DISCUSSION AND RECOMMENDATIONS

6.1 Introduction

In this chapter the results of our study will be discussed and we will come to the conclusions of our study. First we will list the research questions on which we concentrated.

1. What are the determinants of technicians’ patient education behavior, such as expressed by the provision of verbal drug information to patients?

2. What are the effects of an intervention program on patient education activities in community pharmacies, such as expressed by the verbal drug information given to patients?

The methodological aspects of our study will be discussed in paragraph 6.2. Remarks will be made about the studied population and the collected data which have been used to answer the research questions.

In paragraph 6.3 conclusions will be drawn about the results of our study, starting with the conclusions about the observed level of patient education in the studied community pharmacies. In addition, conclusions will be drawn about the determinants of this patient education behavior. Finally this paragraph will present the conclusions about the effects of the intervention program on the observed patient education behavior.

The consequences of the results of our study are discussed in paragraph 6.4. First the implications of our study to community pharmacy practice on the one hand and to pharmacy policy makers and educators on the other are discussed. Secondly the results will be discussed on their consequences to theories about individual behavioral change and organizational change. Finally suggestions will be given in this paragraph for further research activities with regard to patient education in community pharmacy practice.

6.2 Methodological aspects

In this paragraph the methodological aspects of our study will be discussed. Successively the studied population and the collected data will be discussed in detail.

Studied population

The participating pharmacists were selected from a population of pharmacists, who had followed one or more postgraduate courses about patient education. These pharmacists agreed to participate in a
project which had the objective to improve the level of patient education in their pharmacies. So the participating pharmacists were all educated in the field of patient education and had shown to be interested to develop patient education in their pharmacies. This group of pharmacists was chosen, as both the one-year lasting intervention program and the data collecting by audiotapes required high levels of motivation from the participating pharmacists.

Originally we started with 21 community pharmacies, but one pharmacy withdrew as the technicians disagreed with the audiotaped data collecting. As a consequence the results from the intervention program concern 20 community pharmacies (9 experimental and 11 control pharmacies). In these pharmacies some technicians did not participate in the audiotapes as they reported to feel uncomfortable while being audiotaped in the pharmacy.

The individual behavior of technicians has been analyzed with support from the participating pharmacists, who could recognize the voices of their technicians. As not all pharmacists agreed to go along with this part of the study, the results about the determinants of patient education behavior are obtained from 13 out of the 20 community pharmacies. This concerns 6 pharmacies belonging to the experimental group and 7 pharmacies of the control group.

So the pharmacists, which participated in our study had all been educated about patient communication and had shown to be highly motivated to develop patient education in their pharmacies, while they were also willing to be observed. These pharmacists may be viewed as the so-called innovators among their professional group and we expect higher levels of patient education in their pharmacies compared with the average Dutch community pharmacy. Similarly, the technicians are those persons who agreed to being audiotaped and one may expect higher levels of patient education among these professionals compared to their colleagues who appeared to feel uncomfortable in being audiotaped.

Our results about the determinants of technicians’ patient education behavior may apply to other technicians, who are willing to be audiotaped at the counter. The results about the effects of the intervention program may be applied to those pharmacies whose pharmacists and technicians are willing to participate in all different activities of the intervention program. One should realize this condition of willingness to work on patient education continuously will not be met in every community pharmacy nowadays.

**Collected data**

We have analyzed audiotaped patient contacts on the provision of verbal drug information given to patients in community pharmacies. These audiotapes did not reveal to what extent patients were also given written drug information, while receiving drugs. In the Netherlands patient package inserts are included in all retailed drug packages (prescription drugs and OTCs), while prescription drugs always contain drug label instructions. So the studied patient education behavior concerns the verbal drug information given to patients in pharmacies, which is given in addition to written drug information in most cases.
As we have used audiotaped data our results concern the verbal part of the communication process. We were not able to analyze the nonverbal part of the communication process, which is known to express people’s emotions and opinions about each other as well as about the subject of their communications. This has limited the opportunity to study patients’ views on the information given to them and patient’s perceived quality of the provided drug information and the communication process, such as expressed by their nonverbal behavior. Did they understand and accept the information given to them and did this information satisfy their needs for drug information? Possibly patient’s nonverbal behavior revealed information which may have been useful to answer these questions.

The audiotapes provided detailed information about the kinds of patient contacts and the provided drug information, but they did not include information about some other variables which may affect the communication process, such as patient’s age, patient’s level of education and the prescription (new or refill) or drug involved. However, one may expect the studied patient samples of the participating technicians will all consist of young and old patients, refills and new prescriptions and different kinds of drugs.

The determinants of patient education behavior have been studied by analyzing patient contacts of 50 technicians, who practiced in 13 community pharmacies. On the average these technicians participated in 50 patient contacts about drugs, which included the provision of verbal drug information in a minority of these contacts. This number of observations should be taken into account when interpreting the results about the determinants of technicians’ patient education behavior. Similarly the effects of the intervention program should be interpreted carefully, due to the restricted number of pharmacies participating in our study.

The determinants of patient education behavior have been studied by relating the data about technicians’ patient education behavior with technicians’ survey answers. One should realize the limitations of survey collected information, such as people’ s tendency to provide information which is socially desirable. This may have influenced technicians’ answers about their views on and experiences with practicing patient education in their pharmacy. In addition, one should realize the results about the enabling and reinforcing factors with respect to patient education express technicians’ perceptions of these factors. Observational studies are needed to collect information about the actual presence of these factors in these pharmacies. Finally, we should keep in mind that the collected information about technicians’ education and the staff meetings in their pharmacies, concerned the frequencies of these activities, whereas no attention was paid to the quality of the attended courses and meetings. Therefore the results about the determinants of technicians’ patient education behavior should be interpreted carefully.

We have studied the determinants of technicians’ patient education behavior. These results may not be translated automatically to pharmacists as both groups differ in their professional responsibilities and educational backgrounds, which may have consequences to the determinants of their patient education behavior. Technicians are supervised by pharmacists and have received less education about
drugs than pharmacists. These differences between both groups of professionals may affect the determinants of their patient education behavior.

Finally one should realize we have used observational data, by collecting audiotapes. The audiotapes may have influenced patients’ and technicians’ behavior. Some technicians experienced the audiotaped recording as being annoying and those feelings may have decreased their activities in communicating with patients at the moment they were being audiotaped, whereas other technicians may have increased their patient education activities at the counter at the moment they were being audiotaped.

Of course we were aware of these limitations of our data. We preferred to use observational data to other data collecting methods like surveys or diaries, which are known to be limited by influences of social desirability and memory effects. Another reason for collecting audiotapes was the experienced lack of observational data about patient education in Dutch community pharmacies. In this respect, the collected audiotapes reveal interesting information to all who are engaged in patient education in Dutch community pharmacy.

6.3 Conclusions

6.3.1 Observed level of patient education

The studied patient education concerns the provision of verbal drug information, such as observed in audiotaped patient contacts in 20 community pharmacies. What can be concluded about the frequency and quality of the verbal drug information given to patients in these pharmacies, such as observed before the intervention program started?

Frequency

In one quarter of all observed drug contacts verbal drug information was given to patients. Large differences existed among the different kinds of encounters. The prescription drug deliveries and OTC contacts included the provision of any verbal drug information in one third of these cases, while in prescription offering contacts verbal drug information was seldom given. We also found differences among the pharmacies: the observed frequencies of verbal drug information given to patients in these pharmacies varied from 12-62% of their prescription drug delivery contacts and 8-67% of their OTC contacts. The posttest results were analyzed on an individual level and revealed also differences between pharmacists and technicians: their mean scores on the verbal drug information given with prescription drug deliveries turned out to be $53\pm28\%$ (pharmacists) and $39\pm30\%$ (technicians) of these contacts.

When interpreting these results about the verbal drug information, one has to realize patients are also given patient package inserts when receiving retailed prescription drugs or OTCs, while in the case
of prescription drugs they are also given drug label instructions and may have received drug information from doctors. The observed frequency of the verbal drug information given to patients has to be evaluated with this background information in mind. Different arguments are to be mentioned to provide verbal drug information to patients in the pharmacy. One reason could be patients’ problems in understanding and applying the written drug information, while verbal drug information may also be given to motivate patients to follow the instructions given to them. Verbal drug information may be needed to answer patients’ individual needs for additional drug information. As the pharmacy is the last place patients visit before they start using their drugs, patients’ individual needs for additional drug information should be answered in the pharmacy. As patients’ informational needs differ, their drug questions have to be known to be able to provide the information they need. However, we found verbal drug information is mostly given without patients’ questions. It seems these pharmacies do not fully take advantage of the possibility to influence patients’ drug use by providing verbal drug information, which is adjusted to the individual needs for additional drug information.

Contents of the verbal drug information

The provided drug information concentrated on instructions about drug use. The results demonstrated that 66% of the verbal drug information concerned dosage instructions. Other drug information given were instructions about the time of application (22% of all verbal drug information), drug administration (18%), drug activity (16%) and product advice (12%). Seldom patients were given verbal information about the beneficial effects and adverse effects of drugs.

The observed verbal drug information is rather standardized as it concerns mainly the repeating of drug label instructions. This may be counterproductive in discussing patients’ drug problems and meeting their informational needs about drugs. Patients’ surveys demonstrate patients’ interests in information about different drug aspects, among which drug instructions as well as drug effects and drug side-effects. Compliance studies show high levels of noncompliance in relation with patients’ lack of knowledge and motivation. Patients’ motivation may be influenced by providing information about the necessity of the drug therapy, the drug effects which may be expected and about how to deal with drug adverse effects.

We conclude that the verbal drug information given to patients in these pharmacies concentrated on drug use instructions. This kind of information may not be fully adjusted to patients’ individual needs for drug information, such as demonstrated in consumer surveys and in patients’ drug questions addressed to drug information centers.

Quality

Originally five criteria were chosen to study the quality of the observed patient education behavior, among which technicians’ verbal encouragement to induce the patients to ask their drug questions or to give feedback on the information given to them. However, this communicative behavior, which stimulates a two-sided communication process, was seldom observed on the audiotapes. In this respect,
the pharmacies demonstrated low levels of quality in the communication processes with patients and no further attention was given to these aspects. The remaining quality criteria which have been studied and used in further analysis, are: the receiving of patients’ drug questions, the provision of motivating drug information (background information with the drug instructions) and the provision of drug character information (information about the effects or adverse effects of drugs).

**Patients’ drug questions**

In about 5% of all drug contacts, patients asked questions about drugs. About one quarter of the provided verbal drug information was given as a response to patients’ drug questions, so if verbal drug information is given at all, this is mostly given without patients’ questioning. The score range of the participating pharmacies was 2-13% of all drug contacts, which included patients’ drug questions. The kind of encounter was found to be related with the observed frequency of patients’ questions, as patients asked more questions in OTC contacts than in prescription drug contacts: respectively 19% and 5% of these encounters included drug questions. Apparently patients show their informational needs more frequently in Over-The-Counter (OTC) contacts than in prescription drug contacts, which may be related with patients’ participation in the drug choice process in the case of OTCs. Women asked almost twice as many drug questions than men, which was also found in research about doctor patient communication (chapter 2). According to the results of other studies, patients’ questions in the pharmacies concentrated on drug recommendations in the case of OTCs and drug instructions in prescription drug delivery contacts.

Patients’ drug questions have been studied as an indicator of their participation in the communication process. This participation is essential to provide the information which is needed by the individual patient. However, in only a minority of the drug contacts patients asked for additional drug information. Our results about the frequency and contents of patients’ drug questions differ from results of consumer surveys and overviews of patients’ drug questions received by drug information centers, which both demonstrate patients’ interests in the effects and side effects of drugs. It seems that patients only partly show their informational needs in the pharmacy, which may have different reasons. One reason for not asking drug questions in the pharmacy could be that some drug questions arise after reading patient package inserts or after using the drugs. Possibly these drug questions are asked in telephone calls with the pharmacies or they may call the national drug information telephone service, such as organized by the professional organization of pharmacists. Another explanation of the small number of drug questions could be the limited privacy conditions at the counter or technicians’ lack of time to communicate quietly with patients. Possibly patients do not want to ask their drug questions in the pharmacy, for reasons of feeling not welcome in asking drug questions or having had negative experiences with asking drug questions. These various reasons may participate in patients’ behavior at the counter, such as observed in these pharmacies.

Based upon the observed frequency and contents of patients’ drug questions, we conclude that patients only partly demonstrated their informational needs about drugs in these community pharmacies.
**Drug character information**

Drug character information concerns information about the characteristics of drugs, among which information about the drug indication, the drug effects, the drug contra-indication, drug combinations and the drug side-effects. In about 5% of all drug contacts this kind of drug information was given verbally to patients. The score range among the participating pharmacies appeared to be 1-20% of all drug contacts which included the provision of verbal drug character information. Other studies also report low levels of verbal information about the effects and adverse effects of drugs in community pharmacies, whereas drug information centers frequently receive questions about these drug aspects. The low frequency of providing drug character information in these community pharmacies may have different backgrounds. One explanation could be patients’ reserves in asking drug questions, which have been discussed earlier. In addition, one could think about technicians’ drug knowledge or about technicians’ fear about the harmful effects of providing information about the drug side effects on patients’ compliance.

We conclude that the provision of verbal information about the effects and side effects of drugs seems to be uncommon in these pharmacies. As a consequence, patients’ needs for drug information may only partly be fulfilled by the verbal drug information given to them in these community pharmacies.

**Motivating information**

On the average, 2% of all drug contacts included verbal drug information which was interpreted as motivating information, whereas the pharmacies showed a score range of 0-9% of their drug contacts. Motivating information concerns background information about drug instructions, like information about the consequences of not following the instructions given or about the benefits of following the drug instructions. Our description of motivating information did not include remarks such as "your doctor wants you to take this drug" or "this is important to you".

We conclude that a very small percentage of the observed drug contacts included motivating drug information. One may regret these results, as the majority of the verbal information concerned drug instructions, which could have been accompanied by motivating background information rather easily.

**Conclusion about observed patient education behavior**

For the time being patient education in community pharmacies mainly concerns a one-way communication process, in which technicians tell patients how to use their drugs and we rather should talk about patient instruction than about patient education. The observed technicians and pharmacists seem not to take the full profits of the personal communication process, which provide an opportunity to discover patient’s individual needs for verbal drug information at the moment they visit the pharmacy. This verbal information may concern an explanation of the standardized written drug information, additional background information, reinforcement of the information given by doctors in medical encounters, or a support in taking the right decisions about drug use. It seems patients do not
have fully access to the drug information expertise in Dutch community pharmacies and which might offer them the support they need to use their drugs properly.

6.3.2 Determinants of patient education behavior

We studied the extent to which the provision of verbal drug information by technicians is predicted by technicians’ variables, the frequency of staff meetings in the pharmacies, pharmacists’ views on patient education and technicians’ patient samples. This analysis was carried out with the collected data of the 50 technicians whose individual behavior has been studied. What can these results tell us about the determinants of the studied patient education behavior?

Providing verbal drug information

Technicians’ frequencies of providing verbal drug information in drug contacts is predicted by the extent to which patients ask drug questions. Although the verbal drug information was mostly given without patients’ questions, differences among technicians were explained by the number of questions they received. Patients’ questions explained 44% of the observed variance among technicians in their verbal drug information activities. When comparing technicians’ samples of prescription drug delivery contacts only, the observed differences again were explained by the extent to which technicians received drug questions in these contacts. All other variables studied did not contribute to the explanation of the observed variance among technicians in the extent to which they provided verbal drug information. Neither pharmacists’ and technicians’ views on patient education or technicians’ educational level, nor the communication patterns in the pharmacy were involved in the extent to which technicians provided verbal drug information.

This lack of a relationship between technicians’ behavior and their personal characteristics as well as the organizational (pharmacy) characteristics, may be related to the contents of the verbal drug information which mainly concerns drug label instructions. Probably this rather standardized patient education behavior which consists of repeating drug label instructions, does not require technicians’ personal involvement or organizational conditions. Possibly the analysis of the frequencies of patients’ drug questions, such as received by technicians, reveals more about the determinants of technicians’ patient education behavior.

Receiving patients’ drug questions

The number OTC contacts in the studied samples was found to explain 43% of the observed differences among technicians, in the number of drug questions they received from patients. Further analysis of only prescription drug delivery contacts revealed that several technicians’ variables were related with technicians’ patient education behavior. Technicians who received more drug questions reported to have attended more patient education courses. In addition, technicians’ outcome
expectancies and role beliefs were involved in the explanation of variety among technicians in the number of drug questions they received. The more technicians believed patient education contributes to proper drug use and may be viewed as their responsibility, the more technicians received drug questions. Finally, other outcome expectancies were related with the observed frequency of patient questions negatively. These outcome expectancies concerned the influence of patient education on patient’s autonomy, on reduced barriers for patients’ questions and on customers’ registration. The more the technicians were convinced of these effects of patient education, the less they received drug questions. Maybe technicians fear these outcomes of patient education? These feelings about patient education may affect their communicative behavior thereby discouraging patients to ask drug questions.

No relationship was found between the number of drug questions technicians received and the other variables studied. Nor technicians’ perceptions of the enabling and reinforcing factors with respect to patient education, the number of drug information courses they had attended and their experiences at the counter were related with the number of drug questions they received. We did not find a relationship between the number of drug questions each technician received and the frequencies of staff meetings in their pharmacy or pharmacists’ views on patient education either.

**Conclusions about determinants of patient education behavior**

The provision of verbal drug information to patients in community pharmacies is predicted by the extent to which patients ask drug questions. Patients’ drug questions in turn, are predicted by the percentage of OTC contacts in the studied patient samples.

The analysis of the prescription drug delivery contacts revealed that patients asked drug questions more frequently when communicating with technicians who had attended more patient education courses, who demonstrated higher levels of outcome expectancies and role beliefs about patient education and expected less the negative outcomes of patient education.

We found no relationship between technicians’ behavior and several other technicians’ variables, while no relationship was found with pharmacists’ views on patient education and the frequencies of staff meetings in the pharmacy either.

**6.3.3 Effects of intervention program**

The effects of the intervention program on the provision of verbal drug information have been studied by analyzing the variances of the posttest scores of 20 community pharmacies, of which 9 participated in a one year lasting intervention program, while the remaining 11 pharmacies participated in the control group. The pretest scores and patients’ variables of the studied pharmacies were included in the analyses of their posttest scores, to increase the precision of determining the effects of the intervention program on the frequency and quality of the provided verbal drug information. Separate
analyses have been carried out with the results of the 3 pharmacies that participated most frequently in the intervention program, the so-called highly exposed pharmacies.

At first glance it seemed that the intervention program was not effective in influencing the level of patient education in these community pharmacies. When we analyzed the posttest scores of the complete experimental group, the results demonstrated no effects of the intervention program. The results of the highly exposed pharmacies however demonstrated an influence of the intervention program on both the frequency and the quality of the verbal drug information. Increased levels of verbal drug information with prescription drug deliveries were observed, including increased frequencies of drug character information. No effects were found on the frequency of verbal drug information in OTC contacts, on the observed number of patients’ drug questions and on the provision of motivating drug information. These results are in agreement with the developed patient education activities in these pharmacies, which concerned the provision of verbal drug information about prescribed asthmatic drugs or prescribed antihypertensive drugs. The different parts of the intervention program together have contributed to the increased frequency of provided drug information. These results indicate the effects of the intervention program, which were observed 3 months after the intervention program had been finished.

We conclude that the intervention program increased the frequency and changed the contents of the verbal drug information with prescription drugs deliveries in those pharmacies, where both the technicians and the pharmacists participated in the complete intervention program.

6.4 Consequences of our results

In this paragraph we will consider the consequences of the results about the observed patient education behavior, the determinants of this behavior and the process of developing patient education in community pharmacies. Firstly, attention is paid to the consequences of these results for community pharmacy practice and for pharmacy policy makers and educators. In addition, the results will be interpreted as to their consequences for the theories about individual behavioral change and organizational change, such as discussed in chapter 3. The last part of this paragraph lists new research questions, which are based upon the results of our study.

6.4.1 Community pharmacy practice

Objectives of verbal drug information
Verbal drug information should focus on the drug information, which is needed by individual patients in order to use their drugs properly. In this respect verbal information may be needed to explain or to complete the standardized written drug information or to motivate patients to follow the drug instructions on drug labels. Patients’ needs for additional verbal drug information in the pharmacy are
demonstrated in consumer surveys and in patients’ drug questions addressed to drug information centers.

As patients differ in their informational needs, their individual drug questions have to be known to provide the information they need. However, patients asked questions in a minority of the observed drug contacts. These results demonstrate the necessity to evaluate the circumstances in the pharmacy concerning patients’ drug questions. Possibly the privacy conditions in the pharmacy have to be improved to facilitate patients’ questioning. Another possibility is to encourage patients expressly to ask their drug questions in the pharmacy. Patients’ drug questions may be encouraged when prescriptions are being offered by the patients, as the latter may feel less reluctant to demonstrate their drug problems and doubts prior to the receiving of the drugs which have been already prepared. When patients agree with the drug therapy, verbal drug information may be used to emphasize the drug label instructions and to provide the additional background information. When communicating with patients, one may ask patients to give feedback on the information given to them. This quality control instrument may increase the positive effects of verbal drug information on patients’ drug use and patients’ satisfaction with this pharmacy service.

We would like to recommend to pharmacists and technicians to consider the verbal drug information given to patients in their pharmacy and to decide about the specific objectives of this kind of drug information. These objectives provide a guideline for technicians in communicating with patients about drugs in a more personal way than just repeating drug label instructions.

**Development of patient education activities**

We found that the increase of patient education in community pharmacies asks for interventions directed to both the technicians and the pharmacists.

Technicians’ patient education behavior depends on the extent to which patients ask drug questions. As patients’ questions seem to be the key to increased levels of verbal drug information in community pharmacies, patients will have to be encouraged to ask their drug questions in the pharmacy. A first possibility to increase the number of drug questions concerns technicians’ communicative behavior. Patients asked most frequently questions to technicians who had higher outcome expectancies (compliance) of patient education, stronger beliefs about their professional responsibility in patient education, who more frequently attended courses about patient education and less agreed with the negative outcomes of patient education. These technicians’ variables need attention when efforts are made to improve technicians’ communicative behavior. Technicians’ positive outcome expectancies of patient education may be increased by presenting them the results of studies about the effects of patient education on patients’ drug use. Technicians’ negative outcome expectancies of patient education concerned increased patient autonomy, increased customer registration and decreased barriers for patients to ask drug questions. These outcome expectancies were negatively related with the number of drug questions technicians received. It seems technicians fear these outcomes of patient
education. These outcome expectancies are to be influenced by providing technicians the support they need at the moment they meet problems while practicing patient education, for example answering difficult drug questions or patients who do not agree with technicians’ instructions or advice. In addition, patient education courses may support technicians by supplying the instruments which facilitate the process of communicating with patients at the counter. Next to technicians’ communicative behavior, the circumstances in the pharmacy may also influence patients to ask their drug questions. One may think about improved privacy conditions in the pharmacy, printed remarks (“ask your pharmacy”) on the written drug information like drug labels and so-called drug information hours in the pharmacy and/or by telephone. These activities may be viewed as conditions which facilitate patients to ask for drug information in the pharmacy. Finally, patients’ positive experiences with patient education in the pharmacy may be of most importance and should be a reinforcement to patients to ask their drug questions again in the pharmacy.

Pharmacists’ expertise is another area which may need attention. It goes without saying that pharmacists should have expertise in practicing patient education, in order to be able to supervise technicians’ in practicing patient education and to act as role models to technicians. Secondly, pharmacists should be able to plan new patient education activities and to prepare their organization for the implementation of these activities. Staff meetings are needed to evaluate the contents and quality of the verbal drug information given to patients on the objectives of this kind of drug information. In these staff meetings as well as in individual contacts technicians’ motivation, abilities and experiences with respect to patient education should be discussed. These professional contacts are most successful when technicians feel free to report their doubts, their inabilities and their negative experiences with patient education and ask for the support they need. We conclude that these activities require pharmacist’s expertise in patient education, planning activities and managing innovation processes in the pharmacy.

Finally, some remarks about the length of time which will be needed to develop patient education activities in community pharmacies. The introduction of an innovation requires serious attention in the first stage of the innovation process, which is called the initiation stage and concerns the acceptance of the innovation by the members of the organization. This stage of the innovation process requires much attention in organizations like pharmacies which are rather centralized with a high level of formalization and a low level of complexity. As a consequence time is needed to pass through this stage of accepting the innovation, particularly with an innovation like patient education which requires technician’s personal involvement. In this view patient education differs from technological innovations, like a new procedure to prepare eye-drops, which is expected to be accepted and implemented in the organization much more easily.

Based upon this knowledge, we recommend pharmacists to consider their expertise in initiating and implementing patient education activities in their pharmacy. When starting new activities they should be aware of the fact that it takes time to realize technicians’ acceptance of these activities and their co-operation.
6.4.2 Education and professional organizations

The activities in community pharmacies have changed from product care to patient care, which has consequences for educators and professional organizations of pharmacists. Nowadays pharmacists and technicians are expected to be involved in patient education about drugs, being one of their professional activities. In this respect, one may advocate schools for pharmacists and schools for technicians to select their students on these interests and subsequently they should teach students how to communicate with patients effectively.

Schools for technicians have recently started to introduce patient education courses in their curriculum. These courses should pay attention to the positive and negative outcomes of patient education, as these were found to predict technicians’ patient education behavior. One could think of presenting them the results of studies about the effects of patient education on patients’ drug use, or patients might be invited to tell the students about their experiences with drug use and about their needs for drug information. Lessons about patient education should also pay attention to the negative outcome expectancies of patient education, such as increased patient autonomy, increased customer registration and reduced barriers to ask questions. These side effects of patient education may be feared and therefore have to be included in communication courses. Technicians’ resistance towards patients’ drug questions may limit the effects of communication courses. Therefore this resistance needs attention before learning students how to encourage patients to feel free to ask their drug questions in the pharmacy.

Nowadays schools for pharmacists teach their students how to communicate with patients effectively. These courses provide the students the instruments to communicate with patients verbally and written. As these courses are rather limited in time, little attention is paid to the process of supervising pharmacy technicians in their efforts to practice patient education in the pharmacy. As pharmacy schools have the responsibility to prepare pharmacists for their future task, they should pay serious attention to pharmacists’ management skills as this is expected to determine whether pharmacies are innovating organizations or not.

The professional organization of pharmacists (Royal Dutch Association for the Advancement of the Pharmacy) has developed several initiatives in the field of patient education, among which the provision of written and audiovisual drug information and the drug telephone service. In addition, standards have been developed about when, what and how pharmacists are expected to do or not to do in the field of patient education. These standards will be used in the medical audit activities of the professional organization of pharmacists. In the near future pharmacists will be supported by the so-called quality circles which are organized regionally. These groups of practicing community pharmacists are to concentrate on exchanging experiences and discussing the problems pharmacists met while they work on the different activities in their pharmacy. One may expect patient education to be one of the subjects which are to be discussed in these meetings.
Finally, one should realize these listed activities of pharmacy schools and the professional organization of pharmacists support only those pharmacists who are motivated to practice patient education, whereas the less motivated pharmacists will not be able to make use of these services. Other instruments are needed to implement patient education in their pharmacies. These pharmacists are expected to be involved in patient education at the moment their colleagues put social pressure by means of medical audit, certification or direct incentives with respect to patient education activities.

6.4.3 Consequences for research

In this paragraph we will first interpret the results of our study as to their consequences for theories about individual behavior (and behavioral change) and organizational change. Secondly, attention will be paid to further research questions about patient education in community pharmacy.

Theories about individual behavior

The results about the determinants of patient education behavior in the pharmacy demonstrated that patients’ behavior in asking drug questions is the most important factor to explain differences in the verbal drug information technicians provide to patients at the counter. In this view our results do not agree with the theories about individual behavior, such as presented in chapter 3, which state that motivation, abilities and reinforcing experiences are the factors which predict people’s behavior. We also studied patients’ drug questions as an indicator of technicians’ communicative behavior at the counter and again other factors than technicians’ personal variables explained the variance among technicians in the number of drug questions they received. We found that the number of Over-The-Counter contacts was the most important factor which explained differences among technicians with respect to the number of drug questions they received. These results demonstrate that differences among technicians as to the frequency of verbal drug information given to patients and differences as to the number of drug questions they received, are not related to their personal characteristics, but to differences in their patient samples.

These results emphasize the necessity to use a homogeneous sample of patient contacts, when studying the determinants of technicians’ patient education behavior. For this reason we also looked at the number of drug questions technicians received in prescription drug contacts, which was found to be related with some personal variables. Patients asked more frequently drug questions in their contacts with technicians who demonstrated higher outcome expectancies of patient education and had attended more frequently patient education courses. These results were also found in studies about pharmacists’ behavior, which were reviewed in chapter 2. These studies demonstrate a relationship between pharmacists’ (evaluated) beliefs about patient education and their behavior. Green’s theory about behavioral change (discussed in chapter 3) also mentions the importance of predisposing factors like one’s beliefs and outcome expectancies and enabling factors like education, which all are known to predict people’s behavior. However, this theory also mentions other enabling factors and reinforcing
factors, which contribute to the development and sustainment of new behavior. These aspects of Green’s concept have not been found by our results. The demonstrated disagreement with Green’s statement about a relationship between behavior and enabling and reinforcing factors, may be due to different factors.

Our first comment concerns the observed patient education behavior, such as demonstrated in the audiotapes. This behavior may be viewed as rather standardized, as the verbal drug information mainly concerns the repeating of drug label instructions. We expect this kind of behavior does not require technicians’ personal involvement, which may have influenced the results of our study about the determinants of technicians’ patient education behavior. Apparently, the current patient education in community pharmacies has not reached a level which allows the performance of studies about the determinants of technicians’ patient education behavior.

Secondly, we should realize our data concern only those technicians who agreed to being audiotaped. One may expect these technicians to experience fewer problems and negative experiences with practicing patient education compared to their colleagues who did not agree to being audiotaped. This limits the opportunity to study technicians’ perceived inabilities and negative experiences in relationship with their patient education behavior. Possibly these aspects are related with technicians’ patient education behavior but our data could not answer this question, as the informed consent procedure offered technicians the opportunity to refuse being audiotaped.

Theories about organizational change
We found that the intervention program influenced the frequency and contents of the verbal drug information given with prescription drugs. This effect has been demonstrated in the pharmacy teams, whose technicians and pharmacists participated in all activities of the intervention program. No effects were found in the teams that attended the organized activities (pharmacists’ meetings, communication courses) less frequently. Apparently both technicians and pharmacists have to attend these meetings and courses, in order to increase their patient education activities. The pharmacy teams that participated less frequently in the intervention program had not increased their patient education activities. Probably these pharmacy teams did not pass through the adoption stage of accepting the innovation, at the moment the project started. As the experiment of the interventions lasted for a period of one year, this may have been too short to realize the necessary motivation and expertise to increase patient education activities in the pharmacy. When we started the project, we expected the pharmacy teams to have passed through the first stage of accepting the innovation. However, frequently technicians reported to be satisfied with the current level of patient education and showed not to be convinced of the necessity to change their patient education behavior. It seems these pharmacy teams need a longer period for changing their patient education behavior at the counter, than a period of one year. These findings are in agreement with theories about innovating organizations, which mention periods of several years and longer periods in the case of implementing innovations which require another culture in the organization and do not produce positive effects which are observable. So the
implementation of patient education in community pharmacies may require several years, what may explain the limited effects of our intervention program.

Our results concern the so-called innovators among the population of pharmacists, which showed to be highly motivated to work on patient education and to adopt new activities in their organization. Their experiences with patient education will have to be communicated to other pharmacists, who may use this information for getting involved in new patient education activities. Finally, we should realize that not all pharmacists will be convinced of the necessity of practicing patient education in community pharmacies. The less motivated pharmacists are expected to become involved when the majority of their colleagues practice patient education, which leads to the social pressure needed to implement the innovation among the so-called laggards in Roger’s diffusion curve.

Further research questions
As we used audiotaped patient contacts, we concentrated on the verbal part of the communication process, while no attention could be given to the nonverbal communicative behavior of both the patients and the professionals. Videotapes may be used to study the nonverbal behavior, which may reveal more about the quality of the communication process. The verbal part of the communication process revealed that patients were seldom invited to ask drug questions or to give feedback on the information given to them, but technicians’ nonverbal behavior may be of more importance in this view. Videotapes may also yield information about patients’ nonverbal behavior, which may express their acceptance and understanding of the information given to them.

In addition, experiments may be needed with regard to technicians’ and pharmacists’ nonverbal and verbal behavior on the one hand, and the circumstances at the counter regarding patients’ privacy on the other hand, to find out how to encourage patients to participate in the communication process about drugs. These experiments may be followed by studies about the effects of a more two-sided communication process on patients’ drug use and patients’ satisfaction with the prescribed drug therapy and pharmacy services.

A related question concerns the instruments that are to be used to answer patients’ individual needs for drug information. Consumer surveys may reveal patients’ views about the pharmacist’s role in providing them with the support they need to use their drugs properly. Special attention is needed for specific groups such as the non-native speakers (immigrants), the elderly, the children and visitors who are not able to visit the pharmacy themselves. Possibly other instruments than a personal contact at the counter are needed to provide these categories of persons with the necessary drug information and support.

Additional research is needed into the determinants of technicians’ patient education behavior at the counter, with more homogeneous patient samples. Another research question concerns the effectiveness of interventions addressed to technicians’ outcome expectancies and the specific interventions
addressed to the technicians who disagreed with being audiotaped. What kind of educational or organizational support do these technicians need in order to feel comfortable in their contacts with patients? Similarly, evaluations are needed of courses about patient education in order to find out what strategy is most effective to improve technicians’ and pharmacists’ communicative behavior. In addition, education directed to pharmacists’ management skills has to be implemented in pharmacy schools and evaluated as to the effects on the pharmacist’s performance in the pharmacy.

Finally, the results of our study demonstrate that patient education in the community pharmacy rather concerns patient instruction, thereby limiting the influence on patients’ drug use. Our results stress the importance of increased attention on developing patient education in community pharmacies. Efforts to develop patient instruction into patient education have to be evaluated as to the effects on a patient level. These results may be useful to convince pharmacists and technicians of the benefits of a two-sided communication process with patients, thereby starting a process of changing patient instruction into patient education. This innovation process may be a challenge to the community pharmacy practice the next decade.
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