

Health care professionals' attitude towards treatment

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In a discussion of models of health professionals' behaviour, Marteau and Johnston [1] suggested that knowledge, defined as a 'shared set of tested and verified beliefs', is frequently lacking in clinical settings. Treatment decisions are often made on the basis of beliefs that have not been tested or verified and may not be shared. Marteau and Johnston reviewed the evidence to suggest that the behaviour of health care professionals (HCPs) is not easily understood in terms of the commonly assumed knowledge-based model of their behaviour but may be better explained by psychological models that recognise the influence of beliefs that are not knowledge as well as beliefs that are. The models discussed were (1) the educational model – a model of behaviour determined largely by knowledge, and (2) cognitive and behavioural models including (i) information-processing theories, (ii) attribution theory and (iii) subjective expected utility models. The available evidence suggests that the latter three models are useful in understanding variation in the behaviour of health professionals involved in diabetes management while HCPs' knowledge may not be a useful predictor of their behaviour.

Knowledge as a determinant of HCP behaviour

Although HCPs' levels of knowledge about diabetes and its management may not, on their own, account for any more variance in health outcomes than do patients' knowledge levels, that is not to say that knowledge should be ignored. It is undoubtedly the case that deficiencies in knowledge about diabetes have led health professionals to misinform patients and make inappropriate treatment recommendations. In the UK, the effects of recent changes in the way the Health Service is managed and the way general practitioners are remunerated have led to an increase in GPs wishing to manage diabetes themselves rather than referring patients to hospital centres. There is a good deal of concern that this increasing participation of GPs in diabetes management is not matched by an increase in their knowledge of diabetes. It is interesting to note that even among hospital specialists in diabetes care working in the same hospital there are often striking differences in the 'correct' answers they give to questionnaires developed to measure patients' knowledge of diabetes. It is a valuable exercise for diabetes care teams to complete the questionnaires themselves and identify and resolve differences in knowledge among the staff before giving the questionnaires to patients. It would not be expected that levels of knowledge of HCPs would be correlated with levels of diabetes control in their patients as, just as with patients,

HCPs may have excellent levels of knowledge but be unable to, or choose not to, apply it in a way that is effective in improving patients' diabetes control.

A study by Weinberger et al. [2] showed that physicians' knowledge of diabetes was not a significant predictor of their success in helping patients to control their diabetes but their beliefs were significant predictors.

Beliefs as determinants of HCPs behaviour

In the Weinberger et al. study [2], the more successful physicians believed more strongly than the less successful physicians in the benefits of strict blood glucose control in reducing the risk of complications of diabetes. Studies by Marteau and her colleagues [3,4] have explored the beliefs about insulin-dependent diabetes and its management in paediatricians, adult physicians and general practitioners. The general practitioners had the bleakest outlook, perceiving diabetes to carry more risks of complications while being less convinced that improved diabetes control would reduce these risks. In line with these beliefs, their approach to treatment was far more lax than that of the hospital doctors [4].

Anderson and colleagues [5] reported the development of a questionnaire for measuring HCPs' beliefs about diabetes. They called the measure the 'diabetes attitude scale' or DAS. The reason for developing the DAS was a report from the National Diabetes Commission in 1975 that had suggested that the 'diabetes-related attitudes of health care professionals were often inappropriate and that these attitudes could lead to apathy, anxiety, depression, insecurity, confusion and disorganisation in the diabetic patient's lifestyle' (Ref. 5, p. 120). However, evidence for these assertions appeared to be only unsystematic observational and anecdotal evidence. Anderson et al. responded to the commission's recommendation that a scale to measure HCPs' attitudes to diabetes and its treatment should be developed for use in evaluating professional education interventions. A national panel of 17 diabetes experts generated potential items, selected those items they believed addressed important issues in diabetes and indicated what they regarded to be the 'correct' response. Items for which there was 80% agreement on the direction of the appropriate response and which received more than 5 votes for inclusion were included in a preliminary version of the scale. On the basis of responses from 1138 HCPs interested in diabetes, a 31-item DAS was produced which was composed of 8 subscales with acceptable reliability. Subscales were labelled 'special training', 'control/complications', 'patient autonomy', 'compliance', 'team care', 'non-insulin-dependent diabetes', 'difficult to treat', 'outpatient education'.

Although some of the scale items specified the type of diabetes to be considered (e.g. 'Diabetes that can be controlled by diet is a relatively mild disease') most of the items referred just to 'diabetes' (e.g. 'People with diabetes who maintain poor glucose control are more likely to have complications than people who maintain tight glucose control'). Presumably the national panel of experts believed that the non-specific attitudes measured should not be dependent on the type of diabetes. The authors of the

scale do not appear to have investigated whether responses to non-specific items would depend on which type of diabetes respondents were thinking about at the time, though we offer evidence below to suggest that this is likely to be the case. Interestingly, when Anderson et al. [6] revised the DAS for use with patients they found that patients' responses were differentiated by the age and sex of the patient, their type of diabetes and their understanding of diabetes.

Whether or not the DAS will prove useful in evaluating professional education programmes remains to be shown. It may well be useful as a basis for discussion between diabetes care team members, to identify discrepancies in beliefs which need to be resolved.

In a series of research studies the present authors have focused on HCPs' attitudes towards the elderly with diabetes. The effects of age of patient and type of diabetes on the treatment recommended have been investigated and the beliefs of doctors have been compared with those of patients. Some findings from two studies are outlined below.

Physicians' vs. patients' beliefs about diabetes and its management

Forty-four diabetic outpatients aged 40+ were interviewed prior to their consultation with one of two consultant physicians who specialized in diabetes management. Patients responded to a set of rating scales which corresponded to similar scales completed by the doctor after the consultation. Blood glucose measurements were available for 33 patients and with a minimum blood glucose of 8 mmol/l (mean 11.67) it was clear that there was room for improvement in the diabetes control of all those patients. Glycosylated haemoglobin (GHb) measures were only available for 29 patients but again suggested less than satisfactory levels of diabetes control. Patients were divided into four groups for the purpose of analysis according to their age (<65 vs. >65) and the type of treatment for their diabetes (insulin vs. tablets and/or diet). Although the highest GHb indicating the worst diabetes control appeared to be manifested by the older tablet/diet-treated patients there were no significant differences between the groups in GHb, though it is interesting to note that GHb tended to be less often measured in the older patients on tablets and/or diet than in the other groups. Comparison of doctor and patient ratings on two of the rating scales are presented here:

(i) Motivation to achieve good control

The patient's motivation was rated by patient and doctor. Patients rated themselves as significantly more highly motivated than their doctors rated them to be ($F=25.02, p<0.001$). Both physicians and patients rated the insulin users as more motivated than the tablet- and/or diet-treated patients ($F=4.28, p<0.05$). These findings suggested that the doctors underestimated patients' motivation and may, as a result, recommend a less demanding regimen than the patient would be prepared to deal with. Tablet- and/or diet-treated patients were particularly at risk as the doctors un-

derestimated their motivation, which was already lower than that reported by insulin users.

(ii) Severity of diabetes

Ratings of severity differed for both doctors and patients according to treatment ($F=15.96$, $p>0.001$); insulin-treated diabetes was rated as more severe. Significant differences were also found between severity ratings of doctors and those of patients ($F=4.26$, $p<0.05$). Although insulin users rated the severity of their diabetes at least as highly as their doctors did, the tablet-and/or diet-treated patients gave lower ratings than the doctors. Analysis of covariance of doctors' ratings revealed that the tendency for doctors to view insulin-treated diabetes as more severe was largely attributable to duration of diabetes ($F=5.12$, $p<0.03$) but not influenced by whether or not the patient had already developed complications. Given these findings, it is likely that less demanding goals for treatment will be set for tablet- and/or diet-treated patients than for insulin users and less effort and expense will be regarded as justified in the attempts to meet the goals for the tablet- and/or diet-treated patients. It was certainly the case that the more effortful and expensive blood glucose monitoring equipment was more often prescribed to the younger insulin users and was very rarely prescribed for the older patients treated with tablets and/or diet, who, if they did any form of monitoring, monitored urine glucose levels.

Physicians' monitoring recommendations and associated beliefs

This study investigated the beliefs and policies regarding monitoring of a group of physicians who could be regarded as an expert panel on diabetes management. Physicians studied were all members of the Editorial Board of *Diabetic Medicine*, the medical and scientific journal of the British Diabetic Association. They were asked to consider several types of diabetes and their treatment in turn (type 1 insulin-dependent, type 2 insulin-treated, type 2 tablet-treated and type 2 diet-alone-treated) and for each of three age groups (adults under 65 yr of age, adults over 65 and frail elderly) to indicate whether they would recommend blood glucose monitoring for all, most, some or none of these patients. The doctors were then asked to give their reasons for the particular pattern of prescribing of blood glucose monitoring they recommended. Analysis of variance showed highly significant effects of age ($F=111.48$, $p<0.0001$) and treatment group ($F=72.79$, $p<0.0001$) on the likelihood that patients would be prescribed blood glucose monitoring. Blood glucose monitoring was more often prescribed for younger than for older patients; most often prescribed for insulin users with type 1 diabetes and least for diet-alone-treated patients.

Despite the consistency in patterns of prescribing reported by the doctors, the reasons given for the policy described differed markedly. Unaware of this variation in reasons given, one physician simply responded that his reasons for the prescribing policy described were 'obvious'. It seemed there was a tendency to assume that there

was a consensus about the reasons for the policy described which was not apparent in the reasons offered – some of which appeared to be contradictory.

It is remarkable, given the variation in 'rationales' for the treatment policies described, some of which offered little in the way of explanation, that there was not greater variation in the actual policy of prescribing reported. One possible explanation for this apparent discrepancy is that doctors may well be influenced by commonly held cultural stereotypes about the elderly warranting less effort and expense than younger people together with a belief that higher-tech insulin treatment with the greater risks of acute complications of hypoglycaemia and diabetic ketoacidosis indicates the greater severity of insulin-treated diabetes compared with lower-tech tablet/diet-treated diabetes. Evidence to suggest that chronic complications of diabetes are at least as common in the elderly and in people with type 2 diabetes as in younger and type 1 patients seems to be overlooked together with evidence to suggest that diabetes control is important in determining the risk of complications in type 2 as well as in Type 1 diabetes (cf. Ref. 7). Those few studies that have demonstrated the benefits of blood glucose monitoring in the management of tablet and/or diet-treated diabetes do not yet seem to be influencing policy (cf. Ref. 8). It is possible that in deciding on treatment policies for different patient groups, physicians demonstrate information-processing biases such as searching for data to confirm hypotheses rather than to rule them out, deemphasising negative findings [1] in order to support hypotheses or hunches about appropriate treatment that are congruent with cultural expectations about the treatment of different groups of people. What few studies have been conducted to investigate the influence of cultural stereotypes on clinical decision-making have been ably reviewed elsewhere [9,10]. If such stereotypes about the elderly and other groups are major influences, then consensus among HCPs about the appropriate treatment for different patient groups may not be cause for complacency about the appropriateness of the policy followed. Our findings suggest that HCPs should beware of the assumption that other HCPs share their reasons for holding the consensus view and that exploration of such reasons may well indicate a need to review HCPs beliefs about the policies on which there is consensus as well as those on which no consensus is held.

Conclusions

Although there is a rapidly growing literature on the beliefs of patients, little attention has been given to studying the beliefs of doctors and other HCPs. What evidence is available suggests that the beliefs of HCPs may be at least as important as patients' beliefs in influencing diabetes management both directly via treatment policies and indirectly by influencing patients' beliefs and behaviour.

References

- 1 Marteau TM, Johnston M. *Psychol and Health* 1990; 5: 47-58.
- 2 Weinberger M et al. *Soc Sci Med* 1984; 19: 965-969.
- 3 Marteau TM, Baum JD. *Arch Dis Child* 1984; 59: 566-570.
- 4 Marteau TM, Kinmonth AL. *Brit J Clin Psychol* 1988; 27: 381-
- 5 Anderson RM et al. *Diabetes Care* 1989; 12: 120-127.
- 6 Anderson RM et al. *Patient Education and Counseling* 1990; 16: 231-245.
- 7 Morley JE et al. *Am J Med* 1987; 83: 533-543.
- 8 Cohen M, Zimmet P. *Med J Australia* 1983; 2: 377-380.
- 9 Clark JA, Potter DA, McKinlay JB. *Soc Sci Med* 1991; 32: 853-866.
- 10 Lopez SR. *Psych Bull* 1989; 106: 184-203.