CHAPTER V

SUMMARY AND DISCUSSIONS

Summary

A cross-sectional, descriptive research, aiming at behavior, knowledge and attitude regarding the use of antibiotics among caretakers of children under five years of age at Wangwiset Hospital, Trang Province's outpatient department. A questionnaire was developed for the study, with reliability at 0.7. Data collection started in August 2003, with 410 caretakers volunteered to participate in the study. SPSS statistical software package was employed to perform Pearson Correlation Co-efficient, p value at 0.05.

The study found the demographic characteristics of the volunteers as follow: 20-39 years old (84.63%), gender female 100.0 (%), being married (89.9%), with primary education to high school (76.53%), income between 3,001 to 6,000 baht per month (36.1%), with three to five members of the family, and with relationship as parents and children. All of the caretakers in this study have one child under their care, and most of the caretakers were the children's mothers. The majority of these caretakers (54.6%) appeared to have moderate level of knowledge regarding anti-microbial use, including reading through the label, shaking the bottle, use only room temperature boiled water to mix the medication, filling the water up to the line marked on the bottle, taking pre-meal medication 30 minutes before the meal, taking post-meal medicine as soon as possible when forget to take such medication, appropriate drug storage, appropriate spoon to measure drub, stop giving medication only when it is finished, and administer proper dosage and frequency every time. The study also found that volunteers who were married, between 20-39 years old, and with

higher level of education primary school are more likely to have better toward correct utilization of anti-microbial.

Overall, the study found that the volunteers are either good or very good attitude. Income and occupation appeared to be correlated with attitude (government employee and bachelor degree or higher). The majority of the volunteers (88.3%) have positive attitude toward the use of the spoons provided by the hospital for giving medication, and 97.8% of the volunteers reported using them at all times. In addition, caretakers in this study reported their behavior at good and very good levels. The study confirms that attitude is correlated with behavior of caretaker on the utilization of antibiotics.

Discussions

Children in this study had good standard of care due to the following findings:

1. The majority of caretakers in this study (80%) were the child's mothers, and with one to two children in their care, on average. Therefore, these children had good standards of care, because they were in direct relationships, and it was better than being the responsibility of babysitters or relatives.

2. Caretaker's socio-demographic characteristics that are conducive to correct behavior: being married, relatively high educational level, and being government official or working in state enterprise. Analysis of marital status revealed that most caretakers were married, which affected their drug-use behavior related to the physician's advice, which was regarded as social support for patients. It was found that married patients usually provided better cooperation with treatment than divorced or separated patients (cited in Nopparat Assawarat, 1993). The education revealed that most caretakers in this study had junior-high-school education levels. Education level was statistically significantly related to drug-use behavior. Most had low education levels, so had little opportunity to work outside. This was consistent with the study by Pisamai Pitaksawarakorn (1993), who found that people with high education levels provided high levels of cooperation with health care, who found that

education level was related to disease-prevention behaviors. Education level differentiated individuals' health behaviors.

In addition, being agriculturists is also a positive characteristic. Analysis of occupation revealed that most caretakers were agriculturists, so they did not have to change their workplace frequently, so that they could live together in the family. This result was significantly related to the use of antibiotics. Moreover, it was consistent with the study of Prasong Sajjapong (1991), who found that patients with permanent jobs possessed better health behaviors and cooperated better with treatment than patients who changed their jobs frequently, always traveled, or whose job schedule was unstable. In addition, economic status was related to health behavior and cooperation with treatment--people of low economic status would have poor health behaviors and poor cooperation with treatment.

3. Majority showed good behavior: Analysis of antibiotic-use behaviors showed that 81.9% of caretakers mixed the drug powder with cooled boiled water. This result was consistent with the study of Tasanee Kiewkajee (1994), who found that 80% of parents mixed cooled boiled water with the drug; 65.4% of them continued administering the drug although the child had recovered from fever, and 34.6% stopped administering the drug before the completion of the course. The percentage result was smaller than Tasanee's study (68%). 77.6% of the sample continued administering an equal amount of drug although the symptoms had not been relieved. 83.6% administered the drug every 4 hours. However, some caretakers did not administer the drug at fixed intervals, which affected the amount of drug in the child's body, and also the treatment. 96.1% of the caretakers correctly kept antibiotics away from the light, and 75.4% of them correctly kept them away from heat. These results were consistent with the study by Tasanee Kiewkajee (1994), who found that 72% of the parents kept the drug correctly. 97.8% of the sample used the standard spoon provided by the hospital to measure the drug dosage correctly, which was greater than Tasanee's study, at 94%. 96.1% of the caretakers shook the bottle correctly before pouring the drug, which was consistent with Tasanee's study, which found that 94% shook the bottle before giving the drug. 98.8% of the caretakers mixed cooled boiled water with the antibiotic powder

correctly to the line marked on the bottle. 70.9% of the caretakers had correct behaviors for administering pre-meal drugs 30 minutes before a meal, which was consistent with Tasanee's study, which found that 65% of the parents had correct drug administration behaviors. 89.7% of the caretakers administered pre-meal and post-meal drugs correctly, according to the label, which was consistent with Tasanee's study, which found that 77% of the parents administered the post-meal drug correctly. 70.7% of the caretakers had correct behaviors for skipping a forgotten pre- or post-meal drug if the time > 2 hours, and continued to the next meal.

4. Caretakers who need special attention: agriculturists with low education tend to not be able to follow the instructions. They tend to not have adequate knowledge, appropriate attitude and behaviors in providing care to their charge. This sub-group needs special attention from the provider such as pharmacists, pharmacy technician, or social workers.

Recommendations

Based on the research results the followings intervention or activities should be considered:

1. Special intervention for special group: drug demonstration and counseling programmes:

1.1 Caretakers who receive pre-mixed antibiotics for children should be advised separately, for instance, in the drug counseling room, which should be equipped with demonstration equipment, printed materials with explanations, brochures, or an explanatory board to explain terms such as "cooled boiled water". This is because some people may understand that warm boiled water can be used for mixing the drug powder, but do not know that it reduces the drug's efficiency and is harmful to children.

Caretakers should be advised how to mix the drug with water correctly, not just add cooled boiled water right to the line marked on the bottle. They should learn about:

1.1.1 Tapping the bottle to loosen the drug powder

1.1.2 Then adding cooled boiled water (as cool as normal water)

1.1.3 Add water to about half of the marked line, then mix it well first

1.1.4 Add more water to reach the marked line

1.1.5 Shake the mixture well before administration to the child

Where 2 bottles of drugs are received, brochures with illustrations should be attached for more information, and to ensure correct use at home.

2. Caretakers should be advised to store the drug correctly every time they receive it. They should be advised that the best way to keep and maintain the quality of the drug is to avoid light and heat. Therefore, the drug cupboard should be sited away from the sun, and out of reach of children. Drugs that have already been mixed can be kept for up to seven days. If caretakers administer the drug correctly, according to the dosage and frequency on the label, children should finish the course within 7 days. If the drug is kept in the refrigerator, it should be taken out so as not to be too cold before being taken by the child, because the doctor will not recommend giving cold water and cold drugs to children.

Caretakers were suggested to the director and administrative committee to introduce it into drug use demonstration programs, especially the agriculturist group in this study, towards better drug-use behaviors, they should be screened for the need for additional knowledge, for instance, by demonstrating how to mix the powdered drug with water, how to measure the drug, showing them that the efficiency of drug will decrease if they do not possess the appropriate drug-use behaviors, and the treatment will fail and cause other damaging effects in the long term.

To ensure that they understand correctly, they should be allowed to practice as if they were at home. The researcher can observe and evaluate the behavior and correct any incorrect point. The result of the study showed that the behavior of forgetting to administer the drug for more then two hours was still prevalent.

3. Caretakers who are agriculturist with family income below 6000 baht per month needs particular attention from pharmacists and pharmacy technicians in terms of the following care-giving behavior: how to store drug, completion of medication even if symptoms have subsided, and correct behavior when forget to give the

medication to the child. They should be counseled separately, with educational pamphlet or brochure, and allowed to practice in front of public health workers.

Recommendations for further study

1. Further studies should focus on comparing the colors, tastes, and smells of drugs that are pleasing to children, because they affect children's cooperation greatly, and because they could be decision-making factors when hospitals are purchasing drugs. Moreover, Researcher may study in quantity and quality together, and should in-depth interview at home.

2. There should be a follow-up process using random sampling, to investigate those caretakers correctly practicing the advice provided after they have received the drug from the hospital dispensary, because some caretakers said that some drug was left over at home from the previous prescription. Therefore, the dispensing officer may observe whether the amount of drug left over is consistent with the period of administration or not, by calculation from the amount of drug dispensed and the frequency of drug administration, e.g., the hospital has provided 60 ml of drug; how much drug is left after they have taken the drug for X days. If the amount of drug left over is not consistent with the calculation, the reason should be further investigated.

3. Further study combining qualitative and quantitative methods to ensure that there is no response bias should be conducted to identify the drug-use behaviors of the caretakers. The result of the study revealed that it was not possible to determine whether the caretakers' answers to the questionnaires were consistent with their actual behaviors, or not, because the researcher did not go into deep detail with each item. For instance, "does the caretaker use cold boiled water to mix with the drug?", "Is the mixture equal to 60 ml?", etc. Future research therefore should be conducted as follow:

In-depth study: the researcher should follow-up on behaviors at home, as well observe the steps used in mixing the drug, how the caretakers administer the drug to the children, and how they store the drug. The researcher could issue a form for each caretaker to fill in, for each step of drug administration, from the first day of receiving the drug from the hospital until the drug has been finished, and add the issue of how

they will solve problems at each point. For example, "What time did you receive the drug from the hospital on the first day?", "How do you mix the drug?", "When did you administer the first drug meal?", "What was the volume?", What kind of spoon did you use?", "When is the next drug meal?", "What are your child's symptoms?", Do you administer any drugs in addition to the drug from the hospital?", "If yes, what drugs are they?", "from where?", "how much and how many times per day?", "Where do you keep the drugs each day?", "What will you do the next day, until those drugs have been finished?". Did you make a note if you forgot to administer any drug meal?", "If yes, what meal?, and what did you do?"

Furthermore, the researcher should follow-up on drug use at home, to confirm the answers that the caretakers gave by using a similar form, as mentioned above. Using this technique, the researcher will know how much drug is left in the bottle related to the amount of drug that has been taken or not, and whether they kept the drug in an appropriate place, and how. Other answers by the caretakers could also be observed in practice, as well as the status of the children after taking the drug.