Contemporary Themes

Quality of obstetric care provided for Asian immigrants in Leicestershire

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Abstract

Between 1976 and 1981 some 939 perinatal deaths occurred to women living in Leicestershire, of which 128 (14%) were to Asian women. The qualifications of the general practitioners, the gestation at which women start antenatal care, and perinatal death were used as structural, process, and outcome measures for evaluating the services provided to Asian immigrants within this population. Perinatal deaths were divided into four groups: congenital malformation, macerated stillbirth, asphyxia in labour, and immaturity. Asian mothers had one and a half times the risk of perinatal mortality when social class, parity, height, legitimacy, and the general practitioner's qualifications were taken into account. Asian and non-Asian mothers with general practitioners who were not on the obstetric list had more than twice the risk of a perinatal death when a similar adjustment was made.

Recommendations include priority allocation of community midwives to practitioners not on the obstetric list, the establishment of postgraduate courses for such doctors, and the continued evaluation of the effect of such proposals on perinatal mortality.

Introduction

Evaluation of the quality of care has been the subject of much debate on both sides of the Atlantic for several years. Many schemes have been suggested for such evaluations but that proposed by Donabedian¹ in which structures, processes (or how resources are used for patients' benefits), and outcomes (death, disease, disability, discomfort, dissatisfaction, debt) are evaluated remains attractive. In this study we have used as a structural, or resource, measure the obstetric list, and have defined mothers with general practitioners who are not on the obstetric list as disadvantaged in terms of obstetric care. As a process or measure of use, we have used the time of first presentation for formal antenatal care either at the hospital or in general practice (the definition of formal care being the establishment of an antenatal record or a cooperation card). We have used perinatal mortality as the measure of outcome.

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Method

SAMPLE POPULATION

In 1978 the population of Leicestershire was estimated to be 833 000, of whom 55-60 000 are described as Asian. The Asian population (roughly 60% Hindu, 25% Muslim, and 15% Sikh) live predominantly within the City of Leicester. They came mainly from India (Gujarat and Punjab), Kenya, and Uganda. In 1978 women born in the New Commonwealth and Pakistan gave birth to 14% of all Leicestershire births and 33% of births in Leicester City.²

The results reported below relate to all 939 perinatal deaths in Leicestershire from 1976 to 1980.

STUDY DESIGN

We used a case control study design. Cases were defined as perinatal deaths occurring to women whose place of residence was Leicestershire, regardless of the place of delivery. Controls were selected as the next live birth to a Leicestershire woman in the intended place of delivery of the perinatal death to which the case related.³ This method of control selection fails to provide a representative sample of live births as the control sample. A correction for this bias has been developed which has been reported elsewhere.^{4,5} All relative risk estimates presented below have been estimated on a control sample corrected for this bias. Case note review, interview with the mother, and the comments of a review group attempting to identify avoidable factors in relation to the perinatal death are all used as sources of data.

Results

Table I shows the control sample of live births together with the obstetric qualifications and whether the general practitioners of the women concerned are on the obstetric list. In the study individual practitioners were not identified, but the practitioners' obstetric status was recorded as a characteristic of the mother. Overall, 4% of mothers had practitioners who were not on the obstetric list, but the proportion varied considerably between Asian (14.8%) and non-Asian patients (2.7%). The relation was reversed when higher qualifications in obstetrics were considered, Asian mothers having a much smaller proportion (6.3%) of practitioners with higher qualifications than non-Asian mothers (39.1%).

The figure shows the difference between Asian and non-Asian mothers by weeks of gestation at the time of starting formal antenatal

TABLE I—Obstetric qualifications of general practitioners of Asian and non-Asian mothers: Leicestershire 1976-80 (controls). Figures are numbers (%) of women

	Not on the obstetric list	On obstetric list		Total
		No higher qualification	Higher qualification	
Asian mothers	19 (14.8)	101 (78.9)	8 (6.3)	128 (100.0)
Non-Asian mothers	22 (2.7)	472 (58.2)	317 (39.1)	811 (100.0)
Total	41 (4.4)	573 (61.0)	325 (34.6)	939 (100.0)

Initial antenatal care (%) by general practitioner: obstetric list status and week of gestation Leicestershire (controls) 1976-80.

care, together with the general practitioner obstetric list status variable. At 16 weeks' gestation 64% of Asians as compared with 80% of non-Asians are enrolled into systematic care. At 18 weeks the proportions are 74% and 87%. Between 14 and 20 weeks the patients of general practitioners not on the obstetric list attend, or are enrolled into, care later than the patients of those who are on the obstetric list. This applies to both Asian and non-Asian patients.

All these associations are perhaps of little relevance unless they are related to important outcomes resulting from the care provided, in this case perinatal mortality. Table II shows the relative risks of perinatal deaths in Asians and in patients who have general practitioners who are not on the obstetric list. Each group shows pronounced and significant excess mortality. The subanalysis shown in the table relates to the Wigglesworth classification of perinatal death.^{6,7}

Other biological and social variables, however, have well known associations with perinatal mortality—for example, parity, social class, height, and legitimacy. In this study all these variables reached accepted levels of statistical significance, and it is therefore important that these variables be taken into account in assessing the possible relation of ethnic groups and the qualifications of the general practitioner to perinatal mortality. Table III shows the relative risks of perinatal death for Asians and for patients whose practitioners are not on the obstetric list when the effect of these variables is allowed for. Both variables contribute significantly to the risk of perinatal death. Table IV shows the interaction of these variables with the benchmark (100) for the relative risk estimates being taken as the non-Asian

TABLE II—Risk factors for perinatal death: Leicestershire 1976-80 (95% confidence limits in parentheses)

	Overall relative risk (%)	Particular high risk cause of death (Wigglesworth classification)
Mothers of Asian origin: other mothers	165 (130-210)	Asphyxia in labour 204 (132-314) Macerated stillbirth 171 (123-237) Congenital malformations 158 (107-234)
GPs not on obstetric list: GPs on list	200 (130-310)	234 (129-423) Asphyxia in labour 221 (111-442) Macerated stillbirth 205 (119-354)

TABLE III—Relative risk of perinatal death among Asian and non-Asian women with general practitioners not on the obstetric list: Leicestershire 1976-80 (95% confidence limits in parentheses)

	Relative risk (%)
Mothers of Asian origin: other mothers	142 (107-187) adjusted for social class, parity, height, legitimacy, and general practitioner obstetric list status
GPs not on obstetric list: GPs on list	181 (118-277) adjusted for social class, parity, height, legitimacy, and ethnic group

TABLE IV—Relative risk* of perinatal death adjusted for social class, parity, height, and legitimacy Leicestershire 1976-80. (Figures in parentheses are numbers of cases, controls on which estimates are based)

	GP on obstetric list	GP not on obstetric list
Non-Asian mothers	100† (734, 789)	211 (38, 22)
Asian mothers	150 (135, 109)	226 (32, 19)

† By definition.

* Calculated by the Mantel-Haenszel procedure slightly modified to adjust for the bias incurred as a result of the selection of controls.^{1,3}

TABLE V—Potentially avoidable factors present in perinatal deaths in Leicestershire 1976-80

Details	Asian		Non-Asian	
	No	%	No	%
No avoidable factors present	136	80.5	634	82.3
Avoidable factors present:	33	19.5	136	17.7
Relating to antenatal care	20	60.6	50	36.8
Care at delivery	10	30.3	36	26.5
Neonatal care	1	3.0	5	3.7
Patient compliance	1	3.0	24	17.6
Refusal of amniocentesis	1	3.0	7	5.1
Combination of factors	1	3.0	14	10.3
Total	33	100.0	136	100.0

mothers with general practitioners who are on the obstetric list. Both non-Asian and Asian mothers who had practitioners who were not on the obstetric list appeared to have over twice the risk of non-Asian mothers with practitioners on the list. Asian mothers with practitioners on the list occupy an intermediate position on the scale of risk.

Table V describes the categories into which avoidable factors were allocated by the review group. The only difference between the Asians and non-Asians relates to antenatal care ($p < 0.05$), a considerable part of which is undertaken in the community.

Discussion

We have shown that Asian patients in Leicestershire have a larger proportion of general practitioners who are not on the obstetric list than non-Asian patients. The vast majority of Asians in Leicestershire live in the older, relatively poorer, inner city areas of Leicester. In Asian patients systematic antenatal care, as evidenced by routine recording of antenatal tests and examinations, starts at later stages of pregnancy. This tendency of late enrolment into care increases if the patient's doctor is not on the obstetric list. At first we thought this might indicate only patient behaviour, but it has been suggested that some practitioners might not wish to enrol patients into formal antenatal care until the pregnancy is well established. Consequently the mother herself may not see the value of positive health behaviours, such as stopping smoking and reducing alcohol consumption, if her medical adviser is apparently unconcerned about the pregnancy.

Most importantly Asian patients had a significant excess risk of perinatal mortality in three of the four groups of perinatal death recently described by Wigglesworth.⁶ The fourth group of deaths, those due to immaturity, was close to showing a significant excess mortality at the 5% level. Other work in preparation indicates that the excess Asian mortality occurs predominantly in the Hindu vegetarian patients. This excess mortality persisted when social class, parity, height, legitimacy, and whether the general practitioner was on the obstetric list were taken into account.

Patients of both ethnic groups whose general practitioners were not on the obstetric list have a significant excess risk of perinatal mortality which persists when social class, parity, height, and legitimacy were taken into account. This finding could be seen to support the recent proposals by the Royal College of Obstetricians and Gynaecologists to revise the requirements for admission to the obstetric list.

Data on avoidable factors were derived by a group comprising an obstetrician, midwife, general practitioner, community physician, and, latterly, a paediatrician reviewing all the information on the cases and seeking to identify evidence of significant deviations from accepted practice. Such reviews were undertaken only on the cases and were likely to underestimate, rather than overestimate, in a non-random way the extent of such care. It is perhaps surprising therefore that this relatively "soft," uncontrolled data pointed towards differences between the care provided to Asians and non-Asians that were exactly in the area suggested by the earliest analyses of the more reliable, controlled data.

We suggest that although these significant associations have not been shown to be causative, the following implications must surely exist for health services. Firstly, service planners should perhaps ensure that practitioners not on the obstetric list have a priority claim for the full attachment of experienced community midwives to their practices. Secondly, consumer interest and involvement in maternity services should be encouraged in Asian patients by people who understand and can communicate with the various Asian cultural groups. This might result in earlier attendance at antenatal clinics and other appropriate health related behaviours might be stimulated. Thirdly, post-graduate courses should be arranged especially for doctors who are not on the obstetric list. Finally, such innovations will need continual evaluation, not just in terms of professional knowledge acquired but in terms of appropriate patient outcomes, which should include measures of maternal satisfaction as well as measures of maternal and infant mortality and morbidity. We suggest that the case control methods outlined above are a highly appropriate starting point for such routine monitoring as was recommended by the recent Social Services Committee on Perinatal and Neonatal Mortality.⁸

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many hours they spent in the review group; Louise Phillips, Celia Lambden, Ivy Rushby, and Elizabeth Mason for their contribution as midwives and study coordinators; John Woods for programming; Pauline Payne for preparing the manuscript; the midwifery staff who helped with interviewing at the Leicester Royal Infirmary and the Leicester General Hospital; and all the other doctors, nurses, administrators, dietitians, and social workers in hospitals that provide obstetric services to Leicestershire mothers, both within and outside Leicestershire, for their participation; and last, but certainly not least, John MacVicar for his help and encouragement.

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- 8 House of Commons Social Services Committee 1979-80. *Perinatal and neonatal mortality*. Vol 1. London: HMSO, 1980.

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Is it advisable to give "bland drinks" as part of the first aid treatment of a patient who has swallowed a poisonous fluid?

In the case of ingestion of a corrosive substance in the conscious patient bland fluids should be given,¹ as either milk or water. If milk is not immediately available water should be given, since speed is essential. For other ingested poisons, there is no evidence that bland fluids are of help and, in fact, studies in animals show considerable enhancement of gastrointestinal absorption of some poisons when diluted with water.²—J DENNISON, senior registrar, and A DENDUYTS-WHITEHEAD, information officer (poisons unit), London.

¹ Proudfoot A. *Diagnosis and management of acute poisoning*. London: Blackwell Scientific Publications, 1982:98.

² Picchioni AL. In: Winek CL, ed. *Toxicology annual*. New York: Dekker, 1974:27.

A woman in her 30s has a band of dark variegated pigmentation down each side of her abdomen from the ribs to the pelvic region but the inner third of the skin of the abdomen is not affected. She also has a narrow band along the thoracic and lumbar vertebrae, and there is very slight darkening on the back of her forearms. There is no pigmentation of the legs, neck, mouth, or gums. She had a copper coil inserted in the abdomen in 1971, and this condition began to develop three or four months later. The pigmentation gives her no discomfort, and there is no family history.

The banded areas of pigmentation in this patient are probably due to late appearing naevi. Sometimes epithelial naevi may be very extensive and appear late in adult life. One type of naevus is the naevus unius lateris, and in this there are extensive linear and often warty lesions on the limbs as well as transverse bands on the trunk. The involvement may be bilateral, and the lesions are often hyper-melanotic. In women one often sees extensive variegated hyper-melanotic areas on the trunk that do not become hairy or warty but are more noticeable in the summer, when they tan more readily than

the surrounding normal skin. This type of naevus is more commonly seen in men and is known as the Becker naevus.^{1,2} It is usually unilateral and characteristically affects the shoulder and upper back. I think it is coincidental that the increased pigmentation in this patient started after the insertion of a copper coil.—S S BLEEHEN, reader in dermatology and consultant dermatologist, Sheffield.

¹ Becker SW. Concurrent melanosis and hypertrichosis in the distribution of nevus unius lateris. *Archives of Dermatology and Syphilology* 1949;**60**:155-60.

² Copeman PWM, Jones EW. Pigmented hairy epidermal naevus (Becker). *Arch Dermatol* 1965;**92**:249-51.

Why are hairdressers reluctant to perm the hair of a woman within six months of parturition or after major surgery?

For up to six months after a major stress such as parturition, major surgery, haemorrhage, or serious infection a diffuse type of scalp hair fall may occur. Kligman¹ termed it telogen effluvium. On the normal scalp up to 15% of hair is in the resting or telogen phase, but serious stress may force up to 25% of hair to enter this phase. When this resting hair falls out, either by brushing or by pressure from new hair, temporary baldness may become apparent, especially if there is already some thinning of the scalp hair from some other cause. Cautious hairdressers will be unwilling to apply potent chemicals such as permanent wave lotions, bleaching agents, or dyes lest they are blamed for a telogen effluvium. It might be difficult to defend a case in court, especially should putting hair into rollers be blamed. Accordingly hairdressers will not run the risk of legal action, although it is just as safe to apply the potent chemicals to hair during the six months after giving birth or after major surgery as at any other time.—ALAN B SHRANK, consultant dermatologist, Shrewsbury.

¹ Kligman AM. Pathologic dynamics of human hair loss. I. Telogen effluvium. *Arch Dermatol* 1961;**83**:175-98.