For Debate . . .

Bodily perceptions in surgical patients

JANET PEARSON, H A F DUDLEY

This study originated from a general concern for the welfare of patients with a stoma. Devlin's survey published in 1971¹ established that many patients with a colostomy suffered severe or very severe psychiatric problems. Since then frequent references have been made in this and other contexts—for example, Dlin and Fischer²—to the concept of “distorted body image” as a factor in the genesis of mental disturbance. It is difficult to extract meaning from such allusions in that body image is a poorly understood concept. Writers of psychological publications are also guilty of using the term without adequate specification of meaning and, moreover, psychologists' attempts at establishing a satisfactory definition have been unsuccessful. Thus, with little to guide us, we began our study by trying to establish what perceptions average patients have of their internal organs.

Patients and methods

We studied 81 men and women who were in hospital and awaiting major abdominal surgery (cholecystectomy, vagotomy, gastrectomy, oesophageal reconstructions, and colonic resections). The patients were two consecutive samples seen over two periods of six months each. There were 34 men, mean age 56 years, range 21–82, and 47 women, mean age 57 years, range 25–84.

We administered a modified “inside-the-body” test (leaflet obtainable from the Australian Council for Educational Research, Hawthorn, Victoria, Australia). We asked patients simple questions on the function of the gastrointestinal organs and then invited them to locate the organ on a pre-drawn outline of the body.

All patients were interviewed preoperatively in the wards and were told that the study was being carried out to establish how much people in general knew about their bodies, so that we might devise better ways of passing on useful information. We were anxious that patients should not feel threatened by the situation; they were assured that this was not a test of their ability, encouraged to guess if they did not know, and the interview was made as informal as possible.

Responses were assessed as *correct*, *vague idea*, or *wrong* (which included many “don't know” replies) using an agreed list of simple definitions for function and the appropriate abdominal quadrant for location.

Results

Table I shows that out of a total of 729 responses for function, 85 (12%) only were correct, while 169 (23%) were vague ideas, and 475 (65%) were wrong. For organ location, out of a total of 720 responses, 202 (28%) were correct, 99 (14%) vague ideas, and 419 (58%) wrong.

The figure shows the responses as a percentage of the total for the individual organs and parts. Knowledge of function (fig 1) is poor for

TABLE I—Overall responses for organ function and location

Responses	Function		Location	
	No	%	No	%
Correct	85	12	202	28
Vague idea	169	23	99	14
Wrong	475	65	419	58

The responses as a percentage of the total for the individual organs and parts.

all parts except the rectum and anus. Similarly, organ location (fig 2) is poor for all parts except the stomach, rectum, and anus.

Many people believe that individuals with above average intelligence must have a better knowledge of their bodies than we have so far shown. We did not primarily design our study to test this hypothesis. Analysis of social classes against answers (table II), however, does not show statistically significant differences.

Even more startling perhaps than their poor knowledge are the misconceptions held by some patients. Listed below are the main misconceptions detected in our sample.

Stomach—Fifteen (18%) equated this with the abdominal cavity, causing one woman to confuse it with the uterus and one man to believe he had two stomachs.

TABLE II—Overall responses of patients in occupational groups 1 and 2 and the remaining patients (data for function and location responses aggregated)

Responses	Occupational groups 1 and 2 (n = 10)		Remainder of total group (n = 69)	
	No	%	No	%
Correct	47	26	214	17
Vague idea	41	23	220	18
Wrong	92	51	799	65

Duodenum—Ten (12%) believed this to be the name of an ulcer and not a functional part of the gastrointestinal tract.

Liver—Eleven (14%) marked in two livers on opposite sides of the body.

Gall bladder—Fifteen (18%) said the gall bladder was concerned with urine or located it in the lower pelvic area, or both.

Rectum and anus—Five (6%) confused one or other of these parts with the vagina, uterus, or penis.

Discussion

Although we used a simple method and data analysis, our study shows, unreservedly, that this group of patients has poor perceptions of the functions and locations of the abdominal viscera. Two earlier studies^{3,4} examining subjects' knowledge of gross anatomy showed poor knowledge of anatomical locations. It must therefore be reasonable to generalise and say that people rarely possess even a simple knowledge of their bodily functions and organ locations. Furthermore, we can also suppose that many of the surgeon's explanations, even simple ones, are not understood.

Does it matter that patients have poor knowledge and active misconceptions regarding their bodies? We believe it does. Firstly, it takes little imagination to see what very real anxiety some misconceptions might cause—for example, what is going through the mind of a patient awaiting cholecystectomy who believes that the gall bladder is concerned with the storage of urine? Secondly, psychologists have produced a mass of evidence that, on the one hand, dissatisfaction with doctor-patient communication is caused by the patient's failure to grasp and retain what is told⁵ and, on the other hand, good communication can both ease distress and promote recovery.⁶ Beginning with the work of Janis in 1958⁷ and Egbert and his colleagues in 1964,⁸ studies have shown that most patients benefit by a reduction in stress, which results in less post-operative pain, a better psychological and physiological adjustment, and a quicker rate of recovery. More recent work, however, indicates that the situation is more complex than is at

first apparent and that effectiveness of communication depends on several things, including who is delivering the explanation,⁹ style of communication,¹⁰ and the coping mechanisms used by the patient.¹¹

Nevertheless, it must be obvious that before any communication can be effective it must be understood. If people's knowledge of their bodies is as poor as we believe then there are implications for workers in health education. To meet the problem facing us in our wards, however, we suggest that patients be given a simple education and a descriptive explanation of their impending surgery with the aid of anatomical sketches. There is a wealth of teaching aids available,¹² but commercially produced material is often expensive. We have used a clear line drawing of the gastrointestinal tract, taken from an elementary anatomical text and reproduced as cheaply as possible within the hospital. Patients awaiting abdominal procedures have been left with a diagram as a visual reminder of the information given to them. Another possibility, that could both save time and allow patients to take in information at their leisure, is that such diagrams could be included with explanations in booklets written for this purpose.

References

- Devlin HB, Plant JA, Griffin M. Aftermath of surgery for anorectal cancer. *Br Med J* 1971;iii:413-8.
- Dlin BM, Fischer HK. Psychiatric aspects of colostomy and ileostomy. In: Howells JG, ed. *Modern perspectives in the psychiatric aspects of surgery*. London: Macmillan Press, 1976.
- Tait CD Jr, Ascher RC. Inside-of-the-body test. *Psychosomatic Medicine* 1955;17:139-48.
- Boyle CM. Differences between doctors' and patients' interpretations of some common medical terms. *Br Med J* 1970;ii:286-9.
- Ley P, Spelman MS. *Communicating with the patient*. London: Staples Press, 1967.
- Reading AE. The short term effects of psychological preparation for surgery. *Soc Sci Med* 1979;13A:641-54.
- Janis IL. *Psychological stress: psychoanalytic and behavioural studies of surgical patients*. New York: Wiley, 1958.
- Egbert LD, Battit GE, Welch CE, Bartlett MK. Reduction of post-operative pain by encouragement and instruction of patients. *N Engl J Med* 1964;270:825-7.
- Ray CJ, Fitzgibbon G. Socially mediated reduction of stress in surgical patients. In: Osborne DJ, Gruneberg MM, Eiser JR, eds. *Research in psychology and medicine*. Vol 2. London: Academic Press, 1979.
- Williams JGL, Jones JR, Workhoven MN, William B. The psychological control of pre-operative anxiety. *Psychophysiology* 1975;12:50-4.
- Andrew JM. Recovery from surgery with and without preparatory instruction, for three coping styles. *J Per Soc Psychol* 1970;15:223-6.
- Edsall B, ed. *Health education. Index and guide to voluntary social welfare organisations*. London: B Edsall and Co, 1976/7:24-35.

(Accepted 18 March 1982)

Miniprint pages

If you want to read in full size the articles that appear in miniprint in your edition of the *BMJ* you may:

- Change your edition of the journal. If you want to read practice observed articles regularly you need the Practice Observed edition; if you want to read clinical research articles you need the Clinical Research edition.*

- Write to the publishing department for a full-sized copy of an individual article that appears in miniprint in your edition.

*This arrangement does not apply to permanently retired or associate members of the BMA, who receive the compact Clinical Research edition of the *BMJ* (which includes no advertisements).

- Subscribe to a set of full-size pages to be sent at the end of each month. This service (subscription £10 a year) is designed mainly for readers who want to bind their journals.

- Arrange among your colleagues (in a group practice or hospital department, for example) for one person to subscribe to the alternative edition of the *BMJ*. Then everyone in the group will have access to both editions.

The editorial content of both editions is the same: the only difference is in the size of the print of the clinical research and practice observed sections.