



CHRONIC ILLNESS IN THE ELDERLY

THE ROLE OF THE NURSE

A study of the effect of a trained nurse on the health, morbidity and life-style of elderly people with chronic illness.

Thesis submitted for the Degree of Doctor of Medicine
in the University of Adelaide, South Australia, by
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"Old people, on the whole, have fewer complaints than young;
but those chronic diseases which do befall them generally
never leave them."

Hippocrates. Aphorisms. Section 1. No. 39.

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CONTRIBUTION TO KNOWLEDGE.

Methods of statistical analysis have been applied to measure change in clinical status, communication, mood, mobility, activities of daily living and recreational interests. These methods are suitable for use in the study of individuals and populations, thus contributing to the evaluation of standards of health care.

Methods of assessment of disabilities, found suitable for use by a trained nurse, have been devised and tested.

Guidelines have been suggested which could assist in the preferential selection of disabled elderly people for retraining and domiciliary maintenance programmes supervised by a nurse.

A challenging and satisfying role for the nurse has been demonstrated and found to be effective in the promotion of continuing independence for elderly people. The contribution that the nurse can make in the care of the aged has been accepted by doctors, other health professionals, patients and their families.

It is believed that this study widens the horizons of what is possible in the future for the better and more comprehensive care of elderly people.

I declare that the composition of this thesis is entirely my own. All information used in the final analysis was collected personally or under my supervision.

Methods of assessment and criteria for nurse management of the experimental group were planned and the results interpreted. This work, together with the methods of scoring and the application of change and stability in the analysis are claimed as original.

The material has not been submitted to any other University for any award of any other degree or diploma.

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I N T R O D U C T I O N



AIMS OF STUDY.

This study is designed to explore the expanded role of a nurse in the domiciliary care of elderly people with chronic illness. The scope of her duties allows for an evaluation of her skills in a broad range of assessments, decision-making and relationships with patients and those involved in their care.

The study examines the effect of this role, by measuring and comparing change occurring in patients over time.

The four specific aims of this investigation are:-

To define the role and training requirements of a nurse in the domiciliary care of elderly people with chronic illness.

To measure the 'coping-responsiveness' of elderly people with chronic illness whilst living outside of institutions.

To determine the value of a domiciliary nurse in providing continuity of patient care.

To explore how a domiciliary nurse can make an effective contribution to health and welfare services for the prevention of avoidable disability and unnecessary invalidity.

HISTORICAL BACKGROUND.

The role of the nurse in the care of elderly people is the theme of this thesis. With this aim in mind, past contributions in this field are reviewed to give perspective to present and future needs.

Attention will be given first to the history of nursing in the United Kingdom and then to some aspects of Australian nursing related to domiciliary care.

Until the dissolution of the monasteries by Henry VIII (1535-1537), the poor and the sick were mainly cared for by religious orders as a Christian obligation. The great majority of patients were looked after at home.

Only personal care was possible, as specific treatment for disease and training for nurses were not available. Not only was medical knowledge lacking but individuals and communities were not protected against the hazards of their environment. Sanitation was wanting and infectious diseases were rampant and constantly recurring in wide-spread epidemics. As a result, infant and maternal mortality controlled population growth and the average life-span was comparatively short so that degenerative diseases were not a problem.

A steady increase in medical knowledge during the Renaissance period helped the understanding of physicians, but there was no comparable improvement in the standard of nursing care. The community still clung to the belief that sickness was either due to demoniac influences or punishment for religious transgressions.

The result of the dispersal of monastic orders and the closure of monasteries was that England was left without institutions for the custodial care of patients, resulting in community despair. Action taken by the City of London, with royal support, resulted in the beginning

of the concept of what later became the public hospital system. The institutions mainly involved in this were St. Bartholomew's, St. Thomas's, Christ's, Bridewell and Bethlehem hospitals.¹ The idea of a 'head nurse' to supervise staff was retained from monastic times, but lay nursing began with little direction or training, and conditions deteriorated for the next three hundred years, through what is often called the 'Dark Period' of nursing.

From the sixteenth century, through the Dark Period of nursing, such standards as there were survived in the homes of the gentry, where ...

" ... the mistress felt herself to be responsible for the training of her children and servants in every branch of the domestic arts, amongst which were reckoned both medicine and nursing."²

This recalls the days of ancient Greece and Rome, when women of the household,³ assisted by their slaves,⁴ cared for the sick, frail and wounded. Roman women, wearing a 'stola matronalis' to signify their marital status, enjoyed freedom beyond their own homes. They assumed the responsibility of nursing in the community in the pre-Christian era.⁵

It was not until the nineteenth century that rapid progress was made in nursing as conditions altered. Life-styles were changing with a shift from village to urban dwelling. Britain led the world in mechanisation due to her natural resources and the presence of inventors and craftsmen in her midst. On the one hand was prosperity, on the other, misery. Lack of community wealth was reflected in the Poor Law Amendment Act in 1834, which resulted in the setting up of the work houses.

The need for reform was championed by men like Lord Shaftesbury (1801-1885), Edwin Chadwick (1800-1890)⁶ and Southwood Smith (1788-1861)⁶ who brought about improvements in sanitary conditions with far-reaching effects on health. Benevolent interest in welfare by such people as John Howard (1726-1790), Elizabeth Fry (1780-1845), William Wilberforce (1759-1833) and Charles Dickens (1812-1870) aroused the public to the

appalling state of prisons, institutions and factories, and drew attention to the conditions which led to the abolition of child labour and slavery. Dickens exposed nursing standards by creating such personalities as Sarah Gamp and Betsey Prig for public recognition.⁷

The time was ripe for change and acceptance. Between 1800-1860 more than seventy specialist hospitals had opened in London alone,¹ e.g. London Fever Hospital, 1802; St. Martin's Cancer Hospital, 1835; Great Ormond Street Hospital for Children, 1858; but an adequate and efficient nursing service was missing. As a result of extra pressures of population in large cities, nursing standards were deteriorating particularly in the Poor Law Infirmaries, where the sick, aged and orphaned of the poorer classes were fed and sheltered; care was often provided by inmates who were strong enough to help those who were even less fortunate.⁸

Florence Nightingale^{9,10} saw the need for nursing reform and seized the opportunity to begin her work by organising nursing for the British army at Scutari in the Crimean War (1854-1856). After returning to England amidst public acclaim, her enthusiasm and drive won support for the foundation of a training school for nurses at St. Thomas's Hospital in 1860, based on the example of Pastor Theodor Fliedner¹¹ at the Deaconess Institute, Kaiserswerth. She insisted on the proper training of nurses, and was responsible for the laying down of standards of professional behaviour which are practised today.

Coincidentally, these developments were accompanied by major advances in public hygiene and sanitation, which eventually resulted in the control of pandemic infections with a resulting fall in death rate. Further reduction was occasioned by increasing control of epidemic infectious disease, and the introduction of aseptic techniques following the work of Pasteur and Lister. Advances in surgery, now possible,

expanded nursing horizons. There was an urgent need for training, as doctors could no longer provide a service alone. Trained nurses filled the role similar to that long ago envisaged by Hippocrates, who used his medical students to monitor his patients.¹²

The increasing trend to institutional care was accompanied by a wide gap between improving hospital services and the application of efficient nursing care at the community level. Nurses were trained in the hospital setting, divorced from the realities of home care. The need for encouragement of the growth of trained nursing attention in the home became apparent.

Organised district nursing was initiated by William Rathbone¹³ in 1859. It became necessary, in 1875, for nurses to have hospital training followed by supervised experience in the field. Miss Nightingale realised the great need for skilled nursing in the home, saying ...

"The district nurse must be trained. She must do the nursing work under Doctor's orders. ... But next to this she must 'nurse the room' - i.e. put it into nursing order so that it shall not hinder the patient's recovery. ... She should be the friend not the law giver of the family. ... For this purpose she must never e.g. say 'I hope when I come again all this rubbish will be cleared out from under the bed' (where probably there will be old boots, dirty linen, potatoes etc.) If she does they will wish her never to 'come again'. But she must just do many things herself, such as clean a disorderly grate, dirty windows, etc., and so *show* them how to do it. She must also know - about nuisances which she cannot remedy herself - what is in the province of the Sanitary authorities and give notice at their office. She must know if meat, brandy, etc., is required, where to apply for it (whether Poor Law or Charity) also where, in a very poor place, for blankets."⁹

The development of district nursing was accelerated by Florence Nightingale in association with William Rathbone, greatly assisted by a large gift from Queen Victoria on the occasion of her Golden Jubilee, 1887.

The twentieth century has made increasing demands on the training of nurses, preparing them to accept more responsibility and to keep pace

with current medical and technological progress, but attention has been directed mainly to the disease process rather than to a sick person. Treatment has dominated prevention. Complicated therapy has taken preference over simple needs, but the emphasis is slowly swinging back to a better appreciation of the needs of patients in their own environment, with the focus of care once more coming into true perspective.

At the beginning of this century, nursing was all-important for survival from infections primarily of a bacterial nature. The significant advances in pharmacology were yet to come. It was not until 1938 that sulphonamide drugs were developed, followed in 1940 by the discovery of penicillin as an antibiotic. It was then that endemic infectious disease was brought under control.

Nurses are now seldom required to spend long hours tending to acutely ill people with fevers. The role of the hospital nurse has changed significantly, being more technical in character, leaving less-trained people to tend to the basic needs of the sick.

Chronic degenerative disease, although always present throughout the ages, was not a major problem until recently because relatively few people reached old age as we now know it. A shift in emphasis has occurred due to an increased life span. Hospitals are now primarily concerned with acute illness, often life-threatening in nature, leaving chronic illness to the care of domiciliary services. This requires a new type of nurse skilled in the long-term care of patients who are disabled by chronic disease or physical impairment. Such a nurse requires a new pattern of skills and knowledge, taking into account not only her role in the care of the sick but her potential in the maintenance of health in the community.

Nursing began in Australia with the coming of the First Fleet in 1788.¹⁴ A hospital was established at Sydney Cove to cope with people mainly suffering from infectious disease and scurvy. A second milestone occurred in 1838 when the first trained nurses, two Sisters of Charity, arrived in Sydney to work in the women's penitentiary at Parramatta, outside Sydney.¹⁵ A third milestone was passed when thirty years later, Lucy Osburn⁸ and a small group of Nightingale nurses brought with them the ideals and standards which were to influence the future development of nurse training in both public and private hospitals. Hospital and district nursing services gradually extended to each colony. The conditions of the time are aptly described as follows ...

"When the Colonial Infirmary was opened in Adelaide in 1837, the nursing of the sick throughout the world had not yet thrown off the shackles of an age-old tradition, which was that women should be able to care for those stricken with illness without the benefit of training or instruction, relying entirely on instinct, common sense and experience."¹⁶

Legislation has always lagged far behind the incentives of inspired professional leaders. Some would agree that this delay is a good thing for secure progress in any field of human endeavour.

Be that as it may, it was not until 1915 that a Midwives Act was introduced in Victoria and a Nurses Registration Act was not passed until 1924.¹⁵ In South Australia nurses have been registered since 1920, covering all aspects of nursing.

District nursing in Australia began in needy urban areas and spread to rural districts and the 'outback', where nurses actually maintained cottage hospitals in remote areas, as they still do today.

"In the winter of 1893, when the colony had experienced some bad seasons, accompanied, as usual, by a considerable degree of unemployment, a new experiment was tried in order to relieve the prevalent distress by instituting home nursing in one of the poorer suburbs of Adelaide."¹⁷

This was the beginning of the Royal District Nursing Society of South Australia Inc., under the guidance of Rev. B.C. Stephenson, the Hon. Dr. Allan Campbell, M.L.C., and Miss Edith Noble, who had been a pupil of Florence Nightingale. Almost twenty years later in 1912 a resident nurse, Winifred Howie, was sent to live at Hergott Springs (Maree) approximately nine hundred kilometres north of Adelaide, where a two-bed cottage hospital was eventually opened for emergency care.

It is hardly to be wondered at, that the work of the district nurse has altered with the progress of medicine. She has always nursed patients with infectious disease such as typhoid fever, pneumonia and tuberculosis and malignant disease, diabetes and other chronic illness. Her duties cover hypodermic injections and surgical dressings but more recently there has been an extension into the areas of assessment, planning, implementing and evaluation of patient and family care whether it be physical or emotional.

In the last twenty-five years increases in population, the breakdown of the family group, increase in medical consciousness and standard of living and an ever-increasing number of elderly people have caused changes in health care. There is now a shortage of hospital and nursing home accommodation combined with rapidly increasing costs of institutional care. To cushion this, the demand for home nursing has risen as shown by the following figures:-

Year	Number of visits
1967	149,627
1968	146,821
1969	168,362
1970	181,455
1971	196,997
1972	211,491
1973	229,134
1974	270,856
1975	325,599
1976	386,655
1977	442,662

(The figures shown on the previous page have been made available from the Annual Reports by the Director of Nursing of Royal District Nursing Society of South Australia Inc.). In ten years between 1967 and 1977 the number of visits has more than trebled.

In the light of these changes some questions may be asked. What is the future for elderly people? Can the present organisation of health services meet the challenge of the increasing demands?

The Australian health care system has recently been under considerable scrutiny. It has endeavoured to cope with changing pressures in the community, preparing to meet future demands. Reference has been made to the care of aged people and how it influences health and welfare services, highlighting the "continued rapid expansion of demands for care" which will result from growing numbers of aged people, where "chronic conditions and certain mental illnesses inevitably become more prevalent." The need for increasing long-term rehabilitation and medico-social health and welfare services has been stressed. Health-professional roles in the future are questioned.¹⁸

These comments are highlighted by a study to assess the prevalence of chronic illness in the Australian community. A survey was conducted in New South Wales in 1968. This showed "the proportion of persons suffering from at least one chronic illness rose steadily with increasing age" and that ...

"... approximately 23% of the civilian population of the State suffered from one or more chronic illnesses (i.e. illnesses, injuries or impairments); Of the persons suffering from one or more chronic illnesses, 39% reported that the condition(s) limited their activities in some way."¹⁹

These figures were supported in May 1974 by a survey (based on the quarterly population survey) conducted throughout Australia.²⁰

A commentary on the New South Wales 1968 survey makes reference to the need for linking the medical and psycho-social aspects of disabled people.²¹

"The implication of this characteristic is that comprehensive care is necessary, and it may be, for the chronically disabled at least, that the organisation of care is as important as medical care itself. The personal doctor may function best in the sort of organisational structure that enables him to mobilise appropriate and reliable restorative and supportive resources for the disabled as readily as now he can prescribe a tablet."¹⁹

The wisdom of this statement is reflected in the successful establishment of Regional Domiciliary Care Units (under the Commonwealth Home Care and Paramedical Services Act of 1969). In South Australia ²² these units accept referrals from general practitioners, district nurses, voluntary organisations, Government departments, friends and relatives of patients and the patient himself.

Each unit has a Medical Director and an assessment team which may include a social worker, physiotherapist, occupational therapist and supervisory trained nurse who is attached to the Royal District Nursing Society of South Australia Inc.

The general aim of domiciliary care units is to keep people living at home for as long as possible, as well as facilitating earlier discharge from hospital by the provision of supportive services at home. Included in these services are home help, housekeepers, paramedical aids (with some knowledge of nursing techniques), sitters, the provision of linen, meals, hairdressing, gardening, friendly visiting, chiropody, day centre care, physiotherapy, occupational therapy, social work and respite beds. These units have made it possible for many disabled people to stay at home rather than remain in a nursing home or hospital. Home care services whilst attempting to meet the demand, lack much of the personal touch so appreciated by aging and disabled people and their families.

Communication between Regional Domiciliary Care Units and general practitioners, although essential, has not been entirely successful. There is some lack of co-ordination between the two services, with an imbalance in responsibility for assessment of patients and direction of treatment. This results from the merging of the private practitioner and Government health services. A nurse could help to reconcile these services. In the past, the nurse's role in the domiciliary care of patients has been one of attention to physical needs and emotional support. Full use of her potential has yet to evolve in areas regarding assessment, decision-making, treatment and co-ordination of services, particularly for elderly people with chronic illness. For this role, she will need to be experienced, motivated, trained and suitably placed in the health team.

Considering world-wide developments in health care, it would be amazing if the role of the nurse had not been studied in recent years. Such studies, show how a nurse can be integrated into the health team caring for people at home. A few of these studies will now be considered.

Titles and methods of organisation of attachment to a general practice team vary, but a great deal has already been done to define the nurse's role in both primary and maintenance care. There is evidence of her acceptance by patients, doctor-nurse co-operation, job satisfaction, sharing of work-load and an overall improved efficiency in the delivery of patient care.

In the United Kingdom, studies concerned with the role definition of the Health Visitor,²³⁻²⁷ the Practice Nurse²⁸⁻³³ and the Community and District Nurse^{34,35} have been reported. General practitioners have joined with the National Health Service, the Royal College of General Practitioners and the Royal College of Nursing in the collection and

evaluation of data about the nurse. These studies have dealt with the integration of the nurse into the general practitioner team and have given a guide to her duties and her effect on the doctor's role and workload. The benefits and problems of various nurse attachments have been described.

The advantages of a health visitor working in general practice have been stated as follows ...

- "1. Communications are much improved because the health visitor and the doctor meet daily in an informal way and discussion is easy. They learn to understand and appreciate each other's role. Problems are discussed and a common course of action decided upon, thus preventing conflicting advice and duplication of visiting.
2. There is greater speed where action is necessary.
3. There is greater continuity of care.
4. The doctor's medical records, particularly the paediatric reports, and his knowledge of his patients is of great value to the health visitor. In her turn she keeps the doctor informed of families whom he would not see regularly.
5. There is no doubt that the patients like having their medical and health advisers working together from the appreciation they express. The mothers increasingly refer minor problems to the health visitor which previously they would have referred to the doctor. In an all male practice many women appreciate having another woman with whom they can discuss personal problems.
6. Not least is the satisfaction which the health visitor feels as a result of working as a trusted member of a team."³⁶

In the United Kingdom, the nurse's role in general practice has been diverse, covering some aspects of primary medical care as well as maintenance supervision regardless of the age of her patients. According to similar studies the role of the nurse has expanded in many parts of the world.

In the United States of America and Canada investigations have been directed to the nurse practitioner and the public health nurse.

Nurse practitioner trials in 1971-1972 concluded ...

- "1. Job satisfaction for physicians and nurses does not decline after adoption of the new mode of practice except concerning remuneration among physicians. Physicians and nurse practitioners, having worked as co-practitioners for one year, assessed the concept of provision of primary care by nurse practitioners favourably in all cases.
2. Roles and activities in patient assessment and health maintenance formerly the exclusive domain of physicians are delegated to a greater extent to nurse practitioners than to conventional nurses. Practices with nurse practitioners also exhibit a higher proportion of clinical activities carried out interchangeably by the physician or the nurse.
3. Compared with conventional nurses, nurse practitioners spend about 50% more time in clinical activities and 50% less time in clerical and housekeeping duties."³⁷

A study of nurse clinics and progressive ambulatory patient care showed that "the nurse was accepted as a primary source of care," and that patients showed a preference for her to perform some traditionally medical tasks. There was increased adherence to appointment schedules and better utilization of time, an overall lowering of costs and increase in quality of care. The "needs of patients rather than needs and images of professional disciplines" are emphasised as being the focus of any programme for the continuing care of people with chronic illness.³⁸

Another study concluded that ...

"even if her exact role remains to be defined and will depend on local situations, a well-trained nurse practitioner, with close physician back-up, can provide excellent, long-range medical care."³⁹

Comments have been made on the overall management of people with chronic illness ...

"many patients with chronic illness, however, are so severely disabled that the goal of treatment must shift from improving or maintaining physical and mental health to simply coping with their everyday needs and periodic crises."⁴⁰

The role of the nurse in Australia has been reported for the National Health and Medical Research Council (Nursing Sub-committee).⁴¹

The definition of the nurse was that adopted by the Committee of Enquiry into Nursing in Victoria (1970) ...

"The nurse is a person who has completed a programme of basic nursing education and is qualified and authorised in her country to supply the most responsible service of a nursing nature for the promotion of health, the prevention of illness and the care of the sick."⁴²

Several comments from this report ⁴¹ relate closely to this present study ...

"... the potential of nurses should be fully explored before considering the introduction of new categories of health workers."

Regarding the expanded role of the nurse ...

"There is little mention in the literature, however, of nursing skills or regimes specially developed to complement the medical and technological skills. The development of a clinical nurse specialist would seem to be a necessary consequence of new technical and scientific knowledge gained. This could be a new role for the future."

"The future role of the nurse will be an expanded one.

In Clinical Practice it will include more technical tasks and more personal care of a supportive nature which previously were functions performed by doctors."

The future expanded role of nursing has been discussed in the report, and the following recommendations made ...

"Research is required to ascertain which tasks and functions, are being, and are likely to be assumed by nurses, and to determine the degree of responsibility doctors are likely to delegate to nurses in future health care, given the nurse had adequate preparation and education.

A specialist clinical role needs to be developed by nurses themselves which will be complementary to the role of the doctor and will include those elements of technical expertise which are now being delegated to nurses. Educational programmes should be developed which will prepare the nurse for an expanded complementary role in future health care."

A recent search of the literature reveals very few controlled studies which use patient response as a measure of the effectiveness of a nurse. This is particularly so when considering elderly people

with chronic illness where patient response covers a broad range of functions.

One study where physical, mental and social functions were recorded, shows that "qualitative differences in the results of long-term nursing care are significantly related to the degree of disability at the time of referral."⁴⁰

Another study uses physical, emotional and social patient-outcomes to test the effectiveness of a first-contact primary care nurse.⁴³ Yet another study, where the experimental group received maintenance care by nurses, was able to report several factors thought to favour the outcome in patients with diabetes, hypertension or cardiac disease, e.g. direct dispensing of drugs, earlier recognition of morbidity.⁴⁴

The study forming the basis of this thesis has considered patient response as the measure of nurse effectiveness. It began in 1967 when problems of caring for aged people with chronic illness were realised in a country practice. Too little time was available to attend to their every-day needs, and there was little possibility of acquiring a deeper knowledge of the practical aspects related to their independence and enjoyment of life.

In the first instance,⁴⁵ a study of three hundred people, of all age groups, made in the district of Mallala, South Australia, strongly indicated that a nurse could assist in the maintenance care of people in a rural area.

Further definition of an expanded nursing role was thus foreshadowed, but it took several years experience in the assessment and retraining of elderly people to formulate the hypothesis that the health, morbidity and life-style of chronically ill elderly people is significantly affected by a nurse attached to a general practice and to design the study described in this thesis.

M E T H O D S

EXPERIMENTAL DESIGN.DESIGN AND RANDOMISATION.

A before-after controlled study was used.

Initial assessment.

From June to September, 1975 an initial assessment was made on one hundred and sixty-six (166) people.

The assessment was carried out at the Walkerville Nursing Home, Adelaide, South Australia, in a comfortable lounge-room with adjacent kitchen, toilet and bathroom facilities.

Data were collected and summarised by the author, assisted by a trained nurse, a physiotherapist and two voluntary aids.

Patients were instructed to bring their personal toilet articles and all medications.

Instructions to patients following initial assessment.

On completion of this assessment patients were advised that they would be allotted to group A or group B. During the trial period, people in group A would be visited by a nursing member of the St. John Ambulance Brigade, whilst those in group B would be visited by a registered nurse. Each patient would remain under the supervision of his referring general practitioner and would not be seen again by the author until the second assessment in one year's time.

Each doctor was advised of his patient's inclusion in the study. A medical record card was enclosed for recording of information about each patient during the trial period.

Randomisation of groups.

Following the initial assessment, the randomisation (by age and

sex only) was carried out by the Department of Community Medicine, University of Adelaide.

Following randomisation the number of subjects was reduced to one hundred and sixty (160) as three people died before the trial period began (one male and one female in the experimental group and one male in the control group), and three males in the experimental group were excluded due to lack of co-operation.

For the trial period the experimental group and the control group each numbered eighty (80) people. Two registered nurses working on a half-time basis, were each allotted forty (40) people in the experimental group.

Final assessment.

From May to August, 1976 following the trial period, one hundred and fifty (150) of these people were re-assessed, using criteria identical to that of the initial assessment.

At the completion of the study, the nurse compiled a detailed report of her duties and activities and asked each patient (or a relative) in the experimental group to write a letter expressing his thoughts about the study. (Extracts of the letters appear in Appendix I).

Finalisation of the trial period.

Following the trial period, the nurse withdrew her support gradually from the patients.

Management of Control Group. (Group A).

Nursing members of the St. John Ambulance Brigade visited people in the control group on three occasions. A placebo

questionnaire (Appendix II) was administered at each visit. The author instructed the St. John nurses in the methods to be used, emphasising that the aim was for them to maintain contact and show some interest in these people at three-monthly intervals throughout the trial. They were not to become involved in problems or treatment of patients.

ETHICS APPROVAL.

The South Australian Branch of the Australian Medical Association approved the study prior to commencement.

CRITERIA FOR ENTRY INTO THE STUDY.

The following criteria were observed ...

Cerebro-vascular accident, with disability lasting more than twenty-four hours, within three years prior to entry into the study.⁴⁶⁻⁴⁸

In accordance with World Health Organization recommendations, stroke has been defined as a sudden onset of focal neurological deficit due to a local disturbance in blood supply to the brain.⁴⁹

No more than two episodes of cerebro-vascular accident prior to entry into the study.

Population to be obtained from people living at home at the time of entry into the study.

Age limit. 45-85 years at time of entry into the study.

CRITERIA FOR EXCLUSION FROM ANALYSIS.

Death.

Patient absent at time of final assessment.

Lack of co-operation by patients.

DESCRIPTION OF THE STUDY POPULATION.SIZE OF STUDY POPULATION.

The number of people in the study population was influenced by ...

The necessity for statistical viability of results.

The need for a realistic workload for the nurse. A pilot trial showed the optimum workload to be four patients per day. This allowed for approximately one hour with the patient, travelling time, consultation with doctors and other health professionals and the summarisation of the visit.

Summary of size of the study population.

<u>Population detail</u>	<u>Number of people</u>	<u>Total</u>
Initial assessment	166	166
Death before trial period	3	163
Excluded due to lack of co-operation	3	160
Experimental group	80	160
{ Control group	80	
Deaths during trial period	9	151
Absent from final assessment	1	150
Statistical analysis of data	150	150
Experimental group	77	150
{ Control group	73	

EXCLUSION FROM ANALYSIS OF DATA.

Absent from final assessment. (1).

One male in the control group was visiting Scotland at the time of the final assessment.

Deaths. (9).

TABLE 1.

Deaths in the study population. (160).

SEX	Experimental	Control
Male	1	3
Female	2	3
	3	6

NOTE TO READER.

All tables and discussions hereafter in this chapter and further chapters refer to the one hundred and fifty (150) people for whom data were analysed.

Experimental group	77
Control group	73

SEX.

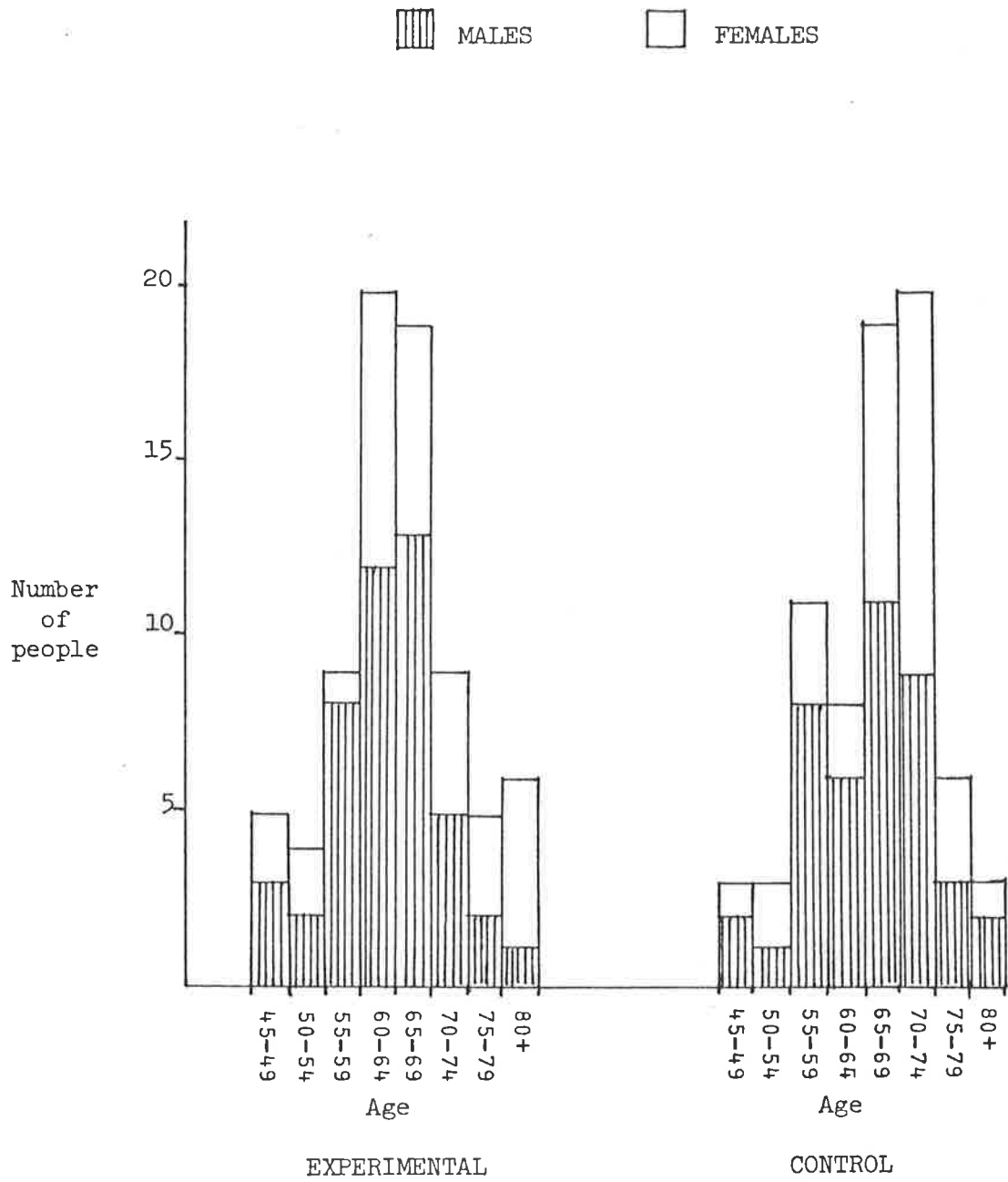
TABLE 2.

Sex distribution.

SEX	Experimental	Control
Male	46	42
Female	31	31
	77	73

FIGURE 1.

AGE DISTRIBUTION - FIVE YEAR INTERVAL.



AGE.TABLE 3.

Mean age (at initial assessment, 1975).

SEX	Experimental			Control		
	n.	\bar{x} .	s.	n.	\bar{x} .	s.
Male	46	63.48	1.13	42	65.29	1.26
Female	31	67.06	1.81	31	67.61	1.58
	77	64.92	1.01	73	66.27	0.99

n. = number of people.

 \bar{x} . = mean.

s. = s.d. mean.

RELIGION.TABLE 4.

Denomination.

DENOMINATION	Experimental	Control
Anglican	22	25
Methodist/Congregational	25	19
Roman Catholic	8	17
Baptist	5	5
Lutheran	6	1
Church of Christ	3	3
Presbyterian	3	2
Latter Day Saints	2	-
Other	3	1
	77	73

OCCUPATION.TABLE 5.

Present or previous occupation.

OCCUPATION	Experimental	Control
Professional	2	7
White collar	17	17
Skilled	26	23
Semi-skilled	8	5
Unskilled	1	1
Home duties	23	20
	77	73

CEREBRO-VASCULAR ACCIDENT.Disability.

The degree of disability was unknown to the author prior to the initial assessment, as it was not a factor influencing the referral of patients. (See criteria for entry into the study p. 18).

Side of lesion.TABLE 6.

People affected by left or right cerebro-vascular lesions.

SIDE OF LESION	Experimental		Control		Total
	Male	Female	Male	Female	
Left C.V.A.	33	15	21	15	84
Right C.V.A.	13	16	21	16	66
	46	31	42	31	150

Time interval from first cerebro-vascular accident.TABLE 7.

Time interval between first cerebro-vascular accident and the initial assessment, 1975.

TIME INTERVAL (MONTHS)	Experimental	Control
≤6	27	21
7-12	13	21
13-18	18	9
19-24	6	7
25-30	9	8
31-36	4	7
	77	73

REFERRAL SOURCE.

Throughout the metropolitan area of Adelaide and two country regions of South Australia (Victor Harbour and Balaklava/Mallala) (Figure 2) general practitioners, in practices selected at random from a reliable list of practitioners, were asked to refer patients who were eligible for inclusion in the study. In addition, referrals came from Regional Domiciliary Care Units, Royal District Nursing Society of South Australia Inc., Royal Adelaide Hospital, Modbury Hospital, Queen Elizabeth Hospital, the Walkerville Nursing Home, Winchester Rehabilitation Hospital and the National Heart Foundation of Australia (South Australian Division).

In all cases, referrals were checked and approved by the general practitioner responsible for the care of the patient at home.

One hundred and three (103) general practitioners co-operated in the referral of patients to the study. Treatment of all patients continued to be directed by the referring general practitioner throughout the study.

TABLE 8.

Number of general practitioners treating patients in the trial period.

PATIENT GROUP	Doctors	
	1975	1976
Experimental	61	60
Control	61	63
Both groups	19	18

TABLE 9.

Number of patients who changed doctor during the trial period.

SEX	Experimental	Control
Male	4	2
Female	3	9
	7	11

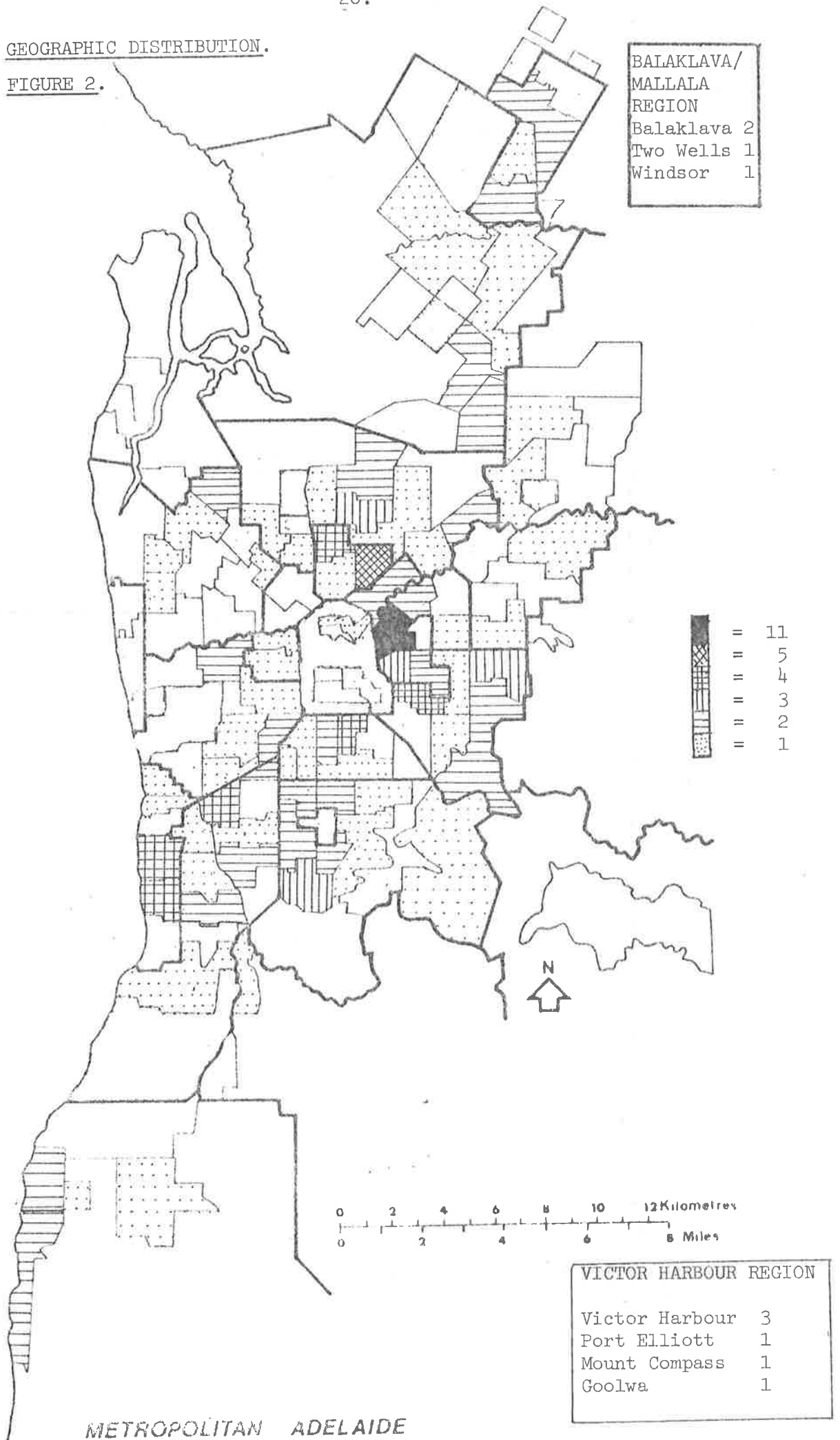
TABLE 10.

Number of patients per doctor.

NUMBER OF PATIENTS	Doctors	
	1975	1976
1	68	72
2	26	25
3	6	5
4	2	2
5	1	1
	103	105

GEOGRAPHIC DISTRIBUTION.

FIGURE 2.



RELIABILITY OF METHOD.ADEQUACY OF SAMPLING.

The study population selection was considered to be free of bias. Subjects were not referred by the author, but were accepted from general practitioners selected at random, and from sources known to have people with stroke in their care programmes. The population covered a wide area of the metropolitan area of Adelaide, South Australia. The two country areas were selected as they were approximately equidistant from Adelaide and had similar community services.

PRECAUTIONS TO ENSURE RELIABILITY OF METHOD.

The aims of the study were concealed from patients, doctors and health professionals participating in the study, at the initial and final assessments and treating patients during the trial period. In particular, the study nurses who were visiting the experimental group were not informed of the aims of the study. For ethical reasons, the doctors were told of their patients inclusion in the study or control group. It was implied that 'stroke' in elderly people was being investigated with the help of a nurse.

The randomisation of the experimental and control groups was concealed from the author until all final assessments were completed.

The trained nurse assisting with initial and final assessments was unaware of the randomisation of groups.

Two voluntary aids assisting at the initial assessment were replaced by two others for the final assessment.

The subjects were not informed of the experimental or control groups.

At no time during the study trial did the author have any contact with or discussion about the subjects in either experimental or control groups.

The two study nurses made all arrangements for all subjects to report for re-assessment in 1976.

At the final assessment, three doctors conducted random checks of all measurements made by the author.

The author carried out or personally supervised all data collection at the initial and final assessments, and was completely unaware of which subjects belonged to either the experimental or control groups.

DATA COLLECTION.PHYSIOLOGICAL VARIABLES. (A).Body weight and height.

All patients were weighed in shorts or briefs before lunch.

A table of weights ⁵⁰ calculated according to sex, age and height was used to indicate the standard weight for each person.

Height was measured in centimetres.

Weight was measured to the nearest kilogram.

For the purposes of this study, obesity was defined as 2 Kg. or more above standard weight.

A shift of 2 Kg. or more nearer to the standard weight was considered a significant improvement in weight.

A shift of 2 Kg. or more away from the standard weight was considered a significant deterioration in weight.

A shift of less than 2 Kg. indicated no change.

Blood pressure.

An Erka Simplex Aneroid Sphygmomanometer (standardised against a mercury sphygmomanometer), was used to measure blood pressure.

All blood pressure readings were taken on arrival, 8-10 minutes after the patient had been seated in a comfortable arm chair. Readings were recorded to the nearest 5 mmHg with the patient seated and standing.

The definition ⁵¹ of hypertension adopted by the World Health Organization was used as the standard in considering blood pressure.

Definite hypertension is said to be present when the systolic pressure is 160 mmHg or more and/or the diastolic pressure is 95 mmHg or more.

Diastolic pressure with the patient seated was used to indicate change.

A difference of 10 mmHg or more between the initial and final measurements of blood pressure indicated improvement or deterioration. Less than 10 mmHg was considered as no change in blood pressure.

Urinalysis.

A mid-stream specimen of urine was collected by a trained nurse using standard nursing procedures.

A separate aliquot of the specimen was tested with Ames Multistix for abnormal chemical constituents including albumen, sugar, ketones, blood, bilirubin and pH.

Data recorded were indicated by the Multistix scale, and scored as deterioration or improvement accordingly.

*The remainder was kept for culture and sensitivity.**

Improvement or deterioration were denoted by the presence or absence of bacteriuria.

Pulse.

Rate and regularity were recorded after the patient had been seated for five minutes.

Auditory acuity.

Prior to the test, both ears were examined for wax.

Wax was said to be present only if it prevented visualisation of the tympanic membrane.

Scores were allotted for the presence or absence of wax.

Auditory acuity was tested in quiet surroundings with the whispered voice as follows:-

* Dr. Gribble & Partners Laboratories, North Adelaide, South Australia.

Question asked at one metre from each ear separately.
Hearing was said to be adequate if the correct answer was given.

Numbers whispered at three metres from the patient (with closed eyes) indicating hearing with both ears.
Hearing with both ears was said to be adequate if the numbers were accurately repeated.

Scores denoting improvement or deterioration were allocated only for hearing with both ears.

Visual acuity.

Uncorrected vision.

Vision was assessed using Snellens Types at six metres. As the correct reading glasses were not brought by many people to the test, corrected vision, although taken where possible (distance only), was considered to be an unreliable test because of the difficulties.

Aphasic patients had their vision assessed by two people. One pointed to the chart, while the author asked the patient to indicate with a word or nod if a line was clear. Direction of letters on the chart was also used as an indication of visual acuity.

Data were recorded as indicated by Snellens score.

Vision was considered to be within normal limits at $\frac{6}{9}$ or better.

Scores denoting improvement or deterioration were allocated for uncorrected vision with both eyes.

Visual fields.

Visual fields were tested by confrontation. *Fields were considered as normal if $>45^{\circ}$ from the midline.*

Tonometry.

Intra-ocular tension was checked using a Schiøetz tonometer, with a 7.5 gram plunger load.

A reading of ≤ 5 was considered as abnormal, needing further investigation.

Haematology.

All blood specimens were collected at approximately 11.30 a.m. just prior to lunch.*

Components of a non-fasting specimen of blood were analysed.

Details of analysis.Serum Chemistry.

Cholesterol
Glutamic Oxaloacetic Transaminase
Lactic Dehydrogenase
Alkaline Phosphatase
Bilirubin
Creatinine
Uric Acid
Urea
Glucose
Phosphorus
Calcium
Albumen
Total Protein

Blood.

Erythrocyte Sedimentation Rate
Erythrocytes
Haemoglobin
Packed Cell Volume (Haematocrit)
Mean Corpuscular Volume
Mean Corpuscular Haemoglobin
Mean Corpuscular Haemoglobin
(Concentration)
Leucocytes
Neutrophils
Lymphocytes
Monocytes
Eosinophils
Basophils

*The total screen was rated as normal or abnormal, taking into consideration the normal variation with age and sex.**

Dyspnoea.

Independent assessments were made by the author and the nurse ...

On patient complaint.

By direct questioning.

By observation of the patient when walking, sitting and lying.

*Dr. Gribble & Partners Laboratories, North Adelaide, South Australia.

A scale of 0 - 3 was used to denote severity of dyspnoea on exertion and when seated and lying.

Scores were allotted to indicate improvement or deterioration.

Oedema.

Ankle and lumbar oedema were tested by thumb pressure.

Body temperature.

Axillary temperature ($^{\circ}\text{C}$) was measured for three minutes.

COMMUNICATION. (B).

Tests of communication skills, including comprehension, expression, reading and writing were given to each patient as part of the initial and final assessments.

Test details, methods of administration of the tests, and scoring methods were finalised in consultation with a senior speech pathologist, who provided or checked all material used.

All communication assessments were scored according to the number of correct responses given for the particular test.

Comprehension.Audio-visual comprehension.Picture identification.

Five clear pictures were placed on a table and the person asked to show the picture named, and then -

Match the stated action to the correct picture.

A different set of five pictures was shown in the initial assessment (1975) and the final assessment (1976).

Test details.Initial assessment (1975).

<u>Pictures</u>		<u>Picture action</u>
Hat	.....	The one you would wear
Tree	.....	The one that gives shade
Clock	.....	The one that gets you up in the morning
Bed	.....	The one where you relax
Table	.....	The one on which food is placed.

Final assessment (1976).

<u>Pictures</u>		<u>Picture action</u>
Man	.....	The one that can talk
Shoe	.....	The one that can be worn
Fork	.....	The one that holds food
Fish	.....	The one that lives in the water
Tomatoes	.....	The one that grows in soil.

The test for indicating named pictures was scored 0 - 5 for correctness.

The test for matching the action to the picture was scored 0 - 5 for correctness.

Listening comprehension.

A short passage was read slowly to each person, who was instructed to listen carefully so as to answer, only by yes/no, questions on completion of the reading.

Test details.Initial assessment (1975).

"Every man knew that the ship would sink before sunrise, yet every man went on hoping, till she heeled over on her side, and sank with her cargo of pianos to the bottom of the sea. James managed to swim to a raft, where he joined the first mate and the ship's cook.

'Well', he said with a laugh, 'I only hope the fish in these parts are musical'."

Five questions asked of the patient ...

Did the ship sink during the day?

Was the ship carrying pianos?

Did the cook escape to the raft?

Was the hero's name 'James'?

Do you think James panicked when the ship went down?

Final assessment (1976).

"A farm-worker on his way home one day found a snake, half-dead with cold. He took pity on the creature and brought it back to his cottage to revive by the fire. No sooner had the warmth restored the snake, than it started to attack the children in the cottage. The farm-worker was then obliged to kill the snake."

Five questions asked of the patient ...

Was the creature a cat?

Was the snake dying from thirst?

Did the snake improve when put by the fire?

Did the farm-worker kill the snake?

Was the snake grateful to the man?

A score of 0 - 5 was given for correct answers.

Expression.Counting.

Each person was asked to count aloud from 1 to 10.

Score 0 - 10.

Naming defined pictures.

Ten clear pictures were shown for correct naming. Pictures were arranged in order of increasing difficulty in syllable length and familiarity. Different pictures were used for the initial assessment (1975) and the final assessment (1976).

Test details.Pictures.

<u>Initial assessment (1975)</u>	<u>Final assessment (1976)</u>
Chair	Dog
House	Tap
Hand	Boat
Car	Book
Girl	Cake
Umbrella	Keys
Rake	Window
Calendar	Toothbrush
Hammer	Scissors
Horseshoe	Telephone.

Points were allotted for ...

giving a name to the pictures. Score 0 - 10

ease of articulation of words. Score 0 - 10

accuracy of articulation of words. Score 0 - 10.

If a wrong name was given, no scores followed for ease or accuracy of articulation of words.

Language use.

A large picture, chosen to show mood and action was shown and verbal description and discussion invited.

The use of sentences showing an appreciation of integrated action of people and description of the scene was rated on a scale 0 - 2.

Reading.Reading words.

Ten words, written in large clear letters, and increasing in difficulty, syllable length and familiarity were shown for

recognition and enunciation.

Test details.

Words.

<u>Initial assessment (1975)</u>	<u>Final assessment (1976)</u>
Man	Boy
Was	Farm
Milk	Bank
Does	You
Decide	Banana
Potato	Manage
Foundation	Reason
Determine	Animal
Disposition	Consideration
Respectable	Professional.

Points were allotted if the spoken word could be easily recognised. Score 0 - 10.

Reading comprehension.

Five questions written in large, clear letters, were shown.

Test details.

Questions.

Initial assessment (1975).

Is an orange a fruit?

Are bicycles faster than trains?

Is summer colder than winter?

Are there twelve months in the year?

Can anyone get a licence to drive a car?

Final assessment (1976).

Do hens lay eggs?

Do dogs bark?

Do you wear a coat in the summer?

Does a waiter cook your food in a restaurant?

Is it possible for a good driver to have a car accident?

Points were scored for correct answers (only by yes/no).

Score 0 - 5.

Writing.

Writing dictated words.

Each person was asked to write five dictated words, repeated if necessary.

Test details.

<u>Initial assessment (1975)</u>	<u>Final assessment (1976)</u>
Girl	Give
Watch	Match
Letter	Waggon
Window	Mother
Remember	Deliver

A score of 0 - 5 was given for correctness of spelling.

Written description.

A composite picture, the same as shown for language use (p. 37), was shown again. Each person was asked to write about the picture. A time limit of 5 minutes was imposed for the test, but this was concealed from the patient. Details to be noted about the picture were required as follows:-

Test details.

<u>Initial assessment (1975)</u> (List A)	<u>Final assessment (1976)</u> (List B)
Childrens' action	Man's appearance
Mother's action	Food on the plate
Refrigerator contents	Food on the table
Food on the table	Utensils and containers
Background	Background
Other	Other

A score of 0 - 5 was given as follows:-

0 = nothing written.

1 = name only written (nothing about the picture).

2 = list of nouns or a short phrase.

3 = one sentence or two phrases, with or without a list of nouns.

4 = $\leq 50\%$ of lists A or B.

5 = $\geq 50\%$ of lists A or B.

MOOD. (C).

Mood was assessed in two ways ...

Observed mood.

Self-assessed mood.

Observed mood.

An assessment of general feeling and communication ability was made by observation and interview techniques over a period of approximately 3½ hours, i.e. the time taken for the whole assessment.

Interaction of people in the room was used to assess verbal and non-verbal communication.

Five variables were noted by the observers ...

By observation.

Sad appearance

Tearful state

Verbal and non-verbal communication.

By interview.

Loneliness

Insomnia.

These were each scored as 1 (Yes) or 0 (No) and totalled to give an overall score of 0 - 5, hereafter referred to as the 'total observed mood.' (Note. 0 is the best score).

Self-assessed mood.

An analogue scale (Fig. 3) was used to allow each person to assess himself. Each one indicated on a scale (0 - 9) his feeling of coldness, anger, depression and confusion. In addition, a self-assessment was made on the ability to cope with self-administered medication.

The score was as indicated on the scale.

FIGURE 3.

ANALOGUE SCALE.

I do not
feel at all
cold

I feel as
cold as can
be

I do not
feel at all
angry

I feel as
angry as
can be

I do not
feel
depressed

I feel as
depressed
as can be

Patient is
not confused

Patient is
confused

Patient is
coping with
medication

Patient is
not coping
with
medication

MOBILITY. (D).Walking.

The time taken to walk ten metres with or without a walking aid or assistance was recorded using a stop-watch. Care was taken to ensure accuracy, with no emphasis on speed.

A difference of one or more seconds between the initial and final assessments indicated a score ± 1 .

Joint range.

Joint ranges were measured by the physiotherapist or the author using a goniometer.

Measurements taken were as follows:-

Wrists	Flexion to extension.
Elbows	Flexion - measured over extensor surface.
Shoulders	Forward flexion and backward extension.
Knees	Flexion.
Hip	Flexion and extension.

The results were considered for joints on the affected and non-affected sides with respect to cerebro-vascular accident.

In order to distinguish those people with severely restricted joint movement, results for each joint were considered in two groups ...

Joint range in the lower third of calculated normal value.

Joint range in the upper two-thirds of calculated normal value.

In order to establish a 'normal joint range', the mean value of joint range at the initial assessment (1975) was calculated for each particular joint on the side unaffected by cerebro-vascular accident.

The normal value thus obtained was then divided into thirds and corrected to the nearest 5° as follows:-

e.g. Right wrist -

calculated normal value = 102°

$$102 \div 3 = 34^{\circ}$$

corrected to nearest

5° , this becomes 35°

Similar calculations were made for other joints.

The groups so calculated were as follows:-

	Lower 1/3 joint range	Upper 2/3 joint range
Right wrist	$\leq 35^{\circ}$	$> 35^{\circ}$
Left wrist	$\leq 35^{\circ}$	$> 35^{\circ}$
Right elbow	$\leq 40^{\circ}$	$> 40^{\circ}$
Left elbow	$\leq 40^{\circ}$	$> 40^{\circ}$
Right shoulder	$\leq 40^{\circ}$	$> 40^{\circ}$
Left shoulder	$\leq 40^{\circ}$	$> 40^{\circ}$
Right knee	$\leq 40^{\circ}$	$> 40^{\circ}$
Left knee	$\leq 40^{\circ}$	$> 40^{\circ}$
Right hip	$\leq 30^{\circ}$	$> 30^{\circ}$
Left hip	$\leq 30^{\circ}$	$> 30^{\circ}$

An increase of $\geq 5^{\circ}$ was considered to be improvement, whilst a decrease of $\geq 5^{\circ}$ was considered to be deterioration.

ACTIVITIES OF DAILY LIVING. (E).

Tests were carried out to determine how well each person could cope with activities of daily living including showering, dressing, undressing, toileting*, cooking and feeding. Details of tests were approved by a senior occupational therapist. *All actions were observed.*
Each test was scored 0 - 10.

Test details.Showering.

- Non-slip mat placed in position.
- Able to wash face and neck.
- Able to wash trunk.
- Able to wash arms.
- Able to wash legs.
- Able to dry back of trunk.
- Able to clean teeth.
- Able to brush hair.
- Able to turn taps on/off.
- Able to style hair (females) or shave (males).

Dressing.

- Panties or shorts.
- Singlet.
- Dress or shirt (button through).
- Trousers or skirt.
- Socks or stockings.
- Tie or brassiere.
- Belt.
- Shoes (slip on).
- Coat.
- Hat.

*Lavatory independence.

Undressing.

Panties or shorts.
Singlet.
Dress or shirt (button through).
Trousers or skirt.
Socks or stockings.
Tie or brassiere.
Belt.
Shoes (slip on).
Coat.
Hat.

Toileting.

Manage clothing ('pre-toilet').
Sitting accurately.
Rising from toilet.
Local hygiene satisfactory.
Manage clothing ('post-toilet').
Flushing toilet.
Leaving toilet area clean.
Washing hands.
Unsoiled clothes - urine.
Unsoiled clothes - faeces.

Cooking.

Manipulate heating-jet indicators.
Boil a small kettle of water.
Break and beat an egg.
Pour liquid (200 mls. of water from a jug to a glass).
Lift an 800 ml.-capacity saucepan containing 400 mls. of water
from the bench to the stove.

Open a small can of soup.

Open a screw-top lid.

Toast a slice of bread (automatic toaster).

Grease a cooking pan.

Wash dishes used in the test.

Feeding.

Setting a place at table.

Suitable posture at table.

Cutting food (tender meat and vegetables).

Using a fork.

Using a spoon.

Spreading a slice of bread with margarine.

Peeling an apple.

Drinking from a cup.

Chewing and swallowing.

No soiling of clothes.

Test details were defined in consultation with nurses and an occupational therapist, all of whom were actively engaged in retraining disabled elderly people. It was mutually agreed that the tests included the necessary components for satisfactory performance of the activity under review. Furthermore, it was agreed that the most appropriate person to help the author with these assessments would be an experienced trained nurse.

Although aids and personal help usually available in the home were noted, *the score for the activity was given for the individual performance on the day, for what a person could actually do himself.* In some instances, entirely at the patient's discretion, aids e.g. suction tooth brush, or cooking aid, were brought to the assessment, enabling the person to score well in a particular item.

RECREATIONAL INTERESTS. (F).

Details of gardening interests and skills, crafts, sport, indoor games, television viewing, radio listening, reading, visits to performing arts and any other recreational interests, smoking habits and alcohol consumption were recorded by interview. Some gardening and craft skills were observed.

Assessment details were defined in consultation with nurses and an occupational therapist, all of whom were actively involved in retraining disabled elderly people. Aging people were consulted about the details included in the questionnaire.

Gardening - interests and skills.Test details.Gardening.

By observation ...

Use of a light hand fork.

Use of small secateurs for light pruning.

Pot-planting of a small plant.

Picking flowers from pot-plant.

By interview ...

Interest in the garden.

Possession of an out-door garden.

Possession of an indoor garden.

A tidy garden.

Participation in watering garden.

Participation in weeding of garden.

Score 0 - 10.

Crafts.

Craft performance was assessed by observation and interview.

The following inventory of crafts was used in the assessments.

Basketwork	Leatherwork
Beadwork	Painting
China painting	Pottery
Crochet	Rug-making
Felt work	Sewing
Floral art	Weaving
Knitting	Woodwork.

and other crafts as specified by the patient.

The number of crafts performed indicated the score.

Sport.

Active participation in sport was assessed by interview.

A positive score was given if a sport was commenced or the variety of sport increased. A negative score was given if sport was discontinued or the variety of sport decreased.

Indoor games.

Active participation in games was assessed by interview.

A positive score was given if a game was commenced or the variety of games increased. A negative score was given if a game was discontinued or the variety of games decreased.

Television viewing.

Television viewing hours were estimated by interview.

The score was indicated by the number of hours spent viewing each day.

Radio listening.

Hours spent listening to the radio were estimated by interview.

The number of hours spent listening each day indicated the score.

Reading.

The amount of reading was estimated by interview. Books, magazines and newspapers were considered.

The number of books and magazines read indicated the score.

The number of people reading newspapers was recorded.

A positive score was given if the activity commenced. A negative score was given if the activity was discontinued.

Visits to performing arts.

The number of people involved in this activity was assessed by interview.

A positive score was given if the activity was commenced or the variety increased. A negative score was given if the activity was discontinued or the variety decreased.

Other recreational interests.

Other recreational interests were estimated by interview.

A positive score was given if an activity was commenced or the variety of activities increased. A negative score was given if an activity was discontinued or the variety of activities decreased.

Smoking habits.

Smoking habits were recorded.

A positive score was given if smoking ceased or was reduced. A negative score was given if smoking commenced or increased.

MEDICATIONS.

Medications were checked and recorded by the author at each test, and categorised as follows:-

Analgesics.

Antibiotics and urinary antiseptics.

Antihistamines.

Anti-hypertensives.

Cardiac reactants.

Diabetic agents.

Dietary supplements.

Iron.

Diuretics.

Laxatives.

Sedatives.

Steroids.

Tranquillisers and antidepressants.

Other medications.

A detailed list of medications appear in Appendix II.

Changes in medication were recorded for each person.

Cost of medication.

Cost of medications was calculated for thirty days (calculated according to costs on 1st September 1976).

Method used to calculate costs.

Tablets, suppositories and capsules were priced per unit, multiplied by the number of tablets taken in thirty days.

e.g. Dispensed cost of tablet = 2.75 cents

Number of tablets per day = 3

i.e. number of tablets per 30 days = 90

Hence cost per 30 days = 90 x 2.75

= 247.5 cents.

This was corrected to the nearest 10 cents, i.e. in the given example, the calculated cost = \$2.50.

Liquid medications were priced per dispensed unit (bottle). The cost for thirty days was calculated in a similar manner to the example given for tablets, using the dose per day.

Ointments and creams were priced per dispensed unit (tube or jar). The cost per month was calculated using the number of tubes per month.

Directions on tablet bottles were noted at the initial (1975) and final (1976) assessments but the instructions were recorded as satisfactory or unsatisfactory only at the final assessment (1976).

MISCELLANEOUS FACTORS.

Facts about the following were recorded by interview ...

Social support, including informal, formal and societal ⁵² resources.

Source of finance.

Consultant referrals.

Alcohol consumption.

Diagnosis in addition to cerebro-vascular accident.

Results appear in Appendix II.

METHODS OF INFLUENCING THE EXPERIMENTAL GROUP.DUTIES AND RESPONSIBILITIES OF THE NURSE DURING THE TRIAL PERIOD WITH THE EXPERIMENTAL GROUP.Collection of data for routine and extended visits.

Each patient in the experimental group was visited by the nurse ten times at monthly intervals. The third and seventh visits were scheduled as 'extended' visits.

At the first visit the nurse collected routine data. The main purpose of the visit was to establish contact and make the patient familiar with the programme which would continue throughout the trial period.

Methods of patient assessment used by the nurse were the same as those of the initial (1975) and final (1976) assessments.

Facts were recorded about variables in sections A - F. *These variables were measured by the nurse during the two extended visits. More frequent assessments in these areas were made at the nurse's discretion. All other factors were assessed each month.

Physiological variables. (A).

Body weight.

Blood pressure.

Urinalysis.

Pulse rate and regularity.

* Auditory acuity.

* Visual acuity.

Pallor.

Dyspnoea.

Oedema.

Body temperature.

Communication. (B).

- * Comprehension.
- * Expression.
- * Reading.
- * Writing.

Mood. (C).

Observed mood.

Self-assessed mood.

Mobility. (D).

Walking.

- * Joint ranges.

Activities of daily living. (E).

- * Showering.
- * Dressing.
- * Undressing.
- * Toileting.
- * Cooking.
- * Feeding.

Recreational interests. (F).

Gardening interests and skills.

Crafts.

Sport.

Indoor games.

Television viewing.

Radio listening.

Reading.

Visits to performing arts.

Other recreational interests.

Smoking habits.

Alcohol consumption.

Community support and services being used.

Medications.

Additional information about patient visits.

At the completion of every assessment the nurse recorded ...

Temperature of day.

Time taken for visit.

Reasons for time taken.

Additional details of the visit including follow-up action, difficulties and relationships with others involved in patient care.

A flow-chart indicating areas of change.

A final summary on each patient was written at the end of the trial period.

Criteria for nurse management of patients.

The nurse had access to the initial assessment record (1975) of patients in the experimental group. Guidelines for management and criteria for referral were given by the author to the nurse prior to the trial period. Each variable was to be considered in itself but the need to relate one variable to another was stressed. A broad assessment of the patient was to be made before the nurse contacted the doctor to discuss her findings.

Throughout the trial period the nurse was to rely on her basic general training and experience with added knowledge of the wider health team and community services. She was to treat each patient as an individual and use her initiative in deciding when to alert the patient's doctor for medical reasons, or for his approval regarding other referrals.

Physiological variables. (A)Body weight.

If the variation in body weight was greater than 2 Kg. the patient was questioned and examined regarding diet, output of urine, ankle oedema and lumbar pad, dyspnoea, thirst and any change in mood.

The findings were considered with variables covering other aspects and the doctor notified of weight change, together with any other relevant facts, e.g. oedema or depression. The nurse asked for his advice or arranged for him to see the patient.

If the variation in weight was less than 2 Kg. the nurse investigated the cause by checking the above list and notified the doctor if she thought it necessary. She suggested a modified diet or more rest or discussed with the doctor the need for an adjustment or change in medication.

Blood pressure.

Blood pressure readings were taken with the patient seated and standing.

If the variation in blood pressure

was \pm 20 mmHg systolic or

\pm 10 mmHg diastolic

the doctor was notified regarding a possible review of treatment.

Urinalysis.

The patient was asked about frequency, nocturia, day and night incontinence, dysuria and adequate fluid intake.

A urine specimen, passed after breakfast, was tested for albumen, sugar and pH. (Ketones, bilirubin and blood were tested only when indicated by symptoms). A test for the full range of abnormal constituents using Ames Multistix, was made at the extended visits. The doctor was notified of any abnormality.

A mid-stream specimen of urine was collected if there were suggestive symptoms of urinary tract infection and if the doctor was willing for culture and sensitivity tests to proceed.

Pulse rate and regularity.

Any change in pulse rate or disturbance in rhythm was noted. Particular attention was paid to drug dosage, e.g. digitalis.

Blood pressure, dyspnoea, oedema, urinalysis, emotional state and mobility were considered prior to notifying the doctor of any abnormality.

Auditory acuity.

Tests were used as described for the initial and final assessments noting the presence of wax. The assessment was made in a quiet room, using slow, deliberate speech. It was noticed if the patient was lip reading.

Hearing aid efficiency and the patient's ability to cope with installation of the aid were checked.

The need for extra aids was noted and arranged as necessary, (e.g. television aids, modified telephone).

The patient and his relatives were encouraged to accept the problem of deafness. The need for continuing patience and clear speech was explained.

Any change in the hearing assessment was related to change in other variables, e.g. recreation and mood.

The doctor was notified of any regression in hearing and the presence of wax.

Visual acuity.

Uncorrected and corrected vision for the left and right eye and both eyes together were assessed using Snellens Types.

Visual fields.

Visual fields were tested by confrontation with one metre distance between the observer's and the patient's eyes. (Range of test - 90° from midline on each side).

Two visual checks were scheduled during the trial period. More frequent checks were made if vision was thought to affect the management of activities of daily living and recreation.

The patient was encouraged to have spectacles checked if necessary. The date of the last refraction test was noted.

The correct use of medications for eyes was reviewed monthly.

Abnormalities, e.g. conjunctivitis or blepharitis were noted.

Aids in use, e.g. magnifying glass, light, large print books were checked and changed or modified if necessary.

The doctor was told of any problems related to vision.

Pallor.

The patient was observed for pallor in good daylight. Noting of pallor was followed by questions and observations regarding dyspnoea, weight, frequency of micturition and change of mood.

If anaemia was suspected, a medical consultation was requested. If iron deficiency anaemia was already diagnosed, correct diet and rest were monitored. A check was kept on iron replacement therapy.

Dyspnoea.

Dyspnoea was noted as follows ...

On patient complaint.

On direct questioning.

By observation of the patient.

If dyspnoea was present it was noted ...

On exertion.

When sitting.

When supine.

Blood pressure, weight, oedema, cough, pallor, change of mood and medications were considered before notifying the doctor of dyspnoea.

Oedema.

The doctor was notified if either ankle oedema or a lumbar pad were found.

Body temperature.

The doctor was notified if there was an elevated temperature.

Communication. (B).

Methods used in the initial and final assessments were followed, but different sets of tests were used at each of the two 'field' assessments. Material for tests used by the nurse differed from that of the initial or final assessments. The patient was encouraged to concentrate by practising communication between visits. Family help was enlisted. Muscle weakness, loose dentures, posture, equipment and light were noted and correction was initiated by the nurse.

The doctor's permission was sought prior to arrangement for assessment by a speech pathologist.

Mood. (C).

Methods of assessment were identical with those used in the initial and final assessments of mood and were scored after observation, conversation and questioning. The nurse used her discretion in deciding when to notify the doctor.

Mobility. (D).

The speed of walking ten metres was recorded. Gait, giddiness, shoes, walking aids and hazards in the home were noted and corrected where possible. Mobility was constantly encouraged.

Joint ranges were observed but not measured.

With the doctor's permission, physiotherapy assessment and treatment was arranged if movement became more limited or painful.

Activities of daily living. (E).

Assessment methods were the same as those of the initial and final assessments.

Physiotherapy and occupational therapy help was arranged at the nurse's discretion. Independence and the use of aids were encouraged.

The support of the Royal District Nursing Society of South Australia Inc., was enlisted where applicable. The spouse was asked to allow independence to develop only assisting when necessary. Over-protection was discouraged.

The doctor was kept informed of progress or deterioration and his co-operation enlisted for appropriate referrals.

Recreational interests. (F).

Observations were made about gardening, craft work, sport, indoor games, television viewing, radio listening, reading, visits to performing arts and any other interests. Participation in diverse activity was encouraged. The need for aids or new interests was assessed. Suggestions were made about community services and aids when necessary.

Following any deterioration in activity, physiotherapy or occupational therapy assessments were arranged at the nurse's discretion but with the doctor's permission.

Smoking habits and alcohol consumption were monitored and the doctor notified of any gross change in habit.

Community groups and services.

Details were recorded about the current use of community services and groups. Participation in community groups was encouraged.

The use of community services was checked and action was taken to modify services at the nurse's discretion.

Medications.

All medications were checked regarding type, dose and correct administration.

Particular attention was given to the labelling of medication. The nurse notified the doctor of any lack of clarity of direction for medication, and requested more precise instructions.

The doctor was told of any problems related to ...

the patient's own wishes regarding medication

patient-initiated medication

medications in short supply

duplication of medications

'cupboard' stock of medication.

The ability of the patient to cope with his own medication was assessed and independence was encouraged.

METHODS OF ANALYSIS OF INFORMATION PROVIDED BY THE NURSE.

At the completion of the final assessments the nurse wrote a summary about each patient, using her notes and flow-sheets compiled during the trial period as a guide.

In consultation with the two study nurses (N/Oborn and N/Boundy), the author extracted information from the summaries.

Rating scale 0 - 3.

A rating scale was applied by the nurses to indicate the incidence of some aspects of their work, the amount of co-operation received and the ease of their relationships with other health professionals. *This scale had a minimum of 0 and a maximum of 3.*

Miscellaneous facts extracted from reports.

Facts were listed about the following ...

Nurse actions.

Problem management felt to be inadequately covered by
basic nurse training courses.

Aids introduced by the nurse.

Time taken for visits - mean visit time was calculated for
each nurse.

Difficulties observed by the nurse concerning patients and
their families, doctors and community services.

Recommendations made by the nurse.

From their observations, the nurses made recommendations about
the following ...

Location and methods of attachment of the nurse in the community.

Nurse involvement with aged people.

Medical and social services for the aged and the disabled.

Training people in the care of the aged.

The above information, together with a comment comparing the two
study nurses, appears in Appendix I.

METHODS OF STATISTICAL ANALYSIS OF THE DATA.

Analysis of data collected in this study is concerned with the measure of change in groups of subjects during a period of approximately one year. Repeated reference is made to terms dealing with 'change' and 'stability' as they affect each variable, and finally each person. Terms used in the analysis are defined below.

DEFINITION OF TERMS USED IN THE ANALYSIS OF THE DATA.

<u>Variable</u>	A factor which can be influenced or varied.
<u>Sections</u>	Variables were divided into sections as follows ...
	Physiological variables (Section A)
	Communication (Section B)
	Mood (Section C)
	Mobility (Section D)
	Activities of daily living (Section E)
	Recreational interests (Section F).
<u>Individual performance</u>	Each person considered according to his aggregate or cumulative performance for variables in each section taken in turn.
<u>Change score</u>	The difference in the score of each variable from 1975-1976 (See examples p. 69).
<u>Cumulative Change score</u>	The aggregate of the change scores of the variables in each section.
<u>Total change score</u>	The sum of the cumulative change scores of all sections of variables. (See example p. 69).

Weighted mean
change scores

The combination of change scores on the variables within each section to provide the mean change score required a weighted average to be calculated. This was brought about through the different scales used for different variables within each scoring system.

Each change score was weighted by the reciprocal of the standard deviation of the change scores calculated from both experimental and control groups pooled as one sample. The effect of such weighting was to standardise the range of possible change scores.

Scale.

The weighted mean change scores as shown in the graphs have been further scaled to the scoring system used in section A; thus all change score means shown in the graphs and explanatory tables are on a section A basis.

Stability
score

The number of variables remaining unchanged in each section.

Stability
percentage

The stability score expressed as a percentage of the number of variables in the section.

Total stability
score

The number of variables remaining unchanged when all sections of variables are combined.

Total stability
percentage

The total stability score expressed as a percentage of the total number of variables in all sections considered together.

Zero scores

These indicate no change in a variable between 1975 and 1976 - thus contributing to the stability scores. A few variables showing no change were allotted a negative change score. (See p. 68).

Stability

is discussed on page 70.

ANALYSIS OF VARIABLES.

Variables were considered for each of sections A - F, with any significant changes indicated where applicable.

They were considered as follows ...

Mean values.

Stability or deterioration at the final assessment for variables which were within normal limits at the initial assessment.

Improvement, stability or deterioration for variables which were showing abnormality at the initial assessment.

Each variable (*exceptions) has been allotted an arbitrary 'change score' which represents the difference between the initial and final assessments. Where no change was observed such a variable contributed to a 'stability score'.

*Systolic blood pressure
Hearing - each ear
Vision - each eye
Oedema
Pulse rate
Visual fields
Tonometry

ALLOTMENT OF 'CHANGE SCORES'.

In the physiological (A) and mobility (D) sections and some of the recreational interests (F) section (sport, games, reading the newspaper, visits to performing arts, other recreational interests and smoking), the following change scores were allotted ...

Improvement	+1
Deterioration	-1
No change	0

Improvement or deterioration was decided according to criteria in the data collection (p. 29).

Thus for blood pressure, ± 10 mmHg or more was allotted ± 1 change score.

Concerning mobility, a difference of one second in the time to walk 10 metres was an indication to allot ± 1 change score.

For the recreational interests (as indicated for Section F)

activity commenced or diversified	+1
activity ceased or narrowed	-1
no activity or substitution of one activity for another	0

In the communication (B), mood (C) and activities of daily living (E) sections and some of the recreational interests (F) section (garden-
ing skills, crafts, television viewing, radio listening and reading books and magazines), change scores were calculated directly from the actual scores recorded at each assessment (1975 and 1976).

e.g. Sections B, E and F (as indicated)

Initial score (1975)	=	6
Final score (1976)	=	8
<u>Change score</u>	=	+2

e.g. Section C.

Observed mood (addition of 5 items)

Initial score (1975) = 3

Final score (1976) = 5

Change score = -2

Self-assessed mood (analogue scale).

e.g. Depression.

Initial score (1975) = 7

Final score (1976) = 2

Change score = +5

A 'negative change score' was given for some variables if they showed no change and were abnormal or absent at both assessments. A negative change score was given for the abnormal physiological variables ...

abnormal urinalysis
bacteriuria
pulse irregularity
hearing impairment
wax in ears
abnormal serum and blood screen
dyspnoea

and zero joint ranges as it was presumed that since no marked improvement had occurred, continued presence of the abnormality, together with advancing age and disease process, would be to the person's disadvantage. Negative change scores were given for television and radio activities if absent at both assessments as this showed a lack of interest in world affairs.

CALCULATION OF 'CUMULATIVE' AND 'TOTAL' CHANGE SCORES AND 'STABILITY PERCENTAGE'.

Methods used in the calculations of cumulative and total change scores and stability percentage for each person are shown in the following example ...

Change scores.

e.g. Section E. - Activities of daily living - Individual Performance.

ACTIVITY	Score 1975	Score 1976	Change Score
Showering	6	8	+2
Dressing	7	7	0
Undressing	7	8	+1
Toileting	5	8	+3
Cooking	8	10	+2
Feeding	9	8	-1
			+7 = <u>Cumulative Change Score</u>

Total Change Score.

Cumulative Change Score for Sections A + B + C + D + E + F
= Total Change Score.

Stability Percentage.

Knowing where change had occurred, it was possible to calculate the number of variables which showed stability in each section.

e.g. Section E. - Activities of daily living.

Number of variables = 6

If change occurred on 2 variables

stability score = 4

Stability percentage = 66.6%

The total stability (%) for each person was calculated ...

64 variables (in Sections A - F) were considered in the total assessment of each person. If there was change on 20 variables, $64 - 20 = 44$ variables remained unchanged or stable.

Total stability percentage = 69%.

STABILITY.

The tendency to consider only those changes recorded either as improvement or deterioration and to measure their extent by a suitable scoring scheme, ignores a principal component of this type of investigation, which in many similar studies has too often been overlooked.

Since the personal characterisation of each member of the survey must be represented by a combination of the separate observations made, the recognition of an *important duality* which exists within any such combination is essential.

The first part of the information relates to a measure of the extent of the changes involved as is represented by a suitably weighted mean of the change scores recorded.

The second, and perhaps the more important part, considers the inter-variable measure which indicates what proportion of those variables considered, contributed to the mean changes scores above.

Thus the same mean change score could arise from a similar change in all variables considered, or equivalently from twice the change in only one half of the variables and no change in the remainder. The first instance would indicate an overall change of moderate size in all variables whilst the second would show a high degree of stability in one half of the variables measured. For this reason, each mean change score is required to be accompanied by a corresponding *stability percentage* showing the proportion of variables in which no change was observed.

TOTAL STABILITY.

For the purposes of this study, it has been desirable to rank each member of the experimental and control groups into some order of chronic illness as defined by the variables considered in the survey. The total stability percentage taken over all variables in all sections A - F has been taken as the ranking criterion. A member of higher overall percentage was regarded as more able to cope than one of lower percentage.

The experimental and control group members have been ranked separately in order from least to greatest stability.

This ranking forms the basic frame of reference for each group, and the separate section results (A - F) are shown graphically both in mean change scores and stability percentages against this reference frame, which is common to all graphs.

The graphs for each section show the trends in mean change score and corresponding stability percentage, as a successively greater fraction of each group is considered, commencing from those members of lowest stability. In this regard, corresponding percentages on the x-axis on all graphs refer to the same members of the group in each instance.

DETAILS OF GRAPHICAL REPRESENTATION.

In Figure 4 (overleaf) ...

X, X' represent the mean change score and stability percentage respectively for those members who had ...

Total Stability % <50%

The mean change score = -1

The stability percentage = 20%.

Y, Y' represent the mean change score and stability percentage respectively for those members who had ...

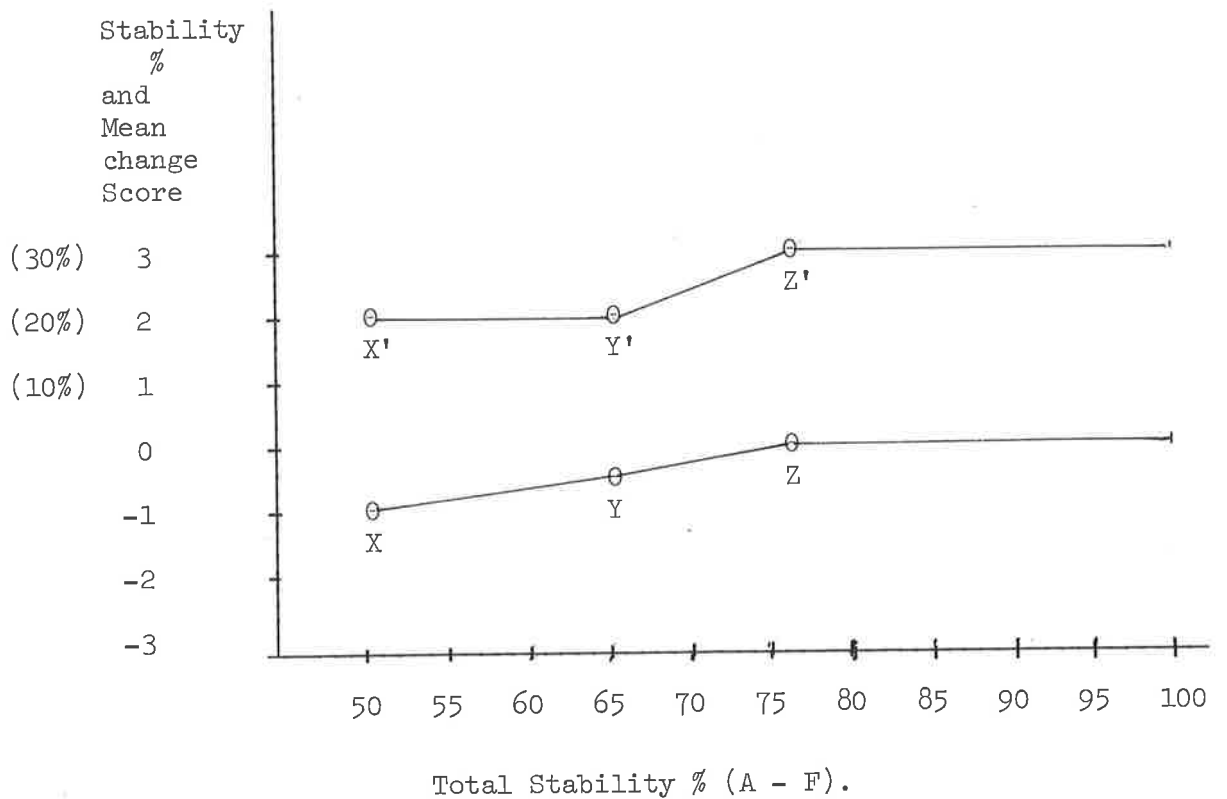
Total Stability % <65%

The mean change score = -0.5

The stability percentage = 20%.

EXAMPLE OF GRAPHICAL REPRESENTATION.

FIGURE 4.



At Y, Y' the number of subjects represented at these points includes those already represented at X, X' and up to Y, Y'.

At X, X' the number of subjects in the experimental group was 21, at Y, Y' 68.

The corresponding numbers for the control group were 16 and 65 (Refer to table 19 p. 89).

The maximum total stability percentage observed did not exceed 75% in any subjects. This accounts for the parallel graphs extending beyond Z, Z' to 100% total stability.

COMBINED EFFECT OF SECTIONS (B - F). COMMUNICATION, MOOD, MOBILITY, ACTIVITIES OF DAILY LIVING AND RECREATIONAL INTERESTS.

Having examined the differences between the experimental and control groups with respect to each section of variables individually, there remains the consideration of the combined effect of sections B, C, D, E and F.

The analysis involves an examination similar to that in the separate sections, but utilises a weighted mean change score (p. 65) of all variables in the sections B, C, D, E and F.

ANALYSIS OF A SUB-GROUP OF ONE-THIRD OF SUBJECTS IN THE LOWER STABILITY RANGE.

Change calculated in each group for sections A - F was favourable to the experimental group over the control group throughout. This result was most obvious in approximately one-third of the subjects in each group seen to have a total stability percentage of less than 55, i.e. on the left 'tail' of the graphs. (Figures 5 - 10 for sections A - F and Figure 11 for the total of sections B, C, D, E and F).

Further analysis of this sub-group of people took into account the 64 variables used in the consideration of individual performance for the sections. People in this sub-group had a total stability score of 38 or less, considering raw scores, thus change was possible on

$$64 - 38 = 26 \text{ variables.}$$

The number of people in this category were ...

Experimental group	26
Control group	25

Behaviour of these subjects was considered with regard to each of the 64 variables. The number of people who deteriorated, improved or remained unchanged was tabulated, and the difference in the numbers in the experimental and control group was expressed as percentage change in the experimental group. (Tables 68 - 73).

At this stage of the analysis, the control sub-group was considered to have served its purpose, by indicating the greater improvement in corresponding experimental subjects.

Further analysis considered the twenty-six (26) experimental subjects. Of these, eight (8), who were not markedly affected by their stroke in 1975, finally showed a negative total change score because of major episodes between the initial and final assessments. No further analysis was made for these people.

Eighteen (18) people showed positive total change score. These people had showed marked deficiencies in their initial performance in 1975.

These eighteen (18) people were considered using the variables which had shown positive change expressed as a percentage in the experimental group.

In this way, 12 variables have been shown to have 50% or more chance of improvement on 50% or more of these eighteen (18) people who had positive total change scores. (Table 74).

Furthermore, these eighteen (18) people improved on 5 or more variables covering at least three of sections A - F. (No table is shown in the results for this observation).

SUMMARY OF METHOD OF ANALYSIS.

Variables were measured and scored to show change.

Variables showing no change contributed to a stability score.

Stability scores were totalled and expressed as a percentage.

Subjects were ordered in the experimental and control groups, according to their total stability percentage.

Stability percentage and corresponding change scores for each subject were represented in tables and graphs.

Consideration of the graphs resulted in the isolation of a sub-group of one-third of the subjects showing most response. This sub-group of people (26 experimental and 25 control) was further analysed considering all 64 variables.

Eighteen (18) experimental subjects, who had an overall positive total change score were analysed on variables showing positive percentage change in the experimental sub-group (26).

12 variables were shown to have 50% or more chance of improvement on 50% or more of these eighteen (18) people.

R E S U L T S

SUMMARY OF RESULTS.

Over the period of one year, both the experimental and control groups have shown similar changes.

Concerning physiological variables (A) minimal change and high stability were observed between the measurements of 1975 and 1976. Changes made were those of deterioration in health status, the tendency being slightly less marked in the experimental group but the difference between groups was minimal. (Figure 5).

Communication variables (B) mainly showed stability between the measurements of 1975 and 1976. Any changes were, generally, those of improvement, slightly more marked in the experimental group. (Figure 6).

Mood variables (C) also maintained stability, which was significantly greater in the experimental group, between the measurements of 1975 and 1976. Change occurring was slightly towards improvement in mood in the experimental group, but when there was a change in the control group, it was that of deterioration. (Figure 7).

Mobility variables (D) showed great instability between the measurements of 1975 and 1976. In general, change was that of deterioration being slightly less marked in the experimental group than in the control group. (Figure 8).

Activities of daily living (E) showed more variation in stability than that seen in the physiological (A), communication (B) and mood (C) sections, between the measurements of 1975 and 1976. Generally, change was towards improvement throughout both groups but it was more marked in the experimental group. (Figure 9).

Variables related to recreational interests (F) showed a moderate stability between the measurement of 1975 and 1976. Generally, change was that of improvement but it was more obvious in the experimental group. (Figure 10).

A feature of the data was that the numbers of variables that remained unchanged in each section were similar in the experimental and control groups. Graphic representation of this form of stability is shown in the upper part of each graph.

Variables that showed change had greater tendency to improvement than deterioration in the experimental group compared with the controls. In the physiological (A) and mobility (D) sections, however, both experimental and control groups had a greater number of variables showing deterioration than improvement. This reflects the inevitability of some physiological variables to show deterioration with age.

Throughout all the sections of variables, change was more marked comparing a subgroup of subjects in the lower stability range, these being the more disabled people. They showed more clearly the greater improvement (or less marked deterioration in the physiological and mobility variables) in the experimental group when a greater fluctuation in mean change scores was possible due to the low stability of variables for people in this sub-group.

In summary, these benefits were least marked in relation to physiological variables and most marked with recreational interests.

CORRELATIONS BETWEEN SECTIONS A - F.

Statistically significant correlations between sections A - F are considered for both groups together and for the experimental group alone.

CORRELATIONS SIGNIFICANT IN BOTH GROUPS.

Correlations in the following table (11) show the potential situation for elderly people with chronic illness in the community, being common to both groups in the study, thus existing regardless of nurse action.

TABLE 11.

Correlations significant in both experimental and control groups.

CORRELATION	Experimental	Control
SA : CA	0.31	0.33
CE : CC	0.23	0.23
CE : CF	0.43	0.43
CB : SB	-0.43	-0.36
SE : SB	0.39	0.34

Values equal to or greater than 0.23 are significant at the 5% level.

SA : CA.

The correlation between the change and stability of the physiological variables indicates that a deterioration in the physiological factors showing change is accompanied by a falling away or deterioration of hitherto stable factors, i.e. there is a general trend to deterioration in physiological function in both groups.

CE : CC.

CE : CF.

Despite physiological deterioration, activities of daily living, mood and recreational interests show positive correlation. This indicates that if the general mood can be improved there tends to be greater independence in activities of daily living and more interest shown in recreational activities.

CB : SB.

Positive change in communication factors is accompanied by a reduction in stability of communication factors. This allows for further change in hitherto stable factors, which results in a general trend to improvement in communication variables in both groups.

SE : SB.

Despite physiological deterioration improvement in communication ability, where possible, tends to be lasting. It is noted that there is no evidence of any connection between communication ability and mood.

CORRELATIONS SIGNIFICANT IN THE EXPERIMENTAL GROUP.TABLE 12.

Correlations significant in the experimental group only.

CORRELATION	Experimental	Control
CE : SA	-0.23	0.16
CE : CB	0.35	-0.03
CA : SE	0.31	-0.01
SE : SC	0.29	0.20
CA : SB	0.24	0.20
CE : SE	-0.51	-0.17

Values equal to or greater than 0.23 are significant at the 5% level.

CE : SA.

This correlation indicates improvement in variables related to activities of daily living despite deterioration in physiological variables.

CE : CB.

Despite physiological deterioration improvement in activities of daily living is accompanied by increased communication ability.

CA : SE.

Physiological deterioration is accompanied by a reduction in stability regarding activities of daily living factors, the resulting changes being essentially those of improvement. (See CE : SA).

SE : SC.

There is an induced positive correlation between activities of daily living and general mood, i.e. the greater the independence the better the mood.

CA : SB.

Where there is deterioration in physiological variables there is a tendency to decreased stability in communication. Change in communication under these circumstances correlates positively with daily living activities, i.e. improved daily living activities was accompanied by improved communication.

CE : SE.

A positive change in activities of daily living is accompanied by a reduction in the stability of activities of daily living, i.e. any possible change is for the better.

PHYSIOLOGICAL VARIABLES. (A).

TABLE 13.

Mean values - physiological variables.

VARIABLE	Experimental		Control	
	1975	1976	1975	1976
Body weight (Kg.)	67.99(1.39)	67.94(1.46)	66.30(1.52)	66.67(1.58)
Blood Pressure (seated)				
Systolic	157.86(2.84)	157.40(2.94)	159.18(2.82)	159.52(3.16)
Diastolic	97.47(1.68)	94.41(1.59)	95.21(1.73)	93.01(1.70)
Pulse rate	79.44(1.43)	79.00(1.00)	77.90(1.40)	79.93(1.20)
Uncorrected vision	20.29(1.70)	19.06(1.67)	19.16(1.71)	18.42(1.65)
Haemoglobin				
Male	14.97(0.15)	14.48(0.15)	14.54(0.16)	14.29(0.17)
Female	13.14(0.15)	12.93(0.14)	13.08(0.13)	13.02(0.14)
Erythrocyte sedimentation rate	20.06(2.26)	20.18(2.29)	17.00(1.51)	18.31(2.23)

(Figures in brackets represent S.D. of the Mean).

No significant levels appear in this table.

TABLE 14.

Physiological variables. (A) - outcome of people between 1975-1976.

VARIABLE 1975	Experimental 1976			Control 1976		
	Worse	No change	Improved	Worse	No change	Improved
Body weight	21	32	24	20	33	20
Diastolic B.P. (seated)	9	45	23	14	38	21
Abnormal urinary constituents						
Albumen	6	65	6	7	64	2
Sugar	2	67	8	2	65	6
Ketones	-	77	-	1	72	-
Blood	3	73	1	3	70	-
Bilirubin	1	75	1	-	73	-
Bacteriuria	5	71	1	5	64	4
Pulse regularity	-	71	6	4	63	6
Wax - left ear	4	63	10	6	64	3
Wax - right ear	3	66	8	6	60	7
Hearing - left ear	6	58	13	3	63	7
Hearing - right ear	7	64	6	8	58	7
Hearing - both ears	9	65	3	8	59	6
Uncorrected vision (both eyes)	15	48	14	19	36	18
Visual field - left eye	-	73	4	-	71	2
Visual field - right eye	1	75	1	-	68	5
Serum and blood screen	6	65	9	10	56	7
Erythrocyte sedimenta- tion rate	13	63	21	15	46	11
Dyspnoea (on exertion)	13	49	15	18	45	10
Dyspnoea (seated)	3	73	1	3	68	2
Dyspnoea (lying)	7	68	2	6	64	3
Ankle oedema	12	57	8	6	55	12

No significant levels appear in this table.

One control subject failed to have erythrocyte sedimentation rate included in the blood screen.

This table is included to show the large numbers of people who remained unchanged on these variables.

The following tables, (15 and 16) consider people according to the variable status at the initial assessment (1975).

TABLE 15.

Outcome of people who were initially affected (i.e. abnormal) on the physiological variables. (A).

VARIABLE 1975	Experimental 1976			Control 1976		
	Worse	No change	Improved	Worse	No change	Improved
Body weight						
Standard - ≤ 2 Kg.	12	17	13	8	18	12
+ ≥ 2 Kg.	9	7	11	7	11	8
Elevated diastolic B.P. ≥ 95 mmHg	4	18	23	6	13	21
Abnormal urinary constituents						
Albumen	-	3	6	1	-	2
Sugar	1	1	8	-	2	6
Ketones	-	-	-	-	-	-
Blood	-	1	1	-	-	-
Bilirubin	-	-	1	-	-	-
Bacteriuria *		8	1		2	4
Pulse regularity		5	6		5	6
Wax - left ear **		9	10		14	3
Wax - right ear		8	8		13	7
Hearing - left ear		13	13		16	7
Hearing - right ear		12	6		11	7
Hearing - both ears		13	3		13	6
Uncorrected vision (both eyes)	10	30	14	12	16	18
Visual field - left eye		4	4		3	2
Visual field - right eye		5	1		5	5
Serum and blood screen		33	9		32	7
Erythrocyte sedimen- tation rate ***	4	-	21	8	2	11
Dyspnoea (on exertion)	5	13	15	7	12	10
Dyspnoea (seated)	-	-	1	-	1	2
Dyspnoea (lying)	-	1	2	-	1	3
Ankle oedema		7	8		9	12

* Exact test. Sig 5%.

** $\chi^2 = 7.40$ (d.f. = 1. Sig 2%).

*** $\chi^2 = 6.16$ (d.f. = 2. Sig 5%).

Bacteriuria.

Compared with the control group, significantly more of the experimental group showed bacteriuria at the final assessment. The average age

of the controls with bacteriuria in 1975 was approximately ten years more than the average age in the experimental group. (See Appendix II, table 4).

Wax - left ear.

This significance in favour of the experimental group, supports the nurse actions regarding ear syringing. (See Appendix I, table 3).

TABLE 16.

Outcome of people who were initially unaffected (i.e. normal) on the physiological variables. (A).

VARIABLE 1975	Experimental 1976		Control 1976	
	Worse	Remained unaffected	Worse	Remained unaffected
Body weight (SW \pm <2 Kg.)	-	8	5	4
Diastolic B.P. (seated) <95 mmHg	+ 5	27	+ 8	25
Abnormal urinary constituents				
Albumen	6	62	6	64
Sugar	1	66	2	63
Ketones	-	77	1	72
Blood	3	72	3	70
Bilirubin	1	75	-	73
Bacteriuria	5	63	5	62
Pulse regularity	-	66	4	58
Wax - left ear	4	54	6	50
Wax - right ear	3	58	6	47
Hearing - left ear	6	45	3	47
Hearing - right ear	7	52	8	47
Hearing - both ears	9	52	8	46
Uncorrected vision (both eyes)	5	18	7	20
Visual field - left eye	-	69	-	68
Visual field - right eye	1	70	-	63
Serum and blood screen	6	29	10	24
Erythrocyte sedimen- tation rate	9	43	7	44
Dyspnoea (on exertion)	8	36	11	33
Dyspnoea (seated)	3	73	3	67
Dyspnoea (lying)	7	67	6	63
Ankle oedema	12	50	6	46

No significant changes appear in this table.

+ These figures indicate the people with diastolic B.P. (seated) \geq 95 mmHg in 1976.

Results of other measurements.

The following results appear in Appendix II.

Mean diastolic blood pressure (seated).

Systolic and diastolic blood pressure (seated) considered
by age.

Sex and average age of people with bacteriuria.

Details of bacterial colony count in urine.

People showing change in uncorrected vision.

Visual aids.

People with an abnormal screening test for glaucoma.

Body temperature.

Individual performance.

Individual performance for the physiological section (A) considered the following variables as they were considered to be representative of the physiological variables ...

Body weight	(1)
Diastolic blood pressure (seated)	(1)
Urinalysis	
Abnormal chemical constituents	(5)
Bacteriuria	(1)
Pulse regularity	(1)
Auditory acuity	
Wax in left and right ear	(2)
Hearing (both ears)	(1)
Visual acuity (uncorrected vision, both eyes)	(1)
Serum and blood screen	(1)
Dyspnoea (on exertion, seated and lying)	(3)
<u>Total variables</u>	(17)

Details of scoring were described in the methods p. 29 and p. 67.

Results are shown in terms of change and stability in the following tables.

TABLE 17.

Distribution of cumulative change scores for the physiological section. (A).

CHANGE SCORE	Number of people (Frequency % in brackets)		Cumulative Frequency %	
	Experimental	Control	Experimental	Control
5 * 7		1 (1.4)		1.4
2 * 4	8 (10.5)	9 (12.5)	10.5	13.9
-1 * 1	37 (48.7)	27 (37.5)	59.2	51.4
-2 * - 4	29 (38.2)	25 (34.7)	97.4	86.1
-5 * - 7	2 (2.6)	9 (12.5)	100.0	98.6
-8 * -10		1 (1.4)		100.0
	76 (100.0)	72 (100.0)		

	<u>Experimental</u>	<u>Control</u>	
Mean cumulative change score	-0.99	-1.42	(N.S.)
S.D. mean	0.24	0.29	

The stability table for the physiological section (A) is shown overleaf, with the stability score representing the number of variables (out of the 17 considered) in the physiological section (A) in which no change was observed.

The distribution is essentially positive with a lower limit of zero and a maximum of 17.

TABLE 18.

Distribution of stability scores for the physiological section. (A).

STABILITY SCORE/17 %		Number of people (Frequency % in brackets)		Cumulative Frequency %	
		Experimental	Control	Experimental	Control
7	41.2	2 (2.6)		2.6	
8	47.1		4 (5.6)		5.6
9	52.9	4 (5.3)	2 (2.8)	7.9	8.4
10	58.8	11 (14.5)	7 (9.7)	22.4	18.1
11	64.7	8 (10.5)	10 (13.9)	32.9	32.0
12	70.6	10 (13.2)	17 (23.6)	46.1	55.6
13	76.5	17 (22.4)	15 (20.8)	68.5	76.4
14	82.4	10 (13.2)	8 (11.1)	81.7	87.5
15	88.2	8 (10.5)	7 (9.7)	92.2	97.2
16	94.1	6 (7.9)	2 (2.8)	100.1	100.0
		76 (100.1)	72 (100.0)		

	<u>Experimental</u>	<u>Stability %</u>	<u>Control</u>	<u>Stability %</u>	
Mean stability score	12.43	73.10	12.19	71.70	(N.S.)
S.D. mean	0.25	1.46	0.23	1.32	

Since the stability score for the physiological section (A) for each person denotes precisely the number of variables for which no change was observed (out of the 17 considered), the division of the stability score by 17, expressed as a percentage, indicates the percentage of those variables stable in the physiological section. This percentage is indicated in the column of the table headed 'Stability %'.

The high stability explains the lack of significance in individual variables shown earlier in the section.

TABLE 19.

Comparison of the physiological section (A) stability %, SA (%), and mean change score, CA, against the total stability % calculated over all sections (A - F).

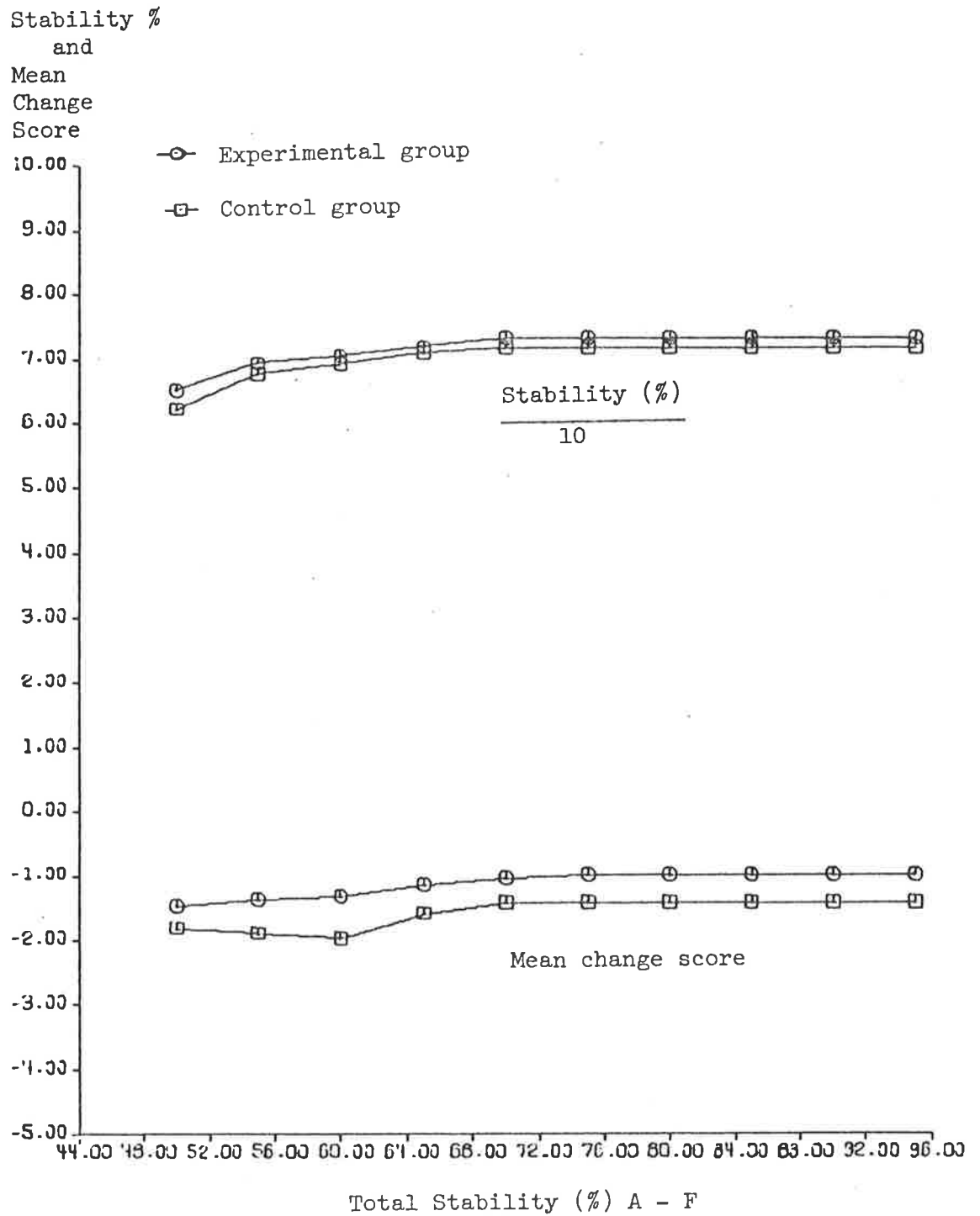
1	Experimental (76)				Control (72)			
	2	3	4	5	6	7	8	9
Total Stability % (A-F)	No	%	SA (%)	CA mean	No	%	SA (%)	CA mean
<50	21	27.6	65.0	-1.5	16	22.2	62.1	-1.8
<55	40	52.6	69.3	-1.4	36	50.0	67.6	-1.9
<60	60	78.9	70.5	-1.3	49	68.1	69.1	-2.0
<65	68	89.5	71.8	-1.1	65	90.3	70.9	-1.6
<70	75	98.7	73.1	-1.0	70	97.2	71.6	-1.4
<75	76	100.0	73.1	-1.0	72	100.0	71.6	-1.4

The table (a graph of which is shown on p. 90) indicates ...

- (a) A higher stability, SA (%), than the overall stability shown in the first column.
- (b) A deterioration in physiological variables indicated by the negative mean change score, CA, throughout both groups.
- (c) A less marked deterioration in the experimental group, particularly over the lower total stability fraction, *but these differences were minimal.*

Most of the change in the physiological section (A) occurs in those people with a total stability percentage of less than 55. (Top of columns 2 and 6). These people will be discussed later in the results (p. 136-146).

FIGURE 5.



CHANGE AND STABILITY IN THE PHYSIOLOGICAL VARIABLES.

COMMUNICATION. (B)TABLE 20.

Mean scores - communication variables.

VARIABLE	Experimental		Control	
	1975	1976	1975	1976
Picture identification	4.77	5.00	4.80	4.85
Match action	4.75	5.00	4.63	4.81
Listening comprehension	3.66	4.35	3.26	4.27
Counting	9.84	9.87	9.66	9.73
Naming pictures	9.29	9.38	9.03	9.03
Ease of articulation	9.03	9.08	8.81	8.99
Accuracy of articulation	9.09	9.36	9.00	9.03
Language use	1.70	1.70	1.73	1.71
Reading 10 words	9.09	9.36	8.90	8.97
Reading comprehension	4.45	4.44	4.37	4.38
Writing dictated words	4.46	4.44	4.37	4.38
Written description	4.30	4.26	4.12	4.18

No significant levels appear in this table.

TABLE 21.

Number of people changed on communication variables between 1975 and 1976.

VARIABLE	Initial score 1975	Experimental 1976			Control 1976		
		Worse	No change	Improved	Worse	No change	Improved
Picture identification	Maximum <Max.	-	73	-	1	67	-
		-	-	4	-	1	4
Matching action	Max. <Max.	-	69	-	1	60	-
		-	-	8	-	3	9
Listening comprehension	Max. <Max.	2	18	-	1	14	-
		6	7	44	7	6	45
Counting	Max. <Max.	-	75	-	-	70	-
		-	1	1	-	2	1
Naming defined pictures	Max. <Max.	1	59	-	1	56	-
		2	4	11	3	5	8
Ease of articulation	Max. <Max.	2	57	-	1	55	-
		4	3	11	3	7	7
Accuracy of articulation	Max. <Max.	2	56	-	1	56	-
		1	3	15	3	5	8
Language use	Max. <Max.	6	52	-	6	53	-
		1	11	7	2	5	7
Reading words	Max. <Max.	-	61	-	3	56	-
		2	4	10	2	6	6
Reading comprehension	Max. <Max.	8	47	-	6	48	-
		4	4	14	2	8	11
Writing 5 dictated words	Max. <Max.	7	51	-	4	48	-
		5	7	7	1	10	10
Written description	Max. <Max.	7	5	-	5	6	-
		5	36	24	12	31	19

No significant changes were reached in this table.

In this table, persons on initial (1975) maximum score cannot improve since they show 100% capability in the variable considered.

Individual performance.

Individual performance for the communication section (B) considered the following variables ...

Comprehension

Audio-visual comprehension	
Picture identification	(1)
Match action to picture	(1)
Listening comprehension	(1)

Expression

Counting	(1)
Naming defined pictures	
Giving a name	(1)
Ease of articulation of words	(1)
Accuracy of articulation of words	(1)
Language use	(1)

Reading

Reading words	(1)
Reading comprehension	(1)

Writing

Writing five dictated words	(1)
Written description of composite picture	(1)

Total variables (12)

Details of scoring were described in the methods p. 34 and p. 67.

Results are shown in terms of change and stability in the following tables.

TABLE 22.

Distribution of cumulative change scores for the communication section. (B).

CHANGE SCORE	Number of people (Frequency % in brackets)		Cumulative Frequency %	
	Experimental	Control	Experimental	Control
20 * 22	1 (1.3)		1.3	
17 * 19	1 (1.3)	1 (1.4)	2.6	1.4
14 * 16	1 (1.3)	2 (2.8)	3.9	4.2
11 * 13	1 (1.3)	1 (1.4)	5.2	5.6
8 * 10	3 (3.9)	3 (4.2)	9.1	9.8
5 * 7	8 (10.5)	6 (8.3)	19.6	18.1
2 * 4	22 (28.9)	20 (27.8)	48.5	45.9
- 1 * 1	31 (40.8)	35 (48.6)	89.3	94.5
- 2 * - 4	6 (7.9)		97.2	
- 5 * - 7	1 (1.3)	2 (2.8)	98.5	97.3
- 8 * -10	1 (1.3)	2 (2.8)	99.8	100.1
	76 (99.8)	72 (100.1)		

	<u>Experimental</u>	<u>Control</u>	
Mean cumulative change score	2.33	2.19	(N.S.)
S.D. mean	0.53	0.53	

The stability table for the communication section (B) is shown overleaf, with the stability score representing the number of variables (out of the 12 considered) in the communication section (B) in which no change was observed.

The distribution is essentially positive with a lower limit of zero and a maximum of 12.

TABLE 23.

Distribution of stability scores for the communication section. (B).

STABILITY SCORE/12 %		Number of people (Frequency % in brackets)		Cumulative Frequency %	
		Experimental	Control	Experimental	Control
3	25.0		1 (1.4)		1.4
4	33.3	4 (5.3)	2 (2.8)	5.3	4.2
5	41.7	3 (3.9)	2 (2.8)	9.2	7.0
6	50.0	8 (10.5)	5 (6.9)	19.7	13.9
7	58.3	2 (2.6)	5 (6.9)	22.3	20.8
8	66.7	6 (7.9)	3 (4.2)	30.2	25.0
9	75.0	7 (9.2)	9 (12.5)	39.4	37.5
10	83.3	21 (27.6)	16 (22.2)	67.0	59.7
11	91.7	17 (22.4)	25 (34.7)	89.4	94.4
12	100.0	8 (10.5)	4 (5.6)	99.9	100.0
		76 (99.9)	72 (100.0)		

	<u>Experimental</u>	<u>Stability %</u>	<u>Control</u>	<u>Stability %</u>	
Mean stability score	9.17	76.40	9.36	78.00	(N.S.)
S.D. mean	0.26	2.19	0.25	2.11	

Since the stability score for the communication section (B) for each person denotes precisely the number of variables for which no change was observed (out of 12 considered), the division of the stability score by 12, expressed as a percentage, indicates the percentage of those variables stable in the communication section (B). This percentage is indicated in the column of the table headed 'Stability %'.

The high stability largely explains the lack of significance in changes in individual variables shown earlier in the section.

Proceeding as in the physiological section (A) by comparing the communication section (B) stability %, SB (%), and mean change score, CB, over the range of total stability % in the experimental and control groups over all sections A - F, results are shown in the following table and graph (p. 97).

TABLE 24.

Comparison of the communication section (B) stability %, SB (%), and mean change score, CB, against the total stability % (A - F).

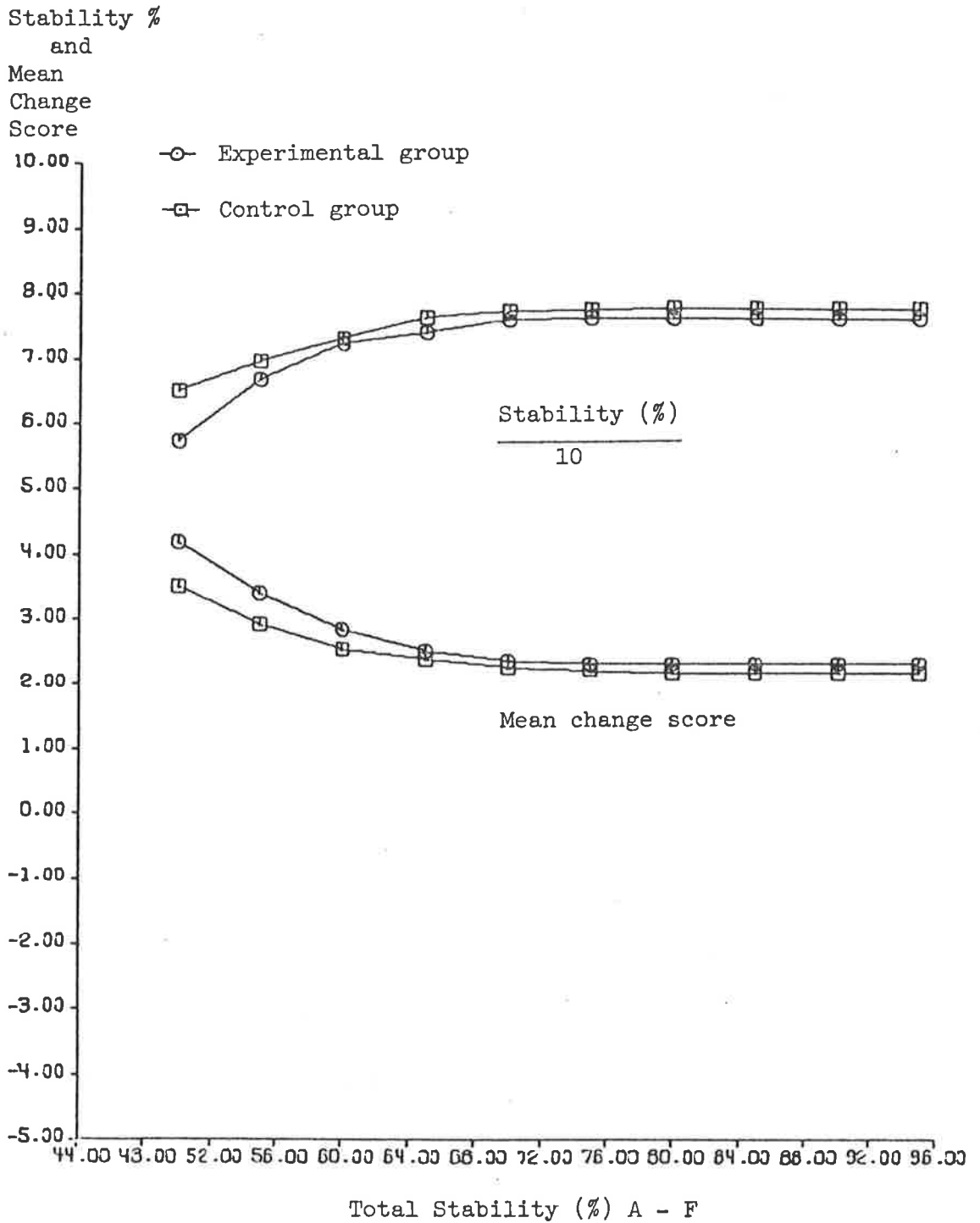
1	Experimental (76)				Control (72)			
	2	3	4	5	6	7	8	9
Total Stability % (A-F)	No	%	SB (%)	CB mean	No	%	SB (%)	CB mean
<50	21	27.6	57.5	4.2	16	22.2	65.1	3.5
<55	40	52.6	66.9	3.4	36	50.0	69.7	2.9
<60	60	78.9	72.4	2.9	49	68.1	73.3	2.6
<65	68	89.5	74.3	2.5	65	90.3	76.5	2.4
<70	75	98.7	76.1	2.4	70	97.2	77.5	2.3
<75	76	100.0	76.4	2.3	72	100.0	77.7	2.2

The table indicates ...

- (a) The higher stability, SB (%), than the overall stability shown in the first column.
- (b) An improvement in both experimental and control groups, indicated by positive CB means in both cases.
- (c) A relatively greater improvement, CB mean, in the experimental group for those members in the lower total stability fraction.

Most of the change in the communication section (B) occurs in those people with a total stability percentage of less than 55. (Top of columns 2 and 6). These people will be discussed later in the results (p. 136-146).

FIGURE 6.



CHANGE AND STABILITY IN COMMUNICATION.

MOOD. (C).TABLE 25.

Behaviour of people who were initially affected (i.e. abnormal) on the mood variables.

VARIABLE 1975	Experimental 1976			Control 1976		
	Worse	No change	Improved	Worse	No change	Improved
<u>Observed mood</u>						
Looking sad		5	8		6	9
Tearful		2	10		3	11
Difficulty in communication		-	5		-	4
Lonely		10	9		16	6
Insomnia		5	9		15	10
Total observed mood †	4	6	25	10	14	21
<u>Self-assessed mood</u>						
Feeling cold	2	1	10	4	2	12
Feeling angry	1	-	2	-	-	4
Feeling depressed	1	-	13	5	-	11
Feeling confused	-	1	8	1	1	8
Coping with medication	2	4	11	1	3	7

† $\text{Chi}^2 = 4.95$ (d.f. = 2.) Trend indicated.

There was a trend to improvement in the experimental group over the control group in people who initially had less than the maximum score for total observed mood.

TABLE 26.

Behaviour of people who were initially unaffected (i.e. normal) on the mood variables.

VARIABLE 1975	Experimental 1976		Control 1976		
	Worse	Remained unaffected	Worse	Remained unaffected	
<u>Observed mood</u>					
Looking sad	*	3	61	12	46
Tearful		3	62	7	52
Difficulty with communication		1	71	1	68
Lonely		5	53	8	43
Insomnia		5	58	6	42
Total observed mood	††	6	36	10	18
<u>Self-assessed mood</u>					
Feeling cold		10	54	16	39
Feeling angry		3	71	6	63
Feeling depressed		4	59	9	48
Feeling confused		5	63	4	59
Coping with medication		5	55	5	57

* $\text{Chi}^2 = 5.67$ (d.f. = 1. Sig 2.5%)
 †† $\text{Chi}^2 = 3.24$ (d.f. = 1.) Trend indicated.

Of those people who initially did not appear sad (1975), significantly less of the experimental group compared with the control group were looking sad at the final assessment (1976).

Considering people who initially had maximum scores, there was a greater tendency to deterioration in total observed mood in the control group.

Individual performance.

Individual performance for the mood section (C) considered the following variables ...

Total observed mood assessment	(1)
Self-assessment of mood (analogue scale)	
Feeling cold	(1)
Feeling angry	(1)
Feeling depressed	(1)
Feeling confused	(1)
Coping with self-administration of medication	(1)
	<u>Total variables</u> (6)

Details of scoring were described in the methods p. 41 and p. 68.



Results are shown in terms of change and stability in the following tables.

TABLE 27.

Distribution of cumulative change scores for the mood section. (C).

CHANGE SCORE	Number of people (Frequency % in brackets)		Cumulative Frequency %	
	Experimental	Control	Experimental	Control
23 * 24		1 (1.4)		1.4
20 * 22		1 (1.4)		2.8
17 * 19	1 (1.3)		1.3	
14 * 16	1 (1.3)	3 (4.2)	2.6	7.0
11 * 13	2 (2.6)		5.2	
8 * 10	5 (6.6)	3 (4.2)	11.8	11.2
5 * 7	9 (11.8)	6 (8.3)	23.6	19.5
2 * 4	9 (11.8)	6 (8.3)	35.4	27.8
- 1 * 1	31 (40.8)	31 (43.1)	76.2	70.9
- 2 * - 4	8 (10.5)	4 (5.6)	86.7	76.5
- 5 * - 7	1 (1.3)	7 (9.7)	88.0	86.2
- 8 * -10	4 (5.3)	5 (6.9)	93.3	93.1
-11 * -13	2 (2.6)	2 (2.8)	95.9	95.9
-14 * -16	1 (1.3)	2 (2.8)	97.2	98.7
-17 * -19	1 (1.3)	1 (1.4)	98.5	100.1
-20 * -22				
-23 * -25				
-26 * -28	1 (1.3)		99.8	
	76 (99.8)	72 (100.1)		

	<u>Experimental</u>	<u>Control</u>	
Mean cumulative change score	0.51	0.10	(N.S.)
S.D. mean	0.80	0.85	

The stability table for the mood section (C) is shown below, with the stability score representing the number of variables (of the 6 considered) in the mood section (C) in which no change was observed.

The distribution is essentially positive with a lower limit of zero and a maximum of 6.

TABLE 28.

Distribution of stability scores for the mood section. (C).

STABILITY SCORE/6	%	Number of people (Frequency % in brackets)		Cumulative Frequency %	
		Experimental	Control	Experimental	Control
0	0		1 (1.4)		1.4
1	16.7	2 (2.6)		2.6	
2	33.3	5 (6.6)	6 (8.3)	9.2	9.7
3	50.0	8 (10.5)	15 (20.8)	19.7	30.5
4	66.7	11 (14.5)	21 (29.2)	34.2	59.7
5	83.3	31 (40.8)	12 (16.7)	75.0	76.4
6	100.0	19 (25.0)	17 (23.6)	100.0	100.0
		76 (100.0)	72 (100.0)		

	<u>Experimental</u>	<u>Stability %</u>	<u>Control</u>	<u>Stability %</u>
Mean stability score	4.59	76.50	4.21	70.20
S.D. mean	0.15	2.49	0.16	2.68

Significance.

Application of the *t*-test for significance between the means above indicates a difference of 0.36 for significance at the 0.05 level. The mean stability score for the experimental group is thus significantly higher than the observed mean for the control group.

Since the stability score for the mood section (C) for each person denotes precisely the number of variables for which no change was observed (out of the 6 considered) the division of the stability score by 6, expressed as a percentage, indicates the percentage of those variables stable in the mood section (C). This percentage is indicated in the column of the table headed 'Stability %'.

The high stability explains the lack of significance in individual variables shown earlier in the section.

From a similar analysis to those reported for the physiological (A) and communication (B) sections we obtain the following ...

TABLE 29.

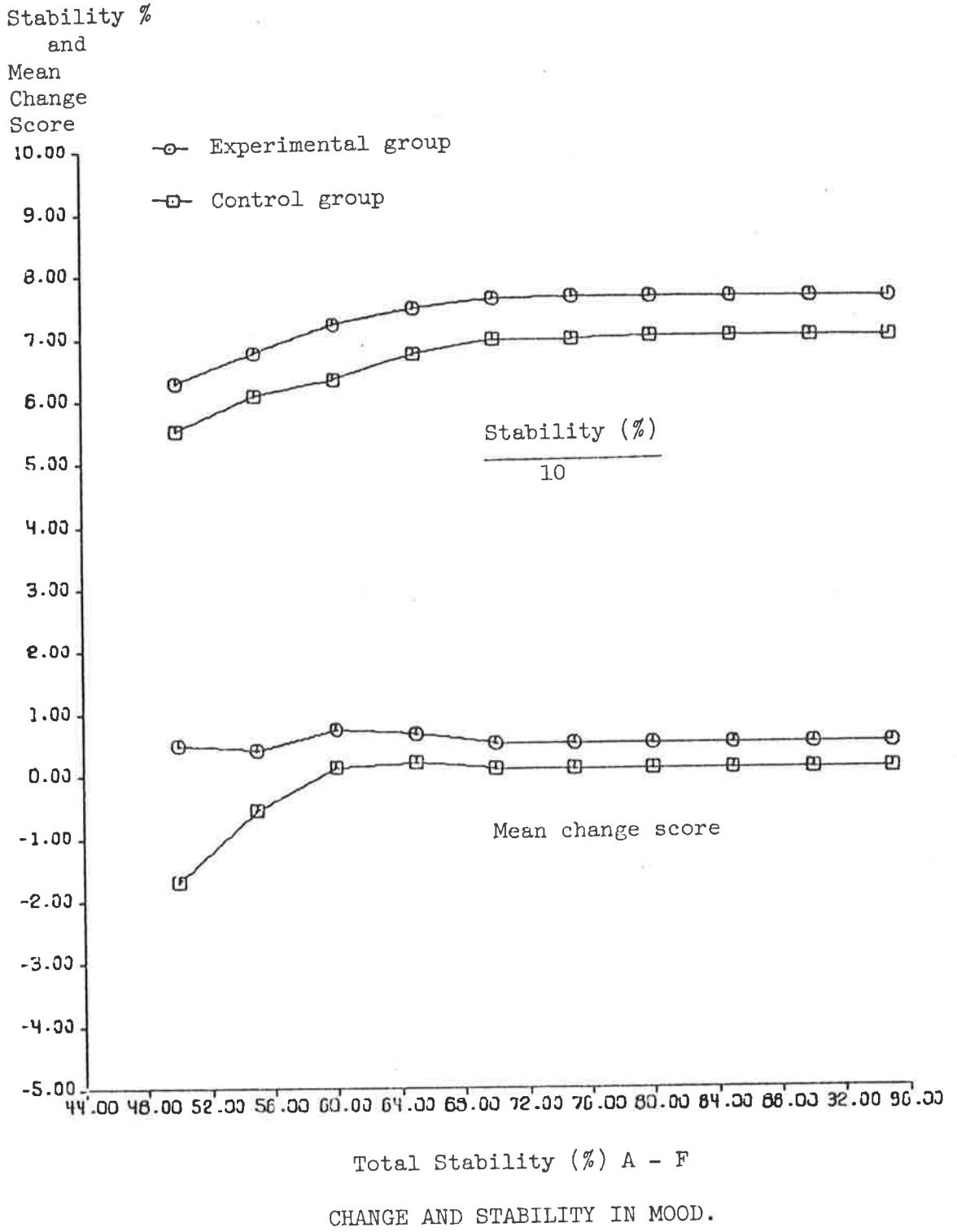
Comparison of the mood section (C) stability %, SC (%), and mean change score, CC, against the total stability % (A - F).

1	Experimental (76)				Control (72)			
	2	3	4	5	6	7	8	9
Total Stability % (A-F)	No	%	SC (%)	CC mean	No	%	SC (%)	CC mean
<50	21	27.6	62.7	0.5	16	22.2	55.2	-1.7
<55	40	52.6	67.5	0.4	36	50.0	60.6	-0.6
<60	60	78.9	72.2	0.8	49	68.1	63.3	0.1
<65	68	89.5	74.8	0.7	65	90.3	67.4	0.2
<70	75	98.7	76.2	0.5	70	97.2	69.5	0.1
<75	76	100.0	76.5	0.5	72	100.0	69.7	0.1

- (a) The mood section (C) shows a greater predominance to change in the control group indicated by the lower stability percentages, SC (%).
- (b) A marked improvement in the experimental group and deterioration in the control group is seen over the lower total stability fraction, CC mean.

Most of the change in the mood section (C) occurs in those people with a total stability percentage of less than 55. (Top of columns 2 and 6). These people will be discussed later in the results (p. 136-146).

FIGURE 7.



MOBILITY. (D).Walking.

All people attempted to walk the ten metre course if possible. Mean time was calculated taking into account the time taken by those people who completed the course.

TABLE 30.

Mean Time (in seconds) taken to walk ten metres. (Excluding seven people who could not walk this distance).

ASSESSMENT	Experimental	Control
1975	24.39 (2.94)	22.15 (2.72)
1976	22.37 (3.63)	21.68 (2.93)
Change	-2.02 sec.	-0.67 sec.

The figures in brackets represent S.D. of mean.

Mean difference = 1.35 sec./10 metres.

Considering both the distance walked and the time taken, all people were included in table 31 showing individual performance.

TABLE 31.

Number of people with change in walking time between 1975-1976.

PERFORMANCE 1976	Experimental	Control
Worse	14	22
No change	10	8
Improved	53	43
	77	73

$\text{Chi}^2 = 3.58$ (d.f. = 2.) Trend indicated.

The mean time taken to walk ten metres is less in the control group at both tests. However, greater improvement in walking in the experimental group is shown by ...

The mean difference in time. (1.35 seconds).

The change in performance between the experimental group and the control group. There was a trend to improvement in the experimental group over the control group.

Joint range.

The following numbers were used in the calculation of the means of joint range (table 33) with the following exceptions in the control group at the final assessment (1976) ...

One person had an above-knee amputation left leg (right C.V.A.).

One person was unable to stand and hip movement was not able to be measured on either side (right C.V.A.).

These were classed as being worse in Table 34.

TABLE 32.

Numbers used in the calculations of joint range.

SIDE OF LESION	Experimental	Control
Right C.V.A.	29	37
Left C.V.A.	48	36
	77	73

Joint ranges.

TABLE 33.

Mean values (degrees).

VARIABLE	Experimental		Control	
	1975	1976	1975	1976
R. wrist (R.)	103.10(1.96)	88.62(2.99)	100.81(2.20)	103.38(2.78)
R. wrist (L.)	68.54(5.04)	65.94(4.91)	69.58(3.65)	66.81(4.07)
L. wrist (R.)	56.72(4.57)	56.21(4.79)	61.49(4.63)	65.81(4.61)
L. wrist (L.)	106.04(2.42)	101.46(2.79)	98.75(1.63)	100.14(3.09)
R. elbow (R.)	119.14(0.85)	119.48(0.72)	118.92(1.03)	118.78(1.10)
R. elbow (L.)	87.71(5.06)	88.33(4.99)	96.81(4.01)	94.58(4.62)
L. elbow (R.)	74.48(5.01)	77.24(5.43)	77.70(4.68)	89.97(5.05)
L. elbow (L.)	119.90(1.02)	120.00(1.20)	118.19(2.11)	121.53(1.19)
R. shoulder (R.)	117.24(1.08)	102.76(2.41)	121.35(0.91)	109.73(2.22)
R. shoulder (L.)	80.83(5.47)	76.46(5.39)	92.78(4.36)	77.78(4.21)
L. shoulder (R.)	66.72(5.14)	60.17(4.83)	70.81(5.01)	64.59(4.97)
L. shoulder (L.)	119.48(1.12)	111.67(1.95)	120.28(0.93)	105.00(2.50)
R. knee (R.)	112.41(1.34)	109.48(1.86)	109.59(2.62)	107.30(2.43)
R. knee (L.)	88.23(4.22)	84.69(4.16)	93.47(3.87)	92.78(3.76)
L. knee (R.)	78.28(4.09)	85.00(3.67)	81.49(2.94)	86.11(3.13)
L. knee (L.)	116.56(1.15)	110.63(1.48)	117.08(1.42)	112.22(1.95)
R. hip (R.)	81.03(2.52)	71.55(2.17)	85.41(1.54)	72.64(1.86)
R. hip (L.)	68.13(3.05)	63.75(2.26)	69.86(2.41)	58.33(2.78)
L. hip (R.)	68.45(3.03)	59.83(2.40)	67.30(2.48)	57.64(2.41)
L. hip (L.)	86.56(1.63)	78.65(1.76)	85.83(1.47)	71.94(2.20)

(Figures in brackets represent S.D. of the Mean).

The (R.) and (L.) after the joint name indicates the side of the cerebro-vascular accident.

No significant levels appear in this table.

TABLE 34.

Number of people with changed joint ranges between 1975-1976.

JOINT	Initial range 1975	C.V.A.	Experimental 1976			Control 1976		
			Worse	No change	Imp.	Worse	No change	Imp.
Right wrist	≤35°	R	-	-	-	-	-	-
	>35°	R	18	3	8	13	4	20
	≤35°	L	2	6	5	-	4	-
	>35°	L	19	2	14	15	4	13
Left wrist	≤35°	R	1	5	3	-	7	3
	>35°	R	9	-	11	8	2	17
	≤35°	L	-	-	-	-	-	-
	>35°	L	21	4	23	14	4	18
Right elbow	≤40°	R	-	-	-	-	-	-
	>40°	R	10	9	10	13	12	12
	≤40°	L	-	7	3	-	2	1
	>40°	L	14	7	17	13	6	14
Left elbow	<40°	R	5	2	2	1	3	4
	>40°	R	5	4	11	3	5	21
	<40°	L	-	-	1	-	-	-
	>40°	L	15	14	18	7	13	16
Right shoulder	≤40°	R	-	-	-	-	-	-
	>40°	R	18	3	8	25	7	5
	≤40°	L	2	5	5	-	3	1
	>40°	L	18	4	14	22	7	3
Left shoulder	≤40°	R	3	3	4	1	4	5
	>40°	R	12	2	5	16	1	10
	<40°	L	-	-	1	-	-	-
	>40°	L	24	8	15	24	5	7
Right knee	≤40°	R	-	-	-	-	1	-
	>40°	R	15	4	10	18	4	14
	<40°	L	3	2	2	1	-	4
	>40°	L	26	3	12	18	1	12
Left knee	<40°	R	1	-	6	1	1	2
	>40°	R	11	2	9	11	5	17
	<40°	L	-	-	1	-	-	-
	>40°	L	28	9	10	18	10	8
Right hip	≤30°	R	-	-	1	-	-	-
	>30°	R	20	2	6	30	1	6
	≤30°	L	-	-	6	2	-	-
	>30°	L	25	5	12	23	2	9
Left hip	≤30°	R	2	-	1	1	-	1
	>30°	R	16	-	10	22	6	7
	≤30°	L	-	-	-	-	-	-
	>30°	L	30	2	16	31	1	4

* $\text{Chi}^2 = 8.13$ (d.f. = 2. Sig 2%)
 ** $\text{Chi}^2 = 6.29$ (d.f. = 2. Sig 5%)
 *** $\text{Chi}^2 = 5.96$ (d.f. = 2. Sig 5%)

Significant differences, experimental group over control group, were seen as follows ...

Of those people who initially had $>40^{\circ}$ range of movement in the affected right shoulder, significantly more of the experimental group improved and less deteriorated.

Of those people who initially had $>30^{\circ}$ range of movement in the left hip (irrespective of the side of cerebro-vascular accident), significantly more of the experimental group improved and less deteriorated.

Individual performance.

Individual performance for the mobility section (D) considered the following variables ...

Walking	(1)
Joint ranges	
Right and left wrists	(2)
Right and left elbows	(2)
Right and left shoulders	(2)
Right and left knees	(2)
Right and left hips	(2)
	<u>Total variables</u> (11)

Scoring details were described in the methods p. 43 and p. 67.

Results are shown in terms of change and stability in the following tables.

TABLE 35.

Distribution of cumulative change scores for the mobility section. (D).

CHANGE SCORE	Number of people (Frequency % in brackets)		Cumulative Frequency %	
	Experimental	Control	Experimental	Control
8 * 10	1 (1.3)		1.3	
5 * 7	6 (7.9)	9 (12.5)	9.2	12.5
2 * 4	19 (25.0)	12 (16.7)	34.2	29.2
- 1 * 1	13 (17.1)	14 (19.4)	51.3	48.6
- 2 * - 4	18 (23.7)	16 (22.2)	75.0	70.8
- 5 * - 7	16 (21.1)	17 (23.6)	96.1	94.4
- 8 * -10	3 (3.9)	3 (4.2)	100.0	98.6
-11 * -13		1 (1.4)		100.0
	76 (100.0)	72 (100.0)		

	<u>Experimental</u>	<u>Control</u>	
Mean cumulative change score	-0.89	-1.31	(N.S.)
S.D. mean	0.50	0.52	

The stability table for the mobility section (D) is shown overleaf, with the stability score representing the number of variables in the mobility section (D) in which no change was observed.

The distribution is essentially positive with a lower limit of zero and a maximum of 11.

TABLE 36.

Distribution of stability scores for the mobility section. (D).

STABILITY SCORE/11 %		Number of people (Frequency % in brackets)		Cumulative Frequency %	
		Experimental	Control	Experimental	Control
0	0	17 (22.4)	12 (16.7)	22.4	16.7
1	9.1	32 (42.1)	24 (33.3)	64.5	50.0
2	18.2	17 (22.4)	26 (36.1)	86.9	86.1
3	27.3	7 (9.2)	7 (9.7)	96.1	95.8
4	36.4	2 (2.6)	2 (2.8)	98.7	98.6
5	45.5	1 (1.3)	1 (1.4)	100.0	100.0
		76 (100.0)	72 (100.0)		

	<u>Experimental</u>	<u>Stability %</u>	<u>Control</u>	<u>Stability %</u>	
Mean stability score	1.32	12.00	1.53	13.90	(N.S.)
S.D. mean	0.13	1.14	0.12	1.13	

Since the stability score for the mobility section (D) for each person denotes precisely the number of variables for which no change is observed (out of the 11 considered) the division of the stability score by 11, expressed as a percentage, indicates the percentage of those variables stable in the mobility section (D). This percentage is indicated in the column of the table headed 'Stability %'.

The analysis of stability and change factors in this instance highlights the different nature of this section of variables. A cumulative check of SD (%) and CD mean scores is given below.

TABLE 37.

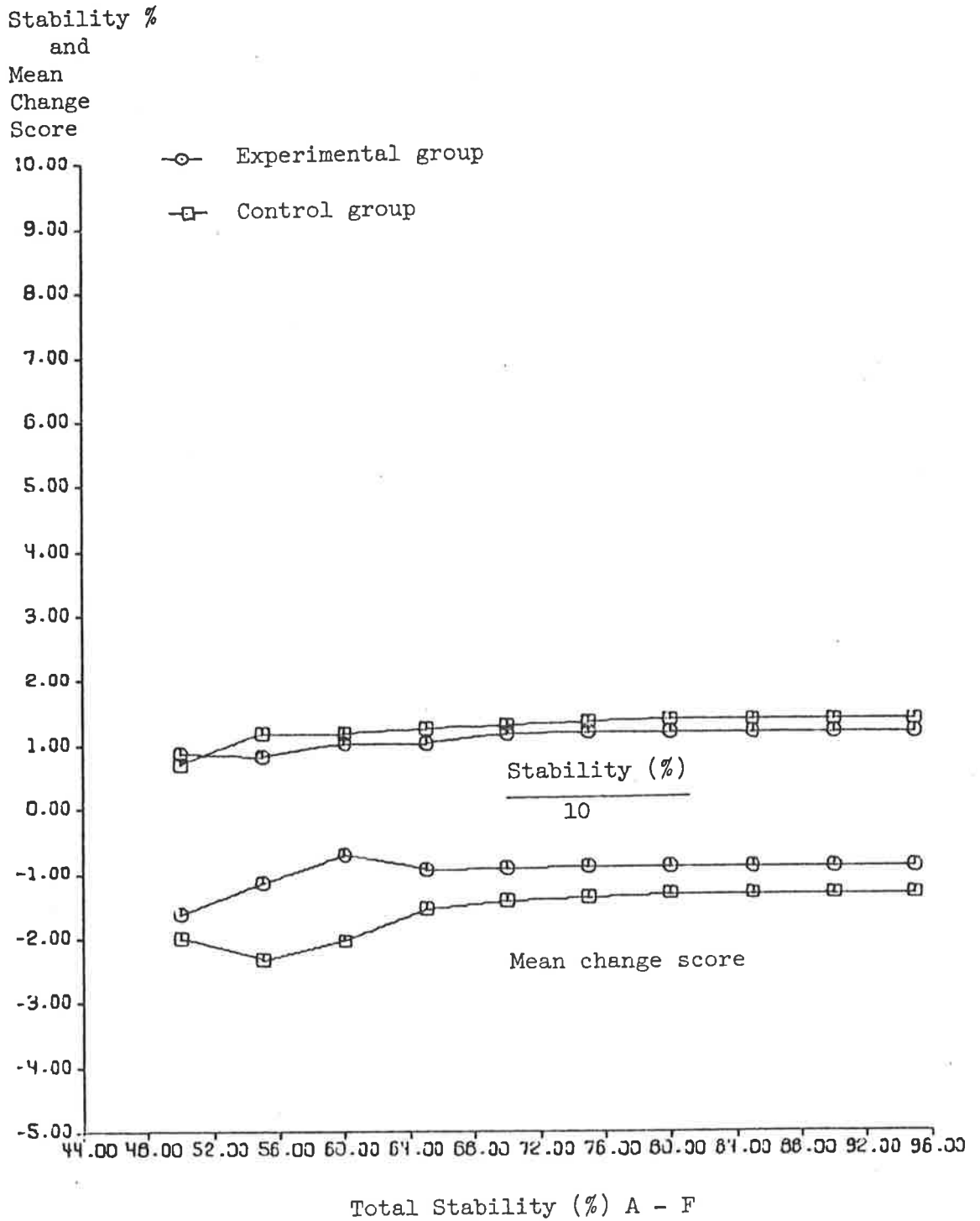
Comparison of the mobility section (D) stability %, SD (%), and mean change score, CD, against the total stability % (A - F).

1	Experimental (76)				Control (72)			
	2	3	4	5	6	7	8	9
Total Stability % (A-F)	No	%	SD (%)	CD mean	No	%	SD (%)	CD mean
<50	21	27.6	8.7	-1.6	16	22.2	6.8	-2.0
<55	40	52.6	8.2	-1.2	36	50.0	11.6	-2.3
<60	60	78.9	10.2	-0.7	49	68.1	11.7	-2.0
<65	68	89.5	10.3	-0.9	65	90.3	12.6	-1.6
<70	75	98.7	11.6	-0.9	70	97.2	13.1	-1.4
<75	76	100.0	12.0	-0.9	72	100.0	13.6	-1.4

- (a) The extremely low stability of the mobility section (D) variables for experimental and control subjects is indicated by the SD (%) values. This is noticeable when compared with Sections A, B and C which show stability percentages of the order of 60-75.
- (b) The change is one of overall deterioration in both groups evidenced by the negative mean CD scores.
- (c) Again the lower total stability fraction of the experimental group shows less deterioration.

Most of the change in the mobility section (D) occurs in those people with a total stability percentage of less than 55. (Top of columns 2 and 6). These people will be discussed later in the results (p. 136-146).

FIGURE 8.



CHANGE AND STABILITY IN MOBILITY.

ACTIVITIES OF DAILY LIVING. (E).TABLE 38.

Number of people changed on activities of daily living. 1975-1976.

VARIABLE	Initial score 1975	Experimental			Control		
		1976			1976		
		Worse	No change	Improved	Worse	No change	Improved
Showering							
	<10	3	9	35	7	10	24
	10	7	23		4	28	
Dressing							
	<10	6	4	19	6	5	22
	10	6	42		5	35	
Undressing							
	<10	1	2	20	3	1	20
	10	5	49		7	42	
Toileting							
	<10	2	0	15	4	1	14
	10	2	58		3	51	
Cooking							
	* <10	5	7	17	5	14	5
	10	2	46		6	43	
Feeding							
	<10	2	9	18	5	10	12
	10	4	44		3	43	

* $\text{Chi}^2 = 8.48$ (d.f. = 2. Sig 2%).

There is a significant difference in the experimental group over the control group when considering those people who initially showed a deficiency in cooking skills. The experimental group showed a greater improvement at the final assessment (1976).

Individual performance.

Individual performance for the activities of daily living section

(E) considered the following variables ...

Showering	(1)
Dressing	(1)
Undressing	(1)
Toileting	(1)
Cooking	(1)
Feeding	(1)
<u>Total variables</u>	(6)

Scoring details were described in the methods p. 45 and p. 67.

Results are shown in terms of change and stability in the following tables.

TABLE 39.

Distribution of cumulative change scores for the activities of daily living section. (E).

CHANGE SCORE	Number of people (Frequency % in brackets)		Cumulative Frequency %	
	Experimental	Control	Experimental	Control
29 * 31	1 (1.3)		1.3	
26 * 28				
23 * 25	2 (2.6)		3.9	
20 * 22	3 (3.9)		7.8	
17 * 19	1 (1.3)	1 (1.4)	9.1	1.4
14 * 16		2 (2.8)		4.2
11 * 13	2 (2.6)	3 (4.2)	11.7	8.4
8 * 10	2 (2.6)	3 (4.2)	14.3	12.6
5 * 7	4 (5.3)	5 (6.9)	19.6	19.5
2 * 4	14 (18.4)	11 (15.3)	38.0	34.8
- 1 * 1	41 (53.9)	37 (51.4)	91.9	86.2
- 2 * - 4	5 (6.6)	5 (6.9)	98.5	93.1
- 5 * - 7		1 (1.4)		94.5
- 8 * -10		1 (1.4)		95.9
-11 * -13				
-14 * -16				
-17 * -19		1 (1.4)		97.3
-20 * -22		2 (2.8)		100.1
-23 * -25	1 (1.3)		99.8	
	76 (99.8)	72 (100.1)		

	<u>Experimental</u>	<u>Control</u>	
Mean cumulative change score	3.00	1.28	(N.S.)
S.D. mean	0.87	0.78	

The stability table for the activities of daily living section (E) is shown below, with the stability score representing the number of variables in the activities of daily living section (E) for which no change was observed.

The distribution is essentially positive with a lower limit of zero and a maximum of 6.

TABLE 40.

Distribution of stability scores for the activities of daily living section. (E).

STABILITY SCORE/6	%	Number of people (Frequency % in brackets)		Cumulative Frequency %	
		Experimental	Control	Experimental	Control
0	0	6 (7.9)	5 (6.9)	7.9	6.9
1	16.7	5 (6.6)	8 (11.1)	14.5	18.0
2	33.3	9 (11.8)	5 (6.9)	26.3	24.9
3	50.0	8 (10.5)	8 (11.1)	36.8	36.0
4	66.7	11 (14.5)	12 (16.7)	51.3	52.7
5	83.3	20 (26.3)	11 (15.3)	77.6	68.0
6	100.0	17 (22.4)	23 (31.9)	100.0	99.9
		76 (100.0)	72 (99.9)		

	<u>Experimental</u>	<u>Stability %</u>	<u>Control</u>	<u>Stability %</u>	
Mean stability score	3.86	64.30	3.93	65.50	(N.S.)
S.D. mean	0.22	3.64	0.24	3.92	

Since the stability score for the activities of daily living section (E) for each person denotes precisely the number of variables for which no change was observed (out of the 6 considered) the division of the stability score by 6, expressed as a percentage, indicates the percentage of those variables stable in the activities of daily living section (E). This percentage is indicated in the column of the table headed 'Stability %'.

The high stability largely explains the lack of significance in individual variables shown earlier in the section.

Change and stability factors in this instance show a marked improvement in the experimental group mean change score over the control and a falling away of stability in the lower total stability fraction.

TABLE 41.

Comparison of the activities of daily living section (E) stability %, SE (%), and mean change score, CE, against the total stability % (A - F).

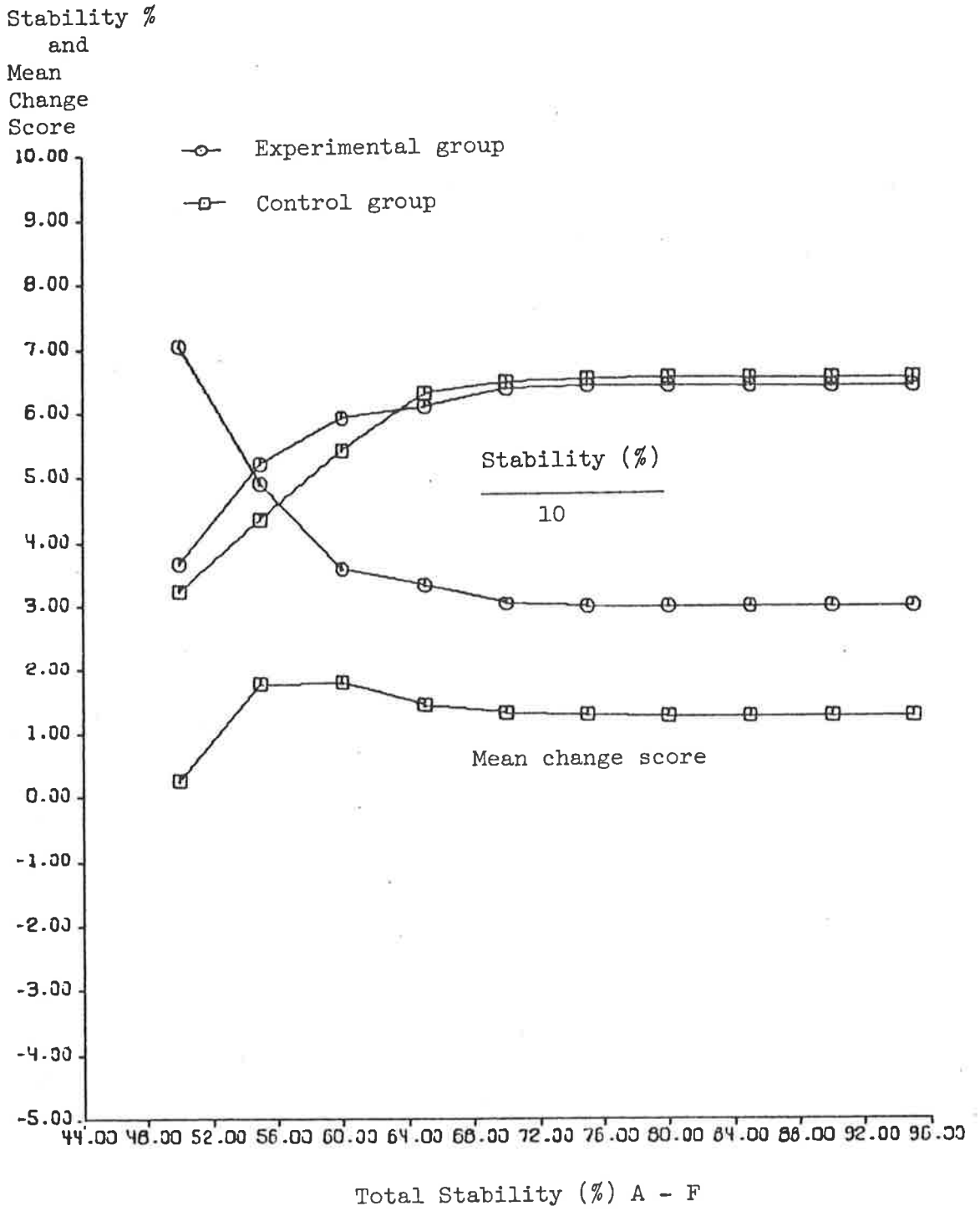
1	Experimental (76)				Control (72)			
	2	3	4	5	6	7	8	9
Total Stability % (A-F)	No	%	SE (%)	CE mean	No	%	SE (%)	CE mean
<50	21	27.6	36.5	7.0	16	22.2	32.3	0.3
<55	40	52.6	52.1	4.9	36	50.0	43.5	1.8
<60	60	78.9	59.2	3.6	49	68.1	54.1	1.8
<65	68	89.5	61.0	3.3	65	90.3	63.1	1.5
<70	75	98.7	63.8	3.0	70	97.2	64.8	1.3
<75	76	100.0	64.3	3.0	72	100.0	65.3	1.3

This table indicates ...

- (a) A marked improvement of the experimental group over the control group throughout the whole range indicated by the larger CE means in every instance.
- (b) Greatest improvement again in the lower overall stability 'tail' of the experimental group, (i.e. with total stability percentage less than 55).
- (c) The low stability, SE (%), over the lower total stability fraction of both groups.

People with a total stability percentage of less than 55 will be discussed later in the results (p. 136-146).

FIGURE 9.



CHANGE AND STABILITY IN ACTIVITIES OF DAILY LIVING.

RECREATIONAL INTERESTS. (F).Gardening.TABLE 42.

Outcome of people who had difficulty with gardening at initial assessment 1975.

OUTCOME 1976	Experimental	Control
Worse	3	9
No change	10	13
Improved	47	37

$\text{Chi}^2 = 4.16$ (d.f. = 2.) Trend indicated.

TABLE 43.

Outcome of people with no gardening difficulty at initial assessment 1975.

OUTCOME 1976	Experimental	Control
Worse	4	5
No change	13	9

Craft.TABLE 44.

Number of people doing any craft.

YEAR	Experimental	Control
1975	33	23
1976	55	38

TABLE 45.

Average number of crafts performed. Group means (S.D. mean).

YEAR	Experimental	Control
1975	0.75 (0.15)	0.48 (0.10)
1976*	1.27 (0.18)	0.77 (0.17)

* Experimental/Control difference significant at 1%.

TABLE 46.

Number of people performing crafts.

OUTCOME 1976	Experimental	Control
Less crafts	6	6
Same crafts as 1975	15	9
More crafts	35	26

Sport.TABLE 47.

Number of people actively participating in sport as compared with 1975.

OUTCOME 1976	Experimental	Control
Sport ceased	4	0
Sport continued	8	6
Sport increased	7	2

TABLE 48.

Variety of sport performed.

SPORT	Experimental		Control	
	1975	1976	1975	1976
Golf	1	3	0	0
Bowls	2	2	4	4
Indoor bowls	5	3	1	2
Horse racing	2	2	0	0
Fishing	2	4	2	1
Multiple	0	1	0	1

Indoor games.TABLE 49.

Number of people actively participating in indoor games as compared with 1975.

OUTCOME 1976	Experimental	Control
Games less	5	12
Games continued	19	14
Games increased	26	17

$\text{Chi}^2 = 5.03$ (d.f. = 2.) Trend indicated.

TABLE 50.

Variety of indoor games played.

GAMES	Experimental		Control	
	1975	1976	1975	1976
Cards	17	24	20	18
Scrabble	2	2	2	1
Monopoly	-	1	1	-
Bingo	1	2	1	-
Crosswords	-	1	1	2
Jigsaws	1	-	-	-
Billiards etc.	1	2	1	2
Dice games	-	-	1	1
Other	2	2	1	1
Multiple interests	6	12	7	10

Television viewing.TABLE 51.

Number of people with changed television viewing hours as compared with 1975.

T.V. HOURS PER DAY 1976	Experimental	Control
Less hours	15	22
No change	30	26
More hours	32	25

TABLE 52.

Television viewing hours per day. Mean value (S.D. mean).

YEAR	Experimental	Control
1975	3.01 (0.22)	2.75 (0.16)
1976	3.29 (0.18)	2.93 (0.22)

Radio listening.

TABLE 53.

Number of people with changed radio listening hours as compared with 1975.

RADIO HOURS PER DAY 1976	Experimental	Control
Less hours	18	17
No change	31	33
More hours	28	23

TABLE 54.

Radio listening hours per day. Mean value (S.D. mean).

YEAR	Experimental	Control
1975	2.21 (0.27)	1.26 (0.16)
1976	2.13 (0.23)	1.47 (0.17)

Reading.

Books.

TABLE 55.

The number of people reading books as compared with 1975.

BOOKS IN 2 WEEKS 1976	Experimental	Control
Less books	11	9
No change	15	14
More books	10	12

TABLE 56.

Number of books read in two weeks. Group means (S.D. mean).

YEAR	Experimental	Control
1975	1.34 (0.31)	1.08 (0.31)
1976	1.19 (0.33)	1.12 (0.31)

Magazines.TABLE 57.

Number of people reading magazines as compared with 1975.

MAGAZINES IN 2 WEEKS 1976	Experimental	Control
Less magazines	19	19
No change	15	10
More magazines	30	27

TABLE 58.

Number of magazines read in two weeks. Group means (S.D. mean).

YEAR	Experimental	Control
1975	2.24 (0.30)	1.66 (0.25)
1976	2.74 (0.41)	2.25 (0.33)

Newspaper.TABLE 59.

Number of people reading the newspaper.

YEAR	Experimental		Control	
	No.	%	No.	%
1975	66	85.7	64	87.7
1976	65	84.4	64	87.7

Visits to performing arts.TABLE 60.

Number of people visiting the performing arts as compared with 1975.

OUTCOME 1976	Experimental	Control
Outings ceased	7	4
Outings continued	13	12
Outings commenced	6	9

Other recreational interests.TABLE 61.

Number of people actively participating in 'other' recreations as compared with 1975.

OUTCOME 1976	Experimental	Control
Activity less	8	12
Activity continued	18	18
Activity increased	45	30

TABLE 62.

Variety of 'other' recreations.

RECREATION	Experimental		Control	
	1975	1976	1975	1976
Sporting functions	6	8	5	4
'Dining out'	2	14	4	11
Car trips	2	2	4	7
Travel	-	1	-	-
Music	1	1	1	-
Home maintenance	3	2	4	3
'Pub'	-	2	3	-
Gardening (hobby)	2	-	4	3
Other	11	6	7	9
Multiple interest	13	31	9	18

Smoking.TABLE 63.

Number of people with changed smoking habits as compared with 1975.

SMOKING 1976	Experimental	Control
Non-smokers	51	48
Maintained	14	16
Increased	3	2
Decreased	9	7

In the tables about recreational interests ...

A significant difference was seen in the average number of crafts performed by the experimental group over the control group.

There was a trend towards improvement in the experimental group over the control group in gardening interests and skills and in participation in indoor games.

Individual performance.

Individual performance for the recreational interests section (F)
considered the following variables ...

Gardening interests and skills	(1)
Crafts	(1)
Sport	(1)
Indoor games	(1)
Television viewing	(1)
Radio listening	(1)
Reading	
Books	(1)
Magazines	(1)
Newspaper	(1)
Visits to performing arts	(1)
Other recreational interests	(1)
Smoking	(1)
	<u>Total variables</u> (12)

Scoring details were described in the methods p. 48 and p. 67.

Results are shown in terms of change and stability in the
following tables.

TABLE 64.

Distribution of cumulative change scores for the recreational interests section. (F).

CHANGE SCORE	Number of people (Frequency % in brackets)		Cumulative Frequency %	
	Experimental	Control	Experimental	Control
11 * 13	1 (1.3)		1.3	
8 * 10	8 (10.5)	3 (4.2)	11.8	4.2
5 * 7	15 (19.7)	12 (16.7)	31.5	20.9
2 * 4	26 (34.2)	18 (25.0)	65.7	45.9
- 1 * 1	20 (26.3)	30 (31.7)	92.0	87.6
- 2 * - 4	5 (6.6)	8 (11.1)	98.6	98.7
- 5 * - 7				
- 8 * -10	1 (1.3)	1 (1.4)	99.9	100.1
	76 (99.9)	72 (100.1)		

	<u>Experimental</u>	<u>Control</u>
Mean cumulative change score	3.13	1.74
S.D. mean	0.41	0.35

Significance.

Applications of the t-test for significance between the means above indicate a difference of 0.90 for significance at the 0.05 level. The mean change score for the experimental group is thus significantly higher than the observed mean for the control group.

The stability table for the recreational interests section (F) is shown overleaf, with the stability score representing the number of variables in the recreational interests section (F) in which no change was observed.

The distribution is essentially positive with a lower limit of zero and a maximum of 12.

TABLE 65.

Distribution of stability scores for the recreational interests section (F).

STABILITY SCORE/12	%	Number of people (Frequency % in brackets)		Cumulative Frequency %	
		Experimental	Control	Experimental	Control
2	16.7	1 (1.3)		1.3	
3	25.0		1 (1.4)		1.4
4	33.3	2 (2.6)	1 (1.4)	3.9	2.8
5	41.7	3 (3.9)	7 (9.7)	7.8	12.5
6	50.0	19 (25.0)	12 (16.7)	32.8	29.2
7	58.3	28 (36.8)	19 (26.4)	69.6	55.6
8	66.7	14 (18.4)	13 (18.1)	88.0	73.7
9	75.0	5 (6.6)	11 (15.3)	94.6	89.0
10	83.3	3 (3.9)	5 (6.9)	98.5	95.9
11	91.7	1 (1.3)	3 (4.2)	99.8	100.1
		76 (99.8)	72 (100.1)		

	<u>Experimental</u>	<u>Stability %</u>	<u>Control</u>	<u>Stability %</u>	
Mean stability score	7.01	58.40	7.40	61.70	(N.S.)
S.D. mean	0.16	1.35	0.20	1.66	

Since the stability score for the recreational interests section (F) for each person denotes precisely the number of variables for which no change was observed (out of the 12 considered) the division of the stability score by 12, expressed as a percentage, indicates the percentage of those variables stable in the recreational interests section (F). This percentage is indicated in the column of the table headed 'Stability %'.

Again the high stability largely explains the lack of significance in individual variables shown earlier in the section.

Considerations of change and stability factors for this section are shown in the table below.

TABLE 66.

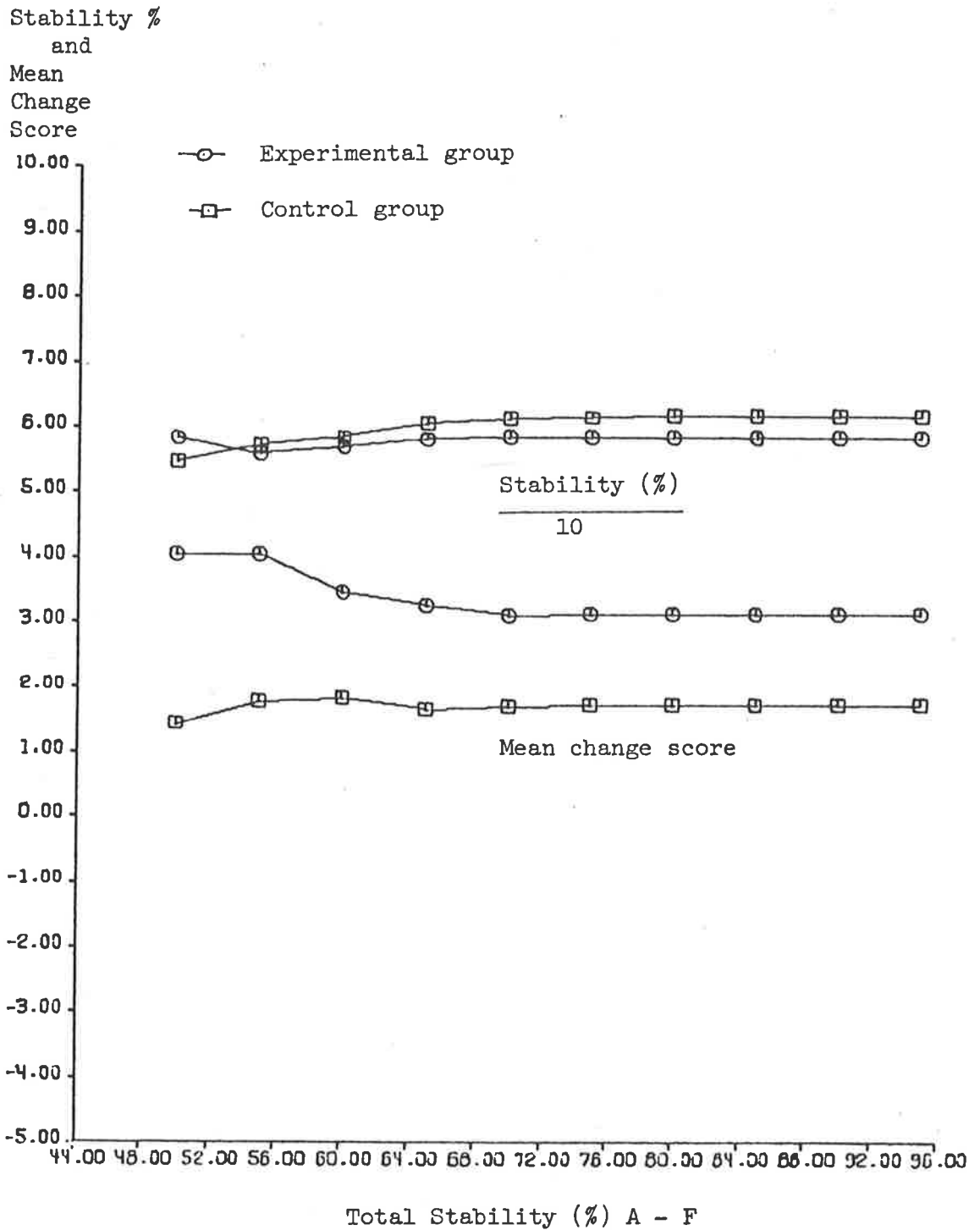
Comparison of the recreational interests section (F) stability %, SF (%), and mean change score, CF, against the total stability % (A - F).

1	Experimental (76)				Control (72)			
	2	3	4	5	6	7	8	9
Total Stability % (A-F)	No	%	SF (%)	CF mean	No	%	SF (%)	CF mean
<50	21	27.6	58.3	4.0	16	22.2	54.7	1.4
<55	40	52.6	55.8	4.1	36	50.0	57.2	1.8
<60	60	78.9	56.9	3.5	49	68.1	58.3	1.8
<65	68	89.5	58.1	3.3	65	90.3	60.4	1.7
<70	75	98.7	58.4	3.1	70	97.2	61.2	1.7
<75	76	100.0	58.4	3.1	72	100.0	61.4	1.7

- (a) The experimental group shows improvement over the control group indicated by the larger CF means.
- (b) The stability factor, SF (%), is relatively stable over both groups and tends not to increase with increasing total stability.
- (c) Greater gains in the experimental group have been made in those people showing lower total stability (with total stability percentage less than 55).

People showing most change will be discussed later in the results (p. 136-146).

FIGURE 10.



CHANGE AND STABILITY IN RECREATIONAL INTERESTS.

COMBINED RESULT OF COMMUNICATION, MOOD, MOBILITY, ACTIVITIES OF DAILY LIVING AND RECREATIONAL INTERESTS. (SECTIONS B - F).

In view of the repeated trend shown in each section when considered separately, viz. that greater improvement was experienced in the experimental group in a sub-group of people with total stability percentage of less than 55, it was to be expected that the combined effect of the sections (B - F) would further reinforce this conclusion. That this is the case is shown in the comparative table below and accompanying graph. (Figure 11).

TABLE 67.

Comparison of the sections B - F stability %, S (B-F) %, and mean change score, C (B-F), against the total stability % (A - F).

1	Experimental (76)				Control (72)			
	2	3	4	5	6	7	8	9
Total Stability % (A-F)	No	%	S (B-F) (%)	C (B-F) mean	No	%	S (B-F) (%)	C (B-F) mean
<50	21	27.6	44.3	14.1	16	22.2	43.4	1.5
<55	40	52.6	48.5	11.6	36	50.0	48.4	3.6
<60	60	78.9	52.2	9.9	49	68.1	51.3	4.3
<65	68	89.5	53.5	8.8	65	90.3	54.6	4.2
<70	75	98.7	55.0	8.1	70	97.2	55.6	4.0
<75	76	100.0	55.2	8.1	72	100.0	55.9	4.0

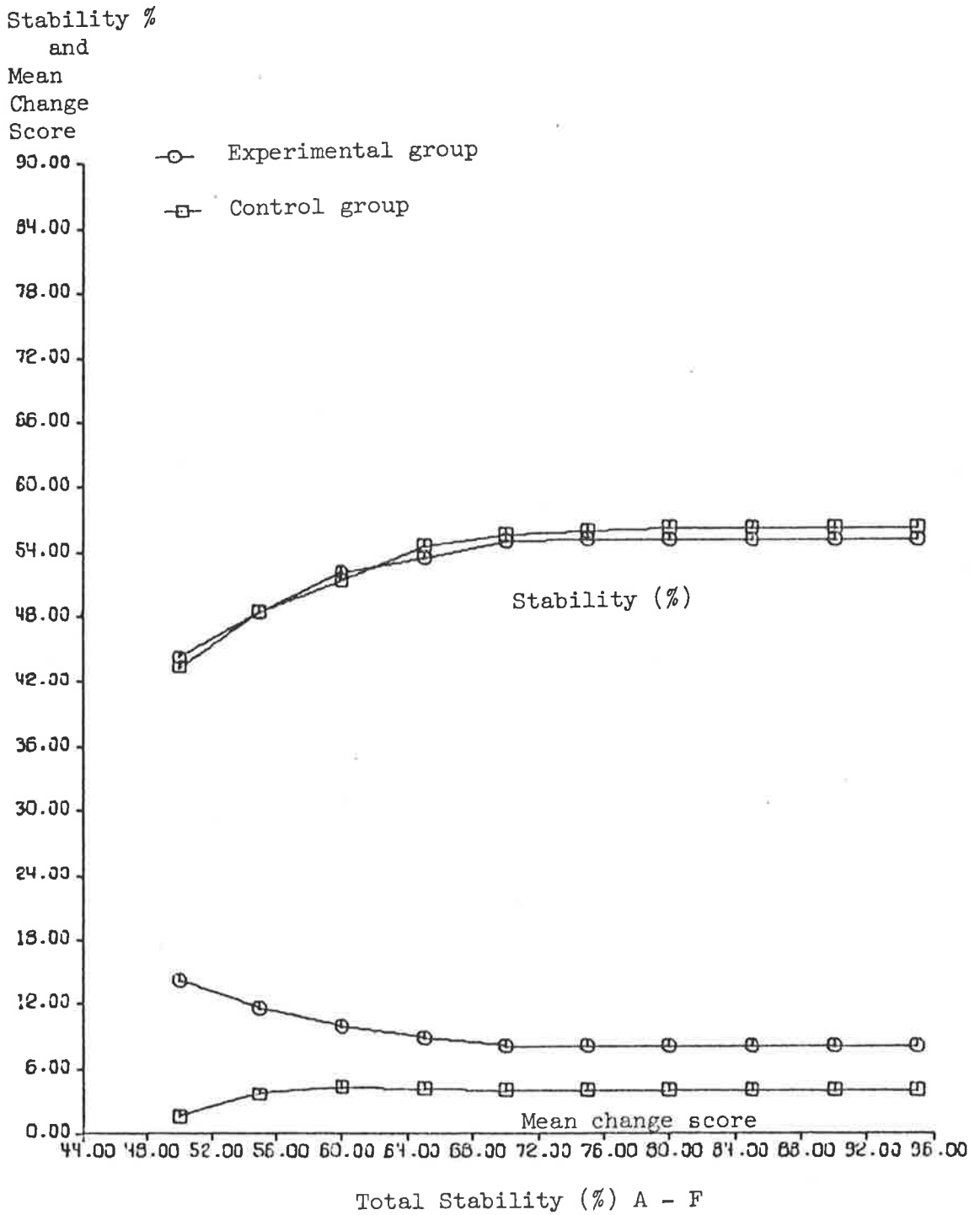
This table shows ...

- (a) The large improvement in the experimental group indicated by the higher positive mean change score in the lower stability range.
- (b) The persistence of the improvement throughout the whole experimental group at a distinctly higher level.
- (c) The similarity of stability in both experimental and control groups.

Significance.

Application of the *t*-test for significance between the means above (8.1 and 4.0) indicates a difference of 4.1 which is significant at the 0.05 level. The mean change score for the experimental group is thus significantly higher than the observed mean for the control group, considering in combination the sections dealing with communication, mood, mobility, activities of daily living and recreational interests.

FIGURE 11.



CHANGE AND STABILITY FOR THE TOTAL OF COMMUNICATION, MOOD, MOBILITY, ACTIVITIES OF DAILY LIVING AND RECREATIONAL INTERESTS. (B - F).

ANALYSIS OF A SUB-GROUP OF ONE-THIRD OF SUBJECTS
IN THE LOWER STABILITY RANGE.

Experimental group (26) control group (25).

For general details about this sub-group see Appendix II.

Physiological variables. (A).

TABLE 68.

Number of people in the lower stability range who have become worse, remained unchanged or improved on physiological variables.

VARIABLE	Experimental (26)			Control (25)			% change in experimental group
	Worse	No change	Improved	Worse	No change	Improved	
Body weight	10	10	6	7	9	9	-23.4
Blood pressure (diastolic seated)	5	12	9	6	6	13	-12.6
Abnormal urinary constituents							
Albumen	6	17	3	4	21	-	+ 4.5
Sugar	1	20	5	-	20	5	- 4.6
Ketones	-	26	-	1	24	-	- 4.0
Blood	1	24	1	1	24	-	- 4.0
Bilirubin	1	24	1	-	25	-	0
Bacteriuria	4	21	1	3	20	2	- 7.5
Pulse regularity	3	22	1	6	15	4	+ 0.3
Wax - left ear	5	16	5	3	18	4	- 4.0
Wax - right ear	6	16	4	7	16	2	+12.3
Auditory acuity	10	13	2	11	12	2	+ 5.2
Vision (uncorrected)	5	16	5	9	9	7	+ 8.0
Serum and blood screen	12	10	4	11	11	3	+ 1.2
Dyspnoea							
Exertion	7	14	5	10	11	4	+16.3
Seated	2	23	1	4	21	-	+12.2
Lying	6	20	-	4	20	1	-10.9

Communication. (B).

TABLE 69.

Number of people in the lower stability range who have become worse, remained unchanged or improved on communication variables, together with change score (for those people changing on the variable).

VARIABLE	Experimental (26)			Control (25)			% change in experimental group
	Worse	No change	Improved	Worse	No change	Improved	
<u>Comprehension</u>							
<u>Picture ident.</u>							
No. of people	-	23	3	-	21	4	- 4.5
Change score			+13			+10	
<u>Matching action</u>							
No. of people	-	19	7	-	17	8	- 5.1
Change score			+18			+17	
<u>Listening comp.</u>							
No. of people	5	7	14	7	5	13	+10.6
Change score	- 7		+24	-12		+32	
<u>Expression</u>							
<u>Counting</u>							
No. of people	-	25	1	-	24	1	- 0.2
Change score			+ 2			+ 5	
<u>Picture naming</u>							
No. of people	1	16	9	3	15	7	+14.8
Change score	- 5		+16	- 7		+10	
<u>Ease of articulation</u>							
No. of people	5	12	9	3	16	6	+ 3.4
Change score	- 8		+19	- 7		+21	
<u>Accuracy of articulation</u>							
No. of people	2	13	11	3	15	6	+22.6
Change score	- 6		+23	- 7		+12	
<u>Language use</u>							
No. of people	5	17	4	6	15	4	+ 4.2
Change score	- 5		+ 4	- 6		+ 4	
<u>Reading</u>							
<u>Reading words</u>							
No. of people	2	16	8	3	17	5	+15.1
Change score	- 3		+12	- 9		+15	
<u>Reading comp.</u>							
No. of people	7	10	9	3	16	6	- 4.3
Change score	-10		- 12	- 5		+ 8	
<u>Writing</u>							
<u>Five words</u>							
No. of people	8	13	5	4	19	2	- 3.5
Change score	-13		+10	- 8		+ 4	
<u>Written descsp.</u>							
No. of people	5	9	12	6	10	9	+14.9
Change score	- 6		+17	- 6		+13	

Mood. (C).

TABLE 70.

Number of people in the lower stability range who have become worse, remained unchanged or improved on mood variables, together with change score (for those people changing on the variable).

VARIABLE	Experimental (26)			Control (25)			% change in experimental group
	Worse	No change	Improved	Worse	No change	Improved	
<u>Total observed mood</u>							
No. of people	5	10	11	8	8	9	+19.1
Change score	-9		+20	-14		+14	
<u>Self-assessed mood</u>							
<u>Coldness</u>							
No. of people	5	17	4	9	10	6	+ 8.2
Change score	-24		+15	-47		+36	
<u>Anger</u>							
No. of people	2	23	1	-	23	2	-11.8
Change score	-15		+ 4			+16	
<u>Depression</u>							
No. of people	2	18	6	7	15	3	+31.4
Change score	- 9		+33	-19		+10	
<u>Confusion</u>							
No. of people	2	19	5	3	19	3	+11.5
Change score	-10		+20	-13		+11	
<u>Coping with medication</u>							
No. of people	5	17	4	5	15	5	- 3.8
Change score	-28		+25	-40		+37	

Mobility. (D).TABLE 71.

Number of people in the lower stability range who have become worse, remained unchanged or improved on mobility variables, together with change score (seconds) (for those people changed on walking).

VARIABLE	Experimental (26)			Control (25)			% change in experimental group
	Worse	No change	Improved	Worse	No change	Improved	
Walking time for 10 metres							
No. of people	6	1	19	10	3	12	+42.0
Change score	-160		+111	-163		+96	
<u>Joint ranges</u>							
Right wrist	13	5	8	12	3	10	-11.2
Left wrist	11	6	9	6	7	12	-31.7
Right elbow	7	8	11	9	10	6	+27.4
Left elbow	10	6	10	5	7	13	-32.0
Right shoulder	10	5	11	16	6	3	+55.8
Left shoulder	14	3	9	15	3	7	+12.8
Right knee	18	1	7	9	1	15	-66.3
Left knee	15	4	7	9	6	9	-30.8
Right hip	13	3	10	19	0	5	+44.5
Left hip	21	0	5	21	2	1	+18.5

Left knee)
 Right hip) control n = 24.
 Left hip)

Activities of daily living. (E).

TABLE 72.

Number of people in the lower stability range who have become worse, remained unchanged or improved on activities of daily living variables, together with change score (for those people changing on the variable).

VARIABLE	Experimental (26)			Control (25)			% change in experimental group
	Worse	No change	Improved	Worse	No change	Improved	
<u>Showering</u>							
No. of people	6	4	16	7	6	12	+18.4
Change score	-9		+50	-17		+28	
<u>Dressing</u>							
No. of people	5	10	11	7	3	15	-8.9
Change score	-11		+36	-16		+30	
<u>Undressing</u>							
No. of people	3	10	13	6	6	13	+10.5
Change score	-4		+49	-19		+29	
<u>Toileting</u>							
No. of people	1	13	12	7	11	7	+42.0
Change score	-5		+42	-12		+19	
<u>Feeding</u>							
No. of people	3	14	9	4	11	10	-0.9
Change score	-9		+14	-8		+15	
<u>Cooking</u>							
No. of people	6	11	9	5	15	5	+11.5
Change score	-9		+20	-18		+7	

Recreational interests. (F).

TABLE 73.

Number of people in the lower stability range who have become worse, remained unchanged or improved on recreational interests variables, together with change score (for those people changing on gardening and crafts).

VARIABLE	Experimental (26)			Control (25)			% change in experimental group
	Worse	No change	Improved	Worse	No change	Improved	
<u>Gardening</u>							
No. of people	3	6	17	10	3	12	+45.8
Change score	- 5		+56	-16		+31	
<u>Crafts</u>							
No. of people	1	12	13	3	15	7	+30.2
Change score	- 2		+17	- 3		+ 7	
Television							
viewing	5	11	10	8	5	12	+ 3.2
Radio listening	8	7	11	9	8	8	+15.5
Reading							
Books	4	19	3	1	21	3	-11.8
Magazines	5	10	11	9	9	7	+31.1
Newspaper	2	23	1	4	18	3	+ 0.2
Visits to							
performing arts	1	23	2	1	21	3	- 4.2
Sport	-	24	2	-	24	1	+ 3.7
Indoor games	1	16	9	5	16	4	+34.8
Other recreations	5	7	14	3	9	13	- 5.4
Smoking							
	2	23	1	-	23	2	-11.8

Experimental sub-group. (26).

Number of people with positive total change score = 18
 Number of people with negative total change score = 8
 Total = 26.

The variables showing positive percentage change in the twenty-six (26) experimental subjects are listed below ...

Physiological variables. (A).

Dyspnoea (exertion) (+16.3%).
 Wax in right ear (+12.3%).
 Dyspnoea (seated) (+12.2%).
 Uncorrected vision (+8.0%).
 Auditory acuity (+5.2%).
 Albuminuria (+4.5%).
 Serum and blood screen (+1.2%).

Communication. (B).

Accuracy of articulation of words (+22.6%).
 Reading words (+15.1%).
 Written description of composite picture (+14.9%).
 Picture naming (+14.8%).
 Listening comprehension (+10.6%).

Mood. (C).

Self-assessed depression (+31.4%).
 Total observed mood (+19.1%).
 Self-assessed confusion (+11.5%).
 Self-assessed coldness (+8.2%).

Mobility. (D).

Right shoulder range (+55.8%).

Right hip range (+44.5%).

Walking (+42.0%).

Right elbow range (+27.4%).

Left hip range (+18.5%).

Left shoulder range (+12.8%).

Activities of daily living. (E).

Toileting (+42.0%).

Showering (+18.4%).

Cooking (+11.5%).

Undressing (+10.5%).

Recreational interests. (F).

Gardening (+45.8%).

Indoor games (+34.8%).

Magazine reading (+31.1%).

Crafts (+30.2%).

Listening to radio (+15.5%).

Sport (+3.7%).

Television viewing (+3.2%).

The next step considered the eighteen (18) people with positive total change score to see which of the above variables had improved for these people.

Further analysis was made to find the variables listed above which were initially abnormal (1975) for nine (9) or more of the eighteen (18) people.

These variables are shown overleaf, (the figure in brackets indicates the number of people (out of 18) who were abnormal in 1975)...

Physiological variables. (A).

Wax in right ear (9).

Uncorrected vision (17).

Serum and blood screen (11).

Communication. (B).

Accuracy of articulation (9).

Written description of composite picture (17).

Picture naming (10).

Listening comprehension (14).

Mood. (C).

Total observed mood (14).

Mobility. (D).

Walking (11).

Activities of daily living. (E).

Toileting (11).

Showering (16).

Cooking (13).

Undressing (12).

Recreational interests. (F).

Gardening (15).

Indoor games (15).

Crafts (13).

Listening to radio (9).

Sport (15).

Knowing these variables, it remained to find which of them improved on 50% or more of those people for whom they were found to be initially abnormal.

The variables thus selected are listed overleaf ...

Physiological variables. (A).

Nil.

Communication. (B).

Accuracy of articulation (66.6%)	(1)
Written description of composite picture (58.8%)	(1)
Picture naming (70.0%)	(1)
Listening comprehension (64.3%)	(1)

Mood. (C).

Total observed mood (57.0%)	(1)
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Mobility. (D).

Walking (63.6%)	(1)
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Activities of daily living. (E).

Toileting (100%)	(1)
Showering (93.8%)	(1)
Cooking (69.2%)	(1)
Undressing (91.6%)	(1)

Recreational interests. (F).

Gardening interests and skills (93.3%)	(1)
Indoor games (46.6%)	(1)

<u>Total</u>	(12)
--------------	------

Selected variables.

The 12 variables listed above have been improved in a group of eighteen (18) disabled elderly people. A summary of the sequence of selection of these variables is shown in table 74.

Further analysis of this group of eighteen (18) people has shown that each person improved on 5 or more of the variables showing positive change listed in tables (68 - 73) covering at least three of sections A - F.

TABLE 74.

Summary of analysis to define selected variables.

1	2	3	4	5
VARIABLE	Positive % change in experimental group (26)	Number of people affected 1975	Number of people improved 1976	Selected variables
<u>SECTION A.</u>				
Dyspnoea (exertion)	16.3	5	1	
Wax - right ear	12.3	9 *	4	
Dyspnoea (seated)	12.2	1	1	
Vision (uncorrected)	8.0	17 *	5	
Hearing	5.2	6	2	
Albuminuria	4.5	5	3	
Serum and blood screen	1.2	11 *	3	
<u>SECTION B.</u>				
Accuracy of articulation	22.6	9 *	6 *	***
Reading words	15.1	8	6	
Written description	14.9	17 *	10 *	***
Picture naming	14.8	10 *	7 *	***
Listening comprehension	10.6	14 *	9 *	***
<u>SECTION C.</u>				
Self-assessed depression	31.4	6	6	
Total observed mood	19.1	14 *	8 *	***
Self-assessed confusion	11.5	6	5	
Self-assessed coldness	8.2	4	4	
<u>SECTION D.</u>				
Right shoulder range	55.8	7	4	
Right hip range	44.5	5	5	
Walking	42.0	11 *	7 *	***
Right elbow range	27.4	6	3	
Left hip range	18.5	2	1	
Left shoulder range	12.8	4	1	
<u>SECTION E.</u>				
Toileting	42.0	11 *	11 *	***
Showering	18.4	16 *	15 *	***
Cooking	11.5	13 *	9 *	***
Undressing	10.5	12 *	11 *	***
<u>SECTION F.</u>				
Gardening	45.8	15 *	14 *	***
Indoor games	34.8	15 *	7 *	***
Magazines	31.1	7	1	
Crafts	30.2	13 *	5	
Listening to radio	15.5	9 *	4	
Sport	3.7	15 *	1	
Television viewing	3.2	6	4	

Column 1. Variables are those which show positive change in a sub-group of people in the lower stability range. (tables 68-73).

Column 2. Shows the positive gain shown in tables 68-73.

Column 3. The figures in this column relate only to eighteen (18) people who had positive total change scores over sections A - F.
* in this column denotes that 50% or more of the eighteen (18) people were affected on the variable in 1975.

Column 4. The figures in this column show how many of those people listed in column 3 improved in 1976.

* denotes that 50% or more of the figure in column 3 improved.

Column 5. Selected variables which could be expected to improve.

MEDICATIONS.TABLE 75.

Number of people (experimental group) taking medication in 1976 compared with 1975.

MEDICATION	Experimental						
	Nil.	Com.	Incr.	Same	Decr.	Cease.	Ch.
Analgesics	46	11	2	1	4	5	8
Antibiotics and urinary antiseptics	71	3	-	-	-	2	1
Antihistamines	67	4	1	1	-	3	1
Anti-hypertensives	45	5	5	10	8	4	-
Cardiac reactants	48	7	3	10	2	6	1
Diabetic agents	69	1	3	2	1	-	1
Dietary supplements	46	9	2	8	5	6	1
Iron	75	-	-	1	-	1	-
Diuretics	34	11	3	15	5	3	6
Laxatives	58	5	1	2	3	4	4
Sedatives	58	6	2	2	3	4	2
Steroids	72	1	-	1	-	2	1
Tranquillisers and antidepressants	48	8	3	4	3	5	6
Other medications	37	14	4	5	2	7	8

Nil. = No medication.

Com. = Commenced.

Incr. = Increased.

Same = No change.

Decr. = Decreased.

Cease. = Ceased.

Ch. = Changed medication within the same group.

TABLE 76.

Number of people (control group) taking medication in 1976 compared with 1975.

MEDICATION	Control						
	Nil.	Com.	Incr.	Same	Decr.	Cease.	Ch.
Analgesics	44	2	2	6	3	9	7
Antibiotics and urinary antiseptics	64	5	-	-	-	2	2
Antihistamines	65	1	1	1	-	5	-
Anti-hypertensives	47	3	5	6	3	9	-
Cardiac reactants	44	7	-	13	3	6	-
Diabetic agents	64	4	-	4	1	-	-
Dietary supplements	48	7	3	11	-	4	-
Iron	70	1	-	1	-	1	-
Diuretics	39	4	3	17	4	4	2
Laxatives	51	6	2	1	3	8	2
Sedatives	50	7	4	5	3	4	-
Steroids	63	4	-	1	-	4	1
Tranquillisers and antidepressants	43	6	4	3	6	7	4
Other medications	36	8	10	5	1	9	4

Nil. = No medication.

Com. = Commenced.

Incr. = Increased.

Same = No change.

Decr. = Decreased.

Cease. = Ceased.

Ch. = Changed medication within the same group.

TABLE 77.

Cost of medication. (Dollars and cents per month - actual cost.
Calculated on September 1st, 1976).

MEDICATION	Experimental				Control			
	1975		1976		1975		1976	
	n.	\$	n.	\$	n.	\$	n.	\$
Analgesics	19	74.00	25	100.50	26	102.60	20	88.40
Antibiotics and urinary antiseptics	3	25.40	4	48.00	4	49.90	7	122.80
Antihistamines	6	8.10	6	13.80	7	18.90	3	8.20
Anti-hypertensives	27	147.20	28	144.10	22	113.10	17	113.50
Cardiac reactants	22	89.60	22	93.60	22	103.60	22	77.50
Diabetic agents	7	23.10	8	26.80	5	16.10	9	27.70
Dietary supplements	22	42.20	25	40.60	17	34.70	21	49.20
Iron	2	2.20	1	0.50	2	3.40	2	3.20
Diuretics	32	103.50	40	118.50	30	98.70	30	105.40
Laxatives	13	68.90	13	18.10	16	18.80	14	14.90
Sedatives	14	31.60	14	32.30	14	31.80	17	34.60
Steroids	4	12.30	3	13.00	7	15.00	6	16.00
Tranquillisers and antidepressants	21	61.30	24	68.30	23	77.60	23	76.70
Other medications	25	200.80	33	167.80	29	160.70	28	208.40
Total		\$890.20		\$885.90		\$844.90		\$946.50
% change				- 0.48				+ 12.03

Experimental group gain = + 12.51%

In some instances in the above table the numbers of people taking medication do not tally with those as indicated in tables 75 and 76. In some cases the cost of medication taken was calculated as zero due to the extremely small amount taken per month. (less than 5 cents).

TABLE 78.

Labelling of medication. (Number of people).

LABELLING	Experimental	Control
Satisfactory	55	37
Not satisfactory	19	28

$$\text{Chi}^2 = 3.94 \quad (\text{d.f.} = 1. \quad \text{Sig } 5\%).$$

Cost of medication was increased in the control group but decreased in the experimental group, the biggest variations being in laxatives and medications included in 'other medications' (see Appendix II).

An effort was made by the nurse to ensure that all medications were labelled satisfactorily. As a result of this there was statistically significant improvement in labelling of medication in the experimental group over the control group.

D I S C U S S I O N

DISCUSSION.

"Since the days of the cave man, the earth has never been a Garden of Eden, but a Valley of Decision where resilience is essential to survival.

"The earth is not a resting place. Man has elected to fight, not necessarily for himself but for a process of emotional, intellectual and ethical growth that goes on forever. To grow in the midst of dangers is the fate of the human race, because it is the law of the spirit." 53

Rene Dubos thus summarised man's response to the challenge of the day.

In recent times, rapid scientific advancement, which shows no sign of abatement, has had dramatic effects on medical practice. Health care systems have changed and will continue to be modified under the influence of new discovery. It is time to awaken affluent societies to the new era, and to take stock of the present scene, for we must respond to the pressures in our midst, not the least of which is the plight of the elderly.

An insidious change in health patterns, illustrated by physical and mental degenerative disease, has risen to substantial dimensions now warranting a fresh approach to community health services. In any consideration of elderly people it must be realised that whilst many suffer from the effects of chronic disease, an even greater number remain well and able to cope for years with minimal help.

Our efforts must be directed to the prevention of morbidity and further disability, for even if affected by chronic ill-health, elderly people must be able to enjoy independence and activity.

A balance must be struck between current medical care in hospitals and long term maintenance care at home; institutional care follows only after all else has failed.

This challenge confronts all who are responsible for the provision of health care today and in the years to come.

The background to this present study was the challenge of caring for elderly folk with increasing disability in a long established country practice. The basic problems were ...

How to maintain optimum continuity of care within the limits of time available.

Pressures placed on families in coping adequately with aging, partially disabled relatives.

The clinical problems of irregular, acute episodes, which in many instances should have been preventable or less severe.

The need for better supervision of people at risk.

Insufficient opportunity to promote independence and stimulate continued participation in community activities.

In the first instance, ⁴⁵ an eighteen month study of three hundred people in the district of Mallala, South Australia, (1966-1967) showed how a team of health-related professionals could greatly assist in the maintenance of well-being and maximum health and independence in elderly folk with multiple conditions. The nurse emerged as a most effective member of the team supporting the doctor.

There was full recognition of the need for a wide view, involving not only just episodic care by a doctor, but the supervision of treatment schedules by a nurse, who would train responsible relatives and neighbours to help maintain continuity of care.

Health, welfare and education, plainly inseparable, were essential components in any long-term care programme with a strong preventive bias.

How to test such a programme, with a trained nurse, and to define where attention can be given most profitably to disabled people was the aim of this present study.

In this study (1975-1976) methods were devised and included to measure and monitor factors connected with the maintenance of independence and well-being for people with chronic illness, who were living at home.

Cerebro-vascular accident illustrates many of the problems such as fear, insecurity and dependency, which are commonly associated with chronic illness. For this reason it was chosen as the diagnosis for entry into the study. Disabilities were regularly estimated by a nurse. As the patients were unselected regarding residual disability, some people were well-restored whilst others had severe limitations thus giving the nurse the opportunity to exercise preventive, therapeutic and retraining measures.

The design of this study acknowledged that each person had the same chance of receiving domiciliary services operating within his locality, if mobilised. The nurse was an additional influence in the experimental group, hence any differences between the experimental and control groups were related to her efforts.

The control group served to show how well elderly people cope themselves or with the help of existing services. The experimental group showed how independence can be increased and activities broadened despite a deterioration in health status.

One of the major findings of this study of people over time has been the indication that some things are inevitable in elderly people, particularly after such a setback as a stroke. On the other hand, with certain enjoyments and activities, many such people can become happier with life, given a modest amount of help.

In this study two nurses, working part-time, were especially engaged for the experimental group. They covered a large part of the metropolitan

area of Adelaide and two near country districts in South Australia. This ensured a wide variation in the socio-economic and cultural aspects of the study population. The nurse interacted with many general practitioners and other health workers, allowing for a broad estimation of her acceptance as well as her relationship with others involved in patient care. (Appendix I table 1).

Due to the distances covered, the nurse was able to visit only four patients each day. All her observations and assessments were made in the patient's home. In the beginning the nurse found that she was entering a complex situation, where patients were already receiving care from their doctor, and in many instances from other sources. She assessed each person according to the study methods. Having decided on a plan of action, she sought the co-operation of the doctor and available community services.

In turn, the nurse monitored patient progress, reported the effect of treatment to the doctor or therapist and suggested where modifications may help. From her observations she was able to initiate timely action, often preventing major deterioration of function.

Other studies 30,31,37,38,39,54 have shown convincing evidence of the acceptance of the nurse in the domiciliary health team. These views are supported by the findings of this study which have been documented in the nurses' detailed report (Appendix I table 1) and personal reports (Appendix I). Each nurse expressed the great pleasure and satisfaction found in this work, particularly as she could see her patient at home, where she soon became a welcome and trusted visitor, not only concerned with physical health but finding time to listen to and discuss their personal problems.

The two nurses showed a similar approach to the management of their patients. They followed essential features of geriatric rehabilitation,

"simplicity, consistency and repetition." ⁵⁵ Wherever possible they included the spouse, the family and friends in their plans to reactivate dormant interests and skills, and re-educate the more physically disabled in the elements of independence. These efforts were not wasted, as marked improvement was seen in activities of daily living and recreational interests for people in their care.

Her services extended to the needs of the whole family, where with 'mother-wit' she grasped every opportunity to promote good health, realising the importance of family support if her patient was to continue to progress. In doing this, she identified the management of alcoholism and marital difficulties as deficient areas in her training.

In many instances a very close relationship grew between nurse and spouse as they joined forces to meet the problems of a chronic illness state. This alliance was made possible by visiting the home and must be regarded as one of the most important developments contributing to overall patient improvement.

Throughout the trial period the nurse enjoyed excellent co-operation from medical practitioners, which she earned, as she made every effort to keep them fully informed and act according to their mutual agreement.

Physiotherapists, occupational therapists and social workers, on the whole, were appreciative of the nurse's participation and were prepared to act on her comments and suggestions regarding patient management.

The nurse asked for and received full support from the nurses of the Royal District Nursing Society of South Australia Inc. They jointly assessed and discussed difficult patients with a view to promoting further independence.

To ensure that requests and personal needs were speedily fulfilled, the nurse herself often performed errands and duties on behalf of her patients. She arranged for simple aids, e.g. peeling boards and card-racks,

to be made at minimal cost to the patients. Eventually, some patients were making and supplying aids for the nurse to distribute where she saw the need. At times, she accompanied her patient to see the doctor, or collected prescriptions, thus avoiding any unnecessary delays.

Research methods were quite new to the nurses in this study. Their diligence in learning details of assessment and their recording of data about their daily routines and patient observations was meticulous.

The value of part-time workers was seen during the trial period. It allowed mature, experienced women to manage a dual role of homemaker and nurse. They deputised for each other for holidays and sick leave, thus providing continuity. In addition to their formal hours, they shared the responsibility of a twenty-four hour telephone cover, to advise and support families when the need arose. Knowledge of this readily available service did much to promote confidence and allay fear.

The nurses readily accepted the challenge of an expanded role. One of their last tasks was to assess their efforts against patient response. Was it all worthwhile? They were satisfied with the results achieved. Statistical evidence supports the nurse's view regarding patient improvement.

People with chronic illness and disability must be assessed as individuals with many attributes. Isolated variables have little meaning in themselves unless related to overall function.

In the first instance, however, each variable must be examined before being included with like variables in appropriate sections. These sections, each concerned with one aspect of function, are brought together to form a composite picture of each person. Total change over time can then be calculated for each person and each group of persons due to the before-after design of this study.

The statistical analysis began with the consideration of each variable as an entity. Nine factors showed significant change. They are marked on the tables (*) and are listed in Appendix II. This relatively small amount of significant change is explained by the high proportion of people with maximum scores in some factors at the initial assessment, the size of the study population and, in some instances, the choice of a variable (e.g. vision) which was unlikely to change in elderly people, but was included as a help for the nurse in the management of her patient.

Variables were grouped into six sections dealing with physiological or clinical aspects, communication, mood, mobility, activities of daily living and recreational interests. In this way it was not only possible to examine each section but to see the inter-relation of sections which is considered later in this discussion.

One of the main aims of the study was to estimate the effect of the nurse on the health status and life-style of her patients. To do this, it was reasonable to consider her influence in the various sections rather than on individual factors. It was seen repeatedly throughout the sections that her effect was greatest on the more disabled people.

The analysis of the physiological section (A) showed remarkably similar behaviour between the experimental and control groups. More variables showed deterioration than improvement, reflecting the inevitability of certain factors to show deterioration with age. An example of this was the bacteriuria, where the results were in favour of the control group. Urinary tract infection becomes more common in old age. It has been shown that significant bacteriuria was found to be present in 20% of women over 65 years and men over 70 years of age in the population sample described. This compared with an incidence of 3% in women age 45 to 65 years and men 65 to 70 years.⁵⁶ In the group of people with bacteriuria

in this study, the mean age of those in the experimental group was about ten years greater than that of the controls. (Appendix II).

Although the group changes were in a downwards direction, the control showed a slightly greater tendency to negative fluctuation.

At first sight, it would seem that the nurse failed in the physiological section (A). We must consider, however, the importance of her decision-making regarding patient activities. This followed only after she had made a clinical assessment, alerted the patient's doctor, and enlisted his help whenever necessary.

Her involvement in this area was an essential and integral part of the whole programme. She reported change to the doctor as set by criteria described in the methods. Medications were checked and modified accordingly, again in consultation with the doctor. Very soon she secured the doctor's confidence in her capability, which resulted in his ready co-operation with her suggestions regarding other aspects of daily function.

The patients were delighted with the increased personal attention. They appreciated the regular checking of their weight, blood pressure, urine and other factors, gaining confidence from the nurse's reassurance or her prompt action when required. The increased feeling of well-being resulting from the knowledge that, from a medical point of view, they were 'holding their own', gave additional impetus to people in the experimental group to listen to her advice and try hard to regain more and more independence.

The effect of the nurse's role in the clinical assessment of patients was reflected in sections other than the physiological section itself.

The assessment of communication indicated that many people could benefit from some help with concentration and writing.

Similar improvement was seen throughout the experimental and control

groups, but it was slightly more marked, experimental over control, when comparing people in the more disabled sub-group. This can be related to the nurse's activity as she concentrated her efforts where she perceived the greatest need. An appreciation of communication performance was essential to guide the nurse in the selection of general activities for her patients.

An indication of mood was obtained using objective and subjective tests. They were chosen after discussion with doctors, nurses and other health professionals. A brief estimation of mood was essential, as it was only a part of the total assessment. It was to be used by the nurse to watch mood changes in her patients in the experimental group during the trial period.

In the mood assessment the total score of five aspects of the observed mood was scored as one unit. Each of the five analogue scales was allotted a score, as these were considered to be a more important guide as to how the person felt himself. (See p. 41, 68).

There was minimal change observed in two-thirds of the experimental and control groups. A difference between the groups was again seen in the sub-group of disabled people, where those in the experimental group showed little change from their initial mood, but there was deterioration in people in the control group. Overall there *was statistically significant stability of mood in the experimental group over the control.*

This emotional stability can be related to the nurse who spent time attending to her patients' happiness and well-being, particularly where she saw greatest need.

Mobility showed a different pattern in that the stability percentage was only 10% compared with about 65% in the other sections. This was accompanied by vigorous changeability, mostly towards deterioration, again most noticeable in the disabled sub-group.

Joint movement and walking were the components of this section. With a few exceptions the range of joint movement became more limited as expected from the age and infirmity of people under review.

The speed and accuracy of walking improved in both groups, but the improvement was more noticeable in the experimental group. The effect of the nurse is shown here, as she observed her patient when walking, defined any problems, made corrections and encouraged regular practice.

Both experimental and control groups improved in activities of daily living but improvement was greater throughout in the experimental group and most marked in the more disabled.

The nurse was responsible for this difference. She repeatedly investigated these activities, actually observing them on two or more occasions during the trial. She introduced aids as necessary, trained her patients in the use of aids and directed where support or the withdrawal of help would be most beneficial in the patient's interest.

She encouraged independence at every possible opportunity and was successful in stimulating people to try once again to do things for themselves.

There was a statistically significant improvement, experimental over control, in respect of recreational interests. Improvement was again greater in the disabled people in one-third of the experimental group compared with the control.

Variables in this section were included to help form a background to people under review. They were items which could be changed by stimulation, encouragement and appreciation of any problems preventing active participation. Recreation was carefully monitored by the nurse when she visited her patients. Broadening of interests was one of the main areas concerning the nurse, who either acted herself to achieve

patient interest or referred people to therapists and day centres when appropriate.

The next step in the analysis was to combine the results of the sections, other than the physiological section (A). This combined result showed how each person had performed overall in the sections dealing with function in the practical sense. It showed how they were feeling in themselves and how they were coping with the essential components of living. For this reason the more finite physiological variables were excluded from the calculation, particularly as in this section the groups had deteriorated in such a similar manner.

The combined result showed statistically significant improvement for people in the experimental group over the control group. This result was derived from the total performance of each person in respect of all the variables included in the section concerned with communication, mood, mobility, activities of daily living and recreational interests. In the light of the wide and varied interest shown by the nurse for each person, it was expected that the greatest benefits would result from these aspects of care.

No study of this nature could be regarded as complete without some consideration of the inter-relationship between the six sections of variables which have been considered.

This must happen in two ways. First, to consider the inter-relations that have occurred for people with chronic illness in the community as it is presently structured. Secondly, the inter-relations of sections must be examined in the group which has had the additional influence of the nurse. This will avoid the danger of extolling the improvement in one section only to find that another section has suffered as a result, thus nullifying any good the nurse may have been thought to do.

Details of the correlations significant in both the experimental and control groups, and in the experimental group alone are discussed in the results chapter (p. 78).

Examination of the correlations showed that any gains made in the sections were genuine gains and not at the expense of other sections.

They showed that improvement in activities of daily living, mood, recreation and communication is possible, despite physiological deterioration. Expectation of improvement is indicated by the significant correlations in the experimental group.

In previous discussions of the sections of variables (A - F) it has been consistently stated that the major differences occurred in the most disabled people, forming approximately one-third of the experimental and control groups. Detailed analysis of this sub-group showed where improvements had occurred, based on a percentage gain for each variable.

This resulted in the selection of 12 variables ...

Mobility

Walking.

Communication

Accuracy in articulation of words
Written description about a composite picture
Naming pictures following visual recognition
Listening comprehension.

Mood

Observed mood (based on the addition of 5 factors).

Activities of daily living

Toileting
Showering
Undressing
Cooking.

Recreational interests

Gardening interests and skills
Participation in indoor games.

It is envisaged that these factors could form a basis for the preferential admission of people to retraining programmes where a trained nurse is working as described in this thesis. On the evidence obtained it can be predicted that marked improvement will occur on these selected variables in people with a broad range of disability.

One of the major problems in the present health care system is to develop criteria for the assessment of elderly people, particularly when disabled, and to define priority for treatment.

This study measured a large number of factors relevant to function. Many of them have remained unaltered regardless of the nurse's influence, but those which can be profitably changed have been identified.

If elderly people with chronic illness living at home were assessed using these criteria, a nurse could manage the assessment following methods as outlined in this thesis. This could lead to timely introduction of retraining procedures to assist in the maintenance of people in their own homes and prevent premature admission to institutions for the care of the aged.

If the nurse were placed in a practice team, her timely intervention would save on high cost areas of health care, including hospital and nursing home beds.

Other information indicating the value of the nurse in the team has been provided by recording details of her duties and the time taken to complete her tasks. (Appendix I). In addition considerable saving was shown in the cost of medication. The cost of drugs and the like were contained or reduced in the experimental group but considerably increased in the control group. (table 77).

The nurse, by checking current medications as well as those in the cupboard, made it possible for doctors to review drugs more efficiently.

She insisted on precise labelling instructions for containers, achieving statistically significant improvement of labelling, so reducing the possibility of incorrect administration. She talked to her patients, explaining the wisdom of taking only those medications considered necessary by the doctor. She corrected the problem of duplication of prescriptions from the general practitioner and hospital doctor. Her instructions regarding diet and fluid intake were effective as shown by the reduction in laxatives taken by her patients. Correct administration of drugs could have contributed to the maintenance or improvement in patient performance which was better in the experimental group than the control group.

Many old people dislike taking tablets, and often are placed in a dilemma resulting from repeat prescriptions, generic and trade names, and the unpleasant side effects of commonly used drugs.

The reduction in the cost of medication is but one avenue which may be considered when matching the cost of services of a trained nurse against the resulting benefits which, when finally evaluated, must include patient comfort, so often destroyed by excessive medication.

So far in this discussion, a nursing role has been defined and statistical evidence of its effect on elderly people with chronic illness has been presented. Reflection on recent health trends and community response to change will bring the role of the nurse as described into perspective. Thus guidelines can be given for her appropriate training and integration into present health services.

When such a study as this is undertaken, the cost of the research must be weighed against the ensuing benefits. The role of the nurse in the care of the elderly warrants clarification in the light of the needs in the years ahead.

Population studies ^{19,20,57,58,59} in Australia have shown that chronic illness affects all age groups, increasing with advancing years. Some limiting disability accompanies approximately one-third of these people so affected.^{19,20}

In recent years, the life span has increased and life-styles have changed due to advances in science and technology. Regardless of cost, people now expect to receive services provided by hospitals, which have become sophisticated but impersonal institutions, able to meet the call for life preservation. Once in the system, the patient undergoes clinical investigation and treatment, often selected without due regard to the final outcome. *Particularly in respect of elderly people, if the person stays alive, the end result is one demanding assessment and prolonged support.* Thus life-saving procedures with ensuing invalidity are compounding the natural trend to degenerative disease in our society.

An awareness of chronic illness, particularly as it affects the aged, has brought about an expansion of domiciliary services aimed at the prevention of unnecessary invalidity and avoidable disability. Old people are being kept at home for as long as possible, for this is where they are happiest and the costs of maintenance are reasonable when compared with institutional care. Even when Domiciliary Care Units are administered on a regional level, there is duplication and fragmentation of services, brought about by the number of people involved with one patient and lack of communication between points of health-care delivery.

People with chronic illness are mostly cared for by a general practitioner, who in the past was able to direct and manage all matters pertaining to his patient's welfare. In doing so, he was supported by the district nurse.

As the number of elderly people with chronic illness has increased, and community health supportive services have developed, general

practitioners are facing difficulty in maintaining continuity of care so necessary for their patients. They need to be kept fully informed if they are to guide their patient's progress. Calling in assistance when required, the general practitioner should be included in any decision-making concerning his patients. Co-ordination, essential at the general practice level, is a function befitting the nurse, who is skilled in assessment methods and fully accepted as a decision-maker by her associates. There are differing opinions as to where the nurse would best be attached, but this is a matter for further trial and evaluation, and it does not affect the concept of her role in this thesis.

For years the district nursing services have realised the need for an expanded role, and have provided training programmes for their nurses. Their present role in no way conflicted with the broad assessment role of the nurse in this study, who, if it were not for the research methods, would have been attached to a general practice team.

In Australia, following world trends, medical and nursing education programmes have been revised in an attempt to produce graduates who have some insight into community problems. Departments of Community Medicine, Social Medicine and General Practice have been established in Universities, giving students the opportunity to observe people in their own environment. Medical students now join with other health professionals to learn of each others' training and discuss approaches to common problems.

This multi-disciplinary training has been extended to nursing.

Very recently, post-graduate courses have been available for the training of nurses in Community Health and Geriatrics and Rehabilitation. (The aims and objectives of the South Australian Courses appear in Appendix I). These courses are designed to prepare trained nurses to work with people in the community as a whole, or in selected groups, where they

learn to know patients as people in the locality. Here, they are better able to assess and advise on current problems, using every opportunity to introduce preventive measures.

As the nurse is working with general practitioners, she should be an asset to student training programmes for all health-related disciplines, able to show them basic problems in the maintenance of health for the elderly and methods of assessment and management. In addition, she may be able to assist in the collection of data for research programmes in her area.

This thesis adds support to the concepts of post-graduate courses for nurses, preferably with basic general training.

It highlights the need for instruction and experience in the assessment of elderly people, directing emphasis to the promotion and maintenance of independence and dignity. This has been shown to be worthwhile, giving satisfaction to patients, their families and the nurses themselves. It may serve as a guide in the planning of future health services.

Why is it necessary to place a trained nurse in this responsible position in the domiciliary health team? Could her duties be just as well carried out by another member of the team?

Her position is fully justified because of her basic medical knowledge which allows her to appreciate clinical conditions and limitations affecting those in her care. Her training must be extended to include experience in the management of people in matters pertaining to independence. Additional training in areas related to communication, recreation and community structure, will fall on fertile ground when given to a nurse who is motivated to work amongst elderly people in the community. The role will encompass her ability to maintain continuity of care and to supervise programmes which have been designed and directed by her associates in more specialised fields.

This thesis has shown that health, morbidity and life-style of elderly people with chronic illness have been significantly affected by a trained nurse. A period of motivation and retraining helped people take up the challenge to accept and overcome their problems. Realising their capabilities, they gained confidence and with a positive approach learned to re-adjust to an altered life situation.

S U M M A R Y

SUMMARY.

"Only a Domiciliary Health Team based in the community can provide adequate patient care, and reduce the unnecessary pressure now placed on hospitals and other institutions concerned with the aged, the disabled and the mentally sick." 45

This was the conclusion drawn from a personal study of the health team in general practice in a rural area in 1967-1968. From this study, I realised that the nurse filled a key position in the team, and her role was outlined. Further experience in the care of elderly people with chronic illness led me to the hypothesis, that "health, morbidity and life-style of elderly people with specified chronic illness would be significantly affected by a trained nurse attached to a general practice."

Reports of other studies of the use of the nurse in primary and maintenance care confirmed this opinion.

The aims of the present study were ...

To define the role and training requirements of a nurse in the domiciliary care of elderly people with chronic illness.

To measure the 'coping-responsiveness' of elderly people with chronic illness whilst living outside of institutions.

To determine the value of a domiciliary nurse in providing continuity of patient care.

To explore how a domiciliary nurse can make an effective contribution to health and welfare services for the prevention of avoidable disability and unnecessary invalidity.

This was a controlled study based on an initial and final assessment of one hundred and fifty people with cerebro-vascular accident within three years prior to the initial assessment.

A method which measured change in people over a wide range of variables was devised and tested. Analysis of data collected was presented in several sections, each important for improved living.

Six major sections were considered ...

Physiological variables. (A).

Communication. (B).

Mood. (C).

Mobility. (D).

Activities of daily living. (E).

Recreational interests. (F).

Facts were presented concerning medications, including the costs of drug groups.

Formal, informal and societal resources of social support were listed, to indicate the use of community services.

Reports were provided by the nurses, giving details about their relationship with doctors, other relevant professional groups and the co-operation received from patients and their families.

The impact of monthly visits by the nurse on the progress of patients was noted. In particular, it was found that most benefit was obtained by the more disabled individuals.

This thesis can serve as a guide to other workers as to the maximum improvement in life-style which can be achieved by people with chronic disability.

The following variables have been shown to be amenable to significant improvement ...

Mobility

Walking.

Communication.

Accuracy of articulation of words
Written description of a composite picture
Naming defined pictures following visual recognition
Listening comprehension.

Mood

Observed mood.

Activities of daily living

Toileting
Showering
Undressing
Cooking.

Recreational interests

Gardening interests and skills
Participation in indoor games.

In the assessment of any group of disabled elderly people the above functions need appraisal as improvement can be expected; especially when a nurse, as shown, plays a major role in the team.

CONCLUSIONS.

A controlled study of elderly people with chronic illness has demonstrated that health status, ability to communicate, emotional stability, mobility, activities of daily living and recreational interests can be measured and scored to show change in individuals during a period of time. In addition, groups of people can be compared by a method of analysis which would be valuable for the continuing evaluation of standards of health care in the community and in institutions.

A trained nurse with sufficient maturity from experience, given minimal training, can assess the ability to communicate, emotional stability, mobility, activities of daily living and recreational interests. In addition, she can make reliable clinical observations. Such extra training of nurses must recognise and accept the skills of other health professionals and the contribution that they make to health care.

A trained nurse was able to effect improvement in the independence and life-style of elderly people despite deterioration in some aspects of their clinical condition. In particular, twelve factors contributing to overall disability were found to be amenable to treatment.

The role of the nurse has been widened and tested with acceptance by the nurse involved, doctors, other health professionals, patients and their families.

In all stages of this programme the assistance given by community services, voluntary or otherwise, was recognised as an integral part of the programme.

RECOMMENDATIONS.

As a result of this study it is recommended that ...

1. Trained nurses with sufficient maturity, experience, motivation and additional training be a central feature of all programmes for the continuing care of elderly people.
2. The full value of attachment of such nurses to the following situations should be explored immediately in medical group practices, health centres, local government facilities, district nursing services, regional domiciliary care units, geriatric rehabilitation day centres and in rural areas in close association with medical practitioners.
3. The responsibility accepted by these nurses should be flexible and determined by the needs of the particular attachment.
4. Emphasis should be placed at all times on the need for elderly people to live in their own familiar residential environment for as long as possible.
5. Consideration be given to:-
 - (a) the full use of all existing local facilities in a co-ordinated effort for aged care.
 - (b) the contribution which can be made by voluntary organisations to the care of the elderly at home.
 - (c) increased availability of aids and equipment at minimal cost.
 - (d) features in accommodation for the elderly including:-
 - Built-in and adjustable fixtures with flexibility to suit particular needs, e.g. shelves, rails, benches.
 - Cupboards within reach and with revolving opening shelves, to minimise bending and climbing.
 - Accessible windows with adjustable latches.

Doorways of sufficient width to admit a person in a wheelchair, with a walking frame or receiving assistance from another person.

Building of shower recesses with hand-rails and a seat rather than a bathtub with an overhead shower.

Installation of telephone, with a bedside extension and an outside red light for emergency call.

Double power plugs in each room to reduce the use of extension cords.

Provision of cooking facilities in hostels for the aged to encourage continuing independence.

6. A team approach to the care of the aged must be emphasised in undergraduate, graduate, vocational and continuing education programmes for all health-related professionals.

This is the challenge of the future.

APPENDIX I.

SELECTION AND TRAINING OF THE NURSES IN THIS STUDY.

When selecting the nurse for the experimental group the aims of the study were considered. The chosen person would need to have an interest in elderly people.

Aware that criticism could be levelled at success being related to a particular personality with extensive training, it was firmly decided to seek a registered nurse with a basic general training; a post-graduate course was not considered a necessary pre-requisite for selection.

It was desirable that the nurse be in her middle years (35-50 years), with a background of natural experience and fully aware of current medical knowledge and nursing procedures. Two nurses selected for the experimental group were married with two and four children respectively. Both had very recently participated in a Refresher Course for Nurses at the Royal Adelaide Hospital.

The role and function of the nurse, and particularly the domiciliary nurse, have been extensively described and discussed.

Mrs. Ranyard (Ranyard Mission 1857) said of visiting nurses,⁶⁰

'A Christian nurse should not be much of a talker, but a quiet, kindly, gentle and yet capable and handy woman, willing to receive instruction in her duties in a large hospital and then she will further need the mother-wit to apply the knowledge thus gained among the London poor amid surrounding difficulties. She must still follow out the original principle of the Bible and Domestic Mission in the Nursing Department "to help the poor to help themselves" and she will need to have a winning way of doing it.'

More recently the function of the professional nurse has been defined as follows:-

" ... the professional nurse is expected to function as a responsible member of a health care team by interpreting and carrying out the instructions of others - chiefly physicians - by collaborating with professional colleagues in the planning and delivery of health services and by acting independently when the needs of the patient and the standards and principles of nursing practice so warrant." 61

This definition should be considered with the definition of the patient as "any person, well or sick, who is receiving the services of a professional provider of health care for the purpose of promoting, maintaining, or restoring health, or minimising the consequences of illness." 61

With descriptions such as these in mind, competent registered nurses were chosen. Friendly, warm attitudes, and a willingness to meet the challenge of new fields, including the discipline of research, were important attributes in the selection.

Four registered nurses were involved with the investigation.

CLEARY Dawn

MATTHEWS Kathleen

BOUNDY Emma

OBORN Joan.

Details of their basic training and experience appear on p. 179 of this appendix.

In preparation for the study duties Nurse Cleary had the following experience:-

Two weeks refresher course for nurses in the Royal District Nursing Society, including lectures on chiropody, geriatrics, social work and St. John Ambulance work.

Visits with the district nurse for two weeks.

Visits to the geriatric assessment unit and day centre at Downey House, Glenside Hospital, the diabetic clinic and renal unit at the Queen Elizabeth Hospital and Eastern, Western and Southern Domiciliary Care Units.

Discussions with physiotherapists at the Physical Medicine Department of the Queen Elizabeth Hospital and the Walkerville Nursing Home Geriatric Assessment and Retraining Unit.

Participation in assessment of daily living activities and craft details.

Discussion with speech pathologists on communication assessment.

Discussion with an otorhinolaryngologist on the assessment of hearing.

Learning to assess vision.

Nurse Cleary helped the author with the trial of measurements on many patients to perfect the methods, timing, feasibility and patient response to the tests.

She assisted the author in the initial assessment of people being admitted to the study population and helped train a second nurse (K. Matthews), who then assisted the author with most of the initial assessments and all the final assessments. Nurse Matthews took no part in the study, other than to assist with the initial and final assessments of patients.

Before retiring from the study due to ill-health, Nurse Cleary helped train Nurse Boundy in visiting routines and in the study methods regarding patient assessment and management. This included the use of community services.

Nurse Boundy was responsible for one half of the people in the experimental group during the trial period.

Nurse Oborn was trained in the study visiting routines and patient assessment and management methods, including the use of community services, by the author and Nurse Boundy. She was responsible for the other half of people in the experimental group.

Standardisation of methods used by the nurses was achieved by direct, one-to-one training. The author checked all methods being used by each nurse at the beginning of the trial.

DETAILS OF BASIC TRAINING AND EXPERIENCE OF NURSES INVOLVED IN THE STUDY.CLEARY D.

Four years training at Royal Prince Albert Hospital, Camperdown, N.S.W. 1952-1956.

Six months 'special' nursing including duties in a geriatric hospital.

Training course in group dynamics, interpersonal relationships and pharmacology in a course for Health Educators organised by South Australian Department of Health.

A training course in interpersonal relationships at South Australian Institute of Technology.

Refresher course (three months) at Royal Adelaide Hospital, S.A. 1974.

MATTHEWS K.

Three years training at Adelaide Childrens' Hospital, S.A. 1939-1942.

Midwifery training, Queen Victoria Hospital, S.A. 1943.

Sub-matron Strathalbyn Hospital, S.A. (four years).

Charge sister Mount Hospital, W.A. (four years).

Staffing for Royal District Nursing Society, Glenelg, S.A.

Tutor sister Adelaide Childrens' Hospital and Wakefield Memorial Hospital, S.A. (two years).

Sister in general practice at Glenelg, S.A.

Staffing at St. Margaret's Hospital (Convalescent) Semaphore, S.A. (three years).

- BOUNDY E. Three years training at Norfolk and Norwich Hospital, Norwich, Norfolk, U.K. 1950-1953.
Midwifery training, Chase Farm Hospital, Enfield, Middlesex, U.K. 1955.
City Fever Hospital, Leeds Road, Bradford, U.K. 1948-1950. 1953-1954.
Staffing - St. James Hospital, Balham, U.K. 1956-1957.
Industrial Nurse, J. Sainsbury Ltd., Blackfriars, London. 1957-1960.
Refresher course, Royal Adelaide Hospital, S.A. 1974.
- OBORN J. Three years training, Adelaide Childrens' Hospital, S.A. 1946-1949.
Midwifery training, Queen Alexandra Hospital, Tasmania. 1949-1950.
Relieving sister, Thyne Memorial Hospital, Millicent, S.A. 1949-1953.
Adult nursing (Post Graduate) Broken Hill District Hospital, N.S.W. 1950. (six months).
Staffing - Queen Elizabeth Hospital for Children, London. 1951. (six months).
Staffing - Royal Hospital for Sick Children, Aberdeen, Scotland. 1951-1952. (six months).
Refresher Course, Royal Adelaide Hospital, S.A. 1975.

NURSE ACTIVITIES

TABLE 1.

Number of people attracting 0 - 3 rating for various aspects of nurse activities, relationships and co-operation received.

OBJECT RATING	N/Oborn					N/Boundy				
	N/A	0	1	2	3	N/A	0	1	2	3
Health education for patient and family		1	6	13	17		3	13	3	21
Counselling		23	2	3	9		15	3	8	14
Training patients in use of aids		32	3	1	1		25	12	1	2
Nurse acceptance by patient and family		-	1	-	36		-	-	1	39
Confidence building		1	1	6	29		-	3	6	31
Support to spouse or family	5	2	-	2	28	4	7	6	9	14
Extra visits		26	8	3	-		21	12	4	3
Extra telephone calls		19	14	3	1		16	18	3	3
Patient co-operation		-	1	2	34		-	-	-	40
Spouse co-operation	9	1	1	-	26	12	-	-	-	28
Family co-operation	22	-	-	-	15	16	-	1	1	22
Doctor co-operation		4	2	5	26		1	4	2	33
Doctor's staff co-operation	-	1	-	3	33	2	2	-	1	35
Domiciliary Care Unit co-operation	22	1	2	1	11	19	1	6	2	12
Royal District Nursing Society co-operation	25	-	1	1	10	28	-	-	2	10
Royal District Nursing Society or Hospital Nurse relationship	27	-	-	-	10	33	-	-	-	17
Physiotherapist relationship	25	-	-	-	12	26	-	-	-	14
Occupational therapist relationship	36	1	-	-	-	28	-	1	-	11
Social Worker relationship	33	-	-	-	4	26	2	2	-	10
Domiciliary Care "cut-off"	22	11	2	-	2	19	13	-	3	5
Nurse satisfaction with action and response		1	4	6	26		-	8	20	12

N/A denotes not applicable.

Request by patient and/or family for visits to continue. Yes - 68
No - 9

TABLE 2.

Number of people* attracting 0 - 3 rating for various aspects of nurse activities. (*Eighteen people in the one-third experimental sub-group in the lower stability range are considered. These people had positive total change scores).

OBJECT RATING	Rating scale				
	N/A	0	1	2	3
Health education of patient and family		1	6	2	9
Counselling		6	3	1	8
Training patients in use of aids		9	5	2	2
Nurse acceptance by patient and family		-	-	-	18
Confidence building		-	1	2	15
Support to spouse or family	2	-	2	1	13
Extra visits		10	5	2	1
Extra telephone calls		9	8	1	-
Patient co-operation		-	-	2	16
Spouse co-operation	4	-	-	-	14
Family co-operation	8	-	1	-	9
Doctor co-operation		-	2	1	15
Doctor's staff co-operation	1	-	-	-	17
Domiciliary Care Unit co-operation	7	-	-	-	11
Royal District Nursing Society co-operation	7	-	1	2	8
Royal District Nursing Society or Hospital Nurse relationship	10	-	-	-	8
Physiotherapist relationship	9	-	-	-	9
Occupational therapist relationship	15	-	-	-	3
Social Worker relationship	11	-	-	-	7
Domiciliary Care "cut-off"	7	8	-	1	2
Nurse satisfaction with action and response		-	2	9	7

N/A denotes not applicable.

Request by patient and/or family for visits to continue. Yes - 17
No - 1

TABLE 3.

Nurse actions.

ACTION	N/Oborn	N/Boundy	Total
Doctor-nurse specific discussion	23	28	51
District nurse arranged	4	-	4
Physiotherapy arranged	10	13	23
Occupational therapy or craft arranged	13	11	24
Clergy visits arranged	7	-	7
Domiciliary Care Unit requests made	4	7	11
House cleaning arranged	-	2	2
Weight control guidance	22	5	27
Mid-stream urine specimen collection	3	3	6
Medications sorted	1	-	1
Ear syringing initiated	7	6	13
Eye examination initiated	4	4	8
Day centre arranged	13	14	27
Aids maintained or investigated	2	3	5
Hearing aid maintained or investigated	2	1	3
Speech or writing assistance	4	2	6
Reading materials collected	2	1	3
Large print books arranged	1	-	1
Crafts investigated	6	5	11
Gardening interest fostered	16	4	20
General interests broadened	7	8	15
Action by patients for study stimulated	3	3	6
Nurse transport for patient provided	3	2	5
St. John Ambulance membership arranged	4	5	9
Transport arranged	-	1	1
Driving investigation arranged	-	1	1
Family education regarding problems	2	4	6
Accommodation investigated	-	2	2
Nursing Home regular visits	1	-	1
Bereavement management	2	1	3
House pride stimulated	2	1	3
Telephone modification arranged	-	1	1
Bills, pensions, Medibank problems checked	3	2	5
Shoe change or repairs	2	1	3

TABLE 4.

Nurse training adequacy.

TRAINING DEFICIENCY	N/Oborn	N/Boundy	Total
No deficiency	30	36	66
Marriage guidance	2	1	3
Language difficulties	1	3	4
Alcoholic problems	3	-	3
Psychiatric problem	1	-	1

Aids introduced by the nurse.

Bath brush.

Bath mat (non-slip).

Card rack.

Feeding aids.

Gardening tools.

No-bows (shoe fastener).

One-handed egg-beater.

Portable toilet for caravan.

Sandwich board.

Soap holder.

Suction toothbrush.

Vegetable peeling and cutting board.

Walking aids.

Writing aids.

Mean visit time.

Oborn 55.71 minutes (s. 13.53).

Boundy 58.45 minutes (s. 12.15).

Overall mean visit time = 57.13 minutes (s. 12.82).

Comment on nurse activities.

There is marked similarity in the ratings given by Nurse Oborn and Nurse Boundy except for two factors (Appendix I Table 1).

Nurse Oborn reported one direct relationship with an occupational therapist to which she gave a zero rating, denoting difficulty in the relationship. The lack of contact with the occupational therapists was due to their absence in some areas. In addition, Nurse Oborn had personal knowledge and skills in craft work.

The rating of the nurse's satisfaction with patient response to the nurse intervention varied. This could be attributed to the individual personalities of the two nurses, some feeling of which shows in their personal reports.

Comparing the activities of the two nurses, there is similarity with slightly different emphasis in some respects (Appendix I Table 3).

Although there is variation between the nurses regarding training adequacy, this was due to the individual patients. Both nurses agreed that they would have appreciated training in problems related to marriage difficulties, alcoholism, language difficulties and psychiatric illness.

A wide variety of aids to daily living were introduced. Some of these (e.g. card racks, soap holders and feeding aids) were made by patients in the experimental group. (See "action by patients for study stimulated" {Appendix I Table 3}).

PERSONAL REPORT - WRITTEN AND SUBMITTED BY J. OBORN.

I accepted the challenge to work in this study when Nurse Cleary became ill and was unable to continue her duties. I had no previous knowledge of the study and no previous experience in research methods.

This was my first nursing appointment following a three months' Refresher Course at the Royal Adelaide Hospital. Prior to this I had not nursed for twenty-two years.

A period of intensive instruction in my role and duties prepared me for the work ahead and I continued to learn about assessments and co-ordination of services throughout the trial period.

This was a part-time appointment, but many extra hours were spent in the recording and follow-up of patients. However, I could do this in my own time which allowed me to cope with my family, and even a very sick child.

The group of patients under my supervision consisted of twenty-three men and seventeen women. Three of my patients died during the study. Two were admitted to nursing homes during the trial, but I continued to visit and assess them.

Visiting patients at home made it possible to observe their conditions and assess their daily living needs. Following assessment, aids were introduced where necessary, and patients trained in their use. Major problem areas were found to be the bathroom and kitchen.

Sometimes an idea collected from one person was used for another. This made people feel that they were part of a project which was helping others with similar trouble.

Patients quickly responded to my attention and concern and as they were usually at ease in their own homes, relaxed and were able to confide their problems.

I was regarded quite differently from the District Nurse. She had limited time to attend to the routine daily care of the patients and some stated that she did not have time to talk to them. This also applied to many of their general practitioners who attended only to their pressing needs. Patients usually refrained from listing their minor ailments or worries and discussed them with me later rather than take the doctor's time.

Attention to weight and blood pressure helped to gain the patient's confidence. Many of them followed my advice trying to keep weight under control between visits.

It was the interest shown in their overall health which led patients to allow me to intrude on their personal problems.

On patient request, the help of the clergy was mobilised on several occasions.

Attention to daily living activities including toileting, cooking, showering and dressing, was beneficial to many patients and their spouses.

Much of my time was given to assessing capabilities and activating people in diversional therapy, e.g. gardening and crafts. I had a special interest in these occupations, and was able to stimulate their continuing interest.

Having determined which services existed in each area, patients were encouraged to use those appropriate to their needs. I was able to inform general practitioners of services of which they were sometimes not aware. It was pleasing to see my patients enjoy diverse activities which have continued beyond the study period.

Throughout, my association with hospital and district nurses, and other health professionals were congenial and informative, facilitating various forms of assistance for my patients.

In summary, I found great stimulation and satisfaction in this work. I enjoyed seeing people in their own homes, where it was possible to see them progress in their usual environment. They gained self-respect and made renewed effort to use all their capabilities.

PERSONAL REPORT - WRITTEN AND SUBMITTED BY E. BOUNDY.

The first and most lasting thought is that this has been a most challenging year; a busy, yet rewarding period in my life, and I'll always be grateful that I took part in this study.

I appreciated being able to work hours which suited me, allowing me to be home with my family. I accepted a "half-time" appointment but it involved much more than twenty hours each week. I gave the extra time willingly as I sometimes felt it was all I had to give. It was imperative that I found time to listen to a problem or a point of view, or even just chat over a cup of tea in order to be accepted and to learn to know my patients as people.

I particularly enjoyed seeing the patients as part of a family unit, rather than as individuals. It was most interesting to see how the various families coped with their particular problems. During the period of the study, I visited my forty patients each month (twenty-four male and sixteen female). Six of these patients lived alone (two male and four female). The others had some family support, which varied from total to merely supportive care.

Family members were always ready to try new methods and ideas to help the patients. I was impressed with how people, when alone could use varying methods to cope with their daily living activities. Some needing constant care, received tremendous family co-operation and consideration.

All the patients responded, to a greater or lesser degree, to the added interest shown during my visits. The majority entered into the spirit of the study and were very co-operative, and determined to improve a skill, or learn new skills between visits.

For a number of patients it was the first time they had had the opportunity, in their own home, to talk with a health professional. As I gained their confidence, problems were raised and discussed at length. I feel sure that even though many problems covering different aspects of family life were not solved, it helped to talk things over.

On a practical note, I introduced various aids to patients. Some were very simple, like the soap bag, "no bows" for shoes, a long-handled bath brush, cutting and peeling boards and dycem adhesive for use under a plate to prevent it from sliding.

I arranged help through the Regional Domiciliary Care Units. This included home help, sitter service and mechanical aids. Also I initiated physiotherapy and occupational therapy as I thought necessary. For these services, it was important to obtain the doctor's approval. Doctors generally were interested, helpful and co-operative in these matters.

The staff at the various Day Centres were most helpful and the patients were generally pleased with the services and attention they received. It was often necessary to request the help of the District Nurse who was caring for a particular patient, and without exception I found these nurses very kind and helpful.

One patient, himself a hemiplegic, became so interested in the study and the other patients, that he made some wooden card racks for their use, whilst his wife made a number of soap bags. I am sure that being a part of the study helped many of the patients to realise they were not alone with their problems and disabilities, and some, took an active interest in the welfare of other patients.

My feeling about the various aspects of the study altered from time to time. In the early weeks I was concerned for elderly people who were deprived of their pets when they moved into units for the aged.

However, as time went by, there were other issues which claimed attention, like the poor design of some bathrooms and kitchens. If units are being purpose-built for the aged, baths should be low or replaced by a shower recess. A shower should never be placed over a bath. Supportive rails should be standard fitments around toilets, in shower recesses and near cookers. They should not be "optional extras" on any building plan.

Because of the random selection of patients, their homes varied considerably. Some were ideally appointed, or well converted to give maximum aid to a disabled person, whereas some were unsuitable, even for elderly people who were not ill or disabled. Modifications to some bathrooms were not satisfactory, although provided by Domiciliary Care Units.

Use and misuse of drugs was a problem, particularly for patients who obtained medications from both a hospital pharmacy or local chemist, through the general practitioner. Patients obtained greater quantities of free medications from the public hospitals than they could have on prescription from their local doctor. Labelling varied considerably, apart from the different names for the same drugs. Most were labelled correctly as to dosage and time, but there were still a great many labelled "take as directed". There should be uniform labelling of all medications wherever they are dispensed.

The staff in doctor's consulting rooms were most helpful, but there were some who made a visit to the surgery a very unpleasant experience, because of hostile and over-protective attitudes. Perhaps they did not understand, or did not choose to understand my role, and resented my occasional visits. However, as it was in the interests of the patient it was necessary to overcome the barrier, even if one had to make an appointment and return at another time to see the doctor. Not all

doctors were aware of all the ancillary services available for their patients, but were happy to listen to, and act upon suggestions. There is a need to educate all those working in the health field with regard to community services.

I did my training in England many years ago (details given in Appendix p. 180). I then had a long period away from nursing. I attended a Refresher Course at the Royal Adelaide Hospital in 1974.

The period of this study has been a time of continued training in new skills, and of re-learning old skills and continual evaluation of my work, as seen by patient progress. At the outset, I was doubtful of my ability, as research was a new field of experience, but at no stage did I feel my training was inadequate for the task.

SUMMARY OF DIFFICULTIES OBSERVED BY THE NURSE.Concerning the patient and family group.

Spouse and family were often over-protective, not allowing independence to develop in the disabled member of the family.

At first, some spouses were resistant to the nurse.

Patients were often concerned for the future of their family. The thought of being a burden in the house was distressing.

Patients were unaware of available community services.

Problems arising from alcohol consumption, affecting the patient or the family.

Marriage difficulties occurring because of prolonged illness.

Grief experienced when parting with pets prior to change of accommodation.

Language barriers were a block to communication.

Concerning the doctor.

A few doctors were vague and disinterested in the study, one was hostile. This attitude created difficulty for the nurse, who needed the doctor's acceptance to work efficiently.

Practice staff resistance and lack of co-operation.

Lack of doctor-nurse communication, due in most cases to the lack of time, as the nurse was not working in a local area.

Insufficient communication, by direct handover of medical records, to relieving doctors.

The doctor was often unaware of available services or where to seek appropriate help for his patient.

Delay in communication between public hospitals and the general practitioner, following discharge of the patient.

Insufficient communication and co-ordination between Domiciliary Care Units and other community services and the general practitioner.

Over-supply of medication from public hospitals, with lack of communication to the general practitioner.

Instructions for medications were not explicit.

Concerning Community Services.

Lack of Day Care facilities.

Lack of respite beds, providing family relief.

Lack of housekeeping services.

Inefficient use of domiciliary services due to inadequate selection and training of personnel.

Insufficient communication between Domiciliary Care Units and the patient. When services were withdrawn, there was sometimes no prior explanation given to the patient.

Accounts rendered by some hospital units without prior explanation to the patient.

Lack of financial subsidy for self-employed people suffering with chronic illness.

Lack of adequate supervision of accommodation change by an appropriately trained person.

Inappropriate home designs and inbuilt supports for disabled people, e.g. kitchens and bathrooms.

Community apathy to the needs of the elderly.

RECOMMENDATIONS FROM NURSE OBSERVATIONS.

Location and attachment of the nurse in the community.

The nurse should work with a group of doctors so as to have ready access to patients and local facilities.

Home visits are essential for the successful management of elderly people with chronic illness.

Comprehensive medical record systems should be encouraged.

Nurse involvement with aged people.

The nurse, working in a similar manner as described in this study, should be included in any team assessment and management of elderly people with chronic illness.

Regular assessments should be made by a nurse on elderly people with chronic illness, preferably in the home situation.

A suitably selected and trained person should supervise any change of accommodation and adjustment period for elderly people with chronic illness.

Medical and social services for the aged and disabled.

An increasing development of doctor-nurse core in the wider health team should be fostered.

Improved communications between hospitals, domiciliary services and the general practice team should be urgently facilitated.

Precise instructions on prescriptions and clear, correct labelling of medication should be obligatory.

Day Care centres should be increased.

Respite beds should be more readily available and kept particularly for this purpose.

A neighbour support system should be encouraged and supplemented.

Emergency housekeeping services should be made available at reasonable cost.

The supply of craft equipment for disabled people should be available on a regional basis.

Large print books and magazines should be produced in Australia, with further consideration to appropriate selection of material.

Interpreters should be more readily available for use by the domiciliary health teams.

Services available for elderly people and the disabled should be more widely publicised in the community.

Architects and builders should be made aware of the problems and needs of the elderly on a very practical basis. Living areas, e.g. kitchens and bathrooms should be designed to suit the needs, and recreational areas should be provided, e.g. gardens, hot houses.

Training people in the care of the aged.

Training programmes should be developed for all personnel (including cleaners and maintenance workers) working with elderly people, particularly those with chronic illness.

Medical and nursing educators should provide programmes to introduce and develop inter-professional relationships on a practical basis.

Training programmes should provide experience in problems related to marriage difficulties, alcoholism and psychiatric illness.

PATIENT LETTERS - EXPERIMENTAL GROUP.

At the conclusion of the study, patients (or their relatives) wrote a letter to the Department of Community Medicine, expressing their thoughts about their illness and the nurse's activities.

Typical extracts of these letters are shown below.

Written by patients.

"Sister has been so thoughtful and thorough in her monthly check up that I have always felt some one is watching me and if I showed any signs of deterioration it would be quickly noted and an endeavour made to correct it. I am sure this knowledge of a qualified person watching closely, makes for a feeling of security, that creates a great peace of mind to any one affected." (Male patient).

"The stroke is such a sudden and weird experience - it leaves a feeling of unbelief and eeriness that is impossible to describe - one minute you are sane and normal - the next - without warning and totally without pain - you are helpless and dependent on other people, feeling strange and not normal any more. Yet stranger still, although you are inwardly sort of scared stiff, there is no thought of crying, only a shock and deadness. Then gradually you realise that people are still treating you like a person.

The Sister visiting me on the survey was gorgeous. The fact that you can talk and she will listen does wonders for your ego - makes one feel human again and her visits are something to look forward to and try to improve yourself for." (Female patient).

"I have appreciated the interest shown me by your program during the year. I feel it did me good and was an encouragement and help to get me interested in things to do to counteract the long days when I had to fill in with not much to do after such a busy life I had before my illness." (Female patient).

"My principal benefit has been the overcoming of fear, apart from recovering from the stroke I had." (Male patient).

"I have found that the survey has been of very real benefit to myself. I find it is of great comfort to have a regular visit from a qualified and experienced Sister on, so to speak, my home ground. Situations that patients have to contend with must be many and varied, this I feel is the importance of the home visit.

In my own case, I do a reasonable days work on my Poultry Farm, the more I can do, the more weight I can take off my wife. I derive considerable satisfaction from the fact that we have been able to remain

financially independent, with the help I must admit from time to time of friends and relations. By and large however, we are independent.

From the tests conducted by the sister on her visits, I have been able to see the pitfalls of my problem, thus providing a yardstick to help my own improvement. I believe the survey must have proved complimentary to ones medical advice." (Male patient).

Written by spouse.

"My husband has improved immensely since he has been under her supervision, and has gained much confidence. He goes for many walks on his own and also goes shopping on his own which he could not do before her help. His outlook has improved wonderfully."

"The interest and kind consideration shown by Sister have been of great assistance as have all the ideas and hints that make things just so much easier - bath facilities, shoe lace aids, non-slip plate mat, games such as draughts and checkers.

Sister was instrumental in having Tom admitted to the Walkerville Day Care Centre. He goes each Monday (also Thursday if desired) and has physio and occupational therapy, meets and talks with outside people and really gains a lot from this contact. From this Centre came the suggestion and arrangement for Tom to attend the Royal Adelaide Hospital and have a walking aid fitted to his shoes, this has improved his walking greatly. Sister also contacted the Church resulting in visits from the Minister and Elders. Tom is unable to go to Church owing to the possibility of an epileptic fit at any time so this was quite a comfort to him.

The monthly visits are of great psychological value to Tom, giving him a sense of security to know that most systems are O.K.- blood pressure, temperature, pulse, urine, weight, measurements and general well being, this, to my mind, is one of the greatest benefits resulting from the survey."

"During the past year I have noticed a distinct improvement, more independent, more aware of what is going on in the house, more confident in approaching and speaking to people. He now washes dishes, makes beds, does the washing, folds and puts it away. Also he is able to sweep the floor, make coffee and garden - all without prompting. This has added up to a situation which has made my life more bearable."

DEPARTMENT OF PUBLIC HEALTH AND HOSPITALS DEPARTMENT

(SOUTH AUSTRALIA)

Community Health Nursing Course. Revised Syllabus. December 1976.

COURSE AIMS.

To graduate registered nurses who will be:-

- (a) able to apply appropriate knowledge skills and attitudes to functioning effectively within community health nursing services,
- (b) influential in improving individual family and community attitudes towards health,
- (c) motivated to continue their own professional and personal growth.

COURSE OBJECTIVES.

To assist registered nurses to develop knowledge and skills in:-

- (1) aspects of community health services and the functions of the community health nurse as a member of the health team within these services,
- (2) assisting with the development of policy and decision making in relation to patient care,
- (3) co-operating with people for the preservation and promotion of health, and co-ordinating care and assistance, when appropriate,
- (4) increasing the capabilities of families, groups and communities to manage their own health and social problems,
- (5) assessing health status and referring patients and clients on identification of health and social problems,

- (6) accepting professional responsibility with an appropriate degree of professional autonomy for assessment, health surveillance and clinical management,
- (7) participating in disease control activities to prevent or reduce within the environment
 - a. the effects of disease
 - b. disability
 - c. threats to health
- (8) maintaining and using records for reference and evaluation,
- (9) the training and orientation of nurses and other professionals entering the field of community health.

DEPARTMENT OF PUBLIC HEALTH AND HOSPITALS DEPARTMENT

(SOUTH AUSTRALIA)

A Post-Basic Geriatric and Rehabilitation Nursing Course. Syllabus.
March 1977.

AIMS OF COURSE.

To graduate registered nurses who will be:-

- (a) competent practitioners in all aspects of nursing care as required by the elderly and disabled members of our society;
- (b) influential in improving community standards and attitudes toward the elderly and disabled;
- (c) motivated to continue their own professional education and personal growth.

OBJECTIVES FOR THE COURSE.

To provide learning experiences which will enable the student to develop the necessary skills to:-

- (1) assess health status (physical, social and psychological), and identify areas of need;
- (2) plan, implement and evaluate the nursing care required by the elderly and disabled person within the private home, nursing home, hostel or hospital setting, according to the needs of each individual;
- (3) recognize factors in the environment which may place the elderly or disabled at further risk; and initiate the necessary remedial/preventative action;
- (4) advise what modifications can be made to the environment which will help individuals and families or other support groups to maintain their independence when providing 'care' to the elderly and disabled;

- (5) assist individuals and families to accept disability imposed by age and/or impairment, and to maintain maximum independence within those limitations;
- (6) supervise the nursing care given by other health care workers;
- (7) undertake orientation and teach staff in the field of geriatric and rehabilitation care;
- (8) communicate effectively with patients, families and co-workers;
- (9) co-operate with other health and welfare professionals and agencies, and when appropriate, co-ordinate care and assistance as a means of participation in developing the team concept of health care;
- (10) use current research and management methods and techniques to improve nursing care to the elderly and disabled individuals;
- (11) pursue personal and professional growth through on-going education.

APPENDIX II.

TABLE 3.

Diastolic blood pressure mmHg (seated) by ages.

Experimental

DIASTOLIC B.P. mmHg	Age group											
	<49 yrs		50-59		60-69		70-79		80+		Total	
	1975	76	75	76	75	76	75	76	75	76	75	76
<95	1	2	5	7	14	19	7	6	5	4	32	38
95	1	1	2	2	4	8	0	1	0	0	7	12
100	0	0	2	1	6	1	2	2	0	1	10	5
105	1	0	1	1	3	3	1	3	0	0	6	7
≥110	2	2	3	2	12	8	4	2	1	1	22	15
											77	77

Control

DIASTOLIC B.P. mmHg	Age group											
	<49 yrs		50-59		60-69		70-79		80+		Total	
	1975	76	75	76	75	76	75	76	75	76	75	76
<95	1	1	1	4	12	14	17	15	2	2	33	36
95	0	0	5	3	5	3	2	5	0	0	12	11
100	1	1	4	4	3	2	3	2	0	1	11	10
105	0	0	0	1	2	2	2	1	0	0	4	4
≥110	1	1	4	2	5	6	2	3	1	0	13	12
											73	73

TABLE 4.

Average age and sex of people with bacteriuria.

<u>Experimental</u>		<u>Control</u>	
Male (n = 4)	Female (n = 10)	Male (n = 3)	Female (n = 8)
Average age	Average age	Average age	Average age
74.25 (1.03)	72.00 (2.46)	62.33 (2.85)	62.75 (3.20)

Males t = 4.5 Sig. 1%

Females t = 2.3 Sig. 5%

TABLE 5.

Number of people with bacteriuria with details of bacterial colony count.

BACTERIAL COLONY COUNT /ml. URINE	Experimental		Control	
	1975	1976	1975	1976
E. Coli $\geq 10^5$	5	10	2	2
E. Coli $\geq 10^4$	1	1	1	2
Proteus $\geq 10^5$	0	0	1	0
Proteus $\geq 10^4$	0	0	0	1
Kleb. A $\geq 10^4$	1	0	1	0
Coag. neg. Staph $\geq 10^4$	0	1	1	0
Multiple organisms	2	1	0	2

Uncorrected vision.

TABLE 6.

Number of people changed. (Uncorrected vision, both eyes). 1975-1976.

1976	Experimental		Control	
	n	%	n	%
Worse	17	22.08	21	28.77
No change	41	53.25	34	46.58
Improved	19	24.68	18	24.66
	77		73	

TABLE 7.

Variety of visual aids. 1975-1976.

VISUAL AIDS	Experimental		Control	
	1975	1976	1975	1976
Spectacles	75	75	70	70
Reading spectacles	33	35	32	29
Spectacles checked within 1 year	30	27	24	29
Large print books	2	4	4	2
Magnifying glass	16	13	12	13
Reading lamp	48	45	45	42

Visual aids.In the experimental group

of 45 people who had not had spectacles checked within one year prior to the initial assessment

16 (35.6%) were tested in the trial period, the nurse initiating tests for 7 of these 16 people.

of 30 people who had spectacles checked within one year prior to the initial assessment

11 (36.7%) were tested again in the trial period.

1 of those 11 was initiated by the nurse.

In the control group

of 46 people who had not had spectacles checked within one year prior to the initial assessment 13 (30.4%) were tested in the trial period.

of 24 who had spectacles checked within one year prior to the initial assessment 15 (62.5%) were tested again in the trial period.

Tonometry.TABLE 8.

Number of people with a reading ≤ 5 (Schioetz tonometer 7.5 gram plunger load).

YEAR	Experimental	Control
1975	5	4
1976	2	3

Body temperature.

No abnormal body temperatures were recorded at either assessment.

MISCELLANEOUS FACTORS.

The following results are included to provide further background information about the study population and to indicate the use of various services by elderly people with chronic illness.

SOCIAL SUPPORT.Informal Resource.TABLE 9.

Outcome of people without informal resource at initial assessment (1975).

RESOURCE 1975	1976			
	Increased		No change	
	Experimental	Control	Experimental	Control
Spouse	-	-	21	15
Daughter	-	-	24	19
Son	-	1	24	32
Near relative	-	-	3	2
Friend	3	6	-	2
Housekeeper	1	-	76	70
Pet	4	4	30	34

TABLE 10.

Outcome of people with informal resource at initial assessment (1975).

RESOURCE 1975	1976			
	Decreased		No change	
	Experimental	Control	Experimental	Control
Spouse	-	2	56	56
Daughter	-	-	53	54
Son	1	1	52	39
Near relative	3	1	71	70
Friend	2	-	72	65
Housekeeper	-	1	-	2
Pet	7	3	36	32

Formal and Societal Resources.Group Resources.TABLE 11.

Number of people with formal and societal group resources at initial assessment (1975) and/or final assessment (1976).

RESOURCE	Experimental		Control	
	1975	1976	1975	1976
Royal District Nursing				
Society	16	19	13	15
Meals on Wheels	8	5	6	8
Regional Domiciliary Care	31	28	30	35
St. John Ambulance	57	71	55	59
Red Cross Society	13	9	4	7
Repatriation	9	9	10	10
Day Centre	19	35	14	21
Church	23	25	23	27
Service Club	11	10	5	6
Senior Citizen's Club	10	12	6	5
Other	26	34	23	24

Formal and Societal Resources.Specific Resource.

TABLE 12.

Number of people with specific formal and societal resources at initial assessment (1975) and/or final assessment (1976).

RESOURCE	Experimental		Control	
	1975	1976	1975	1976
Nurse	16	22	15	19
Nurse aid	4	3	4	3
Social worker	10	11	8	17
Physiotherapist	26	30	26	20
Occupational therapist	13	25	10	8
Speech pathologist	6	2	4	2
Dentist	18	18	11	21
Chiropodist	13	20	15	20
Clergy	20	26	21	23
Mental Health visitor	-	-	-	-
Library	19	20	12	14
Pharmacist	71	75	68	65
Linen service	3	7	12	11
Sitter service	2	2	3	3
Meals	8	10	7	11
Transport	76	74	71	72
Shopping	5	2	8	5
Gardener	11	12	7	11
Hairdresser	47	60	57	58
Cleaner	20	24	19	27
Cook	2	5	6	7
Equipment	56	59	43	47
Telephone	61	62	56	60
Chiropractor	1	1	-	2
Masseuse	1	-	-	-
Hypnotherapist	-	1	-	-
Talking books	1	1	-	-
Respite bed	1	2	-	-
Special accommodation	10	16	9	12
Apex clean-up	-	1	-	-

SIGNIFICANT CHANGES IN USE OF RESOURCES.

St. John Ambulance subscriptions, the use of the services of the occupational therapist and the dentist showed significant differences between experimental and control groups.

TABLE 13.

Outcome of non-subscribers to St. John Ambulance at initial assessment (1975).

1976	Experimental	Control
Non-subscribers	6	12
Subscribers	14	6

$\text{Chi}^2 = 6.69$ (d.f. = 1. Sig. 1%)

TABLE 14.

Outcome of people using the services of an occupational therapist at the initial assessment (1975).

1976	Experimental	Control
Occupational therapist still advising	11	4
Occupational therapist not being consulted	2	6

Sig. 5%. (exact test)

TABLE 15.

Outcome of people not using the services of an occupational therapist at the initial assessment (1975).

1976	Experimental	Control
Occupational therapist services not being used	50	59
Occupational therapist advising	14	4

$\text{Chi}^2 = 7.63$ (d.f. = 1. Sig. 1%)

TABLE 16.

Outcome of people who had not received dental care within one (1) year prior to the initial assessment (1975).

1976	Experimental	Control
Dentist seen again	8	9
No dentist	10	2

$$\text{Chi}^2 = 5.62 \text{ (d.f. = 1. Sig. 2\%)}$$

OTHER INFORMATION.

TABLE 17.

Source of finance.

SOURCE OF FINANCE	Experimental				Control			
	1975		1976		1975		1976	
	n	%	n	%	n	%	n	%
Over 75 pension	2	2.60	34	5.19	4	5.48	6	8.22
Age pension	33	42.86	37	48.05	38	52.05	38	52.05
Repat. pension	11	14.29	10	12.99	10	13.70	11	15.07
Blind pension	0	0	0	0	0	0	0	0
Invalid pension	14	18.18	13	16.88	8	10.96	12	16.44
Superannuation	17	22.08	15	19.48	16	21.92	13	17.81
Private income	37	48.05	36	46.75	36	49.32	26	35.62
Medical benefits	45	58.44	38	49.35	42	57.53	32	43.84
Hospital benefits	47	61.04	45	58.44	43	58.90	41	56.16
Other	14	18.18	13	16.88	22	30.14	24	32.88

Note: Other-includes Benefits Lodge, Workers Compensation, Social Services and English Pension.

TABLE 18.

Consultant referrals.

CONSULTANT	Experimental		Control	
	1975	1976	1975	1976
No consultant	37	44	31	46
Physician	33	17	31	12
Ophthalmologist	3	9	4	11
General surgeon	3	4	4	1
Orthopaedic Surgeon	1	0	1	2
Otorhinolaryngologist	0	2	1	0
Dermatologist	0	1	0	1
Gynaecologist	0	0	1	0

Rehabilitation consultants are included with physician.

ALCOHOL CONSUMPTION.TABLE 19.

Number of people with changed alcohol consumption as compared with 1975.

1976	Experimental	Control
Non-drinkers	28	22
Maintained	26	32
Increased	5	6
Decreased	18	13

OTHER DIAGNOSIS.

TABLE 20.

Diagnosis in addition to cerebro-vascular accident.

DIAGNOSIS	Experimental		Control	
	1975	1976	1975	1976
<u>Neoplasms</u>				
Malignant tumours	-	-	2	2
<u>Endocrine diseases</u>				
Diabetes mellitus	8	9	11	13
Other endocrine diseases	2	2	-	1
<u>Diseases of blood and blood forming organs</u>				
Thalassaemia minor	-	-	1	1
Pernicious anaemia	-	-	1	1
<u>Diseases of central nervous system</u>				
Further cerebro-vascular accident	-	6	-	3
Paralysis agitans (Parkinsonism)	-	1	1	2
Epilepsy	5	7	2	2
Trigeminal neuralgia	1	1	-	-
<u>Diseases of circulatory system</u>				
Ischaemic heart disease	5	1	4	2
Diseases of arteries	2	3	-	1
Varicose veins	5	5	8	8
Congestive cardiac failure	12	15	14	18
<u>Diseases of respiratory system</u>				
Bronchitis and pneumonia	-	3	-	1
Emphysema and asthma	11	12	11	11
Sinusitis	3	1	-	-
<u>Diseases of digestive system</u>				
Stomach and duodenum	1	-	2	1
Intestines	1	1	1	-
Haemorrhoids	1	1	2	2
<u>Diseases of genito-urinary system</u>				
Analgesic neuropathy	-	-	-	1
Papilloma of bladder	-	1	-	-
<u>Diseases of skin and cellular tissue</u>				
Dermatitis	5	2	6	4
Cellulitis	2	3	-	1
<u>Diseases of bones and organs of movement</u>				
Arthritis (unspecified)	29	35	38	34
Fibrositis	-	-	1	1
Fracture - upper limb	2	2	1	3
Fracture - lower limb	-	1	2	4
Amputation - lower limb	1	1	1	2
Other injuries	1	-	-	1
Bunions and benign tumours	-	1	4	5

(Adapted from I.C.D. 1957).

SIGNIFICANT FACTORS.

Bacteriuria	Sig. 5%
Wax removal - left ear	Sig. 2%
Erythrocyte sedimentation rate	Sig. 5%
Observed sad appearance	Sig. 2.5%
Right shoulder joint range (affected side)	Sig. 2%
Left hip joint range (affected side)	Sig. 5%
Left hip joint range (non-affected side)	Sig. 5%
Cooking skills	Sig. 2%
Average number of crafts	Sig. 1%
Drug labelling	Sig. 5%
St. John Ambulance subscribers	Sig. 1%
Occupational therapy maintained	Sig. 5%
Occupational therapy initiated	Sig. 1%
Dental care received in one year	Sig. 2%

GENERAL OBSERVATIONS OF THE ONE-THIRD SUB-GROUP.

General observations about people in the one-third sub-group in the lower stability range.

OBSERVATIONS	Experimental n = 26	Control n = 25
Sex		
Male	18	11
Female	8	14
Average age (years)	65.38	69.40
Patients per nurse		
Oborn	12	
Boundy	14	
Nurse mean visit time (minutes)	62.2	
Average time from cerebro-vascular accident (months)	14.9	13.8
Other serious illness	8	8

ANALGESICS.

Acetylsalicylic acid 650 mg.

Acetylsalicylic acid 250 mg., paracetamol 250 mg., codeine phosphate 6 mg.

Allopurinol 100 mg.

Calcium aspirin 300 mg.

Codeine phosphate 8 mg., aspirin 500 mg.

Codeine phosphate 10 mg., acetylsalicylic acid 500 mg.

Codeine phosphate 30 mg., acetylsalicylic acid 225 mg., paracetamol 150 mg.

Dextropropoxyphene napsylate 100 mg.

Ibuprofen 200 mg.

Indomethacin 25 mg.

Paracetamol 500 mg.

Paracetamol 500 mg., codeine phosphate 8 mg.

Pentazocine HCL. 25 mg., 50 mg.

Phenylbutazone 100 mg.

Salicylic acid powder.

Sodium pentobarbitone 30 mg., paracetamol 300 mg., codeine phosphate 15 mg.

Sulphinpyrazone 100 mg.

ANTIBIOTICS AND URINARY ANTISEPTICS.

Amoxicillin trihydrate 250 mg.

Ampicillin 250 mg., 500 mg.

Chloramphenicol 0.5% (Ophthalmic Solution).

Erythromycin stearate 250 mg.

Griseofulvin 125 mg.

Nalidixic acid 500 mg.

Penicillin 250 mg.

Sulphamethizole 500 mg.

Tetracycline HCL. 250 mg.

Trimethoprim 80 mg., sulphamethoxazole 400 mg.

ANTI-HISTAMINES.

Antazoline sulphate 0.5%, naphazoline nitrate 0.025%, benzalkonium chloride 0.02% (Ophthalmic Solution).

Brompheniramine maleate 4 mg.

Dextrochlorpheniramine maleate 6 mg.

Diphenylpyraline HCL. 2.5 mg., 5 mg.

Mebhydrolin 50 mg.

Meclozine HCL. 25 mg.

Methdilazine HCL. 4 mg., 8 mg.

Pheniramine p-aminosalicylate 50 mg.

Promethazine HCL. 25 mg.

ANTI-HYPERTENSIVES.

Bethanidine sulphate 10 mg.

Clonidine HCL. 150 microgram.

Debrisoquine sulphate 10 mg., 20 mg.

Guanethidine sulphate 25 mg.

Hydrallazine 25 mg.

Methyldopa 250 mg.

Rauwolfia serpentina alkaloids 2 mg.

Rauwolfia serpentina whole root 50 mg.

CARDIAC REACTANTS.

Alprenolol HCL. 100 mg.

Aminophylline 100 mg. tabs, 250 mg. suppositories.

Digoxin 0.25 mg.

Dipyridamole 100 mg.

Glyceryl trinitrate stabilised 0.6 mg.

Lanatoside C 0.25 mg.

Oxprenolol HCL. 20 mg.

Pentaerythryl tetranitrate 80 mg.

Prindolol 5 mg.

Propranolol HCL. 10 mg., 40 mg.

Proscillaridin 0.25 mg.

Quinidine sulphate 200 mg., 300 mg.

Sorbide nitrate 10 mg.

Trolnitrate phosphate 2 mg.

DIABETIC AGENTS.

Acetohexamide 500 mg.

Chlorpropamide 100 mg., 250 mg.

Glibenclamide 5 mg.

Phenformin HCL. 25 mg., 50 mg.

Tolbutamide 500 mg.

DIETARY SUPPLEMENTS.

Calcium 372 mg.

Folic Acid 0.5 mg.

Multivitamin capsules.

Nicotinic acid 25 mg., acetomenaphthone 7 mg.

Nicotinic acid 50 mg., hexyltheobromine 200 mg.

Potassium chloride 600 mg.

Protein 89%, sodium glycerophosphates 5%.

Thiamine.

Vitamins B group and ascorbic acid.

Vitamin C 250 mg.

Vitamin E 50 mg.

Zinc Sulphate 250 mg.

IRON.

Ferrous gluconate 300 mg.

Ferrous sulphate 525 mg.

Ferrous sulphate (dried) 320 mg.

DIURETICS.

Amiloride HCL. 5 mg.

Amiloride HCL. 5 mg., hydrochlorthiazide 50 mg.

Bendrofluazide 2.5 mg., 5 mg.

Chlorthalidone 25 mg.

Chlorothiazide 500 mg.

Cyclopentiazide 0.5 mg.

Frusamide 50 mg.

Methyclothiazide 5 mg.

Quinethazone 50 mg.

Spiroinolactone 25 mg.

LAXATIVES.

Bile salts 70 mg., cascara sagrada extract 65 mg., phenolphthalein 32 mg.,
capsicum oleoresin 3 mg.

Bisacodyl 5 mg. tab. 10 mg. suppositories.

Diethyl sodium sulphosuccinate 50 mg., 120 mg.

Diethyl sodium sulphosuccinate 50 mg., 1,8 - dihydroxyanthraquinone
50 microgram.

Glycerin 80%, diethyl potassium sulphosuccinate 5%.

Paraffin liquid 33%, phenolphthalein 1.32%.

Phenolphthalein.

Standardised senna.

Tiemonium iodide 50 mg.

Vegetable bassorin, frangula bark.

SEDATIVES.

Amylobarbitone sodium 200 mg., 250 mg., 500 mg.

Butabarbitalone 100 mg.

Chloral hydrate 1g./10 ml.

Methyl phenobarbitone 200 mg.

Nitrazepam 5 mg.

Phenobarbitone sodium 30 mg., 50 mg., 100 mg.

Quinalbarbitone sodium 100 mg.

STEROIDS.

Beclomethasone dipropionate 50 micrograms/aerosol dose.

Betamethasone 0.5 mg.

Betamethasone valerate 0.1% (Topical).

Betamethasone valerate 0.1%, gentomycin sulphate 0.1% (Topical).

Fluocinolone acetonide 0.025% (Cream).

Hydrocortisone acetate 1% (Cream), 0.5% (Ophthalmic Solution).

Iodochlorhydroxyquinolone 3%, hydrocortisone 1% (Cream).

Nandrolone decanoate 25 mg./ml.

Norethisterone 5 mg.

Oestrone 10,000 U./mg.

Prednisolone 5 mg.

Prednisolone sodium phosphate 0.5% (Solution).

Triamcinolone acetonide 0.02% (Cream).

TRANQUILLISERS AND ANTI-DEPRESSANTS.

Amitryptiline HCL. 10 mg., 25 mg.

Amitryptiline 25 mg., perphenazine 2 mg.

Diazepam 2 mg., 5 mg.

Doxeprin HCL. 25 mg.

Haloperidol 1.5 mg.
Imipramine 25 mg.
Nortriptyline HCL. 25 mg.
Oxazepam 15 mg.
Prochlorperazine 5 mg.
Protriptyline HCL. 5 mg.
Thioridazine HCL. 10 mg. 25 mg.
Trifluoperazine dihydrochloride 1 mg.
Trimipramine 25 mg.

OTHER MEDICATIONS.

Adrenaline (epinephrine) 1% (Ophthalmic Solution).
Alginic acid 0.521 g., sodium alginate 0.521 g., magnesium
trisilicate 0.052 g., dried aluminium hydroxide 0.0208 g.,
sodium bicarbonate 0.177 g. (Gaviscon).
Aluminium hydroxide gel.
Amyl nitrite.
Atropine sulphate 0.6 mg.
Betahistine HCL. 4 mg.
Bethanecol chloride 10 mg.
Biperiden HCL. 2 mg.
Bromohexine HCL. 8 mg.
Buccoleine berna (oral bacterial vaccine).
Camphor 1%, menthol 1%, eucalyptus 0.5% isobornyl acetate 0.5%,
menthyl salicylate 12% (Dencorub).
Carbamazepine 200 mg.
Cetrimide solution 40%.
Choline theophyllinate 100 mg., 200 mg.
Clofibrate 500 mg.

Crotamiton 10%.

Dicyclomine HCL. 10 mg.

Dienoestrol 10 mg. tab., 0.01% cream.

Dihydrocodeine acid tartrate 15-2 mg./8 ml., chloroform 0.25%.

Diphenoxylate HCL. 2.5 mg., atropine sulphate 0.025 mg.

Fenfluramine 20 mg.

Fluocortolone caproate 1 mg./g., fluocortolone trimethylacetate
1 mg./g. (Cream).

Glycerine.

Hypromellose 0.5% (Ophthalmic Solution).

Kaolin 5.91 g., pectin 132 mg./30 ml.

L-Dopa 250 mg., 500 mg.

Methyl sal linament.

Neomycin sulphate 5 mg., zinc bacitracin 250 U., 1 - cysteine 2 mg.,
dithreonine 10 mg., glycerine 10 mg./g. (Powder).

Neostigmine 15 mg.

Nystatin cream 100,000 U./g.

Orphenadrine citrate 100 mg.

Oxphenonium bromide 500 mg.

Oxytetracycline HCL. 0.5%, polymyxin B sulphate 100,000 U./g.
(Ophthalmic Cream).

Phenytoin sodium 100 mg.

Pholcodine 0.1% linctus.

Pilocarpine HCL. (Ophthalmic solution).

Polymyxin B Sulphate 5,000 U., bacitracin 500 U., neomycin sulphate
5 mg./g. (Ointment).

Polyvinyl alcohol 1.4%, chlorbutol 0.5%. (Ophthalmic Solution).

Primidone 250 mg.

Propantheline bromide 30 mg.

Pseudoephedrine HCL. 60 mg.

Quinine bisulphate 300 mg.

Quinine sulphate 300 mg.

Saccharin.

Salbutamol 4 mg.

Sodium bicarbonate B.P. 176 g., anhydrous sodium citrate USP. 0.63 g.,

anhydrous citric acid 0.72 g., tartaric acid B.P. 0.89 g./4 g.

Sodium citrate, sodium tartrate 2.67 g./4 g.

Sodium cromoglycate 20 mg.

Sodium cromoglycate B.P. 10 mg., lactose 10 mg.

Sodium polyethylene sulphonate 1%, benzyl nicotinate 0.125%.

Stilboestrol 0.5 mg.

Sulthiame 50 mg., 200 mg.

Theophylline 130 mg., ephedrine HCL. 25 mg., phenobarbitone 8 mg.

Thyroxine sodium 0.1 mg.

Urea 10%, lactic acid and betaine 50 g., 100 g. (Cream).

Vitamin A (Ointment).

Warfarin sodium 5 mg.

THE UNIVERSITY OF ADELAIDE

DEPARTMENT OF COMMUNITY MEDICINE



Professor T.G.C. Murrell
M.D., D.T.M. & H., F.R.A.C.G.P.

LEVEL 5, ADMINISTRATION BLOCK
ROYAL ADELAIDE HOSPITAL
ADELAIDE
SOUTH AUSTRALIA 5001
Telephone: 223-0230

Dear

Thank you for agreeing to help us in our study. We will appreciate it if you will come to the Walkerville Nursing Home at 10.15 a.m. on

Arrangements have been made for:

an Ambulance Clinic Car to call for you at your home at 9.30 a.m. or shortly after that time. Can you be ready by then?

or

We understand that you can provide your own transport.

Lunch will be provided free of charge and you will be taken home/or able to leave by about 3.30 p.m.

Will you please bring with you:-

1. Spectacles
2. Hearing aid
3. Walking frame, or aids
4. Shaver, toothbrush, brush and comb
5. Any drugs including tablets, pills, capsules, mixtures, ointments, laxatives, sleeping tablets
6. Pensioner medical card
7. Medibank card.

Will you please contact us if you have any questions, or if the above date and time is unsuitable?

Yours sincerely,

J.B. Linn
D. Cleary
Department of Community Medicine.

THE UNIVERSITY OF ADELAIDE

DEPARTMENT OF COMMUNITY MEDICINE



Professor T.G.C. Murrell
M.D., D.T.M. & H., F.R.A.C.G.P.

LEVEL 5, ADMINISTRATION BLOCK
ROYAL ADELAIDE HOSPITAL
ADELAIDE
SOUTH AUSTRALIA 5001
Telephone: 223-0230

Dear

Thank you for agreeing to help in the study being conducted by Dr. Jeanette Linn. We do appreciate your co-operation.

You have been allotted to Group A.

We look forward to seeing you again in 12 months time for another assessment. We will be in touch with you during the year.

Thanking you again.

Yours sincerely,


T.G.C. Murrell
Professor of Community Medicine

PLEASE NOTE:

1. NOTIFY ANY CHANGE OF ADDRESS.
2. NOTIFY ADMISSION TO HOSPITAL OR NURSING HOME SHOULD EITHER BE NECESSARY.
3. KEEP THIS LETTER FOR FUTURE REFERENCE.



225,
THE UNIVERSITY OF ADELAIDE
DEPARTMENT OF COMMUNITY MEDICINE

Professor T.G.C. Murrell
M.D., D.T.M. & H., F.R.A.C.G.P.

LEVEL 5, ADMINISTRATION BLOCK
ROYAL ADELAIDE HOSPITAL
ADELAIDE
SOUTH AUSTRALIA 5001
Telephone: 223-0230

Dear

Thank you for agreeing to help in the study being conducted by Dr. Jeanette Linn. We are most encouraged by the support we are getting.

You have been allotted to Group B.

By arrangement with your own doctor, a trained nurse () will visit you each month for the coming year. She will be in touch with you to make a suitable time for her visit.

Dr. Linn will make another assessment in 12 months time, similar to that which you had recently.

If you wish to contact the nurse, you may leave a message for her at the Department of Community Medicine, University of Adelaide, ('Phone No. 223 0230 Ext. 370) between 9 a.m. - 5 p.m. or at the nurse's telephone number ().

Thanking you again,

Yours sincerely,

T.G.C. Murrell
Professor of Community Medicine

PLEASE NOTE:

1. NOTIFY ANY CHANGE OF ADDRESS.
2. NOTIFY ADMISSION TO HOSPITAL OR NURSING HOME SHOULD EITHER BE NECESSARY.
3. KEEP THIS LETTER FOR FUTURE REFERENCE.

THE UNIVERSITY OF ADELAIDE

DEPARTMENT OF COMMUNITY MEDICINE



Professor T.G.C. Murrell
M.D., D.T.M. & H., F.R.A.C.G.P.

LEVEL 5, ADMINISTRATION BLOCK
ROYAL ADELAIDE HOSPITAL
ADELAIDE
SOUTH AUSTRALIA 5001
Telephone: 223-0230

Dear Dr.

Thank you for your interest and help in the study of the role of the nurse in the care of elderly patients with chronic illness being conducted by Jeanette Linn. We are most encouraged with the support we are getting.

Your patient
of
has been allotted by random selection into the Control Group (A).

Enclosed is a record card to be included in your patient's file. This record will help us to follow morbidity patterns occurring in patients who have had a stroke.

We will be making another assessment of each patient at the end of the 12 months study period.

IN THE EVENT of your patient leaving your care either by change of address or death will you please complete the card and return it to the Department of Community Medicine.

The success of this study depends on your continued interest and we look forward to your co-operation.

With kind regards,

Yours sincerely,

T.G.C. Murrell
Professor of Community Medicine

DATA COLLECTION

STUDY NUMBER		---
MEASURE NUMBER		--
NAME	_____	
ADDRESS	_____	

PREVIOUS OCCUPATION		---
RELIGION		---
	1975	1976
GENERAL PRACTITIONER	---	---
CONSULTANT	--	--
1 SEX (0 = m, 1 = f)	--	
2 AGE AT COMMENCEMENT	---	
3 HEIGHT (cms)	---	
 <u>DIAGNOSIS</u>		
C.V.A. (R = 0, L = 1)	--	--
ARTHRITIS	--	--
DIABETES	--	--
MALIGNANCY	--	--
C.C.F.	--	--
U.T.I.	--	--
O.A.D.	--	--
PARKINSONISM	--	--
OTHER. SPECIFY .....	.....	.....
 <u>FINANCE</u>		
OVER 75	--	--
AGE	--	--
REPATRIATION	--	--
BLIND	--	--
INVALID	--	--
SUPERANNUATION	--	--
PRIVATE	--	--
MED. BENEFITS	--	--
HOS. BENEFITS	--	--
OTHER	--	--

PATIENT RECORD

STUDY NUMBER	— — —	<u>VISUAL ACUITY</u>	
MEASURE NUMBER	— — —	(Snellens Numerator)	
CARD NUMBER	— — <u>1</u>	L. Uncorrected	— —
		L. Corrected	— —
DATE	— — —	R. Uncorrected	— —
TIME (Morning 1, Afternoon 2)	— — —	R. Corrected	— —
TEMP OF DAY (°C)	— — —	L. + R. Uncorrected	— —
TIME TAKEN (minutes)	— — —	L. + R. Corrected	— —
		Tonometry	
<u>WEIGHT</u> (Kg)	— — —	L.	— —
		R.	— —
<u>B.P.</u> Left seated S	— — —	Fields	
D	— — —	(normal L.	
Left standing S	— — —	limits R.	— —
D	— — —	45 degrees)	— —
Right seated S	— — —	Ability to see (0-5)	— —
D	— — —	Spectacles	— —
Right standing S	— — —	Large Print Books	— —
D	— — —	Magnifying Glass	— —
		Reading lamp	— —
		Other. Specify	— —
<u>OEDEMA ANKLE</u>		<u>BLOOD PICTURE</u>	
L (Cm)	— — —	Pallor	— —
R (Cm)	— — —	Haemoglobin	— —
L. PAD	— — —	Normal screen	— —
<u>URINE</u>		<u>DYSPNOEA</u>	
Albumen	— — —	On exertion	— —
Nil=0 Sugar	— — —	Nil=0 Sitting	— —
+ =1 Ketones	— — —	+ =1 Lying	— —
+ + =2 Blood	— — —	+ + =2	— —
+ + + =3 Bilirubin	— — —	+ + + =3	— —
+ + + + =4 pH(Ac6, N7, Alk8)	— — —		
URINE CULTURE (M.S.S.U.)		<u>MOOD</u>	
W.B.C.	— — —	(observed)	
R.B.C.	— — —	Looks sad	— —
GROWTH	— — —	Difficult communication	— —
		Insomnia	— —
<u>PULSE</u> Rate	— — —	Lonely	— —
Regular	— — —	Tearful	— —
		Total Score (0-5)	— —
<u>TEMPERATURE</u>		(self-assessed)	
Normal	— — —	Analogue scale (0-9)	— —
		Cold	— —
<u>AUDITORY ACUITY</u>		Anger	— —
(within L.	— — —	Depression	— —
normal R.	— — —	Confusion	— —
limits) L + R.	— — —	Coping with medication	— —
Wax L.	— — —		
R.	— — —		
Hearing ability (0-5)	— — —		
Hearing aid	— — —		
T.V. aid	— — —		
CARD NUMBER	<u>2</u>		
Modified phone	— — —		

<u>DRUGS</u>				Radio (hrs. per day)	—	—
Analgesics \$ Month	—	—	—	Ability Scale	—	—
Antibiotic	—	—	—	Equipment Scale	—	—
Antihistamine	—	—	—	Personal Help	—	—
Cardiac	—	—	—	Reading		
Diabetic	—	—	—	No. of books/		
Dietary supp.	—	—	—	2 weeks	—	—
Iron	—	—	—	Ability Scale	—	—
CARD NUMBER			3	Equipment Scale	—	—
				Personal Help	—	—
Diuretic	—	—	—	No. of mags./2 weeks	—	—
Hypotensive	—	—	—	Ability Scale	—	—
Laxative	—	—	—	Equipment Scale	—	—
Sedative	—	—	—	Personal Help	—	—
Steroid	—	—	—	Newspaper (yes/no)	—	—
Tranquillizer	—	—	—	Ability Scale	—	—
Other	—	—	—	Equipment Scale	—	—
No = 0				Personal Help	—	—
Commenced=1 Maintained=3				Theatre. Specify	—	—
Increased=2 Decreased=4				Ability Scale	—	—
Discontinued=5				Equipment Scale	—	—
Changed within group=6				Personal Help	—	—
Medication ability scale				Sport. Specify	—	—
Helped by person in				Ability Scale	—	—
h/hold	—	—	—	Equipment Scale	—	—
friend/neighbour	—	—	—	Personal Help	—	—
visitor	—	—	—	CARD NUMBER		4
Mechanical aid	—	—	—	Games. Specify	—	—
				Ability Scale	—	—
<u>RECREATION</u>				Equipment Scale	—	—
Gardening (0-9)	—	—	—	Personal Help	—	—
Ability Scale (0-5)	—	—	—	Other. Specify	—	—
Equipment Scale (3-5)	—	—	—	Ability Scale	—	—
Personal Help (6-8)	—	—	—	Equipment Scale	—	—
Number of Crafts	—	—	—	Personal Help	—	—
Ability Scale	—	—	—	<u>COMMUNICATION</u>		
Equipment Scale	—	—	—	<u>Comprehension</u>		
Personal Help	—	—	—	Show me cards (0-5)	—	—
TV (hrs. per day)	—	—	—	Card action (0-5)	—	—
Ability Scale	—	—	—	Reading question (0-5)	—	—
Equipment Scale	—	—	—	Ability (0-5)	—	—
Personal Help	—	—	—	<u>Expression</u>		
				Counting	—	—
				Naming cards (0-10)	—	—
				Articulation (0-10)	—	—
				Accuracy (0-10)	—	—
				Language Use (0-2)	—	—
				Ability (0-5)	—	—
				<u>Reading</u>		
				10 words (0-10)	—	—
				Understanding (0-5)	—	—
				Ability (0-5)	—	—
				<u>Writing</u>		
				5 words (0-5)	—	—
				Picture (0-5)	—	—
				Ability (0-5)	—	—
				Typewriter and writing frame	—	—

MOBILITY

Walking

Distance (0-10 metres) _ _ _
 Time 0-300 secs. _ _ _
 Ability (0-5) _ _ _
 Mechanical Aid _ _ _
 Personal help _ _ _

ACTIVITIES OF DAILY LIVING

Showering

Point Score (0-9) _ _ _
 Ability (0-5) _ _ _
 Equipment Scale (3-5) _ _ _
 Personal Help (6-8) _ _ _

Dressing

Point Score (0-9) _ _ _
 Ability _ _ _
 Equipment Scale _ _ _
 Personal Help _ _ _

Undressing

Point Score (0-9) _ _ _
 Ability _ _ _
 Equipment Scale _ _ _
 Personal Help _ _ _

Toilet

Point Score (0-9) _ _ _
 Ability _ _ _
 Equipment Scale _ _ _
 Personal Help _ _ _

Cooking

Point Score (0-9) _ _ _
 Ability _ _ _
 Equipment Scale _ _ _
 Personal Help _ _ _

Feeding

Point Score (0-9) _ _ _
 Ability _ _ _
 Equipment Scale _ _ _
 Personal help _ _ _

MOBILITY

Joint Range

(Angle in Degrees)

Wrist R. _ _ _
 L. _ _ _

CARD NUMBER

5

Elbow R. _ _ _
 L. _ _ _
 Shoulder R. _ _ _
 L. _ _ _
 Knee R. _ _ _
 L. _ _ _
 Hip R. _ _ _
 L. _ _ _

SOCIAL SUPPORT

Spouse _ _ _
 Daughter _ _ _
 Son _ _ _
 Near relative _ _ _
 Friend _ _ _
 Housekeeper _ _ _
 Pet _ _ _
 Other _ _ _

COMMUNITY SERVICES BEING USED

Group

R.D.N.S. _ _ _
 Meals on Wheels _ _ _
 Regional Dom. Care _ _ _
 St. John Ambulance _ _ _
 Red Cross _ _ _
 Repatriation _ _ _
 Day Centre _ _ _
 Church _ _ _
 Service Club _ _ _
 Senior Citizens Club _ _ _
 Other _ _ _

Specific

Nurse _ _ _
 Nurse aide _ _ _
 Social worker _ _ _
 Physiotherapist _ _ _
 Occupational Therapist _ _ _
 Speech Pathologist _ _ _
 Dentist _ _ _
 Chiropodist _ _ _
 Clergy _ _ _
 Mental Health visitor _ _ _
 Library _ _ _
 Pharmacist _ _ _
 Linen _ _ _
 Sitter _ _ _
 Meals _ _ _
 Transport _ _ _
 Shopping _ _ _
 Gardener _ _ _
 Hairdresser _ _ _
 Cleaner _ _ _
 Cook _ _ _
 Equipment _ _ _
 Phone _ _ _
 Other _ _ _
 Drugs labelled _ _ _
 Glasses checked within 1 year _ _ _
 Smoking _ _ _
 Special accommodation _ _ _
 Alcohol _ _ _

DRUGS.

Score 0-6	Trade name	Generic name	Dose	X/day
	<u>ANALGESICS</u>			
-	Brufen	Ibuprofen		
-	Butazolidine	Phenylbutazone		
-	Codeine	Codeine phosphate		
-	Digesic	Dextro-propoxyphene & paracetamol		
-	Doloxene	Dextro-propoxyphene napsylate		
-	Fortral	Pentazocine		
-	Indocid	Indomethazine		
-	Panadol	Paracetamol		
-	Pethidine	Pethidine HCL		
-	Physeptone	Methadone HCL		
-	Salicylates	Salicylates		
	<u>ANTIBIOTICS</u>			
-	Ampicillin	Ampicillin		
-	Erythromycin	Erythromycin		
-	Negram	Nalidixic acid		
-	Penicillin	Penicillin		
-	Septrin	Trimethoprim with Sulphamethoxazole		
-	Sulpha compounds	Sulpha compounds		
-	Tetracycline	Tetracycline		
	<u>ANTI-HISTAMINE</u>			
-	Avil	Pheniramine		
-	Benadryl	Diphenhydramine HCL		
-	Periactin	Cyproheptadine HCL		
-	Phenergan	Promethazine HCL		
-	Polaramine	Dextrochlorpheniramine maleate		
-	Tavegyl	Clemastine		
	<u>CARDIAC</u>			
-	Anginine	Glyceryl trinitrate		
-	Cedilanid	Lanatoside-C		
-	Inderal	Propranolol HCL		
-	Isordil	Sorbide nitrate		
-	Lanoxin	Digoxin		
-	Quinidine	Quinidine sulphate		
-	Trasicor	Oxprenolol HCL		

Score 0-6	Trade name	Generic name	Dose	X/day
	<u>DIABETIC</u>			
-	Insulin	Insulin		
-	Insoral	Phenformin HCL		
-	Rastinone or Artosin	Tolbutamide		
	<u>DIET SUPPLEMENTS</u>			
-	Calcium	Calcium		
-	Cytamen	Cyanocobalamin		
-	Folic acid	Folic acid		
-	Iron	Iron salts		
-	Potassium	Potassium		
-	Vitamins	Vitamins		
	<u>DIURETTIC</u>			
-	Aprinox	Bendrofluazine		
-	Chlotride	Chlorothiazide		
-	Hygroton	Chlorthalidine		
-	Lasix	Frusemide		
-	Navidrex	Cyclophenthiazide		
-	Aldactone	Spirocholactone		
-	Midamor	Amiloride		
	<u>HYPOTENSIVES</u>			
-	Aldomet	Methyldopa		
-	Ismelin	Guanethidine sulphate		
-	Raudixin	Rauwolfia		
-	Serpasil	Reserpine		
	<u>LAXATIVE</u>			
-	Agarol	Paraffin liquid		
-	Coloxyl	Diocetyl sodium sulphosuccinate		
-	Coloxyl with danthron	Dihydroxyanthraquinone		
-	Duralax	Bisacodyl		
-	Granocol	Bassorin, frangula bark		
-	Laxettes			
-	Mag. sulph.	Magnesium sulphate		
-	Normacol	Sterculia, Rhamnus frangula		
-	Senokot	Senna		
	Suppositories:			
-	Anusol	Bismuth subgallate		
-	Glycerine	Glycerine		
-	Rectalad	Glycerine, dioctyl pot. sulphosuccinate		
-	Rectinol	Adrenalin, ephedrine, benzocaine, ZnO. bismuth subgallate		
-	Glycerine and oil enema			

Score 0-6	Trade name	Generic name	Dose	X/day
	<u>SEDATIVE</u>			
--	Amytal	Amylobarbitone		
--	Chloral	Chloral hydrate		
--	Disipal	Orphenadrine HCL		
--	Doriden	Glutethimide		
--	Mandrax	Methaqualone		
--	Mogadon	Nitrazepam		
--	Phenobarb	Phenobarbitone		
	<u>STEROIDS</u>			
--	Prednisolone	Prednisolone		
--	Cortisone topical			
	<u>TRANQUILLISERS</u>			
--	Largactil	Chlorpromazine		
--	Librium	Chlordiazepoxide		
--	Lucidril	Meclofenoxate		
--	Melleril	Thioridazine		
--	Seranace	Haloperidol		
--	Tofranil	Imipramine		
--	Tryptanol	Amitriptyline		
--	Valium	Diazepam		
	<u>OTHER</u>			
--	L-Dopa	L-Dopa		
--	Mylanta			
--	Mucaine			
--	Norflex	Oxyphenadrine citrate		
--	Gaviscon	Alginic acid comp.		

ABILITY SCALE.

	<u>CODE</u>
Not able to cope	0
Completely dependant Needing two people	1
Copes with help Needs one person	2
Copes with help Needs mechanical aid and one person	3
Copes with help Needs mechanical aid only	4
Completely independent	5

EQUIPMENT AND PERSONAL HELP.

<u>TYPE</u>	<u>SOURCE</u>	<u>CODE</u>
Mechanical	Private	3
Mechanical	Statutory	4
Mechanical	Voluntary	5
Personal help	Private	6
Personal help	Statutory	7
Personal help	Voluntary	8

The data collected have not been analysed in each category listed. The information was used only as a guide for the nurse in the trial period.

CONTROL GROUP (GROUP A)

NAME

ADDRESS

STUDY NUMBER

DATE: 1st visit 2nd visit 3rd visit

VISITOR: Name

Address

QUESTIONNAIRE:

	yes or no
1 (1st visit)	
1 Do you find that the weather affects your health?
2 Do you use an electric blanket?
3 Do you use an electric fan?
4 Were you born in South Australia?
5 What is your favourite colour?

2 (2nd visit)

Which of the following foods do you eat?

1 Tomatoes { }	6 Bananas { }
2 Beetroot { }	7 Bacon { }
3 Cheese { }	8 Cauliflower { } Tick { } = yes
4 Fish { }	9 Potatoes { }
5 Eggs { }	10 Asparagus { }

3 (3rd visit)

Which of these do you drink?

1 Tea { }	6 Whisky { }
2 Coffee { }	7 Orange juice { }
3 Milk { }	8 Tomato juice { } Tick { } = yes
4 Beer { }	9 Apple cider { }
5 Brandy { }	10 Lemonade { }

INSTRUCTIONS TO VISITOR:

- 1 Try to contact patient before the first visit.
- 2 Tell the patient that Dr. Linn has asked you to seek the above information.
- 3 Make a time for the second and third visits as appropriate.
- 4 At third visit, tell the patient that they will be contacted for the second assessment by Dr. Linn.
- 5 Thank them for their interest.
- 6 DO NOT BECOME INVOLVED IN ANY TREATMENT OR SERVICES. REFER THE PATIENT TO DOCTOR.

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ADAMSON, T.E. (1971) *Critical issues in the use of physician associates and assistants.* Amer. J. publ. Hlth 61:1768.

Physician associates and assistants contribute indirectly to the quality of medical care, allowing the physician to concentrate his skills on more difficult cases, to pursue continuing education, etc. Nurses, in contrast, whether working independently or in immediate association with a physician, augment patient care directly by providing a comprehensive range of services and especially by adding their unique contribution of psychosocial care.

ANDREWS, G.R. (Ed.) (1970) *Preventive geriatrics : is it possible?* J. Geriatrics 1 (1):30.

Elderly individuals in the community suffering from anaemia, urinary disturbances, visual or hearing defects, dental problems, various locomotor disorders and a variety of other medical conditions may not report their symptoms to their general practitioner until pathology is advanced. In addition the unmet need for a variety of supportive services, in some instances for psychosocial casework, and the predicted value of dietetic and general health advice among the elderly makes the potential very great for the practice of preventive medicine in the group.

ANDREW, R.R. (1970) *Health-planning trends : their impact on present-day services.* Med. J. Aust. 2:40, 41.

... one of our principal aims should be to keep people out of hospitals, and here the role of the domiciliary nurse in collaboration with the general practitioner is paramount.

We must realize, as doctors and nurses, that our duty is to sick society as much as to the sick in it, and that we need to look at all human problems in a synoptic, as well as an analytical, way.

AURICHT, C.O., BAMPTON, J.C. and GILL, D.C. (1973) *The receptionist as a member of the health care team.* Aust. Fam. Physician 2:262.

... the receptionist becomes the key person of initial contact and needs more than a good general education, intelligence, and pleasant personality. She needs training in the concept and understanding of team health care, in basic psychology with emphasis on patient motivation and patient needs. She must know precisely the role of each member of the team and have some understanding of their functions, difficulties and limitations.

BURR, M. (1975) *Multidisciplinary health teams.* Med. J. Aust. 2:833.

The medical profession needs to learn team skills and review its managerial functions in anticipation of increasing involvement with other health professionals in a team setting.

CARSON, S. (1973) *The basic team meeting the needs of the community.* Aust. Fam. Physician 2:254.

Our colleagues, the nurse and the social worker are, like the specialist, our expert assistants. Sometimes, they are our teachers but overall, their task is to help us care for the patients.

For our part, we must be trained so we are familiar with the skills of our fellow professionals. We must comprehend the range of services available for our patients and know how to use them to best advantage.

COULEHAN, J.L. and SHEEDY, S. (1973) *The role, training, and one-year's experience of a medical nurse practitioner.* Health Serv. Rep. 88:833.

... "visits per day" is not in itself an accurate measure of productivity. More time spent with each patient, more understanding of the person, and an investment in health education will in the long run be more productive than numerous episodic contacts.

EHRLICH, F. (1972) *Total care in the elderly.* J. Geriatrics 3 (6):27.

The family is the situation where the elderly's dependence requires most careful study. It is here that much destructive ambivalence can occur

GALTON, R., GREENBERG, S.M. and SHAPIRO, S. (1973) *Observations on the participation of nurses and physicians in chronic care.* Bull. N.Y. Acad. Med. 49:118.

For the future we continue to believe that, for patients with chronic disease, care will come to be a team responsibility between a physician and a nurse clinician. Older persons are becoming proportionally a greater part of the population. Hence, the need for chronic care will also grow. Increasingly physicians do not have the time to devote to such care. In addition, their training emphasizes working with the more interesting, diagnostically challenging, and "curable" conditions. The structure of medical education is heavily oriented to the types of cases found in teaching hospitals, and little emphasis has been placed on the ambulatory management of chronic disease, nor have many physicians in training had to deal with the range of health-related problems of older adults.

GORDON, D.W. (1974) *Health Maintenance Service : ambulatory patient care in the general medical clinic.* Med. Care 12:648.

The purpose of this study was to compare the health care of two groups of ambulatory patients - those treated primarily by a nurse-clinician under physician supervision, with those treated by attending physicians - in the general medical clinic of a large university teaching hospital.

One hundred and sixty-nine new patients were randomly assigned to the Health Maintenance Service (HMS) staffed by the nurse-clinician and

to the Control Group, staffed by attending physicians. The data based upon patients' medical charts and questionnaires revealed that among the HMS patients, there were fewer recorded lapses in care, proportionally fewer whose health conditions were rated as unstable one year after their initial visit, and none whose health condition was judged as deteriorated. The nurse-clinician was able to provide coordinated and continuous medical care for ambulatory patients and the quality of this care appeared to be at least equal to that provided by the physicians.

GORDON, D. (1976) *Health, sickness and society*. University of Queensland Press, St. Lucia. p. 376.

... our society does not seem to have a useful role for the aged. They are redundant and they are given no responsibilities. They are tolerated, even cherished, but not respected. In a highly specialized, highly mechanized community the cut-off point between being a useful wanted member of society and a barely tolerated old fool is sudden and distinct. This does not contribute to the psychological well-being of the aged, and this deficiency in turn renders a number less likely to adapt successfully to the disabilities inherent in the ageing process. They drop the bundle and retreat from life.

JUNGFER, C.C. (1973) *The domiciliary health team. The health care challenge of the future*. Aust. Fam. Physician 2:211.

The Community Health Nurse acts as the link between the practitioner, the patient's home and other members of the team. In broad terms, her duties will be to supervise programmes of domiciliary care instituted by the team appropriate to the particular patient. In so doing, she can sort out minor social difficulties, engage in simple physiotherapy and occupational therapy procedures, train relatives in home nursing techniques, and teach patients and relatives to the point where close supervision is no longer necessary. At all times she will promote health education amongst all she meets in her daily work. She will be a "Jill of all trades" and as a nurse readily accepted by the doctor in charge of the patient, as well as by the patient, the family and the community.

KATZ, S., FORD, A.B., MOSKOWITZ, R.W., JACKSON, B.A. and JAFFE, M.W. (1963) *Studies of illness in the aged. The Index of ADL : a standardized measure of biological and psychosocial function*. J. Amer. med. Ass. 185:914.

The Index of ADL was developed to study results of treatment and prognosis in the elderly and chronically ill. Grades of the Index summarize over-all performance in bathing, dressing, going to toilet, transferring, continence, and feeding. More than 2,000 evaluations of 1,001 individuals demonstrated use of the Index as a survey instrument, as an objective guide to the course of chronic illness, as a tool for studying the aging process, and as an aid in rehabilitation teaching.

KATZ, S. and CHINN, A.B. (1959) *Multi-disciplinary studies of illness in aged persons. II. A new classification of functional status in activities of daily living.* J. chron. Dis. 9:61.

Interest in progression of deterioration is related to one of the oft-stated philosophies of management of aged patients in The Benjamin Rose Hospital, namely, that *the aim of treatment is to maintain the physical, psychologic, and social independence of patients on the assumption that deterioration to dependence is associated with increased progression of deterioration.*

LAST, J.M. (1967) *Objective measurement of quality in general practice.* Ann. Gen. Prac. 12 (2) Suppl. p. 5.

For at least 150 years general practice has occupied the interface between the public and its medical services. The changing pattern of disease and the progress of medical science oblige us to consider whether this kind of medical care is appropriate in the modern world. If general practice is to survive, factors influencing its quality, and ways to produce improvement must be identified.

LAW, R. and CHALMERS, C. (1976) *Medicines and elderly people : a general practice survey.* Brit. med. J. 1:565.

All 151 patients of 75 years and over in one practice were visited at home to survey their health and how they managed their medicines. Altogether 87% were on regular treatment, 34% taking three or four different drugs each day. Most were responsible for their own drugs and managed them well, but many left their drugs in exposed places and were uncertain about how to dispose of unwanted medicines.

... . Most were labelled, but more explicit instructions about indications for taking the drug would have been helpful, and information about hoarded drugs would have been enhanced by dispensing and expiry dates.

LEFROY, R.B. (1970) *Expectations in old age.* Med. J. Aust. 1:1277.

Whatever its cause, aging must be regarded as a process of change for each individual. But we cannot leave it at that, because the direction of change - as well as the fact itself - is important. Is it indeed true that this period of post-maturity is merely going downhill, or at the best free-wheeling and coming inevitably to a miserable halt? Is this the only direction of change?

LEHMANN, J.F., DeLATEUR, B.J., FOWLER, R.S. JR., et al (1975) *Stroke rehabilitation : outcome and prediction.* Arch. phys. Med. 56:383.

Since family involvement can sometimes be changed by a therapeutic team, this predictor may also present a major target for therapeutic intervention.

LEIPER, N.K. (1975) *A course for practice nurses*. J.R. Coll. gen. Practit. 25:542.

Those responsible for the general training of nurses have in the past paid scant attention to the needs of the community and have done little to prepare nurses for work outside hospital. Perhaps, if the current increase in interest in practice nursing is maintained, a part of the nurse's basic course will in the future take place in the community.

MILHOUS, R.L. (1972) *The problem-oriented medical record in rehabilitation management and training*. Arch. phys. Med. 53:185.

The problem-oriented medical record is well suited for use in rehabilitation medicine. It allows for better utilization of allied health professionals, simplifies management of patients with multiple problems, improves patient education, unites the rehabilitation team, saves time for the physician, and provides a logic for the teaching of rehabilitation planning.

MORRIS, J.N. (1969) *Tomorrow's community physician*. Lancet 2:814.

The other challenge is in so-called "tertiary prevention", of the chronic diseases, to limit and postpone deterioration, disability, dependency. The present structure of health services reflects history and politics, sectional pressures, sheer inertia, and it has to catch up now with changes in the patterns of disease, service, and care (including, in every respect, infectious disease). In promoting the people's health, the community physician must be directly concerned with the mass problems of today and be able to draw on the community's resources to deal with these, not be limited to the categories of need or service that history happens to have deposited in his office. Incidentally it means a renaissance for public health.

MOSKOWITZ, E. and McCANN, C.B. (1957) *Classification of disability in the chronically ill and aging*. J. chron. Dis. 5:346.

1. Medical diagnoses do not accurately reflect the physical capacity of the chronically ill or aged person.
2. Disability evaluation, properly geared to this selected group, is necessary to supplement the medical diagnoses.

RADFORD, A.J. (1973) *The use of allied health workers by general practitioners in various situations*. Med. J. Aust. 2:862.

Allied health personnel have much to offer each branch of general practice, community medicine, and narrow clinical specialities in effecting an improvement and increased coverage of health care to people. Their proper utilization releases the doctor from the burden of routine and enables him to undertake the activities consonant with his training, abilities and wishes.

REED, J.W. (1967) *Rehabilitating the chronically ill : a 5-yr follow-up of 341 chronically ill ambulatory medical outpatients.* J. chron. Dis. 20:467.

It was found from the study that success in rehabilitation, either medical or vocational, was more apt to be related to the individual's basic personality profile, his reaction to his illness or disability and his motivation or lack of it, than to the degree of structural impairment in one or more organ systems. Many of the individuals with the greatest impairments were the most successful in their rehabilitative endeavours and vice versa.

These results suggest that a wider application of this type of coordinated team approach with follow-up contact at appropriate intervals would result in larger numbers of chronically disabled individuals being rehabilitated either to gainful employment or to increased self-sufficiency or both.

ROYAL COLLEGE OF NURSING and ROYAL COLLEGE OF GENERAL PRACTITIONERS (1975) *Nursing in general practice in the re-organised National Health Service.* J. R. Coll. gen. Practit. 25:594.

The position of the nurse in general practice is necessarily more exposed than that of the nurse in hospital and the work requires mature nurses who have progressed beyond the early years after qualification.

SAX, S. (1974) *Priorities of the aged : an overview.* Proc. Aust. Ass. Geront. 2:60.

Elderly people who wish to enjoy visits to relatives and friends and those who wish to continue other familiar patterns of personal leisure may be forced by economic circumstances to lead lonely and monotonous lives. There is a clear need for the development both of employment opportunities and of creative leisure activities for these people.

SWEENEY, G.P. and HAY, W.I. (1973) *The Burlington experience : a study of nurse practitioners in family practice.* Canad. Fam. Physician 19:110.

As experimenting, practicing physicians, we have concluded that the Burlington Randomized Trial of the Nurse Practitioner demonstrated the safety and efficiency of the nurse practitioner in providing primary health care. Furthermore, the quality of care received was no different in our conventional practices than in the experimental practices. Our practices, to which we had not been accepting patients for two years, have grown substantially and we are convinced that the major reason for the growth was the redeployment of the nurse.

THRUSH, David. (1976) *Recovering from strokes - is enough being done?* Mod. Med. Aust. 19 (20):15.

The most potent therapeutic tool in the management of stroke is the doctor's time - yet, even today, there is a tendency to view the stroke patient as a lost cause.

VIGNOS, P.J. JR., THOMPSON, H.M., KATZ, S. et al (1972) *Comprehensive care and psycho-social factors in rehabilitation in chronic rheumatoid arthritis : a controlled study.* J. chron. Dis. 25:467.

Improved social adjustment was more often seen in the intensive treatment group. A combination of good motivation and intensive treatment appeared to favour the achievement of superior functional results as judged by ADL performance. Furthermore, the patients showing better ADL function after 1 yr improved more in social adjustment. The results suggest that psycho-social factors, although they do not alter rheumatoid disease activity, can affect functional results of rehabilitation measures.

WALLACE, D.C. (1967) *A study of the natural history of cerebral vascular disease.* Med. J. Aust. 1:90.

Cerebral vascular disease is one of the main causes of death. ... This is not the worst feature of cerebral vascular disease, for it is a disease of old age, and to die of a sudden apoplexy after four score and more years of enjoyable and healthy living is something one might almost look forward to with contentment. The tragedy of cerebral vascular disease lies in the fact that it does not always kill rapidly. In fact, it is the chief and most horrible of the crippling diseases, destroying body and mind alike.

WELFORD, A.T. (1974) *Personal relationships in the years of retirement.* South Australian Council on the Ageing Inc., 19th April. p. 4.

After retirement, every day and every hour of the day tend to be much more alike. In such conditions, horizons contract and attention comes to be focused down onto small details that would otherwise be neglected. The lack of variety is, of course, made worse by lack of money which would enable the monotony to be broken by excursions, shows, meals out and other changes of routine. Further, it tends to be cumulative in its effect so that, in time, listlessness and apathy can render people unwilling to take opportunities for variety when they occur.

WEYDERT, M.E., SOPER, M.R. and COLLIS, P.B. (1974) *Experiences of an army nurse in developing care plans for outpatients with chronic illnesses.* Amer. J. publ. Hlth 64:621.

Final Phase - Chronic Care Program.

During this phase, a strong nurse-doctor team approach was established. Following an initial workup and prescribed regimen by the physician, the nurse becomes the primary caretaker, since nursing care needs are greater at this point than are medical care needs. Medical monitoring and revised medical regimens are provided by the nurse consulting periodically with the referring physician. The nurse is the primary care provider for patient education, disease education, and nursing support. The nurse is not a physician assistant in that she functions as a nurse and the physician as a diagnostician with the two complementing each other.

WHITEHOUSE, F.A. (1963) *Living a useful and meaningful life after stroke*. J. Rehab. 29 (6):45-47 (cited by OVERS, R.P. and BELKNAP, E.L. (1967) *Educating stroke patient families*. J. chron. Dis. 20:48).

Not to function is to die; not to exercise faculties causes deterioration; not to be mentally active leads to breakdown and fantasy; not to have purpose generates despair; not to be in emotional contact with others and the external world encourages retreat; not to be useful leads to self-abasement and unhappiness.

WILLIAMSON, J., STOKOE, I.H., GRAY, S. et al (1964) *Old people at home - their unreported needs*. Lancet 1:1120.

The health-visitor service was started to meet the crisis of high infant and child morbidity which is now a thing of the past. Instead our society faces an equally serious crisis of ill-health and disability at the other end of life.

WORLD HEALTH ORGANIZATION EXPERT COMMITTEE (1974) *Planning and organization of geriatric services*. Wld Hlth Org. techn. Rep. Ser. 548:43.

In all circumstances, the primary care physician and public health nurse constitute the essential nucleus for providing health care for the aged. They should be supported and/or guided by a geriatric health infrastructure specially geared to assessment, intensive therapy, surveillance, and continuous care.

Linn, J. (1969). The health team in general practice summary of a survey in rural practice. *Journal of the Royal Australian College of General Practitioners*, 14(4), 162-168.

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