Public perception of histopathology

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Introduction

All pathologists will be familiar with the popular misconceptions which surround their particular specialty. Most histopathologists will have spent a considerable amount of social and professional time attempting to convince others that the majority of their work is dedicated more to the benefit of living patients than to the identification of unnatural causes of death. The high profile branches of pathology, namely forensic pathology, toxicology, and microbiology, receive considerable media attention through their roles in crime detection and public health issues. The existence and role of other pathology disciplines appear to remain largely unknown to most of the lay public. Histopathology undoubtedly suffers from this increasingly recognised problem, which may also impair the ability of the specialty to win resources for current services or future developments.

The aim of this study was to provide the first detailed examination of the public perceptions of histopathology. Any future initiatives to promote the role of histopathology within medical practice could then be directed towards those areas which are found to be most commonly associated with misconceptions or lack of awareness.

Methods

QUESTIONNAIRE DESIGN

A postal questionnaire was designed by a panel of histopathologists, general practitioners and a non-medically qualified health services researcher. Several versions of the questionnaire were piloted during development and the final version contained 10 questions with multiple stems relating to histopathology and necropsy. Respondents were required to tick a box within a limited range of options (see tables 1-4). Space was left for additional comments. Each questionnaire was accompanied by an ex-

planatory letter from the local general practitioner together with a stamped addressed reply envelope. A single reminder letter and further questionnaire were sent to non-respondents after four weeks.

QUESTIONNAIRE TERMINOLOGY

Preliminary work clearly indicated that the study would not be able to investigate public perceptions relating to the other pathology disciplines of chemical pathology, haematology, immunology, medical microbiology, toxicology, and virology. The required questionnaire would have been prohibitively long and there would have been much confusion about terminology. The same studies also established that the term "histopathologist" was so poorly understood that it could not be used effectively in the final survey. The term "pathologist" was found to be an acceptable synonym for "histopathologist" and was therefore adopted in the questionnaire, which was entitled "What is a pathologist?". All participants in the pilot studies appeared to be aware of the necropsy component of the work of pathologists and therefore specific questions relating to necropsies were included in the questionnaire. The large amount of data obtained in relation to the questions relating to necropsies will not be discussed in this paper.

SUBJECTS AND SAMPLING PROCEDURE

The sampling frame used was the Family Health Service Authority register of all patients registered with one local general practitioner. EpiInfo software¹ was used to draw a random sample of 500 people aged between 18 and 64 years from this practice population. The age range was selected to determine the views of the adult population and the upper age limit was set in recognition of the potential sensitivity of some of the questionnaire subject material,

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Table 1 Responses to items relating to the question "what is a pathologist?"

Item	Question	Responses			
		Yes	No	Unsure/ no answer	Total
1	Are pathologists policemen/ policewomen?	10 (3%)	255 (79%)	58 (18%)	323 (100%)
2	Are pathologists undertakers/funeral directors?	3 (1%)	267 (83%)	53 (16%)	323 (100%)
3	Are pathologists medically qualified doctors?	280 (87%)	21 (6%)	22 (7%)	323 (100%)
4	Are pathologists laboratory technicians with no medical training?	23 (7%)	240 (74%)	60 (19%)	323 (100%)
5	Are pathologists qualified lawyers?	3 (1%)	255 (79%)	65 (20%)	323 (100%)

Table 2 Responses to the question "how long is a pathologist's training after leaving school?"

Response	Number of responses	%
1 year	0	0%
2 years	11	3%
5 years	175	54%
10 years	99	31%
15 years	15	5%
No answer	23	7%
Total	323	100%

specifically necropsy. The size of the sample was chosen to enable the extrapolation of the findings to a wider population.

SURVEY POPULATION

A detailed assessment of the participating general practice population was made in order to establish that the survey population was representative of the general population in Sheffield. Several key characteristics were examined, using the Sheffield Health Authority Locality and Practice Information System which ranks local general practice populations by a range of indicators attributed to the practice populations from the 1991 census. The indicators examined included age distribution; ethnicity; mortality rates; chronic illness distribution; unemployment, unsupported family and state benefit status; and the Jarman-8 underprivileged area and Townsend poverty scores.²³ The survey practice was not found to be at the extremes of the distribution for any of these variables and was considered to be representative of the general population.

Results

RESPONSE RATE AND ANALYSIS

A total of 323 questionnaires was returned completed and the response rate was 66% after the exclusion of 10 questionnaires which were returned undelivered. All of the questionnaire responses were entered into a database using EpiInfo software with a double key and verification technique to ensure accuracy.

RESPONSE REPRESENTATIVENESS

The response rate was slightly higher among females (67%) than males (62%) but this difference was not found to be significant using χ^2 tests. The response rate varied with age, and questionnaires were returned by 51% of those aged between 18 and 34 years, 68% of those aged between 35 and 49 years, and 79% of those aged between 50 and 64 years. Factors influencing this variation would be expected to include differential responsiveness to postal questionnaires and higher mobility of younger people. No significant differences in knowledge and views were identified between the age groups using multiple χ^2 tests, and the age differentiation of respondents does not prevent the application of our observations to a wider population.

QUESTIONNAIRE RESPONSES

Most respondents knew that pathologists are medically qualified doctors and relatively few positive responses were given for the other options (table 1). Histopathology training involves a minimum of 10 years training after leaving school and the required length of training was underestimated by the majority of respondents, with five years representing the commonest answer (table 2). Many respondents considered there to be a role for pathology in undergraduate medical education but a smaller proportion recognised a similar role in postgraduate medical education (table 3, items 1 and 2).

The role of the pathologist in diagnostic work appeared to be poorly understood. Many respondents were completely unaware of the role of pathology in the treatment of the living through the diagnosis of cancer and other diseases (table 3, items 12 and 13). A few respondents were well informed and were aware of the different disciplines within pathology. Such awareness, along with misconceptions concerning forensic pathology, may have contributed to the high affirmative responses to the items relating to the examination of blood samples and the diagnosis of infections (items 5 and 6).

Table 3 Responses to items relating to the question "which of the following do you think are part of pathologists' work?"

Item	Responses			Total
	Yes	No	Unsure/ no answer	
1 Teaching medical students	250 (77%)	15 (5%)	58 (18%)	323 (100%)
2 Teaching doctors	141 (44%)	58 (18%)	124 (38%)	323 (100%)
3 Medical research	247 (77%)	20 (6%)	56 (17%)	323 (100%)
4 Performing surgical operations	43 (13%)	170 (53%)	110 (34%)	323 (100%)
5 Diagnosing infections	140 (43%)	84 (26%)	99 (31%)	323 (100%)
6 Examining blood samples	180 (56%)	65 (20%)	78 (24%)	323 (100%)
7 Looking at routine x rays	55 (17%)	149 (46%)	119 (37%)	323 (100%)
8 Supervising cremations or burials	18 (6%)	231 (72%)	74 (23%)	323 (100%)
9 Giving evidence in court	267 (83%)	14 (4%)	42 (13%)	323 (100%)
10 Looking after patients in hospital	21 (6%)	218 (68%)	84 (26%)	323 (100%)
11 Finding out if people are dead	93 (29%)	160 (50%)	70 (22%)	323 (100%)
12 Diagnosing cancer	94 (29%)	133 (41%)	96 (30%)	323 (100%)
13 Helping doctors give the correct treatment	99 (31%)	126 (39%)	98 (30%)	323 (100%)
14 Organising funerals	9 (3%)	255 (79%)	59 (18%)	323 (100%)
15 Making new drugs	42 (13%)	168 (52%)	113 (35%)	323 (100%)

Table 4 Responses to items relating to the question "where have you learned about what a pathologist does?"

Source of information	Number of respondents*	%
Television	210	65%
Books/magazines/newspapers	160	50%
Friends or relatives	71	22%
Personal experience	66	20%
General practitioner	6	2%

* Respondents could indicate more than one source if applicable.

The highest positive response was to the item relating to giving evidence in court (item 9). The comments made by respondents indicated that there was only limited appreciation of the role of the pathologist in coroner's inquest procedures in comparison to the more readily publicised legal duties of forensic pathologists. The knowledge of many respondents was clearly limited to the forensic aspects of pathology. Few respondents considered that a pathologist is required to confirm death (item 11) and most were aware that pathologists are not actively involved in the disposal of the dead (items 8 and 14).

The commonest sources of information about pathology were television and the popular press (table 4). Additional comments from respondents indicated that many of them recognised that forensic pathology, which is commonly featured in the popular media, may not represent the only role of pathology. Other roles were often not identified but there were many requests for further information about pathology. A surprisingly high proportion of respondents had also gained some knowledge through personal experience and the experiences of friends and relatives. Many of these respondents made positive remarks in relation to the benefits that pathology can provide to both the living and the relatives of the dead through the provision of additional information. References to necropsies and inquests were prominent.

Discussion

Most histopathologists have little direct or sustained contact with patients and the medical contributions of the histopathologist, though often of critical importance, are frequently not appreciated by the public, hospital administrators, and some clinical colleagues. The histopathologist probably has the most extensive involvement with the largest number of patients, but with the least visibility and the least recognition.⁴ The public perceptions of histopathology observed in this study support such opinion and serve to emphasise the need for initiatives aimed at improving public awareness of the specialty.

The commitment of the relevant professional organisations, such as the Royal College of Pathologists and the Association of Clinical Pathologists, will be central to any successful campaign to promote publicly the science and practice of pathology and its branches such as histopathology. Initiatives to improve aware-

ness of the modern role of pathology are being developed and introduced at a national level but these must be supplemented by local initiatives. Departmental open days, public lectures, school visits, and exhibitions both in and outside hospitals are just some of the ways in which the public can be informed about pathology. These events would also provide useful opportunities to disseminate nationally produced literature such as the excellent "Pathology: The Hidden Science that's Saving Lives" booklet⁵ recently produced by the Royal College of Pathologists. Although widespread access to the public would best be achieved through television and the media, this type of exposure is limited and interpretation can be subjective. Carefully presented features could be highly effective and interest may be stimulated by the publicity surrounding local and national initiatives to increase public awareness to pathology. Maximum advantage must be taken of the few visible interfaces between pathologists and patients, such as diagnostic fine needle aspiration cytology performed by some cytopathologists.

The portrayal of pathology in the media may partly explain the lack of recognition for histopathology among the general public but it does not explain the negative attitudes occasionally encountered among clinical colleagues, especially junior grades, and medical students.⁶ The attitudes of clinicians were not assessed in the present study but any attempt to improve public awareness of histopathology must involve the clinicians who provide the specimens and have direct contact with patients. Most clinicians recognise the importance of rapid, accurate diagnosis and the contribution this makes to the selection of appropriate treatment. This vital role of histopathology in patient care must be communicated to the public, primarily by pathologists, but with suitable reinforcement from all other available sources including clinical colleagues.

The development of a fully integrated undergraduate medical curriculum may provide an opportunity to reverse the separation of pathology subjects from clinical teaching but pathology must be given sufficient attention in such initiatives to enable the development of a firm understanding of the role of histopathology within clinical medicine. The profile of histopathology has then to be maintained through postgraduate medical education and extended into as many different areas of non-medical education as possible, with emphasis given to the range of clinical services available, their practical applications, and the potential for medical and scientific career development.

The process of raising the public profiles of histopathology in particular and pathology in general is beginning and its success or failure will be dependent on the enthusiasm and co-operation between pathologists from all disciplines at both local and national level. The potential rewards must not be viewed simply in terms of increased levels of funding but also in the benefits to research, training, and diagnosis which could be derived from es-

establishing a clear understanding of the role of pathology in modern clinical medicine.

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