

# Control of hypertension in family practice by the doctor–nurse team

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**SUMMARY.** In Israel, most hypertensives are treated by the family doctor alone. In 45 family practices, nurses were given a more active part to play in the follow-up of these patients, including measuring weight and blood pressure, giving dietary guidance, checking patient compliance and actively following up drop-outs. After two years' follow-up, of a total of 4,255 patients studied, 82·4 per cent were under control (diastolic blood pressure less than 95 mmHg) compared to 42·1 per cent at the onset of the study. The drop-out rate was 0·65 per cent.

### Introduction

**C**ONTROLLED studies have shown that treating hypertension is much more effective if done in special clinics run by doctor–nurse teams than by family doctors alone (Wilber and Barrow, 1969; Hypertension Detection and Follow-up Program Co-operative Group, 1979; Logan *et al.*, 1979, Tuomilehto *et al.*, 1980). In these special clinics, the nurse instructs the patients in diet and medications, checks compliance and follows up drop-outs. However, most hypertensives in the Western world are not managed by special clinics but by family doctors. Although many have a nurse working in their surgery, most are not involved in such follow-up programmes (Elliott *et al.*, 1980) and there is little information about the effect of nurses taking part in hypertension control.

About 80 per cent of family clinics in Israel are run by Kupat Holim—the Medical Division of the Histadrut Labor Union. Doctors and nurses are hired by this organization; 2,600 doctors and 3,100 nurses are distributed among 1,230 neighbourhood urban and family clinics throughout the country, giving service to 3 million people. Doctors are paid an annual fee for each

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patient on their list, independent of how many times they may see the patient. In each family clinic there are one or more nurses, and until recently their major tasks were first aid, taking blood samples, changing dressings, giving injections such as insulin and visiting house-bound patients.

Studies in Israel in the last five years have shown that about 15 per cent of the population aged 20 and over have hypertension—defined as a persistent systolic pressure of >160 mmHg and a persistent diastolic pressure of >95 mmHg (Modan *et al.*, 1979; Rosenfeld and Silverberg, 1979).

In two previous studies we found that between 30 to 35 per cent of patients who started treatment dropped out and, of those who continued their therapy, only about one third were under control (Rosenfeld and Silverberg, 1979; Silverberg *et al.*, 1979; Hartman *et al.*, 1981). Because of the disappointing results where hypertension is treated by the family doctor alone, we re-organized the care of hypertension in 45 family practices, using the nurse as an active and integral part of the follow-up programme.

### Methods

Forty-five family doctors and their nurses in the Tel-Aviv area were given a course in hypertension. The doctors and nurses participated in the course together. The course included epidemiology, pathophysiology, accurate blood pressure measurement, differential diagnoses, dietary counselling on caloric and sodium restriction and potassium supplementation, non-pharmacological and pharmacological treatment of hypertension, and methods of health education, follow-up and screening.

A special form was added to the medical record of all known hypertensive patients in the 45 practices. On this record the doctor and the nurse could enter the patients' complaints, the lying, sitting and standing blood pressure, heart rate, weight, presence of leg swelling, other physical findings, dietary and drug therapy, degree of compliance (judged from patient interviews and pill counts) and results of laboratory tests.

Once the doctor had examined the patient, had done the necessary basic tests to rule out secondary hypertension and put the patient on therapy, the patient was given an appointment to see the nurse at the next visit. At this visit, the nurse interviewed the patient, performed the tasks described above and reported her findings to the doctor. If there were no complaints and all the findings were satisfactory, the doctor would not see the patient. The patient would be told to stay on treatment and return to see the nurse in a month's time. If all continued well, the nurse continued to see the patients at monthly intervals; once every three months they would see the doctor. If, on any visit, there were any symptoms or if any of the physical or laboratory findings were abnormal, the patient saw the doctor immediately. The nurse also gave the patient verbal and printed information on hypertension, and where necessary instructions on caloric and sodium restriction and potassium supplementation. When dietary compliance was poor, patients were sent to a dietitian.

Each nurse had a filing system for detecting drop-outs. In cases where patients failed to keep their appointments, the nurse contacted them by telephone, letter or home visit to encourage them to return to therapy.

All hypertensives and their families were invited to attend talks given by the doctors and nurses on hypertension. A specially prepared programme using slides was presented. These talks were held at the family clinic in the evening at the end of the regular clinic hours.

To evaluate the effects of the nursing intervention we compared the blood pressure in the medical records on the last two visits before the system was introduced with those on the last two visits two years after the system was introduced.

## Results

The doctor-nurse teams have treated 4,255 patients for two years. Of these, 3,506 (82.4 per cent) patients had a diastolic pressure of less than 95 mmHg on their last two visits compared to 1,791 (42.1 per cent) at the onset of the study. The drop-out rate (those who refused to come for regular follow-up) was 0.65 per cent.

## Discussion

Involving the family clinic nurse in the hypertension follow-up programme resulted in twice as many hypertensives being brought under control as when the doctor alone treated the patient. Controlled studies have shown that compliance improves significantly when there is increased supervision of these patients by paramedical staff such as nurses (Logan *et al.*, 1979) or clinical pharmacists (McKenney *et al.*, 1973).

We have evaluated drop-out rates in two other studies in family practice in Israel where only the doctor was treating the patient (Rosenfeld and Silverberg, 1979;

Silverberg *et al.*, 1979; Hartman *et al.*, 1981). In these two studies the drop-out rates were 30 per cent and 35 per cent, results similar to those of other countries (Caldwell *et al.*, 1970; Finnerty *et al.*, 1973; Engelland *et al.*, 1979). With the doctor-nurse approach in our study, the drop-out rate was only 0.65 per cent. Active follow-up of drop-outs has already been shown in controlled studies to reduce drop-out rates significantly (Takala *et al.*, 1979), and the very low rate in our study is similar to that found in clinics specifically set up to treat hypertension (Wilber and Barrow, 1969; Hypertension Detection and Follow-up Program Co-operative Group, 1979; Logan *et al.*, 1979; Tuomilehto *et al.*, 1980). Our results, however, were obtained in a general practice setting and merely by introducing a more organized approach to the treatment and follow-up, which had made use of the clinic nurse.

Although we did not specifically evaluate the effect of the group discussions with patients, two controlled studies have shown that such discussions can significantly improve patient compliance (Levine *et al.*, 1979; Nessman *et al.*, 1980).

As a result of the findings of this study we have now introduced a similar follow-up system into 350 other family practices in Israel. The improved care should have a significant effect on morbidity and mortality in the hypertensive population.

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How much teaching do vocational trainees really get? What do they think about their trainers and how easily can they talk to them? This *Occasional Paper* reports on the proceedings of the Fourth National Trainee Conference held at Exeter in July 1980 and analyses the results of a questionnaire which was returned by 1,680 trainees throughout the country. This is the most detailed information so far published about the opinions of trainees, and from them a new 'value for money' index has been derived, based on sophisticated statistical analysis, which now makes it possible for the first time to rate a general practitioner trainer.

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Patient participation has been one of the more radical innovations in general practice in the last few years and has led to the formation of many different kinds of patient groups attached to practices all over Britain.

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## Blood pressure affected by placebo

The effect of placebo on blood pressure levels in 20 hypertensive patients was examined as part of a double-blind randomized controlled trial with indoramin. Blood pressure was measured by both standard sphygmomanometry and ambulant intra-arterial monitoring. Blood pressure reduction during the placebo phase, as measured by sphygmomanometry in the out-patient clinic, was highly significant for both systolic and diastolic pressures. In the same subjects, concomitant assessment by ambulatory monitoring showed no significant effect of placebo on intra-arterial pressure. After indoramin treatment blood pressures measured in the clinic showed a mean reduction of 6/8 mmHg, whereas intra-arterial monitoring showed mean reductions of 18/13 mmHg. The placebo response, therefore, appears to be an artifact of clinic blood pressure measurement and its use as a control value in pharmacological trials may lead to serious underestimation of the efficacy of the active drug.

Source: Gould, B. A., Mann, S., Davies, A. B. *et al.* (1981). Does placebo lower blood pressure? *Lancet*, **2**, 1377-1381.

## Breast self-examination

The booklet *Breast Self-examination*, published by the Health Education Council, was sent to 303 women with a covering letter from their own general practitioner, and two months later the patients were interviewed; 90.6 per cent read the booklet, and 15.9 per cent altered their behaviour. There were several other non-numerical indicators which strongly suggested that the women read the literature.

Source: Turner, J., Blaney, R., Irwin, R. *et al.* (1981). Do patients read breast self-examination booklets? *Health Education Journal*, **40**, 11-12.