

PRACTICE OBSERVED

Research in General Practice

Sterilisation of women: prevalence and outcome

ALASTAIR F WRIGHT

Why I started

My interest in research began with a "hunch"—a feeling that had come in the course of daily consultation. Being a "new town" practice, maternity work had always had an important place. Now, during postnatal examinations, I was seeing more women who had been sterilised—a procedure that was previously rare and reserved for cases of severe maternal illness. Now sterilisation was being offered, and eagerly accepted, as a routine contraceptive measure not limited to those of high parity or with medical indications. The other change I had noticed was that more women were consulting because of menstrual problems. Could this simply be due to aging in my rather atypical practice population, or might the two changes possibly be related? My curiosity thus aroused, further questions arose naturally from those impressions. Were there really many women in the practice who had chosen to be sterilised, or had it happened to see an unrepresentative group? How had these women come to be sterilised, and why had they made this choice? Were their expectations realised, or did many come to regret their decision? Was it really true that sterilised women came more often with menstrual disturbances, and were these symptoms in any way related to the operation? The research had begun by asking questions, but could they be answered by a research project that would be practicable in a busy general practice?

What I did

The first priority was to estimate the number of patients to be investigated and thus assess the amount of work required. No practice list is kept of operations, and the only practicable

approach seemed to be a search through the records. I therefore looked at the records of all women patients aged 20 to 50 years. My original guess of 50 to 60 cases from a population of 2200 women proved quite mistaken; I found 272. Even this figure was likely to be an underestimate of actual numbers because some patients who had been sterilised before coming to the practice might have no reference to tubal occlusion in their notes. The logical next step towards the answer—indeed the only alternative—was to ask patients.

According to Bradford Hill,¹ the pioneers of epidemiological research began their work in the 1830s. They tried to count every member of the population with whom they were concerned and usually failed, because they ran out of time, or staff, or money. When they succeeded they could not cope with the sheer weight of the statistical analysis. Fortunately, I could approach the problem by sampling. A 1:10 random sample, representative of women in the childbearing years, was identified from the age/sex register and questionnaires sent out to 250 patients. In my practice, as in some others, an age/sex register had been set up, more as an act of faith than with any specific research project in mind. In the event it proved invaluable for sampling and also for identifying suitable non-sterilised women to be controls.

At this point it seemed important to pause and take stock. For some time we had been noting all new referrals for sterilisation and searching the records of all new patients to identify as many new cases as possible. With some trepidation, because of the numbers, I decided to go ahead and interview as many sterilised women as possible and also to talk to an equal number of non-sterilised women of the same age. I would prefer to prefer to match for parity also, but this proved too difficult with the clerical help available. The difficulty was not the absence of data but its inaccessibility—a familiar problem with traditional medical records.

Using these methods, 387 sterilised women were identified and sent a questionnaire. Ten did not respond and two others refused to co-operate. The 375 patients who returned completed questionnaires were invited to attend for interview. This time

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published studies. Could dissatisfaction with sterilisation have been underestimated?

In 1968 Barglow and Eisner² had commented on the "marked disagreement among various authors about the statistical incidence of poor emotional outcome of tubal ligation." It is very difficult to compare figures on regret after sterilisation because of difficulties of definition, different criteria and groups of patients, and varying intervals after operation. Two additional factors seemed important to consider here. Might women be more frank in expressing regret to their own general practitioner than to a surgeon, who may have performed the operation? High response rates are common when a doctor studies his own patients. Might this uncover those patients who have made an unfortunate choice and would not normally wish to be reminded of it? Table II shows the importance of considering response rate as one factor affecting the validity of results.

TABLE II—Regrets after sterilisation—other studies

Author	Percentage of women with regret	Percentage that responded
Li & Chun (1967) ³	13	34
Blair & Squire (1966) ⁴	4	36
Reid & Barnes (1968) ⁵	4	17
Barglow & Eisner (1968) ²	15	96
Whitehouse (1968) ⁶	14	14
Present study (1979)	21	97

* Also reported larger questionnaire survey of same population which showed 8 regrets from 65 response rate.

I had noticed that more women seemed to be consulting because of menstrual problems and had speculated that this might be related to sterilisation. The alleged association between sterilisation and menorrhagia is disputed,^{7,8} and several conflicting hospital-based studies have been published. Recording patient's reports of menstrual problems could not alone answer this question but provides some evidence from general practice, where gynaecological symptoms are common and many patients are managed without referral. Forty-five per cent of the sterilised women reported current menstrual problems compared with 19% of women matched for control. When oral contraceptive-users are excluded from the matched group the differences remain statistically highly significant and not dependent on parity.

Lessons learned

Whether or not the research is considered to have been successful, it is important to prepare a written report, which should be discussed with interested and informed colleagues. The difficult process of writing serves to clarify the analysis and interpretation of what has been done, highlights deficiencies in the approach, and helps define possibilities for further research and improved planning. Writing a discussion of one's own work encourages wider and more critical reading of other research in the same field. Should the report be published, the effort will have been particularly worth while and further work may be tackled with enthusiasm.

Although doing research can be an absorbing and enjoyable activity, it remains, as yet, of interest only to a minority of general practitioners. It is most important for the would-be researcher to make contact with like-minded colleagues, perhaps at the nearest university department of general practice or at a Royal College of General Practitioners meeting. I have found attendance at research conferences both enjoyable and stimulating, and research "workshops" are a particularly fruitful source of good practical advice.

All projects take longer than expected to complete, but the time taken to explain the project to staff, colleagues, and patients and to listen to their reactions is time well spent. A clear and

friendly personal letter to participating patients, personally signed by the doctor, earns a good response.

Opportunities for similar research

Hospital-based trials are often performed on highly selected patient populations that are not necessarily representative of the whole community. Community-based research may reveal a different aspect of a problem from that visible from a hospital ward. Long-term social and clinical outcome, beneficial as well as harmful, may best be studied in the community. The small, relatively static and, above all, definable populations for which we care offer unrivalled opportunities to observe the epidemiological dynamics of "dis-ease." We need to describe the natural history of disease as we see it and what we do about it.

Guidelines

- DO cultivate the habit of jotting down ideas as they occur. Speculation is fundamental to research and cannot be formally learned.
- DO always ask advice of at least one knowledgeable and interested colleague.
- DO try to attend a course or research workshop.
- DO allow for thinking and listening time.
- DON'T omit a pilot study; it will save time in the end.
- DON'T be afraid to modify or drop parts of your project that have proved unmanageable.
- DON'T forget that statistical significance does not always mean clinical significance, and vice versa.
- DO remember, above all, that research should be enjoyable and interesting. Try it!

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CLASSICAL DIVISION OF THE PROFESSION With respect to the present division into physician, surgeon, apothecary, and man-midwife under which the profession is practised, whether it is either necessary or useful to demand to be considered... nature having frequently so mixed diseases. It would appear that to qualify for and practise the whole under the name of Doctor of Physic (or rather Doctor of Health) as is done in Scotland and America would be attended with much advantage to the public. The profession, however, being at present divided in the metropolis and large towns I shall consider each division separately though I am inclined to think the plan of general education and general practice would be the best both for the public and the profession throughout all parts of the country—T. CUMMERBY. (*Medical and Chirurgical Reform*. London, 1797.)

there were no refusals, but seven patients had left the district before I could interview them. The interviews proved most interesting, and I was impressed by the cheerful co-operation of patients and their frankness in answering all my questions. The time taken was considerable and I was again forced to compromise by sending questionnaires to the non-sterilised matched women and abandoning any idea of interviewing this group.

What I found

The results of the study showed that there were far more sterilised patients than expected (19% of all married patients) and some interesting facts about this representative sample of women in the practice. Before this I had no idea of the prevalence of menstrual, sexual, or family problems among women patients (table I) or that the prevalence of sexual problems was quite so dependent on age (fig 1). The results from the sample also gave important pointers to the sort of results to be expected from a larger follow-up investigation, and thus served also as a pilot study.

TABLE I—Patients with menstrual, sexual, or family problems (random sample)

Problem	Menstrual problems	Sexual problems	Family problems
Number answering "yes"	19 (19.7%)	11 (11.7%)	34 (29.7%)
Best number	210	210	210

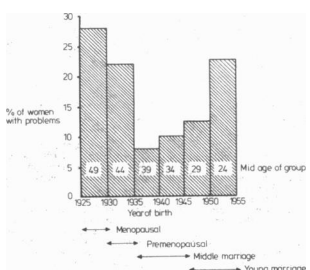


FIG 1—Percentage of women in the whole sample who had sexual problems.

From the interviews it appeared that about 80% of patients were very happy about their sterilisation and had no regrets, while about 9% were dissatisfied and unhappy, and some bitterly disappointed. The remaining 11% had mixed feelings but felt that on balance the operation had been worth while (fig 2).

Practical problems

Practical difficulties are mainly those of organisation and the efficient use of time, and this implies making the best use of available resources. Modest financing, sufficient to afford a part-

time research secretary is not normally difficult to obtain, provided that a well thought out and practicable plan is presented. An "aide-memoire for preparing a protocol" should prove helpful. The main expense is usually secretarial time, but if many questionnaires are to be sent out, you must also budget for postage. Most health boards have funds to support small projects and are usually sympathetic. The Royal College of General Practitioners may also be approached for help, and the BMA maintains a list of organisations that are willing to support research in specific areas.

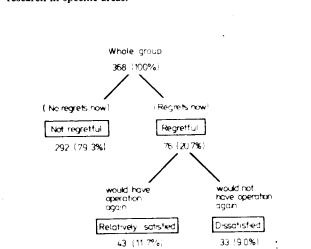


FIG 2—Number of women who regretted or did not regret having been sterilised.

A major advantage of this type of research in general practice is that the size and the age distribution of the study population can be clearly defined. If an age/sex register is to be used frequently it is essential to update quickly the fairly frequent changes of address (and name!) that complicate follow-up. During such an exercise it is very worth while to seek up-to-date knowledge of the district nurse, the health visitor, and even the local housing authority and the voters roll.

Statistical advice is important. Before deciding what results mean it is important to understand what they say. Slick cosmetic surgery cannot transform carefully gathered data into presentable work. Early contact with a sympathetic statistician can lessen the chances of disappointment, but it is important to have clear ideas about research aims and the limitations of practice resources. It is unrealistic to gather information like a stamp collection and expect a statistician to make sense of it. Doing simple analyses oneself, perhaps using edge-punch cards, and working out simple results from one's own data, is worth while and stimulating. Handling the cards and sorting in piles is a wining process that gives a good visual impression of the analysis and helps to get the "feel" of the data. Calculating means and standard deviations on a pocket calculator takes only a little practice, and handling simple significance tests on one's own data is interesting and powerfully educative. This practical experience helps communication with the statistician and enables maximum benefit to be gained from his expertise.

Clinical conclusions

Some of my original questions were answered by the research. Some could not be answered, but provided more questions and some pointers to further work. I found the research absorbing and enjoyable and discovered a great deal about my practice and my patients that I had not even guessed before.

I had asked myself, "How common is dissatisfaction after sterilisation?" I had come up with a figure higher than in most

Practising Prevention

Adults

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"Prevention is the key to healthier living and a higher quality of life for us all."

Preventive medicine, or "anticipatory care," is relevant to any patient who is seen by a doctor. Doctors, however, have time to undertake only a few of the tasks that are open to them, so they are forced to choose where to spend their resources. To some it may seem that the GP should spend time with the most vulnerable patients, but a moment's thought will show that the choice is not easy. Adults are essential in the life of many vulnerable patients. Parents conceive and rear children, break or make marriages, and inflict emotional or physical injury on their offspring. Mothers decide whether or not to attend antenatal clinics and to smoke or drink during pregnancy. Many old people and those who are chronically sick depend on another adult to shop or clean or care for them. Adults create the wealth of our country on which our medical services depend. In short, adults have a strong claim on the limited time of the general practitioner, both in curative and preventive medicine.

Mortality and morbidity

The overwhelming tragedy of death makes anything that the doctor can do to prevent it important. The four most frequent causes of death in adults are cardiovascular disease, cancer, cerebrovascular accidents, and accidents. These can be reduced by anticipatory care. Death rates from ischaemic heart disease have since the 1960s come down in the United States. The variation of mortality figures in different countries (table I) shows the scope for prevention.

TABLE I—Percentage of persons aged 45 years who will not survive to 65 years: the death rates of 1972

Country	Men	Women
Sweden	19	11
England and Wales	21	14
Scotland	23	16

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Articles in this series on prevention on coronary heart disease, hypertension, smoking, cancer, and alcohol all touch on areas where GPs can help to modify these horrifying statistics. It is important for us general practitioners to try and take a smoking and alcohol history on our patients and a blood pressure reading

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once a year. Those who smoke should be advised to stop and given a pamphlet on giving up smoking and then should be followed up at a further consultation. Those who have a drink problem should be given time to discuss it and those who have hypertension treated.

More patients should have regular cervical smears taken and more should be followed up for intermenstrual and rectal bleeding and abnormalities in pigmented nails and breast lumps. But we general practitioners need to look beyond the mortality figures and see how much can be done in the surgery to prevent less overwhelming illnesses in adults. I have space to list only a few ways in which morbidity figures might be altered by the GP. The reader may add others.

Immunisation—The simplest effective preventive activity in the surgery is probably immunisation. Figures show that 13 to 20% of potentially fertile women are still without antibodies to rubella.⁹ There were 1000 terminations of pregnancy on the grounds of damaged fetuses in 1969, and many children are born with damaged hearing as a result of rubella.¹⁰ GPs could do much to identify mothers at risk and immunise them. Many patients are still not protected against polio—a condition that is common in some countries of the world and can be imported and cripple many of the adults on our lists who are not yet immunised.

Antenatal clinics—Adults could be encouraged by GPs to attend earlier and more regularly at antenatal clinics and well-baby clinics.

Low back pain—Low back pain is said to cause the loss of 1.5m working days to industry (£220m in lost output).¹¹ Much could be done to inform adults on the proper ways of lifting, bending, sitting, and working, so as to protect their backs from injury.

Bowel disease—Bowel disease and constipation may be reduced by changing our diets. Patients should be informed of the benefits of roughage and low fat diets (see figure).

Iatrogenic disease—Above all, GPs should be specially concerned about those illnesses caused by medical care. GPs can do much to prevent unnecessary hospitalisation, investigation, surgery, and medication.

In addition, there is a great potential for providing preventive care to adults for the family doctor who is interested in the emotional needs of his patients. One marriage in four is now said to end in divorce. Self-poisoning accounts for 15% of acute hospital admissions. Forty-four per cent of known conceptuses to married women with two or more children are regretted, and terminations are still running high, even in middle-aged women (table II)—and this despite widespread contraceptive services provided by GPs in family planning clinics. "By listening and being open" GPs can help some patients to first reveal and then face up to personal or psychosocial problems, as well as some of the difficulties that arise in the middle years. The recent publication on prevention in psychiatric disorders by the Royal College of General Practitioners¹² shows how stress at times of "life changes" may be helped by the GP anticipating this and discussing it with patients. Such changes include the