exploited by health planners to the benefit of the patient in many parts of the developing world.

Conclusions

At the end of the period we had reached the following conclusions: (1) Doctors in rural general hospitals in Africa cannot avoid dealing with psychiatric patients. (2) Psychiatric problems of many kinds present and most can be managed and helped even in the unsophisticated setting of the mission hospital, with little extra effort on the part of the doctor. (3) An essential prerequisite is educating the whole hospital staff in the elements of psychiatric nursing and management. (4) It is essential to use a local person as linguistic and cultural interpreter. If this role can be combined with therapeutic skills it would be advantageous to all concerned. Thus medical auxiliaries can be trained to deal with most of the problems presenting. (5) There is much to be said for seeking the co-operation of a local traditional healer. (6) The co-operation of the patient's relatives should be encouraged throughout the therapeutic process. (7) Outpatient treatment may be difficult to organise, but should be the aim.

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Personal Paper

A question of conscience

R WALLEY

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It was indeed a surprise to be informed by an eminent professor, after a hospital interview, that as a Roman Catholic gynaecologist "there is no place for you to practise within the National Health Service." One had always assumed, quite naively it seems, that the British "system" is based on fair play and, above all, respect for the individual conscience. It soon became quite obvious that in order to stay in the specialty in Britain I would have had to change a conscientiously held abhorrence to the direct taking of human life. I chose to leave country, home, and family in order to practise medicine in full freedom of conscience.

Rights of physicians

Much has been written about the rights of women to obtain abortions and also the rights of physicians to provide this service within the law. The 1967 Abortion Act protected this right. Little has been written, however, about the rights of physicians who might have conscientious objections to the termination of pregnancy. I shall describe a particular experience in Britain and argue for the place of conscience within the practice of medicine.

All obstetricians and gynaecologists are now faced with the terrible decision as to whether to terminate a human life. For many this decision in conscience is possible. For others, equally in conscience, this decision is impossible. This view is based on a fundamental respect for life from the moment of conception. The conscientious objection clause was included in the 1967 Abortion Act to respect this view. My own experience, and that of others, and recent directives from the Department of Health have made this conscience clause largely a mockery and raise fundamental ethical questions concerning the practice of medicine in the National Health Service.

Personal experience

The method for side-stepping the conscientious objection clause is illustrated by my own experience. I had started specialising in obstetrics and gynaecology in 1965 after preregistration house appointments. At that time terminations of pregnancy were performed in teaching hospitals, more or less on the grounds laid down by the present Act. The rights of the junior doctors to object to these procedures were fully respected. The explanation given at that time was that all terminations should be done by a member of the consultant staff as the procedure was technically illegal and prosecution was always a possibility. In the next years I completed the junior house appointments and obtained the required postgraduate qualifications. Discrimination began once the Abortion Act was passed and I began applying for senior house appointments.

At one University Appointments Board the interview went as follows:

PROFESSOR: Doctor, what are your views on sterilisation?

WALLEY: Well, sir, when there is a good medical or moral indication, I have no problems in recommending this procedure.

PROFESSOR: In taking this a little further, what are your views on termination of pregnancy?

WALLEY: I have a conscientious objection to abortion.

Faculty of Medicine, Memorial University of Newfoundland, St John's, Newfoundland

R WALLEY, FRCS(C), MRCOG, assistant professor of obstetrics and gynaecology (present address: Department of Population Sciences, Harvard School of Public Health, Boston, Mass 02115)

PROFESSOR: Would this be on religious grounds?

WALLEY: Yes. As it happens I am a Roman Catholic but I also have an objection on obstetrical grounds.

The next question came from a speaker further down the table.

QUESTIONER: Doctor, do you think that as a Roman Catholic you were most unwise to undertake a career in obstetrics and gynaecology?

WALLEY: I entered the specialty long before the law was changed. At that time my conscientious objection was fully respected, but it does seem now that it is not respected, and this is a problem. I do not think, however, that termination of pregnancy is the major part of practising obstetrics and gynaecology, and as a fully trained specialist, I feel that I do have much to offer my patients.

The appointment was given to a man who had no objection to abortion, had only been in the country one year, and had no postgraduate qualifications. Somewhat taken aback, I left the waiting room to start the long process of obtaining a job elsewhere.

As I was leaving, I was called back by three members of the board, including the professor and second spokesman. I was informed that the selection board had first decided to give me the position, but after further discussion felt that to do so would be doing me a disservice. The professor then stated that "as a Catholic gynaecologist, there is no place for you to practise medicine in Britain. You are better off getting out". It was suggested that I might consider either going into urology or general practice if I had no wish to leave Britain. I pointed out that, having been in the specialty some five years, having been trained at the expense of the British Government, and as this was my home, I wished for some strange reason to continue to practise obstetrics and gynaecology in England.

I discussed this situation further at two London teaching hospitals with senior members of the Royal College of Obstetricians and Gynaecologists. They agreed that the situation was unjust, but felt that I would be continuing in the specialty with "one hand tied behind my back." They felt many obstetricians and gynaecologists were against the practice of abortion on demand that existed in practice but not in law in Britain. But they felt that "if you are going to do one, you are going to do the lot. And, anyway, what would happen if we had to leave the theatre and you had to carry on doing the lists and refused to do the terminations?" Another consultant gynaecologist considered himself purely as a technician and was prepared to offer his services on that basis without further consideration. The consensus was that I would be continuing in the specialty at a disadvantage.

I became, to say the least, somewhat incensed by this experience and advice, and I proceeded to take the matter up with a member of the House of Commons. Somewhat concerned with the situation he contacted the Department of Health. The reply from the Under-Secretary of State was to the effect that they had no evidence of this discrimination but he did see that it did seem possible that a practitioner with a conscientious objection to the Abortion Act would find it difficult to obtain a suitable post—for example, where it was necessary to ensure that there were enough gynaecologists in a particular area who were prepared to provide the services under the Act. He went on to point out that "Doctors who wished to obtain posts in a more popular specialty, such as obstetrics and gynaecology, faced fierce competition, especially in the teaching hospitals." It appeared to me that one had to compete not only on academic and professional ability but also on one's religious convictions.

It soon became clear that my particular position was not unique. Seven other junior specialists had had similar experiences of discrimination and details of all these cases were forwarded to the Lane Committee. The support from one's own profession was negligible. A letter on the subject to the *BMJ*[1] received one reply from a practitioner in Wales. Some private supportive replies were received from heads of university departments, but they did not seem to have the courage to offer their support in public in the columns of the medical journals. My position did receive some attention from the news media and some sympathy from the general public. Nevertheless, none was sufficient to prevent my becoming unemployed. There was no alternative but to leave Britain.

Conscientious objection

This somewhat detailed account of my experience illustrates the total lack of leadership in implementing the law or even the spirit of the law by the profession. In a recent memorandum to hospitals not to employ doctors who refuse to perform abortions the Department of Health has also totally disregarded the conscientious objection clause. The Lane Committee has restated that "no doctor or nurse is required to participate in the treatment authorised by the Act, if he/she has a conscientious objection to it, on religious or ethical grounds. This is considered an entirely proper and traditional freedom which must be jealously guarded."[2]

Later the Committee's report questions whether priority should be given to the individual's claim for religious tolerance and his right conscientiously to refuse to take part in abortion work. Its conclusion is that the traditional freedom that was so jealously to be guarded may now be rejected in order that the needs of the many may take priority.

This rejection of the right to conscientious objection to abortion places in doubt the whole right to conscientious objection—for example, in time of war. Conscientious objection has long been a tenet of civilised society. From time immemorial service in the armed forces, however onerous and distasteful, has been regarded as an obligation which the state could impose because of citizenship and residence. Nevertheless, exemption from service has been understood as a natural and necessary corollary to religious freedom and certain religious groups have been granted this freedom and allowed to serve elsewhere. This freedom in fact is now withdrawn in the abortion situation without even this chance to serve elsewhere.

Bernard Haring has commented: "One of the great values and foundations of a religiously pleuralistic state is respect for the moral and religious convictions of loyal and serious citizens. There is no good reason, in view of the common good and the fundamental right of all citizens, to disregard the upright moral conviction of many Catholics who, on this point (abortion), abide by the official teaching of their church."[3]

Lack of leadership

The medical profession in Britain must be held partly accountable for allowing this discrimination to exist against a minority of its members. The Royal College of Obstetricians and Gynaecologists observed: "We have certain knowledge that when candidates are being interviewed for appointments as registrar, senior registrar, or consultant in obstetrics and gynaecology, it is now almost the rule for them to be asked their attitude to the implementation of the Abortion Act. We submit that it is quite improper for candidates, for posts in obstetrics and gynaecology, to be discarded or outlawed on the grounds that they have a conscientious objection to performing any particular operation. Their claim should be judged solely on their competence as obstetricians and gynaecologists and not according to whether they will provide an abortion service."[4]

Both junior and senior clinicians in the National Health Service have, in the last year, resorted to industrial action; the former group to protest about salaries and the other to protest about the Government interfering in the traditional doctor-patient relationship—that is, the removal of private practice from National Health Hospitals. Consultants gave approval to the

strike action of junior doctors in their fight for a fair salary. Little or no help or leadership was given to a small group of junior physicians who were being discriminated against in attempting to maintain a strong ethical position.

It would seem that if the medical profession in Britain were to maintain the highest possible medical ethical principles in its practice, then it would have stronger bargaining power with the Government than it has at the present time. Vocal protests concerning ethics arise seemingly only when money is an issue, thus the Government and public may look, with some fair degree of scepticism, on the possible motives of the profession.

It is recognised that the National Health Service has the duty to provide equal and efficient care for all. Nevertheless, by its interference in the freedom to practise medicine by removing physicians who it considers are upsetting the efficient operation of the service, the state infringes on the principle of the total autonomy of the physician and the rights of women in general. The practice of medicine in Britain will suffer by this intervention, for a sameness of practice will develop which will stifle further thought and progress. The freedom that one group of women have gained through the introduction of the 1967 Abortion Act has been lost by another group of women by their inability in the future to be able to consult a physician whose method of practice is based on a profound respect for life.

Fortunately, it has been possible to come to a country whose health care delivery system still maintains a high degree of ethical standards. The ability to practise a specialty is judged purely on qualifications and experience and not on religious background. One hopes most sincerely that this situation will continue.

What a sad world it is when a physician is unable to continue to practise because he has a profound respect for life. The declaration of Geneva was never more pertinent: "I will practise my profession with conscience and dignity. I will maintain the utmost respect for human life, from the time of conception; even under threat."[5]

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Statistics at Square One

IV—Standard deviation (concluded)

T D V SWINSCOW

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Standard deviation from grouped data

Often the standard deviation must be calculated on such a large number of data that they need to be grouped for convenient handling. We have already met this necessity with the calculation of the mean. When Dr Green had only 15 readings for concentration of lead in the urine he could keep them separate in an array. But when he collected 140 readings he compiled a frequency distribution to make them manageable (Part II, table 2.1).

TABLE 4.1—*Calculation of standard deviation from grouped data (continuous variable)*

(1) Lead concentration µmol/24h	(2) Number of children	(3) Midpoints of col (1)	(4) Col (2) × col (3)	(5) Midpoints squared	(6) Col (2) × col (5)
0 –	2	0·2	0·4	0·04	0·08
0·4 –	7	0·6	4·2	0·36	2·52
0·8 –	10	1·0	10·2	1·0	10·0
1·2 –	16	1·4	22·4	1·96	31·36
1·6 –	23	1·8	41·4	3·24	74·52
2·0 –	28	2·2	61·6	4·84	135·52
2·4 –	19	2·6	49·4	6·76	128·44
2·8 –	16	3·0	48·0	9·0	144·0
3·2 –	11	3·4	37·4	11·56	127·16
3·6 –	7	3·8	26·6	14·44	101·08
4·0 –	1	4·2	4·2	17·64	17·64
4·4 –					
Total	140		305·6		772·32

The calculation of the standard deviation from data grouped in a frequency distribution is similar to the calculation from ungrouped data, but one important point needs watching. As with the calculation of the mean from grouped data, the *midpoint* in each class is taken as the reading.

As an example, Dr Green's data are set out in table 4.1, which is simply an extension of table 2.1, with two additional columns. Just as in calculating the standard deviation from ungrouped data (Part III) so here we do not need to measure the actual differences between the observations and their mean. Instead we make use of the identity that we used in Part III:

(sum of squares of differences between observations and mean) equals (sum of squares of observations) minus (sum of observations)^2 ÷ number of observations, or

$$\Sigma(x-\bar{x})^2=\Sigma x^2-\frac{(\Sigma x)^2}{n}$$

It is important to remember that the "observations" in this case are the midpoints in the frequency distribution.

The sum of the observations, Σx, was calculated in table 2·1 to find the mean and is now repeated in table 4.1, col (4), where the midpoint of each class of lead concentration is multiplied by the number of children in the class. Then, just as when calculating the standard deviation from the ungrouped series we squared each of the observations in turn, so now we take each of the midpoints of the observation classes shown in col (3) and square them, as in col (5). These correspond to the squares of the observations in the ungrouped series. But since we have

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T D V SWINSCOW, MSC, MB, deputy editor