POSTSURGICAL CATARACT PATIENTS' HOME SELF-CARE: BEHAVIOURS, DIFFICULTIES AND CONCERNS

by

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ABSTRACT

The purpose of this descriptive exploratory study was to describe specific self-care behaviours related to the provision of eye care and performance of daily living activities, of postsurgical cataract patients during their first few weeks at home following cataract extraction. The twenty subjects who comprised the study sample were all over sixty years of age, were English speaking, had a best corrected visual acuity in the unoperated eye of 20/50 or less, and had undergone uncomplicated unilateral standard cataract surgery without lens implant.

Subjects were interviewed in their homes on two occasions. Difficulties that were experienced and concerns that were expressed by subjects and family members in the performance of eye care procedures, and management of daily living routines were recorded; and factors which influenced the ability of subjects to manage their care at home were identified. Observations were made of the instillation of eyedrops, the application of a protective eye shield, and the status of the operated eye.

The findings suggest a high degree of adherence to the prescribed medication regime, and to the precautionary measures that were to be followed. Difficulties were reported or observed in several areas such as administering eyedrops, applying the eye shield, reading instructions, opening eyedrop containers, and obtaining prescriptions or supplies. The majority of concerns expressed were related to the performance of eye care procedures, and to the prospective visual outcome of the surgery.
Examples of factors identified as affecting home self-care were: the availability of direct assistance and emotional support from family and community resources; the understanding of the surgical procedure and recovery process; the knowledge, and the timing of the receipt of knowledge, of expected behaviours; and the possession of adequate manual skills to perform the eye care procedures with competence and confidence.

Implications for nursing, medical, and pharmacist’s practice are discussed, and areas for further research are identified.
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CHAPTER ONE

INTRODUCTION

Cataract surgery for the removal of an opaque lens in the eye is documented as early as 1000 B.C. in Sanskrit writings (Shock, 1978). At the present time between 400,000 and 500,000 cataract extractions are performed each year in the United States (Jaffe, 1978; Shock, 1978), and about ten percent of that number are performed in Canada (Kwitko, 1978).

A cataract is defined as "a loss of transparency of the crystalline lens of the eye, or of its capsule" (Stedman, 1972, p. 214). The precise mechanism of cataract formation is not well understood, but cataracts develop when the lens protein undergoes a change in molecular structure that results in gradual development of opacity. Radiation, toxic chemicals, trauma, genetic factors, and some systemic diseases are associated with cataract formation, but the most common form of cataract, senile cataract, appears to occur as a natural part of the aging process (Kwitko, 1978; Gardener, 1979). It is reported that by 80 years of age, approximately 85 percent of all people have some degree of clouding of the lens. Cataracts are recognized as the most common cause of blindness in older persons (Shafer, Sawyer, McCluskey, Beck, & Phipps, 1975). Senile cataracts characteristically effect both eyes, but the rate of cataract development is unpredictable, and often the cataract in one eye is considerably worse than the other. In a recent study, Cotlier (1981) reports that acetylsalicylic acid retards the development of cataracts. However, once the lens is opaque, surgical removal is the only treatment.
Teaching patients and family members the knowledge and skills that will enable them to manage their own care at home following cataract surgery, and arranging for assistance from community services to facilitate home self-care, is an important component of nursing practice. Two trends evident in the recent literature have particular import for nurses caring for patients undergoing cataract surgery; firstly, the numbers of cataract extractions performed on persons over 65 years of age is increasing (Nadler & Schwartz, 1980), and secondly, the length of hospital stay is decreasing (Galin, Baras, Barasch, & Boniuk, 1974; Kidger, 1977; Williamson, 1978).

In the United States, during the years 1968 to 1976; the number of intracapsular cataract extractions for individuals over 65 years of age increased at a rate of 4.9 percent per year. This figure was age controlled so that it reflects an excess over the rate of age shift in the population during the same period (Nadler & Schwartz, 1980). Canadian statistics indicate a similar trend (Statistics Canada, 1969, 1977). Improved technology that enables more elderly persons to tolerate surgery, and an increased demand on the part of the elderly for functional vision, are suggested as factors influencing the increase in rate of intracapsular cataract extractions (Nadler & Schwartz, 1980).

Available data indicate that 70 percent of cataract procedures involve persons over 65 years of age (Statistics Canada, 1977; Nadler & Schwartz, 1980). This particular population has, during the past decade, increased by 23 percent while the under 65 age group increased by only 6.3 percent. Within this elderly group, 38 percent are over 75 years of age, and the 85-and-over-group are assuming increasing proportions (Brody, 1980).
This population shift, concomitant with the increased incidence of cataract extractions among the elderly, signifies an increase in numbers of elderly people that will need care. Many of these elderly people live alone or with an equally elderly spouse (Brody, 1980), and many are developing physical handicaps that make self-care difficult. Performance of the necessary eye care procedures and routine living activities at home following hospital discharge may present problems.

The second trend, that of reduced hospital stay, is a subject of current interest. Nadler and Schwartz (1980) report a decrease in average length for hospital stay of intracapsular cataract extraction from 7.6 days in 1968 to 4.8 days in 1976. In a similar time period, the average hospital stay in Canada for intracapsular extraction changed from 12.3 days to 7.9 days (Statistics Canada, 1969, 1976). This trend is also reported in the United Kingdom (Ingram, Banerjee, Traynar, & Thompson, 1980; Kidger, 1977).

Improvements in surgical techniques, development of finer instruments and sutures, and the use of an operating microscope have reduced both the intraoperative and postoperative risk of complication so that stringent restrictions of activity are no longer considered necessary (Boyd-Monk, 1977). These factors, plus the obvious economic benefits incurred with reduced hospital stay, have influenced medical practice. Several authors report practices wherein patients undergo cataract surgery on an outpatient ambulatory basis (Williamson, 1978; Vukcevich, 1979; Low, 1978), or are admitted as day cases and are discharged a few hours following surgery (Galin et al., 1974; Ingram et al., 1980). These authors claim that there is no significant difference in the rate of
complications or in the visual outcome related to the decreased hospital stay. However, these criteria do not consider "the extra effort made by relatives and friends of the patients in caring for them in the immediate postoperative phase" (Strachan & Bowell, 1972, p. 629), nor the fact that the decreased hospital stay will give nurses less time to provide the teaching and discharge planning aspects of nursing care.

Postsurgical cataract patients are expected to perform eye care procedures and follow a prescribed medical regimen at home, the details of which are presented in the following chapter. According to Davies (1976), effective teaching of patients and family members should include not only the necessary knowledge and skills, but the teaching must be based on an understanding of the patient's environment and what is important to him. An understanding of the experiences that postsurgical patients have at home following hospital discharge is therefore important for nurses, so that they can make their teaching relevant and appropriate.

Discharge planning is contingent on matching available resources with patient needs. In British Columbia there is a government financed Home Care Programme which provides, among other services, nursing visits, homemaker visits, meals on wheels, and transportation (McClelland, 1976). This service is available to 80% of the residents of British Columbia (British Columbia Ministry of Health Annual Report, 1980, p. 70). Nurses are instrumental in ordering Home Care services if the need is perceived.

Few studies describe the way postsurgical cataract patients manage their self-care at home following hospital discharge. Little is known
about the changes in living patterns the surgery may necessitate, or the concerns and difficulties these patients and their families may experience. With more knowledge of the home component of postsurgical cataract care, hospital nurses would be better able to fulfill their roles of teaching and assisting with discharge planning, and community nurses would be assisted in identifying situations in which nursing care should be provided.

In summary, the trends of decreasing length of hospital stay for an increasing number of elderly patients undergoing cataract surgery accentuate the importance of the teaching and discharge planning aspects of nursing care of postsurgical cataract patients. Knowledge of what happens to patients after they go home from hospital is essential if discharge teaching and planning are to be effective. The dearth of information available regarding home self-care of cataract patients stimulated this study.

**Purpose of the Study**

The purpose of this study was to describe specific self-care behaviours of individuals over 60 years of age during the first two to three weeks at home following uncomplicated intracapsular or extracapsular cataract extraction; to identify difficulties and concerns experienced by these patients and family members; and to describe personal and environmental factors that affected the behaviours, difficulties or concerns.
**Specific Objectives**

The six objectives of the study were as follows:

1. To describe selected behaviours related to the provision of eye care in the following categories:
   a) Administration of medications as prescribed.
   b) Protection of the eye from injury.
   c) Maintenance of cleanliness of the eye.
   d) Provision of comfort measures when necessary.
   e) Ability to recognize and report significant indicators of possible complications.
   f) Arrangement for continued medical supervision.

2. To assess provisions for accomplishment of activities of daily living.

3. To describe difficulties identified by patients or family members in the provision of eye care or in the accomplishment of activities of daily living.

4. To describe concerns expressed by patients and family members.

5. To identify personal and environmental factors that influenced the self-care behaviours, difficulties or concerns.

6. To assess the status of the operated eye and report any signs indicative of possible complications.

**Definition of Terms**

**Specific self-care behaviours**: Actions taken by the patient to carry out eye care procedures and to provide for the essential requirements of daily living.
Uncomplicated Intracapsular or Extracapsular Cataract Extraction

a) **Uncomplicated:** No unusual or untoward happenings either during the surgical procedure or during the hospital stay, e.g. expulsive hemorrhage, major loss of vitreous, endophthalmitis, severe iritis, wound rupture, serious medical event.

b) **Intracapsular cataract extraction:** Removal of the cataractous lens in its capsule, i.e. without planned or accidental rupture of the lens capsule.

c) **Extracapsular cataract extraction:** Removal of the nuclear and cortical material, leaving the posterior capsule in place.

**Concern:** A situation that was perceived by patients or family members as stressful, causing worry, or that stimulated a question.

**Difficulty:** A circumstance that was perceived by the patient or family member as hard to do, understand or surmount; that posed a problem or obstacle.

**Personal and Environmental Factors**

a) **Personal factors:** Examples were manual dexterity, physical functioning, knowledge and skills related to home care of the eye, visual acuity, hearing, perceptions of the surgical experience, feelings of confidence, education level, ethnic background, health status, previous experience with eye surgery or instillation of eye drops.

b) **Environmental factors:** Examples were family, social and community support groups, smoking status, housing, neighbourhood environment, length of stay in hospital, transportation, proximity of stores and other services, socio-economic status, season of the year.
Activities of Daily Living: Actions that are undertaken on a regular basis to provide for basic needs of rest, exercise, nutrition, elimination, safety, shelter and companionship.

Signs Indicative of Possible Complications: Swollen lids, unduly red conjunctiva, hazy cornea, shallow anterior chamber, unusual discharge, crusting of the eye lashes, severe headache, browache, nausea, pain in the eye, change in vision.

Limitations

Caution must be used in generalizing results of this study because of the small sample size (N = 20), and the convenience method of sample selection. The data collection method which used open-ended questions and observations in addition to structured items, introduced the risk of bias both in the interpretation of subject’s responses to open-ended items, and in the accurate recording of patient behaviours.

Assumptions

For this study it was assumed that behaviour of patients, and personal and environmental factors are important components of the health care process, interacting with medical and nursing practice to influence the outcome of health care.
CHAPTER II
REVIEW OF THE LITERATURE

This literature review provides a perspective for the study of postsurgical cataract patients' self-care behaviours. The review is presented in five sections: 1) theoretical and organizational framework; 2) medical practice related to patients with cataracts; 3) nursing practice related to patients with cataracts; 4) personal and environmental factors that influence patient's self-care behaviours; and 5) studies of postsurgical cataract patients in their homes.

Theoretical and Organizational Framework

Psychological theories of behaviour may be divided into two main categories, firstly those that contend that there is a direct connection between the stimulus and the response, minimizing mediating variables, and secondly those that view the mediating variables as important factors in a behavioral response. Examples of theorists in the first mentioned category are Thorndike, Pavlov, Watson and Skinner, and uses of their work in the health care field may be seen in behaviour modification techniques and programmed learning.

The second group of psychologists, who contend that mediating factors govern the reception of stimuli, their reorganization, and the response, are the Gestaltists, such as Kohler and Koffka; field theorists, such as Lewin and Tolman; phenomenologists, such as Combs and Snygg; and personality theorists, such as Freud and Maslow (Clayton, 1965, p. 46-77).
Theories of this second group of psychologists are appealing to many health professionals because they provide a rationale for understanding behaviour, and a focus for intervening to modify behaviours in a direction that will foster positive health outcomes.

The major concepts inherent in the work of Lewin (1951), Tolman (1958), and Combs and Snygg (1959), are: 1) that a variety of factors, both internal and external to the individual, influence behaviour; and 2) that the individual's perception of a situation is an important factor in mediating behaviour. These concepts have become a central theme of many nursing models (Campbell, Cruise & Murakami, 1976; King, 1968; Neuman, 1974; Roy, 1974). The importance of considering the patient's viewpoint is recognized, and active patient participation in the health care process is encouraged. The role of the health provider, particularly the nurse, is changing from one of doing things for or to the patient, to a more collaborative relationship where the patient is helped to assume his own self-care (Kinlein, 1977; Norris, 1979).

An organizational framework which incorporates the concepts of mediating factors in behaviour, and the collaborative patient/provider relationship, has been adapted for this study from a health services research model proposed by Starfield (1973). Figure 1 illustrates this adapted model wherein patients, nurses and doctors are seen as co-providers of health care. The outcome of such care is the result of the interaction of patient behaviour, personal and environmental factors, and medical and nursing practice. The various aspects of this interactional model will now be discussed.
The medical practice component of the model is well documented in the literature. Many authors describe variations in surgical procedures, new instruments and suture materials, variations in hospital and postsurgical management, prevention and control of complications, and resultant visual outcomes. However, the discussion in this section will be limit-
ed to aspects that have relevance to the self-care behaviours of post-
surgical cataract patients.

Cataract surgery is usually an elective procedure, and the decision
to operate is customarily made when the visual acuity in the patient's
better eye had decreased to the point where normal activities cannot be
performed (Jaffe, 1978). The surgery may be performed under local or
general anaesthetic, depending upon the surgeon/patient preference and
the patient's medical status.

There are two basic techniques for cataract removal; the intracap-
sular technique which removes the lens and its capsule, and the extracap-
sular technique in which the capsule is ruptured, the cortex and nucleus
removed, and the posterior capsule left in place. Customarily in these
standard procedures the lens is removed through an 11 - 18 mm. incision
which is made superiorly at the corneal-scleral junction. The incision
is closed with either direct or running multiple fine sutures. The de-
gree of reaction and discomfort postoperatively depends to some extent on
the size and type of suture material used, and whether knots are left ex-
posed or are buried (Troutman, 1971).

Complications related to the surgery are rare (Gardener, 1979;
Weinstock, 1978), and visual improvement is achieved in 95 percent of
cases of standard cataract surgery when combined with corrective refrac-
tion (Luckman & Sorensen, 1980, p. 1992). Occasionally the following
complications may occur: infection, hemorrhage, wound disruption, vitre-
ous loss, retinal detachment, uveitis, or glaucoma (Havener, Saunders,
Keith, & Prescott, 1974, chap. 11; Johnson, 1978; Smith & Nachazel, 1980,
chap. 5). Postoperatively, patients are taught precautionary measures
designed to reduce the occurrence of complications. A more detailed discussion of patient teaching is presented in the ensuing section on nursing practice.

Mydriatic, anti-inflammatory, and antibiotic eyedrops and/or ointments may be prescribed to be used for several weeks following standard cataract surgery to reduce the risk of complications, and to increase comfort (Smith & Nachazel, 1980).

As the lens normally contributes about one-quarter of the focusing power of the eye (Smith & Nachazel, 1980), its function must be replaced by some form of optical correction such as spectacles, contact lenses or an intraocular lens implant. The advantages and disadvantages of each of these corrective measures are important for patients to consider.

Cataract spectacles create many difficulties. Objects are magnified approximately 30 percent, peripheral images are distorted, and the field of vision is reduced. The weight of thick lenses is uncomfortable, and the cosmetic appearances are objectionable to a number of people (Jaffe, 1978). Some amelioration of these problems may be obtained with plastic lenses which are lighter in weight than glass lenses, and with new manufacturing techniques which reduce peripheral distortion. The spatial disorientation associated with cataract spectacles requires major adjustments and is difficult for many people. In addition, if surgery has been performed in only one eye, the discrepancy in size of images precludes binocular vision (Jaffe, 1978).

1 Richard Stewart; Dispensing Optician; personal communication, June 1981.
A contact lens produces less distortion and permits adequate peripheral vision. Objects are magnified by only five to ten percent, so binocular vision can be achieved in instances when only one eye is aphakic. However, management of contact lenses requires a high degree of manual dexterity, which older persons often lack. The perfection of extended wear lenses, ones which may be worn for several months without removal, may offer a viable option to those persons who are unable to manage the daily insertion and removal of a contact lens (Luckman & Sorensen, 1980, p. 1992-96).

Permanent correction with glasses or contact lenses is usually delayed until changes in refraction due to the healing process have stabilized — a period commonly entailing two to three months. Occasionally temporary spectacles with refractive power approximating the permanent correction are provided.

The implantation of a plastic lens, with optical power similar to that of the patient's natural lens, is a method of optical correction gaining in popularity. According to Jaffe (1978), at the time of his writing approximately one-quarter of the cataract operations performed in the United States involved a lens implant. The advantages of the intraocular lens are namely: that the magnification produced is only one to three percent, there is no spatial disorientation or abnormal peripheral vision, and patients have useful vision almost immediately. The implanted lens does not have the ability to accommodate, so reading glasses need to be worn for close work (Luckman & Sorensen, 1980, p. 1992-96). According to Jaffe (1976), short term results of the intraocular lens are good, but there are as yet no well documented long term studies. For a
young individual there is a question of long term intraocular tolerance, but for older, dextrously impaired persons, the intraocular lens offers many advantages.

**Nursing Practice Related to Patients with Cataracts**

Because this study is concerned with postsurgical cataract patients at home, the discussion of nursing care will be limited to those measures that help patients and family members assume responsibility for self-care at home following hospital discharge. Widely accepted recommendations that are pertinent to home eye care for postoperative cataract patients have been selected from nursing texts (Luckman & Sorensen, 1980, p. 1992-96; Shafer et al., 1975, chap. 31; Smith & Nachazel, 1980, chap. 5), and journal articles (Berkoben, 1978; Boyd-Monk, 1977; Shanahan & Pelham, 1978), and have been summarized by this writer.

Since it is customary for eyedrops to be prescribed for several weeks following surgery, it is necessary to teach patients and/or a responsible family member how to instill the drops appropriately. Other eye care procedures such as instillation of ointment, application of a protective shield at night, and cleansing the eye of mucus or crusts may be recommended, and therefore require instruction.

A number of activity restrictions and precautionary measures are advocated in an endeavour to reduce the risk of postoperative complications. The following list summarizes major recommendations that nurses convey to patients.

1. Avoid actions such as coughing, sneezing, bending, lifting, and straining during bowel movements, that may increase intraocular pressure and place strain on the suture line.
2. Avoid sudden movements, jarring, bumping, squeezing, or rubbing the eye, that might contribute to wound rupture, iris prolapse, hemorrhage, or retinal detachment.

3. Wear dark glasses or prescription glasses during the day, and a protective eye shield at night to prevent accidental rubbing or injury.

4. Wash hands before treatments, and refrain from touching the eye with fingers or other unclean materials, to avoid infection.

5. Be cautious on stairs, uneven ground, curbs, crossing busy streets, and pouring hot liquids, as there may be difficulties with depth perception that influence the ability to judge distances.

6. Be aware of, and report any signs or symptoms of possible complications to the doctor immediately. Significant signs and symptoms are pain in the eye, headache or browache that is unrelieved by a usual headache remedy, nausea or vomiting, unusual discharge or crusting, change in vision, flashing lights.

7. Use a walking stick for stability, and for judging heights and edges of curbs and stairs.

Shanahan and Pelham (1978) describe a practice wherein a responsible family member is included in home care instructions. Nurses demonstrate necessary skills, and ascertain before hospital discharge that the patient or the family member is capable of adequately performing the prescribed procedures. In collaboration with family members, nurses make referrals to community agencies if home care assistance is required.

In addition to teaching manual skills and precautionary measures, the nurse has a responsibility to prepare patients and family members for situations that may arise during the postoperative recovery period. The
possibility of experiencing minor eye discomforts and sensitivity to bright light should be discussed, and methods of alleviating these suggested. If temporary glasses are provided, anticipated visual adjustments need to be discussed. Patients should also be reminded of an expected waiting period of two to three months before healing has taken place, and the final visual correction provided.

Several authors advocate the provision of written information, in large print, as an adjunct to verbal instructions, and provide this written material variously before hospital admission (Low, 1978; Kidger, 1977), and before hospital discharge (Shanahan & Pelham, 1978). These latter authors report that the names of the patient's medications, with their dosage instructions, are written on the information pamphlet "to aid the patient's adherence to the prescriptions" (Shanahan & Pelham, 1978, p. 11). A discharge instruction sheet provided for most patients in this study may be found in Appendix E.

Community nurses who care for postoperative cataract patients in their homes undertake the following responsibilities (Berkoben, 1978; Kidger, 1977):

1. Perform prescribed eye care procedures, supervise patients and/or family members while they perform procedures, and teach skills if necessary.

2. Monitor both the patient's general physical condition, and the status of the operated eye, and report any complications to the attending physician.

3. Reiterate recommended precautions, and ensure that patients and family members know them and understand their importance. Assist pa-
tients and family members to recognize and remove potential hazards in the home.

4. Answer questions, and provide information to facilitate self-care and reduce concerns.

5. Ascertain the ability of patients to provide for daily living necessities, and refer to other agencies if necessary.

Personal and Environmental Factors That Influence Self-Care

Since no studies were located that reported self-care behaviours specifically of postsurgical cataract patients, general factors that influence patient's self-care were identified in the compliance literature and literature related to the elderly. For the purposes of this paper the terms "compliance" and "adherence" are used synonymously, and are defined as "... the extent to which patients follow the instructions — proscriptions and prescriptions — of their physicians or other providers" (Hulka, 1979, p. 3). The discussion is presented under three headings; personal factors, illness and treatment factors, and interpersonal factors.

Personal Factors

In extensive reviews of the literature on compliance, Blackwell (1973), Haynes (1978, p. 49-62) and Marston (1970), conclude that demographic variables such as age, sex, socio-economic status, education, religion, and race, when examined in isolation from other variables, are seldom found to be significantly related to compliance with recommendations. Some exceptions are noted in the preventive health literature
where Rosenstock (1974) found that women were more likely to engage in preventive actions, and persons of low socio-economic groups were less likely to take preventive actions that entailed cost to themselves.

In the ophthalmology literature there are also inconsistencies. In studies of eyedrop adherence of glaucoma patients, women were found to be more compliant than men (Bloch, Rosenthal, Friedman, & Caldarolla, 1977; Vincent, 1973), and individuals over 65 years of age were reported to be more compliant than their younger counterparts (Vincent, 1973). Spaeth (1970) found no differences in these variables.

Marital status and living situations are associated with compliance in many studies. Divorce, separation (Schwartz, Henley & Zeitz, 1964), family instability, unemployment, poverty, and living alone (Blackwell, 1973) contribute to non-compliance. According to Davis (1968) and Green (1970), health related behaviours are influenced by the expectancies and reactions of others. Peer groups and families can exert a strong influence in either a positive or negative direction. Caplan and Associates (1976) reported that adherence to a regimen for hypertension was enhanced by support from physicians and spouses, and Donabedian and Rosenfeld (1964) noted that adherence of chronically ill patients to their medical regimen was correlated to the degree to which family members provided support and interest. In addition, social isolation has been associated with an increase in medication errors among the elderly (Neely & Patrick, 1968).

Patient personality variables have been investigated, and Davis (1968b) reports that patients who are co-operative, grateful and articulate are more compliant than those who are demanding, authoritative and
overbearing; or submissive and dependent. High self-esteem, and confidence in one's ability to follow recommendations are also associated positively with adherence (Caplan et al, 1976).

Many patient values, beliefs and attitudes are related to adherence and the patient's perception of the severity of an illness, rather than of the physician's assessment of it, is considered to be the important factor in adherence (Gillum & Barsky, 1974). Non-compliers perceived themselves as less susceptible to, or threatened by, the actual or potential illness (Gillum & Barsky, 1974), believed that the treatment was of no benefit (Spaeth, 1970), or considered that regular medication schedules were unimportant (Bloch et al., 1977). Patient attitudes toward compliance are exemplified in Davis' (1968b) study, where 40 percent of defaulting subjects indicated that they never had any intention of following the doctor's instruction. Other authors note that three to seven percent of the prescriptions written by physicians are never filled (Boyd, Covington, Stanaszek, & Cousins, 1974; Hammell & Williams, 1964).

The learning ability of older adults is a potential factor of influence in adherence to recommendations, and is a subject of controversy in the psychology literature on aging. Most studies agree that the speed of information processing and the rate of responding declines with age, but there is disagreement whether there is a decline in actual learning ability. Botwinick (1978, p. 278) summarized a number of studies and concludes, "when sufficient time for a response is available, the performance of elderly people is only slightly inferior or not inferior at all to that of younger people." Some situations in which older adults are more disadvantaged than younger adults are: 1) when there is irrelevant
or redundant information included in the learning task (Rabbitt, 1965); 2) when pacing of information is rapid (Canestrari, 1963); 3) when there is an inappropriately high level of autonomic nervous system stimulation (Powell, Eis dorfer, Bogdonoff & Durham, 1964); and 4) when the learning task is abstract rather than concrete (Arenberg, 1968). Decreased response time or omitted responses in the older adult were also attributed to worry about making an error (Potash & Jones, 1977).

Sensory deficits, deficits in manual dexterity, physical diseases, and attitudes about the ability to learn also affect the older adult's ability to comprehend instructions and perform manual skills (Saxon & Etten, 1978, p. 158-166).

Few studies make any distinction between comprehension (understanding the regimen) and compliance (following the regimen). However, two studies (Parkin, Brown & Monk, 1976; Schwartz, Wang, Zeitz & Goss, 1962) are noted exceptions. In the Parkin study, 130 patients discharged from acute medical wards were studied two weeks following discharge, to identify factors responsible for deviation from prescribed drug treatment. The mean age of subjects was 66 years. The results indicated that 35 percent of subjects deviated from prescribed treatment because they did not understand their regimens; 15 percent knew the instructions but did not follow them. Therefore, in this study nescience was a more powerful factor than non-compliance in deviation from the prescribed regimen. Common sources of error were: using dosages that were operative prior to hospital admission, reversion to old prescriptions (Parkin et al., 1976), adding medications prescribed by a previous physician to the current ones, and using a spouse's medication both knowingly and unknowingly
(Schwartz et al., 1962). Forgetting instructions may be an important factor in nescience. Ley (1980) summarized his research and reported that in one study, 50 percent of the information given to patients by a general practitioner was forgotten in five minutes. In other trials 37 - 54 percent of material was forgotten. Forgetting was not related to age or intelligence, but a curvilinear relationship with anxiety was reported (Ley, 1980).

The aforementioned knowledge of expected behaviours, and the ability to perform them, is different from factual knowledge about disease entities and medications. The literature is divided over whether this latter type of knowledge increases adherence (Caldwell, Cobb, Dowling & de Jongh, 1970; Hulka, 1979; Pratt, Seligmann & Reader, 1957; Spaeth, 1970), or has no effect at all (Bergman & Werner, 1963; Boyd et al., 1974; Haynes et al., 1976, p. 69-82). Close scrutiny of three glaucoma studies would suggest that although knowledge of facts was not sufficient to influence adherence in these studies, an understanding and appreciation of the relationship between increase in intraocular pressure and visual loss did differentiate compliers and non-compliers (Bloch et al., 1977; Spaeth, 1970; Vincent, 1973). Perhaps it is the higher level of understanding and appreciation, rather than factual knowledge, that is important to adherence to recommendations.

Although knowledge about the medical condition may not consistently correlate with adherence, information seeking is one of the most basic ways of coping in situations that are new or pose a threat (Cohen & Lazarus, 1979, p. 217-254). For example, Janis (1958) has suggested that by gaining information about what to expect, patients can develop ways of
coping with the threats of surgery. This concept may explain the finding that satisfaction with health care is increased when information about the medical condition is provided (Hulka, 1979; Svarstad, 1976). However, the amount of information desired is very individual. Some patients are insatiable in their search of information, whereas others prefer to place themselves in the hands of someone they can trust, believing that "ignorance is bliss" (Cohen and Lazarus, 1979, p. 244).

Illness and Treatment Factors

In chronic conditions where there is prolonged therapy, lapses in compliance are more likely to occur than in acute short term illnesses. This is particularly true when the condition is mild or asymptomatic, when the treatment is suppressive or prophylactic, or when the consequences of skipping treatment may be delayed (Blackwell, 1973). For example, in chronic simple glaucoma, where there is no pain or immediate disability, and where the only symptoms may be from unpleasant side effects of the medication, there is little reinforcement to continue with prescribed treatment (Riffenburgh, 1966). In Bigger's (1976) study, 37 percent of subjects with asymptomatic elevation of intraocular pressure dropped out of treatment, most within a month of the initial diagnosis.

If symptoms are present, recommendations that attempt to relieve the discomforts are usually followed carefully (Haynes, 1976), but disappearance of the symptoms frequently lead to premature termination of the prescribed regimen (Becker et al., 1972). Bigger (1967) comments that although no statistical studies report compliance in acute ophthalmological conditions, most ophthalmologists are aware that patients with conjunc-
tivities are likely to discontinue their eyedrops once the symptoms clear, and many contact lens wearers discontinue regular follow up appointments once they have achieved successful wear.

The amount of change in habits or life style that is required to follow the recommendations (McAlister, Farquhar, Thoresen & Maccoby, 1976), and the amount of interference with daily living activities (Tagliacozzo & Ima, 1970) affect adherence. In addition, patients are known to be selective in adhering to recommendations, complying with those aspects that require the least adjustment in their way of life (Davis & Eichhorne, 1963).

Complexity of the regimen and the number of drugs prescribed have been cited by a number of authors as affecting adherence (Davidson & Akingbehin, 1980; Francis, Korsch & Morris, 1969; Hulka, 1979; Schwartz et al., 1964), but the effect of the number of doses per day has been questioned (Blackwell, 1973).

The effect of medication side effects on compliance is equivocal (Haynes, 1979, p. 60), however, both Bloch and Associates, (1977) and Riffenburgh (1966) cite unpleasant and inconvenient side effects as reasons that patients with glaucoma discontinue their eyedrops.

The few studies that have investigated the effect of cost of medications on adherence produce conflicting results (Haynes, 1979, p. 60); however, the cost of eyedrops was a factor in non-compliance in Vincent's (1973) glaucoma study.

Dispensing factors are implicated in adherence to medication taking in several studies. Mazzulo, L'asagna & Griner (1974) report that there is a wide variation in patients' interpretations of labelled instructions
on medication bottles, particularly when the instructions were not explicit; and Hermann (1973) notes that patients have considerable difficulty in establishing for themselves appropriate time intervals and sequences for medication schedules.

Safety lock containers were a source of difficulty and reduced medication consumption for subjects in two studies (Lane, Barbarite, Bergner & Harris, 1971; McIntire, Angle, Sathees & Lee, 1977). Furthermore, it was noted that elderly patients frequently left the tops of containers off once they had been opened (McIntire et al., 1977).

Davidson and Akingbehin (1980) comment that labels are frequently hard to decipher for patients whose visual acuity and reading ability are reduced, and Vincent (1973, p. 218) reports that difficulties with self-administration of eyedrops were indicated as factors in non-compliance for a small number of subjects who stated, "My hand trembles," "It's hard to find my eye," or "I waste too much."

**Interpersonal Factors**

The role of patient satisfaction with medical care has received considerable attention (Aday, Andersen & Fleming, 1980), and patient satisfaction with the interaction between themselves and their physician has been found to be positively related to subsequent adherence to recommendations (Aday et al., 1980; Hulka, 1979; Korsch & Negrete, 1972; Svarstad, 1976). Although most of the studies are of relationships between physicians and patients, the principles apply equally to nurses. From the patient's perspective, satisfaction is enhanced when: 1) doctors pay attention to and deal with what the patient perceives as the
main concern for the visit; 2) a doctor shows a friendly interest in non-medical aspects of a patient's life (Aday et al., 1980; Korsch & Negrete, 1972); 3) expectations for a visit are met (Stimson, 1974); 4) explanations and information are given about the medical diagnosis, and justifications for specific prescriptions are provided (Svarstad, 1976); and 5) an opportunity is provided to participate in an active interchange with the doctor, asking questions and validating impressions (Korsch & Negrete, 1972).

The communication of instructions of patients, and the patient's reception of these instructions has been the subject of studies by Hulka (1979) and Svarstad (1976). In both these studies, discrepancies between what the physician said was prescribed, and what the patient reported as the regimen, resulted in medication errors of dosage, scheduling, and duration of treatment.

Svarstad identified physician factors that reduced successful communication as: 1) incomplete or ambiguous instructions, 2) terminology that was not understood by the patient, and 3) faulty assumptions about the extent of the patient's knowledge. Patient factors were identified as unwillingness to ask for clarification, or to indicate uncertainty and confusion. Patients who provided such feedback received more instruction from the physician, and increased the accuracy of their perceptions.

In principle there can be little doubt that the quantity, quality and content of the provider/patient interaction influences the way patients conduct their own self-care, but studies of the components of the interaction are few, and are just beginning to attract the attention of researchers.
In the final section of this review, studies of cataract patients at home are discussed.

Cataract Studies

Although there are many studies in the medical literature that examine types and rates of complications, and visual results following cataract surgery, there are few that examine the impact of the surgery on the lives of patients and their families, and few that describe self-care practices.

In a paper written by Kidger (1977), an ophthalmic nurse specialist in England, a home visiting programme to postsurgical cataract patients is described. One hundred and nine patients were visited over a one year period, drops were instilled, patients and family members were supervised in eye care procedures, and the operated eye was examined. Seven patients were referred back to their ophthalmologist because of leaking wound, atropine sensitivity, iritis, and hyphema. Problems that patients had after they got home from hospital prompted the development of an information pamphlet, printed in large type, that is now sent to all patients before hospital admission. The author does not report the specific problems that were encountered by the patients at home.

In another study in the United Kingdom, Hilbourne (1975) visited 44 elderly postsurgical cataract patients in their homes to ascertain their level of functioning and their reactions to the surgery. Three months following surgery, very few patients had increased the number of activities they were able to do, many were having difficulty adjusting to their spectacles, and many were disappointed with the outcome of the surgery.
The key determinant in performance and satisfaction was the level of visual acuity in the unoperated eye; subjects with corrected visual acuity in the unoperated eye better than 20/100 were dissatisfied while those with less than 20/100 were pleased with their results.

Finally, Crawford (1980) in an unpublished master's thesis, reports on the needs of ten elderly postsurgical cataract patients referred to a visiting nurse agency. Patients in this study relied heavily on family members, neighbours and friends, as well as the visiting nurse for provision of eye care. Other needs frequently identified were assistance with housekeeping and shopping. Subjects over 80 years of age, with poor vision in the unoperated eye, living alone and with little support system, were identified as most likely to need Home Health Services for a longer period of time than the three days which are reimbursed by the U.S. Medicare System. The small sample size and the retrospective nature of the study which depended on recall of events that occurred up to one year previously, are limitations of this research project.

In summary, theory supports both the usefulness of a collaborative approach to health care, and the need to recognize that many variables affect patients' self-care behaviours. Nursing and medical aspects of a patient's care following cataract surgery are documented, but the personal and environmental factors that influence the patient's behaviour can only be surmised from the general literature. No studies have been located that examine specifically the self-care behaviours of postsurgical cataract patients at home following hospital discharge, and few report difficulties and concerns that are experienced. This deficiency in the literature directs the focus of the present study.
CHAPTER III
METHODOLOGY

This study was conducted to describe selected eye care and self-care behaviors of postsurgical cataract patients during their first few weeks at home following hospital discharge, and to identify factors which might have influenced those behaviors. An exploratory descriptive research design was selected as the most appropriate method to achieve the stated research purpose. The longitudinal panel design of the project provided the opportunity to observe changes in the same subjects over time.

The study took place over a three month period between May 1st and July 31, of 1981, in a large metropolitan Canadian city, and involved twenty subjects who had recently undergone cataract surgery.

This chapter describes the methods used to conduct the study: selection of participants, development of the instrument, collection of the data, and analysis of the data.

Selection of Participants

A convenience sample of twenty postsurgical cataract patients who met the following eligibility criteria were admitted to the study:
1. Age was over 60 years.
2. Present surgery was the first cataract extraction.
3. Procedure was an intracapsular or extracapsular extraction without lens implant.
4. Best corrected visual acuity in the unoperated eye was 20/50 or less.
5. Surgical procedure and postoperative hospital stay were uncomplicated.

6. Were discharged to a private residence (where patient had to make own arrangements for services).

7. Were able to speak, understand and communicate in English.

8. Lived in a geographical area that was within a one hour drive of the city centre.

The rationale for the selection criteria is discussed briefly. The age requirement was selected because it represents the major group of people undergoing cataract surgery. Canadian statistics indicate that 70 percent of cataract operations are performed on individuals over 65 year of age (Statistics Canada, 1977). The requirements of the specific surgical procedure, lack of complications, first cataract surgery, minimum visual acuity, and the exclusion of persons with lens implants reflect an attempt to limit the number of variables and increase the homogeneity of the sample. The residence requirements were selected to obtain subjects who were responsible for their own care, and the communication specification was made because of the verbal interaction requirements of the interview data collection technique.

Initial contact with potential subjects was made by the attending ophthalmologist, who explained the purpose and scope of the study. If subjects expressed an interest in participating, a written explanation of the study was provided (See Appendix A). Subjects were encouraged to discuss the study with family members, and think of questions they would like to ask.
The investigator visited interested subjects while they were still in hospital, answered questions, and obtained a consent for participation in the study (See Appendix B). A tentative appointment for the first home visit was made, at a time on the day following hospital discharge, that was mutually convenient to the subject and the researcher. A business card noting the investigator's name, telephone number and university affiliation was left with the subject.

Both the information material and the consent form were provided in large print, high contrast format to maximize legibility for these low vision subjects. In spite of these special efforts to improve the readability of materials, four subjects were unable to read the consent form. In these instances, to ensure that subjects knew what they were signing, a family member was asked to read the information sheet and the consent form to the subject, and co-sign the agreement to participate.

All subjects who met the eligibility criteria agreed to participate in the study.

**Development of the Instrument**

A three faceted data collection instrument was designed by the researcher for this study (See Appendix D). A face sheet was compiled to record demographic data. An interview schedule was constructed using a selection on both open and closed-ended questions, a combination that is highly recommended by Polit and Hungler (1978, p. 330) to attain the advantages and offset the weaknesses of each type of question. Finally, a checklist was devised to record observations of eyedrop instillation, application of a protective eye shield, and the condition of the operated eye.
Content areas were directed by the conceptual framework, and derived from three main sources: firstly from the literature on postoperative nursing care of cataract patients, health care needs of the elderly, and the compliance literature; secondly from discussions with ophthalmologists, ophthalmic nurses and home care nurses; and thirdly through conversation with individuals who themselves had undergone cataract surgery.

The interview schedule was critically reviewed for content validity and clarity by two ophthalmic head nurses, three ophthalmologists, a nursing research committee two of whose members had ophthalmological experience, and by a faculty member experienced in constructing and coding interview schedules. Revisions were made to incorporate suggestions of the consultants.

Reliability issues were addressed by the utilization of a standard schedule for each subject, by tape recording interviews, and by recording observations immediately following the interview. Internal consistency of patient responses increased confidence in the reliability of the instrument.

A pilot study was conducted with six subjects to test the instrument. At the completion of three interviews, minor changes were made in wording and sequence in order to clarify ambiguities and introduce, earlier in the interview, items of major relevance to the subjects. An item on cost of supplies was deleted as most of the study subjects were in an age group that had costs of medications covered by Provincial Pharmacare Insurance, and pilot subjects deemed other supplies such as cotton balls and tape to be insignificant in cost. The revised schedule was tested with three more subjects and was found to be satisfactory.
Two committee members and a faculty research associate reviewed tape recorded interviews and concomitant data coding procedures. Both features were judged to be acceptable.

Confidentiality was maintained by using code numbers on tapes and data coding sheets. The list of patient names was kept by the researcher in a separate confidential file.

Written permission was obtained from the attending ophthalmologist of each subject for an extra prescribed eyedrop to be instilled if the researcher's visit did not coincide with a regular medication administration time (See Appendix C).

Collection of Data

Data were collected from three sources: personal interviews, direct observations, and the subject's hospital chart. Interviews and observations took place during the course of the two home visits which were made to each subject. The first visit took place the day following hospital discharge, the second between the 13th and 16th postoperative day. The length of visits averaged 40 minutes; no visit lasted more than one hour. Times of visits were reconfirmed by telephone the evening preceding the planned visit.

All interviews were tape recorded, and although all subjects had the option of refusing the tape, turning it off during the interview, or erasing segments, none exercised the option.

The manner in which the interviews were conducted merits comment. Since the research interview is an interactive process, with both the interviewer and respondent contributing to the communication, it becomes
the responsibility of the interviewer to create the conditions that will maximize the completeness and veracity of the respondent's communication. At the same time a focus on the objectives of the interview must be maintained (Kahn & Cannell, 1957, p. 49-64). A non-judgemental attitude, warmth, and interest were used by the interviewer to facilitate open communication. The initial hospital visit to explain the study and obtain a consent provided an opportunity for rapport to be developed, so that by the time of the first home visit and interview, trust and mutual interest were found to have been established. Questions were answered as they came up if they were judged not to influence subsequent interview topics, but answers were postponed to the end of the interview if it was thought participants' responses would be compromised. Responses to difficulties and concerns were empathetic, but any interventions were deferred to the end of the interview.

The use of the tape recorder provided the advantages of enabling the interviewer to observe and respond to non-verbal cues, and maintain eye contact to hold the attention of elderly subjects.

Observations of eye care procedures and eye status were made at the end of home visits in the hope that rapport would be built, and familiarity with the observer would minimize the distortion that occurs in known observation situations (Fox, 1970, p. 213). Observations were recorded on the checklists as soon as possible after the researcher left the subject's home.

Physiological and demographic data required for the study were obtained from the hospital chart after permission had been obtained from the subject.
Analysis of the Data

Data from taped interviews were transferred to recording sheets. Finite answers were coded and replies to open ended questions recorded. Data were then organized into content areas related to the objectives. Descriptive statistics such as frequency distributions, measures of central tendency, and measures of variability were used to analyze and display data.

In addition, the Fisher Exact Test\textsuperscript{1} was applied to selected variables to test for possible associations. A level of $p = .05$ or less, two tailed, was selected to indicate a significant association. For example, age, sex, manual dexterity were tested for association with difficulty in eyedrop administration. Continuous variables such as age were dichotomized by using the median as the dividing point. (See Appendix G).

Socio-economic status was obtained by asking for the subject's major life-time occupation. For married women with no work experience, the husband's occupation was used. The stated occupation was then converted to a rank of socio-economic status, using Blishen and McRobert's (1976) scale where five hundred occupations of Canadian workers are indexed and ranked in descending order of status on a scale of one to five hundred.

Findings are presented and discussed in the following chapter.

\textsuperscript{1}The University of British Columbia Statistical Package for the Social Sciences, Version 8, "CROSSTABS," (Kita 1980) was used to perform this test.
The study findings are presented and discussed in this chapter in five sections. The first section describes characteristics of the sample, the second and third sections present findings related to eye care activities and daily living activities respectively, and the fourth section describes personal and environmental factors that influenced patient self-care behaviours. Difficulties and concerns experienced by patients and family members in the performance of eye care procedures and daily routine activities are described in their relevant sections. In the fifth section a discussion and interpretation of the aforementioned findings is presented.

SAMPLE CHARACTERISTICS

The study sample was a convenience one, representing all the post-operative cataract patients (N = 20) in one hospital who met the study eligibility criteria during the three month data collection period. Personal characteristics and medical parameters associated with the study participants are presented in this section, and are summarized in figures 2 and 3.

The sample was composed of thirteen female and seven male patients who ranged in age from 63 to 83 years (median 71 years). Prior to this hospital admission, ten of the respondents (four women and six men) lived with able spouses; one woman lived with her daughter; and nine subjects (eight women and one man) lived alone. All were Caucasian, of British or
European descent. A wide range of socio-economic status was represented. Sixty percent of the subjects had the equivalent of grade 12 education or higher. The range was seven years of schooling to five years of university.

Figure 2. Age and Sex Distributions of Subjects (N = 20)
A review of the medical history on the subject's hospital chart indicated that this sample was representative in medical status of the general population of a similar age. Chronic medical conditions were reported for 16, or 80 percent of the subjects. The majority of these conditions were hypertension (eight subjects) and arthritis (five subjects). Other medical problems such as angina, chronic obstructive lung disease, and mitral insufficiency were also recorded. Five subjects had previously had eye surgery unrelated to the present cataract surgery. Five were being treated for glaucoma. The best corrected visual acuity in the subject's unoperated eye ranged from 20/50 to no useful vision, and for one subject, the operated eye was an only eye.

Impairments in fine motor co-ordination were observed in 12 subjects, and a hearing loss was noted in seven. None required a hearing aid.

All subjects had their cataract surgery in a large metropolitan acute care teaching hospital, and received their pre and postoperative care on an ophthalmology unit. Chart review established that all subjects had standard cataract surgery without lens implant, and no complications occurred during the surgery or during the postoperative hospital stay. One ophthalmologist operated on seven of the patients, two others on three each, and the remaining seven patients were operated on by the remaining seven ophthalmologists. Fourteen patients had a general anaesthetic, six a local anaesthetic. Following surgery, the length of hospital stay ranged from three to six days; the mean was 4.2 days, the mode four days.
Figure 3. Selected Health Related Characteristics of Subjects (N = 20)
EYE CARE ACTIVITIES

An overview of expected eye care behaviours, patients' comprehension, difficulties experienced and concerns expressed, is presented visually in Table 1. As may be observed, the majority of subjects followed the recommended medical regimen. However, many patients and family members experienced difficulties and concerns in the course of carrying out the instructions. Detailed accounts of specific eye care findings are presented under headings related to the specific study purposes.

Administration of Medications as Prescribed

Complete adherence to the prescribed medication regime, once medications were obtained, was reported by 18, or 90 percent of the subjects. Of the two remaining subjects, one omitted only one eyedrop administration in the two week period, and the other occasionally altered the frequency of instillations of an eyedrop according to the severity of headaches that were experienced. All subjects considered careful adherence to the medication routines to be an important patient responsibility, and perceived this adherence to be a factor that contributed to a successful visual outcome. Data related to the administration of medications are reported in the following section under three headings: filling the prescriptions; establishing appropriate routines; and instilling eyedrops.

Filling Prescriptions

All subjects had a minimum of two different kinds of eyedrops prescribed. In addition, three subjects had systemic medication (acetazolamide) ordered. Frequencies of administration varied from once a day to four times a day. No ointments were prescribed.
### TABLE 1

Examples of Expected Eye Care Behaviours: Adherence, Comprehension, Difficulties, Concerns, Questions

<table>
<thead>
<tr>
<th></th>
<th>Knew Expectations</th>
<th>Unaware of Expectations</th>
<th>Incurred Difficulties</th>
<th>Concerns or Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adhered</td>
<td>Not Adhered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instilled eyedrops</td>
<td>18</td>
<td>2</td>
<td>0</td>
<td>16(a)</td>
</tr>
<tr>
<td>Took systemic medication</td>
<td>3(b)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Wore protective glasses</td>
<td>19</td>
<td>1</td>
<td>0</td>
<td>0</td>
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<td>Wore protective shield</td>
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<td>14</td>
</tr>
<tr>
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<td>2</td>
<td>0</td>
<td>0</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restricted reading</td>
<td>8</td>
<td>1</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>Avoided touching eye</td>
<td>18</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Washed hands before treatments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visit 1(c)</td>
<td>14</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Visit 2(d)</td>
<td>16</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Washed hands following treatments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visit 1(c)</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>Visit 2(d)</td>
<td>0</td>
<td>0</td>
<td>19</td>
<td>0</td>
</tr>
</tbody>
</table>

(a) Difficulties include getting drops into eye; touching lids, lashes or eye; manipulating dropper, agitating bottle.
(b) Only three persons had parenteral medications ordered.
(c) First home visit - 18 observations made.
(d) Second home visit - 19 observations made.
The prescribed medications were obtained by all subjects. However, initial delays in prescription dispensing, ranging from four to 24 hours, were experienced by four subjects, engendering concern over missing scheduled medication times. These delays were attributable to a difficulty in locating a neighbourhood pharmacy that was open on a Sunday, and to the lack of availability of two specific medications, namely, echothiophate iodide (Phospholine Iodide), and 2.5% phenylephrine hydrochloride (Neosynephrine), in small neighbourhood drug stores.

Relatives or friends obtained the prescriptions for the majority of subjects (16), while pharmacists delivered the medications in three instances. One subject obtained his own medications, taking a taxi from the hospital to a local pharmacy, and a bus the remainder of the way home.

**Establishing Appropriate Routines**

The establishment of appropriate routines for sequencing and remembering medication times was accomplished without difficulty by all participants. Decisions were frequently based on schedules that had been used by nurses in the hospital. Daily routines such as arising, retiring and mealtimes provided focal points for remembering medicines. One subject, who was receiving drops for glaucoma as well as the postoperative cataract drops, set an alarm clock for each successive medication administration time in an endeavour to maintain constant levels of medication.

It was noted that the simpler the routine, the easier it was for subjects to sequence and remember medication times. For example, when two kinds of drops were ordered at the same intervals, remembering admin-
istration times was simplified, and the need to differentiate medications was negated.

**Instilling Eyedrops**

A variety of arrangements were made for eyedrop administration. Table 2 illustrates the delegation of responsibility of eyedrop instillation at the time of each of the two home visits. Especially notable are the observations that by the time of the second home visit, the number of subjects who administered their own drops had increased by a factor of three, and the home care nurse visits had terminated.

**Table 2**

Delegation of Responsibility for Eyedrop Instillation, First and Second Visit

*(N = 20)*

<table>
<thead>
<tr>
<th>Person Responsible for Eyedrop Instillation</th>
<th>Visit One*</th>
<th>Visit Two+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Spouse</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Relatives</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Friend</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Home Care Nurse</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

* Day following hospital discharge
+ Postoperative day 13 - 16
Observations of instillation of eyedrops were made in 37 instances. (Two subjects had home care nurses for initial instillation and were therefore not observed. One of these subjects refused to be observed instilling drops on the second visit and is excluded from the analysis for observed techniques).

A graphic portrayal of observed eyedrop instillation technique is presented in Figure 4, where the reader will observe that a number of difficulties were incurred by subjects or family members in the administration of drops. At the time of the first visit, six family members had difficulty getting the drops into the patient's eye. Two factors contributed to these difficulties; either the subject's head was not tilted far enough back to provide an adequate angle for administration, or the subject could not hold his eye open voluntarily and the family member was reluctant to, or did not know to pull down the subject's lower lid (a maneuver that creates a pocket to receive the drop, and overcomes the need to blink or squeeze the eye shut). Patients had a particularly difficult time keeping their eye open voluntarily during the administration of the second of two drops.

Contamination of the dropper or bottle tip was another difficulty, and most frequently occurred when a family member inadvertently touched the lashes or lids. None of these participants used a technique of instillation that provided support for their hand, such as resting the heel of the hand of the subject's brow or temporal bone. Three subjects who were self-administering drops, contaminated the bottle when they placed the dispenser directly on the inner canthus or on the sclera to ensure that the drop went into the eye. With this technique subjects reported difficulty in judging how many drops had been instilled.
Figure 4. Observations of Home Administration of Prescribed Eyedrops

- Perform
- Not performed
- Not applicable

Visit 1: N = 18 (3 subjects, 15 relatives or friends)
Visit 2: N = 19 (8 subjects, 11 relatives)
Sixteen subjects had a suspension type drop prescribed. Eight of these did not know of the necessity to agitate the bottle before administering the drops, and neglected to do so. For some, the directions on the bottle to "shake well" were too small to read, and in three instances the manufacturer's directions on the bottle were completely covered by the typed pharmacist's label.

The instruction to wash hands before treatments was neglected in six instances, and in no case were hands washed following treatments, although these instructions were on a printed discharge handout sheet (Appendix E) received by 17, or 85 percent of the subjects.

The safety of two subjects was jeopardized during medication administration by the potential hazard of a fall. One 82 year old subject, who stood unsupported in the bathroom while a relative instilled the drops, became unsteady when she tilted her head back to receive the drops. Another subject, precariously balanced on a folded towel on the rim of the bathtub, was in similar jeopardy when he leaned back to facilitate drop instillation.

As may be observed in Figure 4, most of the difficulties were observed during the first home visit. By the second visit, participants had become more adept and had overcome many of the initial difficulties. The researcher may have influenced the results of observations for the second home visit on three items. Firstly, in the two instances where the safety of subjects was jeopardized, the researcher suggested that a safer routine would be to have the subject positioned on a bed or sofa where there would be support during eyedrop instillation. On the second visit, participants had instigated this suggestion. Secondly, in the
eight instances that suspension type drops were not agitated, subjects were told of this necessity. Finally, in three instances where family members were having great difficulty with eyedrop instillation and the subject was apprehensive of having the bottle touch the eye, the researcher demonstrated a technique of drop instillation that supported the hand holding the dropper. This intervention followed the observation of the family member’s instillation of drops, and was done at participants’ request.

Concerns Related to Medications

The most frequently stated concern related to medication administration was the worry of inadvertently touching and damaging the eye during eyedrop instillation. A second common concern was of squeezing the bottle too hard and instilling more than one drop. Some examples of frequent questions were: "Does it matter which drop goes in first?" "Should I wait a few minutes between drops?" "Where on the eye should the drop be placed?" "Should I continue with the drops I was using before surgery as well as the new ones?" "Will the drops always be necessary?"

Systemic medications were also the subject of questions. While in hospital, some subjects had changes made in schedules or dosages of medications prescribed prior to the surgery by family doctors, and occasionally new medications had been added. The question was, which schedule to follow? All three of the subjects taking acetazolamide (Diamox) queried whether or not they should have this prescription renewed.

In addition to previously mentioned difficulties, participants reported the following problems:
1. Containers were initially difficult to open. The plastic sealing collars around the bottle tops were difficult to remove, and when left attached to cap, prevented secure replacement of the bottle top. Eyedrop bottles dispensed inside child-resistant plastic tubes also presented problems, and once opened, tops were frequently left off, or the container was not used at all.

2. The printed instructions on bottles, and the typed pharmacist's label were too small for many subjects to read. Initial help from friends, relatives and home care nurses enabled subjects to differentiate and organize medications. Physical characteristics such as colour, shape, size and place of storage were used to tell medications apart. In several instances, differentiation was unnecessary as drops were ordered at simultaneous intervals.

3. Plastic dropper bottles were stiff to squeeze, and the amount of pressure needed to emit just one drop was difficult to judge. Subjects worried that several drops would spurt out at one time.

4. Replacing droppers in glass bottles was difficult because of decreased depth perception. Two of the four subjects who had drops dispensed in glass medicine bottles with separate droppers tipped over the bottle when they were attempting to replace the dropper. These subjects learned to locate the bottle carefully by touch, hold it securely and feel for the opening to replace the dropper. Manipulating the small rubber bulb on the glass dropper, and judging if there were enough drops sucked up into the dropper, posed problems for three of these four participants.
5. Subjects who instilled their own drops reported difficulties in judging the angle at which they were holding the dropper or bottle, and in judging the distance the dispenser was from the eye. Three subjects, who had been instilling their own drops for glaucoma for several years prior to this cataract surgery, commented on the new difficulty presented by their inability to see the position of the bottle.

Difficulties reported by participants and the frequency of their occurrence are summarized in Table 3.

Table 3

Summary of Reported Difficulties by Type, Frequency, and Person

<table>
<thead>
<tr>
<th>Number of Participants</th>
<th>Patient alone</th>
<th>Family member</th>
<th>Total number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Opening container</td>
<td>4</td>
<td>5</td>
<td>9</td>
<td>45</td>
</tr>
<tr>
<td>2. Reading labels</td>
<td>8</td>
<td>-</td>
<td>8</td>
<td>40</td>
</tr>
<tr>
<td>3. Squeezing bottle</td>
<td>3</td>
<td>5</td>
<td>8</td>
<td>40</td>
</tr>
<tr>
<td>4. Obtaining prescription (delay &gt; 6 hours)</td>
<td>-</td>
<td>2</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>5. Spilling eyedrops</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>50*</td>
</tr>
<tr>
<td>6. Manipulating separate dropper</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>75*</td>
</tr>
</tbody>
</table>

* Only four subjects had eyedrops dispensed in glass bottles with a separate dropper.
Protection of the Eye from Injury

Use of Eye Glasses, Protective Eye Shield

The majority of subjects (19) used dark glasses or their own prescription glasses during the day and the metal protective eye shield at night, to protect the eye from inadvertent rubbing or bumping. One subject did not own prescription glasses, and found the hospital issued dark glasses were uncomfortable to wear all day. This subject did, however, wear the dark glasses outdoors. Several subjects reported that the dark glasses reduced their ability to see with the unoperated eye and made it difficult to get around. One creative individual solved this problem by buying clip-on plastic dark glasses and cutting off the side that would have covered the unoperated eye.

One subject did not understand the need for the metal shield, and discontinued its use on the third day home from hospital. Four subjects used the shield and an eye pad for extra periods during the day as well as at night, stating that the pad and shield gave them a feeling of security and comfort. These four subjects were not aware of any contraindication to this behaviour, such as the possibility of increasing the risk of infection within an enclosed environment.

No subjects reported any interference with their sleep because of the shield; however, many had difficulties with its application. Types of difficulties, and the frequency of occurrence are illustrated in Table 4.
### Table 4

**Eye Shield Difficulties by Type and Frequency**

<table>
<thead>
<tr>
<th>Difficulty</th>
<th>Number of Participants</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Observed</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Positioning shield: nasal or temporal portion of eye left exposed, or shield rested on soft portion of eye</td>
<td>8</td>
<td>40</td>
</tr>
<tr>
<td>2. Manipulating tape: shield slipped out of place when participant reached for roll of tape</td>
<td>11</td>
<td>55</td>
</tr>
<tr>
<td><strong>Reported</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Tape irritating to skin</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>2. Tape did not stick well</td>
<td>5</td>
<td>25</td>
</tr>
</tbody>
</table>

Successful applications of the eye shield were accomplished by:

1) placing a strip of tape on the shield before applying it, or 2) having the patient hold the shield in place while a family member applied the tape. It should be noted that, while in most instances difficulties were related to lack of facility, in two instances the shield did not fit the configuration of the patient's face. Problems related to the tape itself were solved when subjects changed to transparent mending tape, masking tape, or dermapore/micropore tapes.

Questions that participants frequently asked the researcher were:

1. Is there a side that is supposed to go next to the nose?
2. At what angle should the shield be positioned?
3. Should the shield be sterilized each day?
4. Is it all right to use a folded Kleenex under the shield at night?
Restriction of Activity

The discharge instruction sheet provided to patients in this study proscribes actions which involve bending, lifting, straining; and until directed by the doctor, reading, housework, gardening, and returning to work. As the reader will have noted in Table 1 (p. 41), with the exception of the reading proscription, 18, or 90 percent of the subjects complied with the recommendations. Subjects reported that they used a variety of strategies to comply. For example, they bent their knees or used salad tongs to pick up fallen objects, and kept items they needed at counter level. None of these subjects reported that the restrictions presented any difficulty other than remembering about them.

Both of the subjects who reported non-compliance resumed housekeeping activities, although they did have other people available to help them. One subject within two weeks of surgery hoed the garden, vacuumed the house, and carried two large bags of groceries five blocks home from the store.

The sanction on reading was the least understood restriction, and stimulated questions regarding how much would be tolerable and how long it should be restricted. Several subjects conjectured that reading would be acceptable as long as the operated eye was covered.

Precautions to Avoid Falling and Bumping the Eye

All subjects said they took precautions against falling by using railings on stairs, steadying themselves when necessary on furniture in the home, and walking carefully outdoors on uneven ground. Several subjects reported that since the surgery it was more difficult to judge the
speed and distance of cars. They, therefore, now used intersections with traffic lights to cross busy streets even if it meant walking a few blocks further.

Complicated furniture arrangements or loose scatter rugs were noticed by the researcher in six of the homes, but subjects stated they were familiar with these and did not perceive them as a hazard.

Walking sticks were unacceptable to 18 subjects, mostly because of an association with being old. One seventy-one year old subject typified the replies of other subjects with the comment, "I am not an old woman. When I get old I will use a cane." Another, eighty-two years of age, stated she might find a rolled up umbrella acceptable but a walking stick would give the appearance of old age, so she would not use one.

Five subjects described incidents that had potential for eye injury. Two subjects fell when they got out of bed during the night in the unfamiliar surroundings of a daughter's home. Another bumped her head on a bookcase near her bed, and one had a painful jar when she climbed up on the rim of a bathtub to hang up laundry and misjudged the distance down to the floor. The fifth poked his eye with the earpiece of his glasses as he was putting them on. Few people (seven) were aware of a precaution when putting on spectacles, of holding them by the ear tips to avoid such an accident. None of these incidents was deemed serious enough to report to the ophthalmologist, and indeed no eye problem was noted on the subsequent check-up visit.
Maintenance of Cleanliness of the Eye

"Bathe your eyes with warm tap water as necessary, using sterile cotton balls which may be purchased at the drugstore" is an instruction on the printed discharge sheet. Sterile cotton balls were not available in any of the drug stores in which participants in this study attempted to purchase them. Some family members spent considerable time trying to locate a drug store that carried sterile cotton balls and finally purchased non-sterile cotton or rayon balls packaged for cosmetic or first-aid use. These persons were concerned that they were not using sterile cotton balls as instructed. Two participants purchased sterile rolled cotton and pulled off portions as necessary, and six used cotton balls they already had on hand. Two subjects queried the frequency implied in the words, "as necessary." Figure 5 illustrates eye cleansing behaviours.

| 14 | 3 | 3 |
c|---|---|---|
cleansed eye with warm water and cotton balls as necessary | not necessary | unaware of instructions: used dry cotton balls or face cloth to wipe eye |
| no mucus or crusts |

Figure 5. Illustration of Patient Adherence to Eye Cleansing Instructions
Provision of Comfort Measures When Necessary

Thirteen subjects reported mild discomfort in their eye, usually describing the feeling as "itchy" or "scratchy," and eight patients complained of browache. A total of six patients deemed their discomfort troublesome enough to occasionally take an over-the-counter headache remedy, a measure which, with one exception was effective. Seven had no discomfort at all. Discomforts and measures for their relief are illustrated in Table 5. All subjects with initial discomforts reported improvements by the second home visit.

Table 5
Discomforts by Frequency, Severity and Comfort Measures

<table>
<thead>
<tr>
<th>Discomforts</th>
<th>Number of subjects reporting</th>
<th>Severity</th>
<th>Comfort measures</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Browache</td>
<td>7</td>
<td>mild-mod.</td>
<td>used over-the-counter headache remedy</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>1*</td>
<td>severe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Eye itchy, scratchy</td>
<td>13</td>
<td>mild</td>
<td>- cleansed eye</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- lay down and rested eye</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- put on pad and shield</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- used over-the-counter headache remedy</td>
<td>2</td>
</tr>
<tr>
<td>3. Photophobia</td>
<td>11</td>
<td>mild</td>
<td>- drew drapes</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- wore dark glasses</td>
<td>11</td>
</tr>
<tr>
<td>4. Cigarette smoke irritating</td>
<td>3+</td>
<td></td>
<td>- avoided smoky areas</td>
<td>3</td>
</tr>
<tr>
<td>5. Eyedrops stung</td>
<td>3</td>
<td>mild</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* One subject experienced increasingly severe headaches which were unrelieved by home remedies. The ophthalmologist was notified, and frequency of echothiophate iodide (Phospholine Iodide) drops were reduced.

+ These subjects were all non-smokers themselves.
Recognition and Reporting of Significant Indicators of Complication

Specific signs and symptoms deemed reportable by subjects were as follows: severe pain in the eye; onset of nausea or vomiting; discharge from the eye; increased redness; severe headache; change in vision; swelling.

Table 6 indicates the number of subjects who considered each sign or symptom reportable. A free response was the spontaneous reply to the interview schedule item: "When patients leave hospital they are usually instructed to phone their doctor if they have undue discomfort or notice a change in the condition of their eye. What specific signs would you think required a call to your eye doctor?" When subjects had completed the spontaneous response, they were prompted by the question, "Do you think you would call your eye doctor if you noticed:- All items in the table were subject to a prompting except "swelling," which was not offered.

All subjects stated that they would have had no hesitation in phoning their eye doctor if there was any concern about their eye, although one subject would have been reluctant to call on a weekend. For 13 of the subjects, the ophthalmologist was the only person they would have consulted. The remaining seven had secondary sources for information or reassurance; family doctor, home care nurse, hospital eye ward, neighbours or relatives who were nurses.

Six subjects made phone calls to the ophthalmologist before their first postoperative office check-up; one call was to report a severe headache, and five were requests for clarification of instructions.
Table 6
Indicators of Possible Complication and Subject's Perception of Need to Report

<table>
<thead>
<tr>
<th>Sign or symptom</th>
<th>Number of subjects who would report</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Free response</td>
</tr>
<tr>
<td>Severe pain in the eye</td>
<td>17</td>
</tr>
<tr>
<td>Onset of nausea or vomiting</td>
<td>1</td>
</tr>
<tr>
<td>Discharge from the eye</td>
<td>8</td>
</tr>
<tr>
<td>Increased redness+</td>
<td>5</td>
</tr>
<tr>
<td>Severe headache</td>
<td>1*</td>
</tr>
<tr>
<td>Change in vision</td>
<td>3</td>
</tr>
<tr>
<td>Swelling</td>
<td>4</td>
</tr>
</tbody>
</table>

+ Two persons living alone stated they could not see well enough to notice a change in the amount of redness
* Reported

Status of the Operated Eye

On each of the two home visits observations were made of lids, cornea, conjunctiva, anterior chamber, pupil and iris. In no instance was a sign or symptom of a possible complication noted that merited a report to the ophthalmologist. Detailed eye status observations may be found in Appendix F.

Continued Medical Supervision

All subjects made and kept appointments for continued medical supervision. Transportation to the doctor's office was difficult for only one subject and a volunteer driver was arranged through the local health unit to solve this problem. Table 7 illustrates transportation methods used by subjects to attend medical appointments.
Table 7
Methods of Transport to Medical Appointments
by Type and Frequency

<table>
<thead>
<tr>
<th>Method</th>
<th>Number of subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Driven by a relative or friend</td>
<td>11</td>
</tr>
<tr>
<td>2. Driven by community volunteer</td>
<td>1</td>
</tr>
<tr>
<td>3. Bus, accompanied by relative or friend</td>
<td>6</td>
</tr>
<tr>
<td>4. Bus, unaccompanied</td>
<td>1</td>
</tr>
<tr>
<td>5. Taxi</td>
<td>1</td>
</tr>
</tbody>
</table>

General Concerns Related to the Eye

For the majority of subjects (70%) the cataract surgery itself was not stressful. Of the 12 subjects who had experienced previous surgery with which to make a comparison, 10 felt that the cataract surgery was "minor;" "easier;" "not as painful" as their previous abdominal, orthopaedic, prostatic or glaucoma surgery. However, a successful visual outcome from the surgery, with all the resultant anticipated benefits, was perceived as extremely important to all these subjects, and influenced their behaviour and concerns. Patients commented that in spite of a general optimistic outlook, generated by confidence in their doctor, statistical probability of success, and examples of successful outcomes among friends and relatives, they all had an underlying pervasive concern about the improvement in vision they would obtain. The first occasion on which a trial lens was presented, and subjects could read letters on the chart,
or clearly see objects in the room, was both a relief and a moment of excitement. As one subject succinctly put it, "That really bucked me up."

Only one subject had severe concerns about the outcome of the surgery. This subject, and spouse had expected improved vision immediately, and perceived the presence of stitches to be indicative of a complication in the surgery. Their concern was evident in their facial and vocal expressions; and their lack of understanding was exemplified by the spouse's remark, "We thought it was just a cataract removal, which is just one day . . . you know . . . they lift it off and send you home — but it wasn't that at all." The subject anxiously reported, "I can't see nothing yet! I'm blind in that eye!"

DAILY LIVING ACTIVITIES

At the time of hospital discharge, 16, or 80 percent of the subjects were very confident that they could manage their personal care and household tasks with the help they had available from family members and community services. The remaining four subjects were concerned that anticipated decreased visual acuity, or decreased energy level would affect their ability to manage at home. These subjects reported that they were pleasantly surprised, once they were home, at how well they were able to cope.

Explicit behaviours, difficulties and concerns related to daily living activities are reported in the following section.
Living Arrangements

Prior to this surgery, 10 subjects lived with able spouses, one with a daughter, and nine lived alone. Following surgery, five people made temporary changes in living arrangements. Table 8 illustrates these arrangements and associated sex distributions.

Table 8
Living Arrangements Postsurgery by Change and Sex

<table>
<thead>
<tr>
<th>Living arrangements</th>
<th>Number of subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
</tr>
<tr>
<td>Change</td>
<td></td>
</tr>
<tr>
<td>Moved in with daughter</td>
<td>-</td>
</tr>
<tr>
<td>Moved in with sister*</td>
<td>-</td>
</tr>
<tr>
<td>Daughter moved in with subject</td>
<td>-</td>
</tr>
<tr>
<td>No Change</td>
<td></td>
</tr>
<tr>
<td>Lived with able spouse</td>
<td>6</td>
</tr>
<tr>
<td>Lived with daughter</td>
<td>-</td>
</tr>
<tr>
<td>Lived alone</td>
<td>1</td>
</tr>
</tbody>
</table>

* Permanent residence out of town
Utilization of Community Services

Homemaker service, Home Care nursing service, and a volunteer transportation service were used by five subjects. Details are illustrated in Table 9.

<table>
<thead>
<tr>
<th>Subject code #</th>
<th>Sex</th>
<th>Age</th>
<th>Living arrangements</th>
<th>Community services used</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>F</td>
<td>77</td>
<td>Alone</td>
<td>Homemaker</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Alone</td>
<td>Homemaker</td>
</tr>
<tr>
<td>6</td>
<td>F</td>
<td>82</td>
<td>Alone</td>
<td>Homemaker</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Alone</td>
<td>Nurse and homemaker</td>
</tr>
<tr>
<td>7</td>
<td>F</td>
<td>72</td>
<td>Alone</td>
<td>Homemaker</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>With daughter</td>
<td>Nurse (supervisory visit only)</td>
</tr>
<tr>
<td>8</td>
<td>F</td>
<td>83</td>
<td>Alone</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>With daughter</td>
<td>Volunteer transportation</td>
</tr>
<tr>
<td>9</td>
<td>F</td>
<td>71</td>
<td>Alone</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Alone</td>
<td>Nurse and homemaker*</td>
</tr>
</tbody>
</table>

* Subject discontinued homemaker after one week; no longer necessary

Homemaker services were usually provided four hours per week; however, one subject's homemaker was ordered for two hours per day. This amount of help was perceived as more than necessary and was discontinued by the subject after one week. A home care nurse instilled drops for two subjects, and taught independent administration. The average number of nursing visits was five, and included a follow-up supervisory visit approximately one week after subjects had assumed responsibility for their own treatments.
Home Maintenance Activities

Most subjects (19) arranged for another person, either spouse, relative, friend or homemaker to do the heavy housecleaning, gardening, laundry and grocery shopping during the first few weeks following surgery. No difficulties or concerns were expressed.

Self-Maintenance Activities

Daily activities such as meal preparation, bathing, dressing, sleeping, and elimination, were assessed and were reported to present no problem. Even the subjects who lived alone were able to manage their own meal preparation, and by the time of the second home visit, had resumed grocery shopping for themselves. Many commented on the fact that the quality of their sleep was greatly improved now that they were back in the familiar surroundings of their own home.

The instruction, "You may have your hair washed and set" (Appendix E) was interpreted individually to produce a wide range in behaviour, beginning at one end of the scale with an individual who showered and shampooed on post-surgery day five, to an individual who planned to wait until at least four weeks postsurgery before having a professional shampoo and set. The timing of, method of, and safety of hair shampoo was queried by over 50 percent of the subjects, but none considered this activity a problem.

A variety of adaptations were made in routine activities in order to comply with precautionary measures, these are listed in Appendix H.
Leisure Activities and Exercise

All subjects reported that they were less active than before their surgery, a situation attributed to compliance with activity restrictions or to poor visual acuity, rather than lack of energy. On the day of hospital discharge, five subjects went out for walks, unaccompanied, in their own neighbourhoods. By 14 days postsurgery, the majority of patients (18) had been out for walks, one averaged six miles a day. Pleasant summer weather during the time this study was conducted facilitated outdoor exercise.

For 11 subjects, the ability to see to perform usual activities did not seem to be as good as it was before surgery, even though for these subjects the eye with the least vision had received the surgery. In their opinion, either the vision in the "good" eye had deteriorated or the operated eye interfered with the visual ability in the best eye.

Temporary or "practice" glasses which were an approximation of the required prescription were given to five subjects. All of these had vision in the unoperated eye of 20/100 or less; two had no vision at all (one was monocular, and one had no useful vision as a result of a previous retinal detachment). These five subjects remarked on, but quickly adjusted to the magnified image and distorted peripheral vision. The temporary glasses enabled them to function more independently in their daily activities, and were a source of encouragement as a harbinger of future visual ability.

Most subjects spent their time visiting with or chatting on the telephone with friends and relatives, watching television, listening to music, doing light household jobs, and going out shopping. Six subjects
complained that time dragged and they were very bored, the remainder were content to accept and abide by the temporary restrictions. Three men, who had been employed prior to surgery, were anxious to return to work. Several subjects mentioned that it was easy to forget they had even had surgery because there was no bandage, little discomfort, and they felt so well.

Two subjects reported that they were unable to see well enough following surgery, even with a magnifying lens, to dial their telephone. Both had spouses who did the dialing for them, but they felt stranded when they were left alone. Neither phone had a large print dial attachment, and neither family knew of the free service available to low vision customers whereby the operator will look up any requested number and make the connection. Other subjects used magnifying lenses, temporary cataract glasses, and large print dials to facilitate independent use of the telephone.

PERSONAL AND ENVIRONMENTAL FACTORS THAT INFLUENCED BEHAVIOURS, DIFFICULTIES, AND CONCERNS

A number of personal and environmental factors that influenced the performance of eye care procedures and daily living activities have already been mentioned in the course of reporting data pertinent to those behaviours. Additional factors reported by subjects as being influential, such as acquisition of requisite knowledge and skills, understanding and perceptions of cataracts and cataract surgery, and the helpfulness of support systems is presented in the following section.
Requisite Knowledge and Skills for Home Eye Care

Prior to hospital discharge, all subjects received some instructions pertaining to home eye care procedures and the recommended precautionary measures. Major sources of information were reported as: the doctor (mentioned by 18 subjects), and the discharge instruction sheet presented by nurses (received by 17 subjects). Other sources were: the hospital resident doctor, home care nurse, friends and relatives who had had cataract surgery, and other patients in the hospital room.

Patients and family members found the discharge instruction sheet helpful, and were glad to have printed material to which they could refer. However, seven patients were unable to read the instruction sheet; two of these lived alone. It was helpful when the nurse discussed the instructions, elaborating on or clarifying points. Several subjects stated that they liked to know the principles or reasons behind prescribed activities so that they could judge the safety of a variety of other activities not specifically mentioned in the instructions.

Family members were present, and able to participate in the discussion of home care management procedures, in nine of the twenty cases. All of these subjects and family members reported that it was helpful to have a second person aware of the instructions, for it was easy to forget or misinterpret points, especially during the excitement of getting ready to go home.

The timing of information regarding home care expectations was also an important factor. The eight subjects who had knowledge prior to hospital admission reported this advance information enabled them to arrange for assistance from relatives, put their house and garden in order, and
stock up on staple food items so that these factors would not be a source of concern immediately after hospital discharge. These subjects, and an additional four who reported they received information on several occasions during their hospital stay, had time to think of questions and assimilate the information. Eight participants perceived that they had received home eye care information only on the morning of hospital discharge. Three of these subjects voluntarily commented that it was difficult to concentrate on instructions that were provided immediately prior to going home, when their thoughts were on hospital discharge routines and waiting relatives.

A demonstration of eyedrop instillation was provided for seven subjects; verbal instructions were given to others. Hospital nurses gave a demonstration to four relatives who requested the assistance, a doctor initiated one demonstration for a spouse, and home care nurses taught the procedure to two subjects in their homes. Table 10 relates demonstration of eyedrop instillation with previous experience in instilling eyedrops.

<table>
<thead>
<tr>
<th>Demonstration of Eyedrop Instillation</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous Experience with Yes</td>
<td>2*</td>
<td>11</td>
</tr>
<tr>
<td>Previous Experience with No</td>
<td>5+</td>
<td>2</td>
</tr>
</tbody>
</table>

*1 friend and 1 spouse
+2 subjects, 2 daughters, 1 spouse
All of the subjects who received a demonstration thought it was very helpful, five others would have liked to have had someone show them how to instill the drops. Eight participants thought a demonstration was unnecessary as they had instilled eyedrops on previous occasions, usually for their children. Of these eight with previous experience, only two performed the procedure without difficulty or concern once they were at home.

With the exception of the subjects visited by home care nurses, no patient nor family member had the opportunity to be assessed in the ability to manage eyedrop instillation or application of the eye shield and receive reassurance or correction if necessary. It was noticeable that the subjects who had home nurse visits were confident in their ability to manage their own care, and had no unanswered questions. Several participants, who recognized the researchers nursing role, commented on the helpfulness of having a nurse come to their home so that they could ask questions, receive reassurance about little concerns, have eye care procedures supervised, and have the operated eye examined.

**Understanding of Cataract and Cataract Surgery**

Subjects stated that knowledge and understanding of cataract, cataract surgery, and postoperative expectations was helpful in allaying anxiety and reducing the number of concerns. This concept was exemplified in the response of one subject, "If you really understand what is happening, you are more relaxed about the whole process."

A variety of answers were given by subjects to the questions about what a cataract is, and the surgical and recovery process. Some examples of subject's comments were:
"I presume it is a film over the eye and they strip the film off. They gave me a paper in the hospital but I haven't studied it particularly...I think I may try contact lenses. I certainly don't want to wear those thick heavy glasses. I don't like the looks of them! ...The doctor says I will have to wait a month or so before I get them."

"Dr. _____(hospital resident) explained everything. He used a model that comes apart to show me the insides of an eye...and the cloudy lens that is taken out. ...It was very interesting and very reassuring. ...Later on I will get glasses. I am used to glasses."

"I know I have the senile type of cataract where the lens gradually becomes opaque and has to be removed. ...The lens is behind the aqueous humour so an incision is made above the cornea and the lens is taken out. Then you need to replace that lens. ...I am planning to have contact lenses in about three months...or whenever the eye is healed. They give better peripheral vision, but I will have cataract glasses as well so that I won't be entirely dependent on the contact lens. I might drop it sometime and not be able to find it."

The content of subject's responses was summarized and categorized. Table 11 represents the author's interpretation of subject's responses.

Table 11

Subjects' Comprehension of Cataracts and Cataract Surgery

<table>
<thead>
<tr>
<th>No. of Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A cataract is an opacity or clouding of the lens</td>
</tr>
<tr>
<td>2. The surgery entails entry into the eye and closure with sutures</td>
</tr>
<tr>
<td>3. A waiting period is expected postoperatively before corrective lenses could be fitted</td>
</tr>
<tr>
<td>4. A cataract is a film over the eye that would be peeled off during surgery</td>
</tr>
<tr>
<td>5. No concept of a cataract</td>
</tr>
</tbody>
</table>

* Two of these persons were surprised at the length of the waiting period
On the whole, study participants reported that they were satisfied with the amount of knowledge they had. There was one exception, previously discussed, where a couple was very concerned over the outcome of surgery, because of lack of understanding. The other few subjects who had little or inaccurate information were quite content, commenting that "ignorance is bliss," "the doctor knows what to do," and "I take things as they come."

Sources of information about cataracts and cataract surgery were reported as: eye doctor; resident; relatives and friends who had had cataract surgery; a television programme on eye surgery; newspaper articles; pamphlets obtained from Canadian National Institute for the Blind booth at the Pacific National Exhibition, and discussion with the person manning the booth; dictionary; library books; and information received from answering an advertisement in a United States magazine.

**Support Systems**

All subjects in this study had at least one close relative or friend who could be instrumental in providing direct assistance and/or emotional support. In addition, many subjects had large extended families, neighbours and church group friends who took an interest in their welfare, providing companionship, outings and diversions. Family members were reported to have been particularly helpful in reminding subjects of precautions and medication times. Although a strong desire for independence was both expressed by subjects and observed by the researcher, the support of interested friends and relatives was welcomed and appreciated.
Length of Hospital Stay

Satisfaction with length of hospital stay was expressed by the majority (17) of subjects. Two of these subjects, one discharged three days following surgery, and one six days, remarked that they could have managed at home sooner, if that had been the doctor's recommendation. One patient, discharged postsurgery day four, who developed severe headaches, thought the headaches might have been avoided had the stay in hospital been longer. Two subjects, discharged five and six days after surgery thought they might have benefited by a few more hospital days. The expectations of these latter two were in part influenced by the experiences of friends who had stayed in hospital for a week following cataract surgery.

Demographic Factors

The Fisher Exact Test of Association, \( \chi^2 = .05 \) using two by two contingency tables was used to examine the possibility of association between demographic variables such as age, sex, education level, socioeconomic status, length of hospital stay, manual dexterity, and visual acuity, with performance variables such as difficulties in administering eyedrops, confidence in managing eyedrop instillation, comprehension, expression of concern. The only association that was positive at the .05 level of significance was a relationship between age greater than 71 years, and concerns as evidenced by phone calls to the ophthalmologist.

Because of the small sample size few performance variables had a frequency of occurrence sufficient to perform a test of association, and conclusions drawn from results of variables that were tested must be in-
DISCUSSION

The Sample

The subjects in this study are fairly representative of their age group in the general population although a slightly higher proportion of these subjects lived alone than is generally reported. Utilization of community services for assistance, and the presence of concomitant general medical conditions is also consistent (Brody, 1980). The relatively large proportion of subjects with glaucoma as an additional diagnosis may reflect the patterns of practice of contributing ophthalmologists, but may also reflect the association of some kinds of miotic eyedrops with cataract formation (Nurses's Guide to Drugs, 1980, p. 816-823). The absence in the study sample of patients with the diagnosis of diabetes mellitus is not surprising. Although such individuals are recognized to be particularly prone to the development of cataracts (Duke-Elder, 1969, p. 166; Mausolf, 1975, p. 200) the progression of the opacity is accelerated (Cotlier, 1981). On the average, cataract surgery is indicated in diabetic patients at an earlier age than in the general population. Therefore, subjects with diabetes would tend to be younger than this study's sample, for whom the age requirement was over 60 years.

The average length of stay of 5.2 days (4.2 postsurgery) was lower than the average stay reported in Canada in 1977 (Statistics Canada) and may reflect the continuing trend of decreased hospital stay (Nadler & Schwartz, 1980). Age did not appear to be a factor related to length of
hospital stay, for an 80 and an 83 year old subject went home on the third postoperative day, and two 71 year old subjects were discharged on the fifth and sixth postoperative days respectively. Similarly, the presence of chronic medical conditions did not appear to be related to length of stay, for the subject with the longest stay had no diagnosed concomitant medical condition. It would appear that in this small sample, the length of hospital stay most likely reflects the customary practice of the attending ophthalmologist.

Because of selection criteria for the study, non-English speaking people were not represented in the sample. However, it would be reasonable to postulate that such a subject would incur even more difficulties and concerns, especially those that are related to communication of instructions.

Adherence

The high rate of adherence (90%) to the medical regimen was notable in this study when compared with the general compliance literature reviewed by Blackwell (1973), where the non-compliance rate ranged from 25 to 50 percent, or with reports from the ophthalmology literature where most studies report a non-compliance rate of 28 percent (Bloch et al., 1977) to 58 percent (Vincent, 1971) depending on the definition of non-compliance. A finding congruent with this study is a recent report by Worthen (1979) that indicates a compliance rate of 95 percent to timolol maleate (Timoptic), a long acting glaucoma drug that requires administration only once or twice a day.

Factors contributing to the favourable rate of adherence among subjects in this study could be postulated as follows:
1. A successful visual outcome was of great importance to the subjects, and complete adherence to medication recommendations was perceived as a significant factor in attaining visual improvement. The theoretical framework (Lewin, 1951) supports this premise.

2. The condition is acute and of relatively short duration, so compliance problems associated with long term medication administration (Blackwell, 1973) have not developed.

3. Subjects in the age group of those in this study frequently have other medical conditions for which they have established medication schedules. Incorporating eye medications into an already existing schedule did not necessitate a major change in habits or life style, a factor identified by a number of authors as affecting compliance (Davis & Eichhorn, 1963; McAlister et al., 1976; Tagliacozzo & Ima, 1970). Furthermore, Vincent (1971) reports that patients on systemic medication were more likely to comply with recommended glaucoma drop schedules.

4. Medication schedules were usually uncomplicated and easy to remember, a factor associated with compliance in elderly people (Neely & Patrick, 1968; Parkin et al., 1976; Schwartz et al., 1964).

5. The occurrence of unpleasant side effects was minimal, and many patients reported the drops made their eye more comfortable.

6. The interaction between physician and patient was highly satisfactory. This contention is supported by the facts that patients were knowledgeable about medication instructions, felt free to discuss their concerns and validate perceptions, had no reluctance to phone their doctor if anything worried them, felt their doctor was highly
competent, felt their doctor took a personal interest in their well-being, and were mostly satisfied with the amount of knowledge they had about their condition. All of these facets of positive interaction have been identified in other studies to be related to adherence to recommendations (Hulka, 1979; Korsch & Negret, 1972; Svarstad, 1976).

Problems noted in this study such as reading labels, opening child resistant containers, and obtaining eyedrops at community pharmacies have been substantiated variously in other studies (Davidson & Akingbehin, 1980; Hammell & Williams, 1964; Lane et al., 1971).

In contrast with other studies (Boyd et al., 1974; Hammell & Williams, 1964), all patients in this study had their prescriptions filled.

Organizing and scheduling medication at appropriate intervals during the day was not a problem as it was in Hermann's (1973) study. However, questions were raised regarding which of two drops ordered at similar intervals should be instilled first, and whether a time interval should be waited between instilling two different types of drops.

It is interesting that patients should identify this problem, because it is only recently that the topic has been addressed in the literature. Baum (1981) states that the average eyedrop ranges in size from .25 to .4 ml and that drops larger than .25 ml overflow the conjunctival sac. The smaller drop stimulates less tear formation than the larger one, so may actually deliver more drug as there is less dilution. Baum suggests that five minutes should be allowed between instillation of two types of drops to avoid wash-out, and that two drops of the same medication are unnecessary.
The activity restrictions that involved bending, lifting, straining were well known and adhered to, whereas the proscription on reading was less well known, understood, or followed. It is possible that patients were familiar with the former instructions because they were part of pre-operative teaching and were reinforced throughout the hospital stay. The instruction about reading was part of the discharge teaching provided on the day of hospital discharge and was usually provided immediately prior to leaving the hospital. The timing of this teaching may not be appropriate for effective learning.

In addition, nurses who were discussing instructions with patients may not have been convinced of the necessity of the reading proscription as there is a diversity of opinion among ophthalmologists and in the literature (Smith & Nachazel, 1980) regarding this subject. Certainly, patients were not aware of the reasons for the reading proscription.

Finally, the discharge handout itself was in small print and difficult for many subjects and family members to read to refresh their memories. This latter point may also have contributed to the lack of knowledge of the instruction to wash hands following treatments.

**Performance of Requisite Skills for Home Eye Care**

Only two subjects in this study were able to perform the necessary eye care procedures without some kind of difficulty or concern. In some instances deficits in fine motor co-ordination contributed to the difficulty, but in many cases the difficulties were related to a lack of technical skills, a factor which might have been amenable to teaching.
Redman (1972) described three factors that are important in learning a manual skill; development of a mental image of how the skill is performed, opportunity to practice the skill and receive corrective feedback, and the opportunity to develop a positive attitude toward the procedure (p. 77-79).

Five subjects in this study received a demonstration of eyedrop instillation (the mental image), before they left hospital. All of these persons deemed the demonstration helpful; however, two still experienced difficulties when they came to perform the procedure by themselves at home. An opportunity to practice and receive corrective feedback might have helped these subjects.

Redman also notes that the opportunity to practice in a setting that approximates as closely as possible the actual situation in which the procedure will be performed, facilitates learning (p. 79). The two subjects who had help from home care nurses had both the demonstration and the opportunity to practice in the home setting. Although these people still had some difficulty because of poor manual dexterity, they were able to perform the procedure independently, and were confident in their performance (the positive attitude).

It is frequently presumed that previous experience with instillation of eyedrops assures the ability to perform the skill in ensuing situations. This assumption did not turn out to be true in the present study, for the 13 subjects who reported previous experience, eight (60%) had a difficulty or some concern when they attempted the procedure at home. This finding is not surprising when one considers that both forgetting and a decrease in manual dexterity that often accompanies increasing
age, contribute to deterioration in performance of a previously learned skill. Further considerations are that the skill may not have initially been learned adequately, or this new situation may be different from that in which the previous experience was acquired. For example, subjects reported that putting an over-the-counter anti-inflammatory drop in a normal eye gives a false sense of confidence, for it is quite a different experience instilling a drop in an eye that has just had cataract surgery. As well, putting drops in one's children's eyes many years ago prompted an affirmative response to "previous experience instilling eyedrops," but that skill is quite different from instilling one's own drops in an aphakic eye.

There are many techniques for instilling eyedrops, but the ophthalmology literature provides little direction as to the merits and efficacy of various methods. However, it is the opinion of the author that for individuals in the older age group, many of whom have deficits in manual dexterity and visual acuity, a preferred technique is one that provides support to the hand that is instilling the drop. Such a technique might reduce the number of instances of touching lashes or the eye itself, and might allay the concern of persons with shaky hands about damaging the recently operated eye.

It is noteworthy to report that a frequently recommended technique, whereby the subject is instructed to stand before a mirror to see how to position the dropper and instill the drop, was of no help to individuals in this study, whose vision without glasses was not good enough to be able to see in a mirror. Furthermore, the position assumed when looking in a mirror does not provide an angle that facilitates eyedrop administration.
Application of the protective eye shield was another skill that presented difficulties at home for many subjects and family members. Verbal instructions were sufficient for some people, but others might have benefited by the opportunity to practice the skill under supervision.

The ophthalmic nurse specialist home visiting programme reported by Kidger (1977) reflects an approach to facilitating home self-care that is of interest. Kidger visits referred patients in hospital, and at home following discharge. This service provides continuity of care, opportunities to teach and supervise patients in their own home situation and would appear to this writer to offer possible solutions to a number of problems and concerns identified in this study.

Safety

Throughout this study there has been mention of various instances when the safety of subjects was jeopardized. Two falls and one poking of an eye with ear pieces of spectacles are examples of actual accidents. Several factors may contribute to unsafe practices. Firstly, although most subjects stated they used hand rails on stairs and took the arm of a relative when outdoors (if accompanied), they did not perceive loose scatter rugs, foot stools or coffee tables in frequently travelled areas, book cases or tables close to the side of the bed, or standing on chairs or the rim of the bath tub to reach something, as a hazard even when commented on by the investigator. Perhaps these are examples of habits that are difficult or inconvenient to change, or it is possible that these people were just not used to anticipating and preventing accidents. Certainly, those who stood in the bathroom or sat on the edge of the tub
to have their eyedrops instilled were not thinking about safety. Secondly, unfamiliar surroundings may have contributed to the falls of the elderly female subjects who moved into a daughter's home. Thirdly, there appears to be a denial of increasing age and decrements in physical ability. Even temporarily, most subjects would not use a walking stick, either not perceiving any need, or not willing to be seen using one. Finally, the relative comfort of the eye postoperatively provided little to remind subjects of the activity restrictions designed to prevent eye complications.

**Knowledge and Understanding of Cataracts/Cataract Surgery**

The premise that knowledge and understanding of a surgical procedure reduced anxiety (Janis, 1958) would appear to be substantiated in this study. Many subjects were surprisingly knowledgeable about cataracts and cataract surgery, and had used a variety of community sources as well as discussions with their doctor to learn about the condition. The one patient in this study who had the greatest anxiety had the least understanding of the condition. The relatively high level of understanding among these subjects contrasts with the findings of Hilbourne (1975) wherein 86 percent of subjects thought a cataract was a film over the front of the eye.

The fact that nurses were not perceived as major contributors to patient knowledge is also documented by Marram (1973) and White (1972) who suggest that their findings may be based on patient's lack of recognition of teaching as a nursing function. A similar orientation to the nurse's role may have been present among subjects in the present study.
Demographic Variables

It is acknowledged that with such a small sample, inferences drawn from statistical analysis are questionable, however, the association found in this study between age and phone calls to the ophthalmologist is not surprising. The majority of the phone calls were to clarify instructions, a finding which accentuates the point that elderly patients need explicit, concise instructions provided in a non-stressful environment, and need to have instructions repeated.

An explanation that could be entertained for the lack of association between demographic variables and difficulties in performing eye care procedures would be that the difficulties were experienced by a wide variety of persons, and were related to something other than personal variables - for instance effectiveness of teaching.

The descriptive nature of this study and the small sample size do not permit predictive or causative statements. However, since nursing and medical practice is concerned with individuals as well as groups of people, findings that relate to health care outcomes of even a few people deserve consideration. In the following chapter conclusions, implications for health care professionals, and recommendations will be presented.
CHAPTER V
SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Summary

The observation that the number of elderly persons undergoing cataract surgery is increasing each year, and the length of stay in hospital is decreasing, has implications for patient care. Nurses in hospitals who teach postsurgical cataract patients and family members the knowledge and skills necessary for home self-care will be dealing with a greater number of older people, many of whom live alone or with an equally elderly spouse. Many will have concomitant medical conditions and diminished manual dexterity. In addition, there will be less time in which to perform these teaching and discharge planning functions. In order to make the teaching and planning relevant and effective, it is necessary to consider the experiences patients and their families are likely to have at home following cataract surgery.

The purpose of this study was to describe specific behaviours related to eye care and daily living activities of individuals over 60 years of age during the first two to three weeks at home following uncomplicated cataract extraction; to identify difficulties and concerns experienced by these patients and family members; and to describe personal and environmental factors that affected the behaviours, difficulties or concerns.

An exploratory descriptive study was carried out using a semi-structured interview schedule developed by the investigator, to gather data during two home visits to postsurgical cataract patients and their families. Twenty subjects were interviewed in their homes the day following
their hospital discharge, and again between the 13th and 16th postoperative day. Observations were also made of eyedrop instillation, the application of a protective shield, and the status of the operated eye. The study subjects, thirteen females and seven males, ranged in age from 63 to 83 years. All subjects were admitted to hospital the day prior to surgery, and remained three to six days following surgery. Fifteen subjects lived with family members after hospital discharge, and five lived alone. Of these five who were alone, three had assistance from community homemaker services and two had assistance from a home care nurse.

Findings indicated a high degree of adherence to the recommended postsurgical regimen by study participants, who perceived adherence as an important factor in obtaining a successful visual outcome. In the few instances when expected behaviours were not performed (for example, hand washing following treatments, and reading proscriptions), lack of knowledge was a major contributing factor.

Difficulties were experienced in the performance of manual skills such as instillation of eyedrops, and application of a protective eye shield, in obtaining supplies such as sterile cotton balls; and in reading labels and instructions. Other eye care behaviours such as recognizing and reporting significant indicators of complications, and keeping appointments for continued medical supervision, presented no problem.

No difficulties were reported in managing personal care such as bathing, dressing, meal preparation, elimination, exercise and rest. Assistance with heavy household cleaning and gardening was necessary during the first four to six weeks postsurgery, and was provided by family members, privately hired labour, and community homemaker service. Assis-
tance with grocery shopping for approximately the first 10 days to two weeks at home was also required. Leisure activities were restricted in deference to activity proscriptions or because of poor visual acuity rather than lack of energy. Independent use of the telephone presented problems for two subjects.

Concerns and questions were largely related to the performance of eye care procedures, and anticipated visual outcome.

A number of factors were identified by subjects as being influential in facilitating self-care and in alleviating concerns. Examples of these factors were: adequate understanding of the surgery and postsurgical expectations, confidence in the doctor and the opportunity to discuss options and concerns, inclusion of family members in information sessions, teaching and supervision from home care nurses, and the availability of support systems both for direct assistance and emotional support. For those subjects who had very poor vision in the unoperated eye, or no vision at all, temporary cataract glasses were helpful to provide enough vision to cope with daily routines.

Factors that were identified as contributing to difficulties and concerns were lack of requisite knowledge and skills to follow recommendations with competence and confidence, and perceived reduction in visual acuity in the unoperated eye.

Statistical analysis of selected patient demographic variables produced only one association at the .05 level of significance—an association between concerns, as evidenced by number of phone calls to the ophthalmologist, and age greater than 71 years. Because of the small sample size, few variables occurred with frequency sufficient to perform an analysis. Any interpretations must be treated with caution.
Conclusions

The findings of this study suggest the following conclusions:

1. Postsurgical cataract patients are highly motivated to follow recommendations assiduously, and become very concerned when situations arise that interfere with their ability to comply.

2. Patients manage routine activities at home extremely well with assistance similar to that which was required prior to surgery plus extra temporary assistance with heavy household maintenance tasks, gardening and grocery shopping.

3. Cataract surgery, without complications, has a relatively painless postoperative course, and few patients find the surgical experience enervating.

4. Supportive family members and friends contribute important services; remembering and interpreting instructions, and providing direct care, companionship, and emotional support.

5. Concerns are reduced when patients and family members have sufficient understanding of cataract surgery and the recovery process. The amount and kind of knowledge required is highly individual.

6. Self-administration of eyedrops for aphakic patients who have poor vision in the unoperated eye presents difficulties and engenders concerns. Patients eventually develop, through trial and error, a variety of strategies to instill their own drops. Those who had home care nurses teach and supervise eye care procedures felt confident about their ability to manage self-care.

7. Difficulties and concerns experienced by family members in the performance of eye care procedures were related to diminished manual
dexterity, the use of an ineffective technique, and nervousness about damaging the eye.

8. Patients were unaware of the potential hazard of many of their actions, and of many elements in their environment.

9. There were a number of difficulties experienced by patients and family members in the initial stages of obtaining supplies and opening containers that could be ameliorated.

Implications

Although this study's limitations of design and sample size restrict the ability to generalize the findings, some factors emerged that have implications for nursing practice, medical practice, pharmacist's practice, and patient self-care behaviour.

Nursing Practice

The difficulties that patients and family members had with the performance of eyedrop instillation and application of the eye shield deserves attention. Since teaching requisite skills for home eye care is a recognized nursing responsibility, it would be desirable to examine current teaching practices to see how they might be changed to increase patient competence in home eye care procedures. Some direction regarding the acquisition of manual skills could be taken from the education literature, which advocates a demonstration followed by an opportunity to practice under supervision, in order to attain competence and confidence. It is also recognized that readiness to learn and even the recognition of the need to learn, is highly individual, and influences the ap-
appropriate time for teaching. It may be found to be appropriate to teach
skills before surgery, during the hospital stay, following hospital dis-
charge in the home environment, or a combination of all three.

In addition to formal teaching, it is important to recognize that
patients learn from, and make decisions based on behaviours modelled by
nurses during the process of patient care. For example, a comment fre-
quently heard was, "that was the way the nurses did it in the hospital,
so I just tried to do it the same way." An implication inherent in this
comment is that it is important for nurses to model behaviours that they
want patients to follow later. For instance, if it is important for pa-
tients to wait five minutes between the instillation of two different
kinds of drops, then the same behaviour must be modelled by nurses.

Problems related to the discharge instruction sheet such as dif-
ficulty in reading the small sized print, and poor comprehension of sev-
eral items, suggests that revisions in format, content, and time of pre-
sentation of this instruction sheet merit consideration. The item re-
garding cleansing the eye with sterile cotton balls should be reviewed,
as sterile cotton balls are not readily available in the community.
Since the eye cleansing routine in the patient's own home may need to be
only a clean procedure, a change in wording of the instruction to read
"cotton balls" rather than sterile ones, would remove a factor that
caused trouble and concern to a number of participants. The item on hand
washing after treatments, and the item proscribing reading were not wide-
ly comprehended, and if these are considered to be important behaviours,
a change in method of presentation is indicated. Inclusion of answers to
frequently asked questions noted in this study might strengthen the
printed handout. Other content areas which could be considered for nurse-patient-family discussion are: 1) principles and reasons behind instructions, 2) specific examples of permissible and nonrecommended activities, and 3) available community resources such as free telephone assistance, large print telephone attachments, and volunteer transportation service to medical appointments.

The optimum time for the provision of information for home eye care is an additional consideration. A practice described by subjects wherein the discharge instruction sheet was presented and discussed at the nursing station immediately prior to hospital discharge has disadvantages. One effective practice reported in another centre (Kidger, 1977) that might be considered, is to mail out information pamphlets prior to hospital admission, and reinforce the instructions at subsequent intervals both during the hospital stay, and at home following discharge.

The findings related to participant's knowledge and skills has implications for nursing education and nursing administration. In most nursing schools, students are taught how to instill eyedrops and ointment in patients' eyes, and this same skill is applicable in teaching family members. However, little attention is paid to helping students learn strategies that are effective for patient self-administration, a teaching problem of a different order. Graduate nurses who work with patients who have eye problems might also benefit from education programmes that focused on how to teach patients to perform eye care procedures for themselves. Within the domain of nursing administration, alternate methods of nursing care delivery might be considered. For instance, a nurse with expertise in teaching eye care to patients and families might be assigned
this particular role, or hospital nurses could extend their work into the community, making home visits to their patients to help them establish a satisfactory routine.

The finding that a large number of patients could not read the print on medication labels, or the regular type on the discharge instruction sheet, and the finding that several patients were unsure about instructions regarding medication routines for concomitant medical conditions, have implications for discharge planning. It would appear to be important to ensure that the patient could administer prescribed medications accurately. A significant example would be a patient who was an insulin dependent diabetic, many of whom undergo cataract surgery. Nurses should ascertain that these patients are able to measure and administer their insulin accurately, either by observing the patient perform the procedure independently before hospital discharge, or by arranging for a home care nurse to visit in the home.

Finally, the identified need for assistance at home with heavy household maintenance, gardening and shopping activities has implications for discharge planning. Discussions with patients and family members can identify specific areas where help is required, and community services can be arranged to supplement family support systems.

Medical Practice

The high degree of satisfaction expressed by patients in this study with various components of their interaction with the physician, and the association of this satisfaction with subsequent reduction of anxiety, implies that the time taken to discuss the surgery and listen to concerns is well spent.
Although only a few subjects had problems manipulating small glass bottles with separate droppers, they represent 50 percent of the group for whom this kind of dispenser was provided. If plastic dropper bottles were viable options for the same generic drug, consideration might be given to ordering this latter dispenser, especially for patients or family members who have diminished manual dexterity. An additional consideration for prescribing practices is suggested by the finding that drops ordered at similar intervals reduced concerns associated with remembering schedules and differentiating medications.

It was noted that once patients had given the prescription to the pharmacist, they no longer had a record of the physician's medication instructions for reference. Precautions to prevent potential errors could be: 1) to give patients written instructions of medications and times of administration for their own reference, and 2) encourage patients to bring medications with them to office visits to assess currency and accuracy of medications being used.

Initial difficulties in obtaining medications might be alleviated by providing starter samples of medications. Patients could also be provided with a list of pharmacies that: 1) carry infrequently prescribed eye medications, and 2) are open on Sundays and Holidays.

Pharmacist's Practice

Several findings have implications for the dispensing practices of pharmacists. Study participants were noted to have problems reading labels typed in regular print, reading instructions that were covered entirely by glued-on typed labels, opening caps of eyedrops, and opening
child resistant containers. Consideration could be given to ways in which these problems might be alleviated. For instance, for older patients, pharmacists could remove the plastic collars around the bottle tops, could design some method for providing instructions in larger print, especially "shake well" instructions, and could review the necessity of dispensing eyedrops in child resistant containers.

Patient Self-Care Behaviour

Implications for patient self-care behaviours are also generated by the findings. Since accurate understanding of expectations, and the ability to perform the necessary procedures is essential for managing home self-care, patients and family members should make sure they understand instructions and feel confident in performing procedures before they have to do them alone.

Knowledge about cataracts, the surgery and the recovery process is a factor in alleviating concerns. Therefore, patients and family members need to avail themselves of opportunities to discuss the subject with nurses, hospital resident doctors, and their ophthalmologist.

In order to facilitate accomplishment of daily routines following hospital discharge, patients who are aware of expectations could stock staple food supplies, and plan for anticipated needed assistance well in advance of surgery.

Finally, since safety was an issue in this study, patients and family members should examine the home environment, and actions they customarily perform, for potential safety hazards. It may be safer for elderly patients to stay in their own homes, and have others come to them to help.
Recommendations for Further Research

Based on the findings of this study, the following areas of research are suggested:

1. That this study be replicated with a large sample to increase confidence in the reliability of the findings and to increase the ability to generalize the results. A larger sample would also permit wider statistical analysis of variables, possibly finding associations that would give direction to nursing practice.

2. That a similar study be conducted with a slightly different sample, for example, younger patients, or patients who have had intraocular lens implants, to compare similarities and differences with patients in this present study.

3. That a variety of teaching strategies for patients and family members be developed and tested for efficacy.

4. That a study be undertaken to determine the optimum time and place for teaching patients and family members requisite home self-care knowledge and skills.
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Stimson, G. Obeying doctors orders: A view from the other side. Social Science and Medicine, 1974, 8, 97-104.


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APPENDIX A

INFORMATION LETTER FOR PROSPECTIVE SUBJECTS
INFORMATION REGARDING A RESEARCH STUDY RELATED TO POST-SURGICAL CATARACT PATIENTS

INDIVIDUALS WHO HAVE RECENTLY HAD CATARACT OPERATIONS ARE BEING ASKED TO PARTICIPATE IN A RESEARCH STUDY. THE PURPOSE OF THE STUDY IS TO LEARN ABOUT THE EXPERIENCES THAT PATIENTS HAVE DURING THE FIRST FEW WEEKS THAT THEY ARE HOME FOLLOWING CATARACT SURGERY. IT IS HOPED THAT THE RESULTS OF THE STUDY WILL HELP NURSES BE OF MORE ASSISTANCE TO FUTURE CATARACT PATIENTS.

MRS. SHELAGH SMITH, A REGISTERED NURSE STUDYING FOR A MASTER'S DEGREE IN NURSING AT THE UNIVERSITY OF BRITISH COLUMBIA, IS CONDUCTING THE STUDY, AND WITH THE AGREEMENT OF YOUR DOCTOR, IS REQUESTING THAT YOU CONSIDER PARTICIPATING.

IF YOU AGREE, TWO VISITS WOULD BE MADE BY MRS. SMITH TO YOU IN YOUR HOME AT A TIME THAT IS CONVENIENT TO YOU. THE FIRST VISIT WOULD BE THE DAY AFTER YOU LEAVE HOSPITAL. THE SECOND VISIT WOULD BE ABOUT TWO WEEKS AFTER YOUR SURGERY. THE DISCUSSION WOULD BE RELATED TO THE EXPERIENCES YOU HAVE IN MANAGING YOUR CARE AT HOME. OBSERVATIONS OF EYE CARE PROCEDURES SUCH AS INSTILLATION OF EYE DROPS WOULD BE MADE. IF A FAMILY MEMBER IS ASSISTING YOU IN THE CARE OF YOUR EYE, IT WOULD BE APPRECIATED IF THAT MEMBER COULD BE PRESENT FOR THE INTERVIEWS. EACH VISIT WILL BE LESS THAN ONE HOUR.

ALL INFORMATION WILL BE CONFIDENTIAL. NO ASSOCIATION BETWEEN WRITTEN REPORTS OF THE STUDY AND YOU OR YOUR FAMILY WILL BE ABLE TO BE MADE. UNDER SPECIAL CIRCUMSTANCES, AND WITH YOUR AGREEMENT, IF A CONDITION OF CONCERN RELATED TO YOUR EYE WAS NOTICED, MRS. SMITH WOULD NOTIFY YOUR DOCTOR.
IN ORDER THAT CONVERSATION IS NOT INTERRUPTED BY TAKING NOTES, MRS. SMITH WOULD LIKE TO USE A TAPE RECORDER DURING THE VISITS. THE TAPE WILL BE ERASED AS SOON AS THE STUDY IS FINISHED.

IF YOU AGREE TO PARTICIPATE, YOU ARE FREE TO WITHDRAW AT ANY TIME WITHOUT AFFECTING YOUR FUTURE MEDICAL OR NURSING CARE.

YOU ARE WELCOME TO HAVE A SUMMARY OF THE RESULTS IF YOU REQUEST IT.

THE PURPOSE OF THIS LETTER IS TO PROVIDE A GENERAL DESCRIPTION OF THE STUDY. IF YOU ARE WILLING TO CONSIDER PARTICIPATING IN THE STUDY, MRS. SMITH WILL CONTACT YOU SOMETIME DURING YOUR HOSPITAL STAY TO DESCRIBE THE STUDY IN MORE DETAIL, ANSWER ANY QUESTIONS YOU MIGHT HAVE, AND OBTAIN YOUR CONSENT.
APPENDIX B

SUBJECT CONSENT FORM
CONSENT FORM

I AGREE TO TAKE PART IN A PROJECT THAT IS DESIGNED TO STUDY THE EXPERIENCES OF CATARACT PATIENTS AFTER THEY RETURN HOME FROM HOSPITAL.

I AGREE THAT TWO HOME VISITS MAY BE MADE BY MRS. SHELAGH SMITH FROM THE UNIVERSITY OF BRITISH COLUMBIA TO DISCUSS HOW I AM MANAGING AT HOME, AND TO OBSERVE EYE CARE PROCEDURES SUCH AS THE INSTILLATION OF EYE DROPS AND APPLICATION OF PROTECTIVE EYE SHIELD.

EACH VISIT WILL BE SHORTER THAN ONE HOUR.

I UNDERSTAND THAT ALL INFORMATION WILL BE KEPT CONFIDENTIAL. UNDER SPECIAL CIRCUMSTANCES, AND WITH MY AGREEMENT, MRS. SMITH MAY DISCUSS MY CONDITION WITH MY DOCTOR. INFORMATION OBTAINED IN THE STUDY WILL BE WRITTEN IN A PAPER AND SHARED WITH OTHER NURSES, BUT MY NAME WILL NOT APPEAR IN ANY PLACE.

I UNDERSTAND THAT I MAY WITHDRAW FROM THE STUDY AT ANY TIME WITHOUT AFFECTING MY FUTURE MEDICAL OR NURSING CARE, AND
THAT I MAY RECEIVE INFORMATION ABOUT THE RESULTS OF THE STUDY IF I SO REQUEST.

INTERVIEWS WILL BE TAPE-RECORDED, AND THE TAPES WILL BE ERASED WHEN THE STUDY IS COMPLETED.

I ALSO GIVE PERMISSION TO SHELAGH SMITH TO READ MY HOSPITAL CHART TO OBTAIN INFORMATION NECESSARY FOR THE STUDY.

ALL MY QUESTIONS ABOUT THE STUDY HAVE BEEN ANSWERED BY SHELAGH SMITH.

SIGNATURE:__________________

WHERE APPLICABLE
A MEMBER OF MY FAMILY MAY BE ASKED TO PARTICIPATE IN THE INTERVIEWS.

SIGNATURE:__________________
APPENDIX C

LETTER OF AGREEMENT FOR EYE DROP ADMINISTRATION
Dear Doctor:

Thank you for agreeing to assist me in contacting subjects for my research study on postsurgical cataract patients during their first few weeks at home following hospital discharge.

I am requesting written permission that it is acceptable for your patient to receive one extra drop of prescribed eye medication on the day I make a home visit if I am unable to coincide my visit with a regular medication administration time.

I would appreciate it if you would sign the permission noted below.

Thank You,

Shelagh Smith

I agree that the postsurgical cataract patients under my care who are visited by Shelagh Smith for a research study may receive for reasons of the study, one extra application of a prescribed eye medication on the day of her visit. In my opinion this extra medication would in no way be detrimental to the patient.

Signature:
## INTERVIEW GUIDE POST-SURGICAL PATIENTS

### PROFILE SHEET

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>1.</strong> Patient Number</td>
<td></td>
<td>+14. Manual Dexterity of Family Member (if applicable)</td>
</tr>
<tr>
<td><strong>2.</strong> Doctor Number</td>
<td></td>
<td>Level of Physical Functioning:</td>
</tr>
<tr>
<td><strong>3.</strong> Patient Age in Years</td>
<td></td>
<td>1. Independent with no regular household or gardening help.</td>
</tr>
<tr>
<td><strong>4.</strong> Sex [M] [F]</td>
<td></td>
<td>2. Independent, but employs regular household or gardening help to facilitate daily living.</td>
</tr>
<tr>
<td><strong>5.</strong> Ethnic Background</td>
<td></td>
<td>3. Requires assistance with routine household or gardening activities one-half day per week or less frequently.</td>
</tr>
<tr>
<td><strong>6.</strong> Type of Anaesthetic</td>
<td></td>
<td>4. Requires assistance with routine household or gardening activities more than one-half day per week.</td>
</tr>
<tr>
<td></td>
<td>1. General</td>
<td></td>
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<tr>
<td></td>
<td>2. Local</td>
<td></td>
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<tr>
<td><strong>7.</strong> Length of Hospital Stay in Days</td>
<td></td>
<td>15. Client Pre-op Level</td>
</tr>
<tr>
<td></td>
<td>Before Surgery</td>
<td></td>
</tr>
<tr>
<td><strong>8.</strong> After Surgery</td>
<td></td>
<td>16. Client Post-op Level</td>
</tr>
<tr>
<td><strong>9.</strong> Total</td>
<td></td>
<td>17. Spouse/Family Member (if applicable)</td>
</tr>
<tr>
<td><strong>10.</strong> Other medical problems</td>
<td></td>
<td>+18. Hearing</td>
</tr>
<tr>
<td></td>
<td>List:</td>
<td>1. No apparent impairment</td>
</tr>
<tr>
<td><strong>11.</strong> Medications prescribed on discharge from hospital.</td>
<td></td>
<td>2. Mild impairment (needs occasional repetitions, increased volume).</td>
</tr>
<tr>
<td></td>
<td>List:</td>
<td>3. Moderate impairment repetitions).</td>
</tr>
<tr>
<td></td>
<td>Frequency &amp; Route of Name Dosage Admin.</td>
<td></td>
</tr>
<tr>
<td><strong>12.</strong> Vision: Best corrected visual acuity unoperated eye</td>
<td></td>
<td></td>
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<tr>
<td><strong>13.</strong> Manual Dexterity (fine motor co-ordination)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. No impairment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Some impairment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Impaired</td>
<td></td>
</tr>
<tr>
<td><strong>14.</strong> Manual Dexterity of Family Member (if applicable)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>15.</strong> Client Pre-op Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>16.</strong> Client Post-op Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>17.</strong> Spouse/Family Member (if applicable)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>18.</strong> Hearing</td>
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<tr>
<td></td>
<td>1. No apparent impairment</td>
<td></td>
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<td></td>
<td>2. Mild impairment (needs occasional repetitions, increased volume).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Moderate impairment repetitions).</td>
<td></td>
</tr>
</tbody>
</table>
19. Smoking Status
   1. Non-smoker
   2. Smoker

20. Education Level in Years

21. Occupation

22. Housing:
   1. House
   2. Apartment
   3. Room
   4. Facility (without nursing care)
   5. Other (specify)

23. Household Composition
   Pre-surgery Lives:
   1. Alone
   2. With able spouse
   3. With dependent spouse
   4. With other family member (specify)
   5. With friend
   6. Other

24. Outside stairs [Y] [N]

25. Handrails [Y] [N]

26. Inside stairs [Y] [N]

27. Handrails [Y] [N]

28. Adequate lighting [Y] [N]

29. Furniture Arrangement:
   1. Clear passageways
   2. Complicated arrangement

30. Scatter Rugs [Y] [N]

+Neighbourhood

31. Traffic
   1. Light
   2. Moderate
   3. Heavy

32. Curbs
   1. None
   2. Few
   3. Many

33. Rough Terrain
   1. None
   2. A little
   3. A lot

34. Proximity of usual shopping facilities.

* Data from hospital chart

+ Observations
GENERAL INTRODUCTORY REMARKS

Explain focus of the study again, and reiterate option of subject to have tape stopped or portions erased.

To begin, tell me how you have gotten along since you came home from hospital yesterday. (Ask about anything unexpected that happened, anything for which subject or family were unprepared, any visits from a home care nurse, any phone calls requesting information or assistance related to eye care)

35. I would now like to ask a few questions about your eye. Since you got home from hospital, have you had any pain or discomfort in your eye?
   1. Yes - Elaborate.
      Elicit description, duration, severity, frequency, comfort measures (Items 36-43).
   2. No - Go to 44.

36. In which of the following words would you describe the way your eye feels?
    1. Itchy
    2. Scratchy
    3. Smarting
    4. Aching
    5. Throbbing
    6. Sharp pain

37. Would you describe the discomfort as:
    1. Mild
    2. Moderate
    3. Severe

38. How frequently has the feeling of discomfort occurred?
   1. Once or twice (very occasionally)
   2. Three to five times (occasionally)
   3. More than five times

39. Does the discomfort last:
   1. A few minutes
   2. Several hours
   3. All day

40. Did you take any medication for the pain, discomfort?
   1. Yes (what?)
   2. No

41. Did this medicine relieve your discomfort?
   1. Completely
   2. Some
   3. Not at all

42. Did you use any other measure to make your eye more comfortable?
   1. Yes (specify)
   2. No
Have you noticed anything in particular that you think causes your eye to be uncomfortable? Free response:

Probe for 1. Photophobia 2. Cigarette smoke

Now, I would like to ask about some general problems that people sometimes have.

Since you got home from hospital, have you had any:

44. Nausea
45. Vomiting
46. Coughing
47. Sneezing
48. Headache
49. Sore throat
50. Other discomforts (specify)

If affirmative for sore throat, elicit severity.

If affirmative for headache, elicit severity (52) and location (53).

Elicit comfort measures employed for above.

Elicit success of any comfort measures:


How well did you sleep last night? Free response, then validate with cues:

1. Slept well 2. Awake a lot of the time

How does this compare with your usual sleeping pattern?

1. Same 2. Different

If different or awake a lot of the time, elicit any reasons for the difference.

Did you take a sleeping pill, or use a home remedy to help you sleep?


Is it usual for you to take something to help you sleep?

1. Yes 2. No

Now I would like to ask a few questions about your medications and treatments.

When you left hospital you were given a prescription for eye medicines. How did you obtain these medications?

1. Delivered by pharmacy 2. Picked up by relative or friend 3. Picked up by self 4. Other (specify)
Interviewer: Check medications against discharge orders.

62. Was there any difficulty in obtaining the medicines?
   1. Yes (specify)
   2. No

63. How long after you returned home from hospital did you receive your first application of eye medication?
   1. Scheduled time
   2. Discrepancy - elaborate

64. Were there any other supplies related to the care of your eye that you needed to purchase?
   1. Cotton balls
   2. Tape
   3. Other (specify)

65. Were there any problems in obtaining the supplies?
   1. Yes (specify)
   2. No

66. Are there any other medications that you take regularly?
   1. Yes (list)
   2. No

67. Who puts the drops in your eye?
   1. Self
   2. Spouse
   3. Relative
   4. Friend, neighbour
   5. Home care nurse
   6. Other (specify)

Interviewer: Direct the next six questions to person instilling drops.

68. How did you manage with the first few applications? Did you experience any difficulties? (Ask about opening bottles).
   1. Yes - elaborate
   2. No

69. How do you feel about putting in the eyedrops? Free response. Then cue:
   1. Confident
   cue 2. A little nervous
   3. Very nervous

70. Have you ever instilled eyedrops before?
   1. Yes (describe circumstances)
   2. No

71. Would a demonstration have been helpful to you?
   1. Yes
   2. No

72. Would an opportunity to practice have been helpful?
   1. Yes
   2. No

Do you have any special methods to differentiate the medications?

73. Can read the labels
74. Colour of top
75. Size or shape of container
76. Place of storage
77. Other (specify)
I would like to talk about some of the ways in which you care for your eye now that you are home from hospital.

Tell me what you do to keep your eye clean?

78. Cleanse eye with sterile cotton balls and water as necessary to remove crusts and mucus
79. Wash hands before treatment
80. Other - describe

Tell me some of the actions you avoid because you understand they may be harmful to your eye. Free response, then ask: Did anyone mention?

81. 1. Bending
82. 2. Lifting
83. 3. Straining
84. 4. Rubbing eye
85. 5. Squeezing eye
86. 6. Sudden movements
87. 7. Other (specify)
88. Do any of these restrictions present a difficulty for you?
   1. Yes - elaborate
   2. No
89. How do you pick up something that has fallen to the floor?

Are there any special precautions that you take to protect your eye from injury? Free response then probe for:

Free Probe
90. 1. Wear glasses during the day
91. 2. Wear eye shield at night (elicit success of first application)
92. 3. Hold glasses by ear tips when putting on
93. 4. Other (environmental hazards, stairs, use of cane or other support)

Who were the people that provided you with information about what would be expected of you and what you could expect to do once you were home from hospital? Free response, then probe:

Free Probe
94. 1. Nurses
95. 2. Doctors
96. 3. Interns
97. 4. Other (other people who had had cataract surgery, other patients)

When did you receive information about expectations for home care? Free response, then probe:

Free Probe
98. 1. Before admission to hospital
100. 3. Day of discharge

101. 4. Other (specify)

102. When you left hospital, did you receive a printed sheet that gave instructions for home eye care?

1. Yes—Ask items 102-106
2. No—Go to item 107

103. Did anyone discuss the instructions with you?

1. Yes
2. No

104. Did you find this sheet helpful?

1. Yes
2. No

105. Were there any items you did not understand?

1. Yes
2. No

106. Could you read the print?

1. Yes
2. No

107. Could a family member read the print?

1. Yes
2. No

108. Was a family member able to be present to receive instructions about home eye care?

1. Yes
2. No

109. Was it helpful to have a family member present for instructions?

1. Yes
2. No

110. Would it have been helpful for a family member to be present for instructions?

1. Yes
2. No

111. Elicit opinion family member (if present).

1. Helpful
2. Not helpful
3. Would have been helpful
4. Not necessary

When patients leave hospital, they are usually instructed to phone their doctor if they have undue discomfort or notice a change in the condition of their eye.

What specific signs would you think required a call to your eye doctor? Free response. Then ask: Do you think you would call your eye doctor if you noticed:

Free Probe

112. 1. Severe pain in the eye
113. 2. Increased redness
114. 3. Discharge from eye
115. ____ ____ 4. Severe headache
116. ____ ____ 5. Onset of nausea or vomiting
117. ____ ____ 6. Change in vision
118. ____ ____ 7. Other (specify)

Is there anyone else you would call if you needed some help or information regarding your eye or its treatments?

119. - Family doctor
120. - Public health nurse
121. - Hospital nurse
122. - Neighbour
123. - Other

124. Have you called your eye doctor or any of these other people since you got home from hospital?

1. Yes - elicit (who and reason)
2. No

My next question is related to support people that are available to you.

Who do you have that you can call on if you need to have an errand done or want someone to talk to?

125. - Family members
126. - Neighbours, good friends
127. - Other

128. Has an appointment been made for you to see your eye doctor for a check up?

1. Yes
2. No - What are your plans about making an appointment?

129. Is there any problem associated with transportation?

1. Yes - elaborate
2. No

130. Do you have any questions that you would like to ask...anything you have been wondering?

EYE STATUS OBSERVATIONS

131. Lids
1. Normal
2. Swollen
3. Ecchymosis

132. Conjunctiva
1. No injection
2. Slight injection
3. Moderate injection
4. Marked injection

133. Incision
1. Normal
2. Abnormal (describe)

134. Cornea
1. Clear, lustrous
2. Steamy, hazy

135. Anterior chamber
1. Normal, formed
2. Shallow, flat

136. Pupil
1. Round
2. Irregular
3. Keyhole
4. Other
### Pupil
1. Dilated
2. Constricted
3. Other

### Discharge
1. Absent
2. Watery
3. Mucus
4. Purulent
5. Other

### Crusting
1. Absent
2. Present

### Subject's report of crusting in a.m.
1. Absent
2. Present

### Observation of Instillation of Eyedrops

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

| 141  | Washed hands before procedure |
| 142  | Assumed a safe position      |
| 143  | Reclined head to facilitate eyedrop administration |
| 144  | Agitated medicine bottle if necessary |
| 145  | Instilled correct medication |
| 146  | Instilled correct amount     |
| 147  | Drop went into eye on first attempt (describe attempts if more than one) |
| 148  | Maintained cleanliness of bottle of eyedrops |
| 149  | Touched lids or lashes       |
| 150  | Touched globe                |
| 151  | Washed hands upon completion of procedure |

### Application of Eye Shield

| 152  | Applies shield securely |
| 153  | Applies shield confidently |
| 154  | Edges of shield rest on bone of orbit on all edges |

### Comments:
SECOND HOME VISIT
INTERVIEW GUIDE

General Introductory Remarks

Reiterate tape recording policies.

155. How have you been getting along since I last visited you?

156. Has there been anything about your eye or its treatments that has worried you, or that you have wondered about?

157. Have you noticed any difference in your ability to manage daily routine activities?

Today I have some questions that are similar to those I asked on my last visit, and some new ones that are related to the changes, if any, you have made in your daily routine since you had the surgery.

158. Since I was here last, how many visits have you made to your eye doctor's office?

159. Did you encounter any difficulties related to keeping your appointment?

1. Yes - elaborate
2. No

160. Have there been any changes made in your treatments, or any new instructions related to activity?

1. Yes - elaborate
2. No

161. Compared with my last visit, do you feel your eye is:

1. More comfortable
2. About the same
3. Less comfortable

If less comfortable, elicit frequency, severity, duration and description of discomfort.

162. Frequency

1. Occasionally
2. Frequently

163. Duration

1. Few minutes
2. Several hours
3. All day

164. Severity

1. Mild
2. Moderate
3. Severe

165. Description

1. Itchy
2. Sandy, scratchy
3. Smarting
4. Aching
5. Throbbing
6. Sharp pain

Elicit comfort measures, success of comfort measures.
Since my last visit have you had any: Code frequency
1 = Not at all
2 = Occasionally
3 = Most of the time

166. Nausea
167. Vomiting
168. Coughing
169. Sneezing
170. Headache
171. Sore throat
172. Other discomforts (specify)

If affirmative, elicit severity, duration frequency, comfort measures and success of comfort measures.

173. Since my last visit, in addition to the scheduled visit(s) to your eye doctor, have you consulted anyone or phoned anyone because you had a question or a concern about your eye or its treatment?
1. Yes
2. No

If affirmative, describe concern, elicit who was called.

174. How have you been managing with the eye drops? Free response, then ask: Compared with my last visit, do you feel:
1. More confident
2. About the same
3. Less confident

175. Do you have any special methods that you use to help you remember when each of the medications is due?
1. Yes - elaborate
2. No

Probe for association with meal times, other medication times.

176. How well have you been able to have the drops put in the prescribed number of times each day? Would you say:
1. Always received medications according to instructions
2. Sometimes missed a dose
3. Often missed a dose

177. How have you managed with the metal eye shield?
Free response, then ask: Does it stay on all night?
1. Yes
2. No

178. How well have you managed to avoid bending, lifting or straining?

179. Did these restrictions present any difficulty to you in the management of daily routine activities?
1. Yes
2. No
**Activities of Daily Living**

I am interested in knowing what changes, if any, you have made in your routine household and personal care activities since the surgery.

____ 180. Have you made any changes in living arrangements as a result of the surgery?
   1. Yes
   2. No

____ 181. Do you have regular or periodic household or gardening help?
   1. Yes
   2. No

____ 182. Have you made any changes in the frequency or type of assistance you receive?
   1. Yes - elaborate
   2. No

Have you made any changes in your general routine in regard to:

Code:  1. Yes - elaborate  2. No

____ 183. Shopping
____ 184. Food preparation
____ 185. Housecleaning
____ 186. Laundry
____ 187. Transportation
____ 188. Use of the telephone (ask about any special aids to facilitate telephone use i.e. magnifying lens, large print attachment, operator assistance)
____ 189 Other home maintenance or household management tasks

In relation to personal care activities, have you made any changes related to:

____ 190. Bathing
____ 191. Dressing
____ 192. Hair shampoo
____ 193. Other

____ 194. Were any of these daily routine activities difficult for you to do? Were they more difficult to do than they were before your surgery?

____ 195. Have you developed any special methods for managing things at home that might be useful for someone else to know about, and that you would share?

____ 196. Can you think of any other kind of help other than what you had that would have been useful to you?

**Nutrition**

____ 197. Has there been any change in your eating pattern since the operation?
   1. Yes
   2. No

If affirmative, elicit how it has changed and if anything in particular prevented subject from eating normal diet.
Elimination

198. Have you had any difficulty with constipation since you came home from hospital?
   1. Yes
   2. No

If affirmative, elicit any action taken:

199. Laxative
200. Dietary measure
201. Other
202. No action

Exercise and relaxation

203. Tell me how you have spent your time during a typical day since your surgery?

204. How does this way of spending time compare with a typical day before your surgery?
   1. Same
   2. Different - elaborate: elicit energy level, vision, activity restrictions as possible factors.

205. Are there activities you would like to do that you are unable to do just now?

206. Do you anticipate that you will be able to do these things later on?

207. When you returned home from hospital, how confident did you feel about managing your personal care, and household activities?
   1. Confident
   2. Insecure - elaborate

My last group of questions are related to your understanding of the cataract surgery, and your feelings about the whole experience.

208. What is your understanding of what a cataract is?

209. What is your understanding of the operation that was done?

If not freely offered, ask: Did you expect that you would not be able to see out of the operated eye for several weeks? Elicit expectations regarding type of optical correction and visual improvement. Elicit feelings about waiting for optical correction.

210. Was the amount of knowledge you had regarding the surgical procedure, the waiting time after surgery for the eye to heal, and the choices you might have for visual correction:
   1. Sufficient to satisfy you
   2. Not sufficient - elaborate

211. Is there any information that you would like to have had that was not provided?

212. How does this eye surgical experience compare with previous hospital admissions, or surgery you have had?
213. Some people say that any surgery creates anxiety, but that eye surgery is particularly stressful. What is your opinion regarding this statement?

214. Can you think of any factors that influenced your feelings?

215. Have you a relative or friend who has had cataract surgery? Was their experience:

   cue 1. Helpful
   2. Not helpful

216. You were in hospital days after your surgery. What is your opinion regarding the length of your hospital stay?

   cue 1. Not long enough
   2. About right
   3. Too long

217. Can you think of anything more that could have been done to better prepare you for the first few weeks at home following hospital discharge?

Complete profile sheet items that have not been filled in, i.e. education level, ethnic background, occupation, smoking status.

Terminate visit with examination of operated eye, and observation of eyedrop instillation.

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**EYE STATUS OBSERVATIONS**

218. **Lids**
   1. Normal
   2. Swollen
   3. Ecchymosis

219. **Conjunctiva**
   1. No injection
   2. Slight injection
   3. Moderate injection
   4. Marked injection

220. **Incision**
   1. Normal
   2. Abnormal (describe)

221. **Cornea**
   1. Clear, lustrous
   2. Steamy, hazy

222. **Anterior chamber**
   1. Normal, formed
   2. Shallow, flat

223. **Pupil**
   1. Round
   2. Irregular
   3. Keyhole
   4. Other

224. **Discharge**
   1. Absent
   2. Watery
   3. Mucus
   4. Purulent
   5. Other
_226. Crusting

1. Absent
2. Present

_227. Subject's report of crusting in a.m.

1. Absent
2. Present

OBSERVATION OF INSTILLATION OF EYEDROPS

Code: 1 = Yes 2 = No

_228. Washed hands before procedure

_229. Assumed a safe position

_230. Reclined head to facilitate eyedrop administration

_231. Agitated medicine bottle if necessary

_232. Instilled correct medication

_233. Instilled correct amount

_234. Drop went into eye on first attempt (describe attempts if more than one)

_235. Maintained cleanliness of bottle of eyedrops

_236. Touched lids or lashes

_237. Touched globe

_238. Washed hands upon completion of procedure

Comments:
APPENDIX E

DISCHARGE INSTRUCTION HAND-OUT
INSTRUCTIONS FOR EYE PATIENTS ON DISCHARGE
FROM HOSPITAL

1. Make an appointment to see your doctor in ______________ time. The phone number is ______________ and the address is ______________

2. Before carrying out any treatment to your eye, wash hands thoroughly and again upon completion.

3. Have your prescriptions filled at your drugstore and you may have the prescription refilled by your pharmacist should this be necessary. Carefully follow the directions on the bottle.

4. Bathe your eyes with warm tap water as necessary, using sterile cotton balls which may be purchased at the drugstore.

5. If your eye is uncomfortable you may take one or two aspirins or your favorite headache remedy.

6. Your eye may remain red for a month or so as part of the normal healing process. Moderate mucous discharge is to be expected and your lids may be swollen. If you have undue discomfort or notice a change of the condition of your eye please call your doctor's office at once.

7. Wear dark glasses during the day especially when out of doors or in any glare. At bedtime apply the eye shield over your operated eye using scotch tape to hold it in place.

8. Be very careful to avoid jarring your head or bumping your eye. You must not bend, lift or strain. You may dress yourself, be up and about the house, walk outside, watch television and prepare light meals. You must not read, do housework, gardening or return to work until directed by your doctor.

9. You may brush your teeth, take a tub bath, or shower. Men may shave.
You may have your hair washed and set.
Avoid shaking your head during these activities

10. Do not resume sports or strenuous activities until directed by your doctor.

Special Instructions:
APPENDIX F

RESULTS OF EYE STATUS OBSERVATIONS
# TABLE 12
RESULTS OF EYE STATUS OBSERVATIONS

<table>
<thead>
<tr>
<th>Feature</th>
<th>Frequency</th>
<th>Frequency</th>
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<tr>
<td><strong>Visit</strong></td>
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<tr>
<td><strong>Visit</strong></td>
<td><strong>1</strong></td>
<td><strong>2</strong></td>
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<td>Lids:</td>
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<tr>
<td>Normal</td>
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<td>18</td>
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<tr>
<td>Swollen</td>
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<td>2</td>
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<tr>
<td>Ecchymosis</td>
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<td>Anterior Chamber:</td>
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<td>Normal, formed</td>
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<td>Shallow, flat</td>
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<td>Conjunctiva:</td>
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<td>No injection</td>
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<td>Slight injection</td>
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<td>Moderate injection</td>
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<td>5</td>
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<td>Marked injection</td>
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<td>2*</td>
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<td>Discharge:</td>
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<td>Mucus</td>
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<td>Purulent</td>
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<td>Crusting:</td>
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<td>Cornea:</td>
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<td>Clear, lustrous</td>
<td>18</td>
<td>20</td>
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<td>Steamy, hazy</td>
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<td>Pupil:</td>
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<td>Round, dilated**</td>
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<td>Round, small***</td>
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<td>Ovoid, dilated**</td>
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<td>Irregular, mod.</td>
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<td>dilated**</td>
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<tr>
<td>Keyhole, dilated**</td>
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</table>

* Subjects had subconjunctival injection of antibiotic (Garamycin) during surgery

** Atropine drops ordered

*** Phospholine Iodide or Timolol drops ordered
APPENDIX G

RESULTS OF ANALYSIS FOR ASSOCIATION AMONG SELECTED VARIABLES USING FISHER EXACT TEST
METHOD OF DICHOTOMIZING CONTINUOUS VARIABLES FOR FISHER EXACT TEST

Age: 1 = 71 years or less; 2 = more than 71 years

Length of Stay: 1 = 4 days or less; 2 = more than 4 days

Visual Acuity, Unoperated Eye: 1 = 20/100 or better; 2 = 20/200 or less

Living Arrangements: 1 = with able relative; 2 = alone

Education Level: 1 = 12 years school or less; 2 = more than 12 years

Socio-economic Status: 1 = Rank less than 250; 2 = Rank 250 or greater (Blishen & McRoberts, 1976)

Manual Dexterity: 1 = no impairment; 2 = impaired

Understanding of Cataract Surgery: 1 = knew lens became opaque, surgery was intraocular 2 = thought cataract was external growth
TABLE 13
Two-tailed Significance Levels of Fisher Exact Tests\textsuperscript{1} of Association Among Selected Eye Care and Demographic Variables

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>Sex</th>
<th>Education</th>
<th>Occupation</th>
<th>Marital Status</th>
<th>Religion</th>
<th>Vision Loss</th>
<th>PWR</th>
<th>PRIV</th>
<th>Eth</th>
<th>Race</th>
<th>Sex</th>
<th>Vision Acuity</th>
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<td>Length of stay\textsuperscript{2}</td>
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<td>Phone calls to ophthalmologist</td>
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<tr>
<td>Understanding of cataract surgery</td>
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<td>Knowledge of waiting period</td>
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<td>Difficulty getting drop into eye</td>
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<td>Manual dexterity</td>
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<td>Concern about touching eye with dropper</td>
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\textsuperscript{1} The University of British Columbia Statistical Package for the Social Sciences, Version 8, "CROSSTABS," (Kita, 1980) was used to perform this test. Selected significance: $\chi^2 = .05$.

\textsuperscript{2} The method used to dichotomize continuous variables is provided on the facing page.
APPENDIX H

PATIENT SUGGESTIONS THAT FACILITATE

COMPLIANCE WITH RECOMMENDATIONS
PATIENT SUGGESTIONS THAT FACILITATE
COMPLIANCE WITH RECOMMENDATIONS

Dressing:
1. Bend knees or use salad tongs to pick up objects from the floor.
2. Select clothing that buttons down the front and does not need to be pulled on over the head.
3. Hang up clothes immediately so they will not end up on the floor.
4. Lift feet to put on shoes and stockings.
5. Use long shoe horn to assist with putting on shoes.
6. Use shoes without laces.
7. Store shoes on chairs, chests, or closet shoe bags so they will be high enough to prevent the need to bend.

Bathing:
8. Turn one's back to the shower spray.
9. Wear metal eye shield when taking a shower.
10. Use sponge baths for the first while as a precaution against falling in the tub.

Meal Preparation:
11. Keep kitchen utensils and frequently used pots and pans at counter level.
12. Ask family members to put objects back in their usual places so they may be located easily and thereby permit patient to be more independent.

Garden:
13. Sit on a piece of carpet or mat to "pull a few weeds."
Dark Glasses:

14. Cut off side of plastic clip-on glasses to provide relief from photophobia for the operated eye, but enough light for the other.

Eye Shield:

15. Bend edges of metal eye shield to fit individual facial configuration.

16. Place a piece of tape on the shield first and then apply it to the face.

17. Have patient hold the shield in place while a family member applies the tape.

Eyedrops - Family Member Administration:

18. Have patient hold down the lower lid while family member instills the drop.

Eyedrops - Self-Administration:

19. Place knuckle of thumb on bridge of nose and hold eye dropper between thumb and forefinger, to estimate correct position, of dropper.

20. Place thumb knuckle on middle of eyebrow to estimate correct position of dropper.

21. Use non-dominant forefinger to pull down lower lid, and use extended middle finger of this hand to judge distance the dropper is from the eye.

22. Lie on bed with a small pillow or rolled towel beneath the neck to hyperextend head and facilitate angle for drop instillation.