and difficulties in matching the research resources of developed countries. The DAP research series was established to provide a forum for the rapid distribution of data and findings relevant to critical areas of drug policy and use. The Action Programme has a firm commitment to national operational research as part of its direct country support. It is also strongly committed to making the findings of such studies widely known and accessible. While every effort is made by the Programme to support studies of the highest possible quality, research skills and resources will vary from country to country. Documents in the DAP research series reflect this variation, and range from reports of very small scale studies, undertaken with minimal resources, to major global research involving substantive financial, scientific and editorial input.

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1. BACKGROUND

Many studies have documented the problems relating to medicines in the developing world (1-10). In large numbers of these countries rural populations have no or very limited access to appropriate and affordable drugs. Developing countries have insufficient financial means to purchase the necessary drugs; and frequently management and health care infrastructure are less than adequate to ensure the availability of essential drugs in the rural areas. As a result, people have to rely on the private health care system and herbal medicines where these are still available.

Nepal is no exception to the above. Although the country has a population of 18.5 millions (1988 data), there was only 96 hospitals, 18 health centers, 816 health posts and 155 Ayurvedic units to serve these people. The government owned pharmaceutical organization is unable, due to financial limitations, to ensure an adequate supply of allopathic drugs throughout the year. There is a constant shortage of drugs at the health posts. The annual consignment of drugs supplied to the health posts, as provided for in the regular budget, lasts only for three to five months. There are no other resources for ordering more drugs until the following year's supply is due. It is estimated that less than 20% of rural health care are provided by public health care institutions.

Most of the year people are thus forced to turn to the private market for their health care. This consists of drug shops and various types of practitioners of traditional medicine (Ayurvedic, Chinese, homeopathic etc.). Also included in this category are spiritual practitioners such as shamans, priests, dhami/jhankris[1], and astrologers. People also have the option of using herbal medicines (roots, grasses, plants etc.) which they can either collect themselves in the forests or purchase from practitioners or shops.

Self-medication is an often chosen practice in Nepal. This research study took as its basic premise that - given the limited availability of public health care services - it would not be possible nor desirable to try to eliminate this practice. Instead the study aimed at finding ways of using self-medication to strengthen primary health care in Nepalese villages through educating providers and consumers in how to avoid the misuse of drugs and how to prevent the occurrence of hygiene - and nutrition related diseases.

The general aim of the study, therefore, was not only to obtain information about various methods of self-care and medication in the context of consumers and providers; but more importantly to identify and evaluate intervention strategies which could improve the health and well-being of the communities. Having collected information on the use of beneficial and harmless medications in self-care, a system could be designed to discourage the use of inappropriate, unnecessary and harmful drugs, including vitamins. Another important part of the intervention strategy would be to attempt to internalize important primary health care elements into the self-care system, i.e. oral rehydration therapy (ORT), immunizations, sanitation and hygiene, improved nutrition, family planning, first aid. Finally, the research would seek to explore the options for community participation and community supervision in the self-care system.

The research project was originally proposed by the WHO Action Programme on Essential Drugs and later adapted to a Nepalese context by the principal investigators: Dr K. Kafle and Mr R. Gartoulla. Financial and technical support was provided by the Action Programme through a grant of the Swedish International Development Authority/Swedish Agency for Research Cooperation in Developing Countries (SIDA-SAREC). Mrs A. Reeler, anthropologist, assisted in the preparation of the final report.

[1] Dhami/jhankris are shamans who exorcise evil spirits from the bodies of sick people. They use drums and sticks in their night-long healing rituals.

2. OBJECTIVES

The overall objectives of the study were to gather information on:

1. The various methods of self-care.
2. The types of therapy used by consumers and providers.
3. Knowledge, attitudes and practices concerning drug use in self-care, including socio-cultural aspects.
4. The referral system between different health care providers.
5. The possibilities of internalizing important primary health care elements into the self-care system.

3. RESEARCH DESIGN AND METHODOLOGY

The research was divided into two phases. The first phase of ten months was devoted to gathering information on self-care patterns and providers in the selected areas. The second phase, also of ten months' duration, consisted of educational interventions and two subsequent evaluations of their effectiveness.

Makwanpur district was chosen because of its multi-ethnic groups of different socio-cultural backgrounds and because of its urban and rural distribution of villages, it was assumed this might have influences on self-medication practices. Within the district of Makwanpur, Padam Pokhari Village (Terai area) and Makwanpur Gadi Village (Hill area) were selected because of their heavy population concentration which would facilitate data collection.

4. COLLECTION OF INFORMATION: PHASE 1

This phase included a preparatory period of two months during which Makwanpur district was mapped in terms of ethnicity and geography. Prominent villagers, such as community leaders, elderly, shamans, keepers of drug shops, priests, vaidhyas, were contacted and given explanations about the purposes of the research. The preparation also included field-testing of an in-depth, open-ended questionnaire for households and providers. Interviews with traditional leaders, drug-sellers and community leaders were also carried out.

The survey sample was drawn from ten percent of the households, ten percent of the population and ten percent of each ethnic group, using a random number table. The sample was stratified and proportionate according to the above criteria. In the following this sample will be referred to as the MP sample.

The MP sample consisted of 2 050 people and 319 households. Nine ethnic groups were represented in the sample, the majority belonging to the Tamang group. Of the 319 households, 138 came from Makwanpur Gadi village (886 people) and 181 from Padam Pokhari village (1 164 people). There were almost equal numbers of men and women.

Methods

1. An in-depth, open-ended questionnaire administered to the MP sample. This questionnaire consisted of general demographic and socio-economic questions as well as questions on illness in the last 2 weeks, treatment strategies and self-medication.

2. Interviews of traditional healers, drug-sellers, and community leaders.

3. Group interviews of entire families from the sample.

4. Observation of how the households use their "drug-bag" (this bag may contain herbal and/or allopathic medicines, stones, soil or chemicals believed to have healing powers). Also observation of ritual processes in connection with health care and narrative descriptions of self-care processes.

5. Intensive study of a selected number of cases of self-care.

6. Observation of drug storage and dispensing practices of providers.

Personnel

Two principal investigators, various consultants in the fields of health education and statistics, and a field supervisor were responsible for the research design, pre-testing of questionnaires, training of the two research assistants, supervision and evaluation. The data collection was done by the research assistants.

Results

General

Most people in the selected areas are engaged in agriculture. The population is poor and more than half of the people are totally illiterate. Life expectancy is low in Nepal, 53.02 years (1988 data), and the infant mortality is 106 per 1 000 (1987 data). Average household size is 6.4 people, most household consisting of parents and children. Only about 45% of the population have access to safe drinking water and more than 80% have to use the forest to relieve themselves. The sanitary situation in the research area is thus very inadequate which again is reflected in the disease pattern. Diarrhoea and dysentery are among the most common diseases. Other common complaints are fever, cough, and vomiting.

Providers

There is a district hospital with 25 beds, 12 health posts and a public health office in the area. There is also an Ayurvedic dispensary. There is a total of 72 other providers in the area, of whom 41 participated in the survey. Those excluded consisted of 2 health assistants, 1 community leader, 27 exorcists and 1 shaman.

The providers included in the survey are listed below:

Interviewed providers	Numbers
Traditional healer	35 men
Modern drug seller	2 men
Community leader/traditional healer	2 men
Community leader/modern drug seller	1 man
Traditional healer/modern drug seller	1 man
Total	**41 men**

More than 40% of the providers were illiterate.

These providers use more than 20 traditional medicines as well as allopathic drugs such as tonics, tetanus toxoid (TT), antitetanus serum (ATS), cough syrup, paracetamol, antibiotics, sulphaguanidine and ENT drops.

Households

Out of the 2 050 people in the MP sample 157 were sick, that is 7.7% of the population. Fifty seven people of the sick population were self-medicating, that is 36.3%. It must be cautioned here that self-medication in this research has been defined as any medication obtained and used without consultation with a qualified, allopathic practitioner. In the following self-medication therefore also includes medicines obtained in consultation with shamans, traditional healers, and other types of traditional practitioners. Self-medication can consist of allopathic and/or traditional medicines and the two types cannot be distinguished in some of the research tables.

Methods of self-medication

The medicines used for self-medication were obtained from one or more sources. Only five households of the sample had a drug bag, or kit-box as it is also called, containing traditional and/or modern medicines.

Method	Persons	%
Buying allopathic medicine	23	40.3
Roots/traditional medicine (mainly from forest)	14	24.6
Shamans/priests	23	40.3
Vaidyas' medicine	1	1.8
Total	**61**	**107.0**

As there were only 57 self-medicating people, some people used more than one method (that also explains the 107%).

It is interesting that more than 40% bought allopathic medicines in spite of the fact that there are much fewer sources of allopathic medicines than traditional medicines. The data do not provide a complete explanation for this purchasing pattern but it indicates that allopathic drugs are quite popular in these areas.

People were asked about their expectations with regard to self-medication. More than 80% replied that they were hopeful that self-medication would result in recovery but 12.3% were only using this method because there were no other options. Approximately 5% had a "total" belief in the effectiveness of self-medication. When compared with the actual recovery, 45 people out of the 57 sick had not recovered within 14 days. Being "hopeful but uncertain" therefore seems to be a realistic evaluation of the recovery prospects.

People were also asked how they obtained their knowledge of self-medication. About three quarters had learned from others and the rest claimed to have learned the subject by themselves. Sources of information about self-medication were identified as follows:

Source of information	Persons	%
Shopkeeper	14	24.14
Dhami/Jhankri	17	29.31
Friends	11	18.96
Self-known	13	22.41
Others	3	5.18
Total	**58***	**100.0**

* **Note**: One respondent sought advice from both a Dhami/Jhankri and a shop-keeper.

When asked if they would use any alternatives to self-medication in case of no relief, more than 77% replied that they would search for other services. The large majority identified the hospital and the rest health posts or traditional healers. However, 7% of the sick people felt that there were no alternatives to self-medication.

93% of the respondents had no knowledge about possible side-effects or adverse effects of medication. Nor did they have any knowledge of conditions during which medicines should not be taken (e.g. pregnancy). Approximately 5% identified "evil spirits" as a condition where medicines should not be taken. Less than 2% knew about side-effects. It is worth noting that providers were no more knowledgeable about side-effects or adverse drug reactions than the patients. But less than 20% of the providers felt that their own medications might not be appropriate.

According to the data, the monthly expenditures on medicines were less than 50 Rs. for almost three quarters the self-medicating people and less than 100 Rs. for about 88% of this sample. The monthly cash income is less than 701 Rs. for 79.3% of the households. Whether the cost of medicines

is prohibitive or not in the local context is difficult to determine here. The interviewed providers felt that due to the effectiveness of self-medication, all socio-economic strata of the population used this method.

All of the respondents spent less than one day obtaining medicines (number of hours not available in the data).

5. INTERVENTION STUDY: PHASE 2

The analysis of the data from phase 1 identified several problem areas for intervention. Among these were the prevalence of various communicable diseases, in particular gastro-intestinal conditions, and the prolonged duration of illnesses. The economic implications of this prolonged duration included loss of work-days and expenditures on medicines.

Although a significant number of people were practising self-medication, only a very low proportion got information about medicines from the various sources in the community (shop keeper, Dhami/Jhankri etc). The majority of people (patients and providers) had no knowledge about side-effects of drugs or conditions during which medicines should not be used.

The intervention goals were therefore identified as follows:

Consumers

1. To reduce the incidence and duration of illnesses in the community.

2. To reduce the economic costs of illness (work-time lost and cost of medicines).

3. To increase the number of people who use appropriate self-medication by:

   a. promoting a belief in the effectiveness of self-medication and reducing the number of people who do not seek any treatment at all;

   b. increasing the proportion of people who buy essential, necessary and appropriate drugs from medical stores (drug shop);

   c. educating on side-effects and conditions during which drugs (and herbs) should not be used;

   d. promoting the use of drug bags/kit-boxes for home use;

   e. increasing the proportion of people who consult with shamans on illnesses and appropriate medicines within these healers' field of knowledge;

   f. increasing the proportion of people who collect and use appropriate herbs.

4. To inform people about alternatives to self-medication (seeking qualified advice).

Providers

1. To increase the number of health providers in the community who are knowledgeable about medications.

2. To encourage shop keepers and traditional healers to sell/distribute appropriate medicines, including ORT.

Intervention strategy

Having identified the goals of the intervention, this phase was designed in such a way that the impact of the intervention could be measured. Padam Pokhari was selected as the intervention area, while Makwanpur Gadi was used as a control area in which no intervention would take place.

A training programme was designed for all sampled households and providers in the intervention area. There were 12 training centers and 30 sessions of two hours duration each. One family member from each of the households participated. Because of migration there were only 162 households left from the original sample of 181. The trainers used visual aids such as posters, banners, charts, specimens of herbs and plants, display boards and mats, and gave examples of drugs (herbal and allopathic) used in first aid treatment. The use of a kit-box/drug bag with medicines was also demonstrated. In addition, every trainee was provided with a booklet and other written information at the beginning of the programme. Six households were also provided with a kit-box containing both modern and traditional medicines. If a trainee missed a session, a follow-up visit would be made to his/her household to cover the contents of that session.

A training programme for the providers was organized at the same 12 centers. Only 14 providers out of the 20 in the intervention area participated. These were 12 traditional healers and 2 drug-sellers (shop keepers). For one week they were trained together with the household representatives. The second week a separate training course was organized to suit the nature of their work as providers. Three providers were given a kit-box containing modern and traditional medicines.

The subjects covered in the training were those identified as intervention goals, i.e. how to prevent occurrence of hygiene-related illnesses, appropriate medication etc (see above). In addition, information was given on personal hygiene, nutrition, indications for when and how to use ORT, appropriate and effective ways of using drugs including side-effects and contra-indications, family planning and child care, immunization and sanitation. An example of the intervention plan for consumers is attached as an annex.

Evaluation

The effect/impact of the training was evaluated two and six months later. This was done by administering four types of questionnaires to the respondents in the intervention area and the control area. The first questionnaire sought information on demographic issues and general health condition. The second was administered to sick households. The third questionnaire aimed at healthy households and sought to evaluate attitudes towards medication in hypothetical illness situations. The fourth questionnaire was for the providers only. The questionnaires covered the topics of the training course. It should be noted here that the samples of sick and healthy households would vary in the 4 months between the 2 evaluations. In addition to the administration of questionnaires, observation of dispensing practices of providers was carried out.

The data analysis does not identify any changes in results in the four months between the two evaluations. The reason for this is not quite clear but it is possible that the deviations were too small to be significant. However, the differences between the intervention area and the control area have been identified as follows:

Consumers

More people in the intervention area had knowledge about preventive measures such as immunization, hygiene, nutrition, family planning and sanitary practices. This was also the case with treatment strategies, where respondents in the intervention area were more likely to start immediate treatment in case of illness (this was one of the intervention goals). The intervention strategy was also successful in increasing the number of households who said they would use the health post or hospital in case of wounds and who in general would seek qualified advice if no recovery was obtained. This should be seen in comparison with the control area where more people felt that any illness could be treated by shamans.

In terms of oral rehydration therapy the intervention also proved effective. More people in the intervention area knew how to prepare and use ORT. With regard to medication in general, households who had participated in the training seemed to spend less time and money on obtaining medicines.

However, some of the evaluation results are less clear-cut. More respondents (from the healthy-household sample) in the control area answered that they would seek treatment in case of illness. Similarly, there were more people in the control area who knew about side-effects of medicine and nutrition. Compared to people in the intervention area, more respondents in the control area had knowledge about conditions during which medicines should not be used. Another interesting observation was that there was a significant increase in the number of kit-boxes/drug bags containing medicines in the control area between the two evaluations.

Providers

In the case of the providers the intervention was also successful overall. More providers in the intervention area knew about various aspects of self-medication in general. When the drug sellers of the two areas are compared (only 2 drug sellers in each area), the evaluations show that the trained drug sellers had acquired knowledge about essential and appropriate drugs. Besides, when all the providers in the two samples were interviewed on these two topics, more providers in the intervention area knew about them.

Twice as many providers in the intervention area knew about correct storage of drugs and simple prescribing principles such as not to dispense antibiotics for simple fever and headache. Knowledge about the treatment of diarrhoea had also improved with the training. Providers in the intervention area recommended the use of ORT to prevent dehydration and herbs while the providers in the control area recommended plain water and treatment by shamans. Knowledge about how to prepare ORT was non-existent in the control area while in the intervention area it was partially or totally correct. Responses on the use of metronidazole for dysentery were also correct in the intervention area while incorrect in the control area.

Views on the expertise of shamans also varied between intervention and control area. In the latter the opinion was to consult these in cases of fever while in the former allopathic medicine was recommended for such conditions. Furthermore, in the control area the use of allopathic medicines by shamans was felt to be harmful while providers in the intervention area pointed out that shamans could increase their own reputation by referring patients to allopathic health institutions.

The evaluation also showed positive effects of the training in terms of preventive knowledge, especially immunizations, nutrition, family planning and knowledge on what types of allopathic medicines could be kept in the kit-box/drug bag for home use.

Knowledge on the advantages of herbal medicines (cheap, fresh etc) had also improved in the intervention area. But interestingly, more providers in the control area suggested to use local herbs for cheap treatment in connection with another question. The data do not explain this disparity which may have been caused by the way the questions were phrased or presented to the respondents.

More respondents in the intervention area "suggested that the treatment should be according to disease" to save money and that the patients might have to be referred to other treatment providers. However, providers from both areas would refer patients with fracture, severe conditions or long duration of illness to the hospital.

Providers in the intervention area were more aware of conditions during which medicines should not be taken (pregnancy, diarrhoea, hepatitis etc.) Disturbingly, the exceptions to this were the drug sellers who were not aware of these contra-indications.

The researchers also carried out observation of the practices of drug sellers. Dispensing practices had improved in the intervention area and conditions for drug storage in the shops were also significantly better.

The evaluation of the impact of the training of providers seem to be more transparent than was the case with the evaluation of the consumer training. With the exception of the concept of essential drugs, there is a clear difference in the level of knowledge between trained and non-trained providers. The observation of the practices of the drug sellers confirm this positive difference. Given the Nepalese situation with its lack of public health care institutions in the rural areas, this type of integrated training of private allopathic and traditional practitioners may be the most cost-effective solution to the health problems of rural villagers.

6. DISCUSSION

Information collection

The first phase of this research revealed a health situation in the communities marred by hygiene-related diseases (gastro-intestinal conditions, diarrhoea etc.). In the absence of a public health care system with sufficient supplies of essential drugs, most people were turning to the private market for treatment. Private practitioners in this area included many types of traditional healers and two drug shops. In addition, some community leaders dispensed allopathic or traditional medicines. Prior to the training, most of these providers had very little knowledge about preventive measures or the appropriate use of medicines. The same was the case with consumers.

A very large amount of data were collected; of varying relevance. The data on self-medication are very interesting although hard to compare with other research data. This is because self-medication in this project has been defined to include all types of medication, allopathic or traditional, obtained without the consultation of a qualified, allopathic practitioner. In other words, medicines obtained from traditional specialists are also considered "self-medication", which is rarely the case in other research studies.

A very large amount of time was also spent on collecting data. Roof types and ownership of house, for instance, were collected to give information on socio-economic status. Data on ethnicity

were collected and analysed to better understand differences in self-medication. Likewise, the data analysis produced a large number of tables on the behavior of healthy versus sick but not self-medicating versus sick and self-medicating respondents in the two areas. All these data were not directly useful in the research as hypotheses underlying the reason of their collection and analysis were not clearly formulated at the beginning.

However, the research did provide some important information on attitudes and practices of consumers and providers. And most important, these results were used to design a relevant educational intervention.

Evaluation of intervention

The mixed results of the evaluation of consumer training cannot be explained by the existing data. Some subjects seem to have been misunderstood by the consumers receiving the training, for instance the educational messages on side-effects of medicines. Retrospectively, it is difficult to explain the reasons for this. One possibility is that this message was given emphasis in the written material rather than in the oral and visual messages. Given that a very large proportion of the Nepalese population is illiterate, the distribution of any written material seems hopeful at best. There may be other explanations, such as a different and less effective health educator on this subject. Or yet again reasons may be embedded in the cultural cognition of the people, in their traditional perceptions of how medicines and healing works. A future research project could try to conduct an in-depth, anthropological investigation into some of these issues.

Similarly, it would be interesting for future research projects to look at the "spill-over" effect of training. Using the above described methods, researchers could try to identify how kit-boxes and knowledge about side-effects of medicines increased in the control area. Was it through contact with people who had already undergone the training or were there other sources not described in these data?

The evaluation of the training of providers yielded more homogenous results. The training of providers proved to be a very effective way of improving preventive and curative practices in the community. This training was in particular commendable for the way in which it sought to integrate various systems of medicine into an appropriate referral system for patients. The intervention strategy correctly reflected the reality of the treatment scenario of the people rather than ideological or professional categories.

Overall the intervention seems to have had a positive effect on medication attitudes of consumers and providers. Although most questions were hypothetical, actual observation of practices in shops did reveal an improvement. Some intervention goals may seem less relevant (such as the emphasis on promoting a total faith in medication) but other messages on prevention and appropriate use of medicines were very important and worthwhile.

7. CONCLUSION

The strength of this research project is its emphasis on the use of the research findings. Far too many research projects have concentrated solely on collecting data for scientific purposes without considering how the results could be used to improve the health situation of the respondents. The aim of this research project was more practical, namely to use the research results to strengthen primary health care in the selected areas. Having identified the main health problems of the communities, an intervention was designed to improve the situation. And the intervention seemed to have been quite effective in achieving this although it is unclear from the data analysis what the trends were after two and six months' evaluation.

Future research could use the baseline information in this study and, rather than conduct new surveys, look specifically at some of the interesting deviations from expected results, e.g. the increase in side-effect knowledge and drug-kits in the control area. Such information would be important if this type of integrated primary health care training is to be repeated on a broader scale in Nepal.

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ANNEX

INTERVENTION PLAN: SELF-MEDICATION
(consumers)

INTERVENTION PLAN: SELF-MEDICATION (CONSUMERS)

No.	Problem	Intervention goal	Intervention strategy	Target group	Activities
1.	Prevalence of various communicable and non-communicable diseases particularly gastro-intestinal, and general symptoms.	Reduce the incidence of illness.	Education on: Personal hygiene. Nutritional supplement.	Households with sick person during the survey (N=79) particularly those who did not practice self-medication. General public of Padam Pokhari.	Group talk. Posters. Distribution of pamphlets. Schools.
2.	Prolonged duration of illness from less than one week to 4 years.	Reduce the duration of illness.	Education on: Timely treatment, even by self-medication. Need and technique of ORT. First aid. Aseptic care of wounds.	Same as in (1).	Same as in (1).

No.	Problem	Intervention goal	Intervention strategy	Target group	Activities
3.	More than half of the population lost totally or partially working days due to illness.	To reduce the time and money lost due to illness by: Reducing the proportion of sick people who lost working days (less then 50%). Reducing the average amount of monthly expenditure by less than RS 100.00.	Public information on: Need and importance of timely treatment of all illnesses. Cost-effectiveness of self-medication approach. Economic ways of using drugs including vitamins. Role of ORT, nutritional supplements, family planning, immunization, sanitary practices, personal hygiene, first aids and aseptic care of wounds in reducing the overall expenditure in illness, care and reducing the duration of illness.	General public.	Large group session (short talk). Exhibition.
4.	More than half of the population was affected by loss of working days due to illness.	Reduce number of days lost due to sickness.	Information: Timely treatment. Appropriate treatment. Use of timely and appropriate self-medication.	Families with sick persons. General public.	Public information (group session).

No.	Problem	Intervention goal	Intervention strategy	Target group	Activities
5.	Most of the people are buying and/or getting medicines from medical shops (14/33) and from The Shaman healers (12/33) some (4/33) did collect herbs by themselves.	Increase the proportion of people who: Buy essential and appropriate drugs from medical stores. Consult shaman healers for acquiring appropriate medicines. Collect appropriate herbs. Encourage medical shopkeepers, traditional healers to possess and sell or distribute appropriate medicines, including ORT in the case of traditional healers.	<u>Public information:</u> Inform people to buy only essential and appropriate drugs from medical shops. Inform people to use traditional healers to obtain appropriate medicine. <u>Orientation:</u> Orient shopkeepers to possess essential and appropriate medicines. Orient traditional healers to possess appropriate herbal medicines and simple drugs (ORT, antiseptic, etc.) for minor treatments (medicine kits).	General public. Medical shopkeepers. Traditional healers (dhami/jhankri, etc.). Selected families (CHV, women volunteers, etc.).	Public information (group session). Small group and individual counselling. Organizing families or groups who are willing to have medicine kit.
6.	A very low proportion of population get information about self-medication from important sources in the community [shopkeepers (10/31), dhami-jhankri (6/31)]. An even lower proportion of population are knowledgeable about self-medication.	To increase the proportion of key health related population in the community, such as dhami-jhankri, shopkeepers who provided information on self-medication. Encourage population to acquire knowledge and skills in self-medication.	<u>Information/education on the need for:</u> Informing the population on self-medication. Approaching the community informants to get information on self-medication. Knowing more about self-medication.	Shopkeepers (medical shops). Dhami-jhankris. General public particularly with sick member in the family. General public.	Small group education. Public information.

No.	Problem	Intervention goal	Intervention strategy	Target group	Activities
7.	Only 30 out of 79 (37.9%) sick population practised self-medication (SM).	Increase the % of cases treated with appropriate self-medication (over 38%).	Information that appropriate self-medication can be used instead of leaving the sick person without treatment. Importance of self-medication.	Households with sick person during the survey (N=79) particularly these who did not practise self-medication. General public of Padam Pokhari.	Group talk. Public announcement system.
8.	A significant proportion (43%) of population use shamans. A significant proportion of population bought medicine from shops.	Reduce the proportion of population using shamans indiscriminately of nature of illness. Reduce inappropriate and over consumption of medicine.	<u>Information/education:</u> That dhami-jhankris should not be consulted for serious illness and complicated illness. That dhami-jhankri can give treatment advice but other reliable resources should be contacted. That unnecessary medicine should not be bought.	43% of the families who used shamans. Families having sick persons during the survey. General public	Individual counselling. Group talk. Individual counselling.
9.	A considerable proportion of population use roots & herbal medicines.	Encourage the use of appropriate herbal medicines and reduce use of those which are inappropriate.	Advantages of using appropriate herbal medicines. How to distinguish between appropriate & inappropriate herbal or root medicines.	General public.	Organization of exhibition on herbal and root medicine.

No.	Problem	Intervention goal	Intervention strategy	Target group	Activities
10.	Only a small proportion of population (3.3%) had total belief in the self-medication used. An overwhelming proportion (86%) thought it may work, 10% did not believe in it but had no other alternatives.	To increase the proportion of population who believe in the healing power of appropriate self-medication. To encourage certain groups or families to have self-medication kits.	Information/education: To provide information on the healing power of appropriate indigenous medicines. Organize groups who are willing to have a indigenous medicine kit. Use of medicine kits.	General public. Selected families e.g. dhami-jhankri priests, school kids, etc.	Public information. Individual & group sessions.
11.	The proportion of illness for which there is no recover after onset and medication is significantly high (N=25) out of 30.	Reduce the duration of illness and increase the proportion of recovery from the illnesses.	Information: Timely treatment. Appropriate treatment. Use of timely and appropriate self-medication.	Families with sick. General public.	Group talk. Public information.
12.	Certain percent of population (13,33%) do not follow any medication if the self-medication does not succeed. A great majority (83,33%) look for alternative sources.	Decrease the proportion of population who do not treat at all. Provide alternative opportunity for self-medication.	Motivate population to seek treatment. Motivate population to choose alternative sources of medication. Train CHVs, VHWs and traditional healers. Encourage the dhami jhankris and other traditional healers to use appropriate herbal medications and other drugs including ORT.	General public who do not treat at all or searched for other alternative sources of treatment. Traditional healers including dhami-jhankris.	Public information. Exhibition. Small group training.

No.	Problem	Intervention goal	Intervention strategy	Target group	Activities
13.	Population spent often more than 50Rs for buying medicine.	Reduce family expenses on buying medicines.	Information/education on: Need for buying essential drugs only. Ways of selecting essential drugs. Ways of using low-cost indigenous drugs appropriately. Need for selling essential drugs only.	General public Medical shops.	Public information. Group talk.
14.	Only a negligible proportion of population knows (2/31) the side-effects of medicines used.	Increase the proportion of population (6%) who know the side-effects of inappropriate self-medication.	Information/education on: What is an appropriate use of medicines under self-medication. Effect of over/under use of medicines. Some serious side effects of most commonly used medicines and herbs.	General public. Medicine shopkeepers. Focus groups including those families who are using medicine inappropriately. Families who reported "don't know".	Public information: - exhibition - posters - small group discussion.
15.	Almost all the respondents do not know the conditions when medicine should not be used.	Increase the proportion of population who know the conditions in which the most frequently used drugs and herbs should not be used.	Public information on: The most common conditions under which frequently used drugs should not be used. Contra-indications of most frequently used drugs, particularly those drugs, including herbs, which are used without proper prescriptions.	The respondents who reported "don't know".	Large group sessions. Small group discussion.