Hoppe, R., and Ogden, J. (1997) Practice nurses' beliefs about obesity and weight related interventions in primary care. International Journal of Obesity 21, 141-146.

Beliefs about obesity and current weight related interventions

in practice nurses and GPs

Roberta Hoppe, BSc, Research Associate and Jane Ogden, BSc, PhD, Senior Lecturer in Health Psychology, Department of General Practice, UMDS, London.

Address for correspondence:

**Dr Jane Ogden,
Senior Lecturer in Health Psychology,
Department of General Practice
United Medical and Dental Schools of Guy's and St Thomas's
80 Kennington Road
London SE11 6SP**

Summary

Background: With increased focus on health promotion at the level of primary care, primary health care professionals have to make decisions regarding weight management and dietary change. However, little is known about the beliefs which may contribute to these decision making processes.

Aim: The aim of the present study was to investigate practice nurses' and GPs' beliefs about weight related issues and the variables involved in the decision to offer weight loss / dietary change advice.

Subjects: 586 practice nurses and 177 GP's completed a questionnaire concerning their beliefs and current practices regarding weight and diet related issues.

Results: The results suggest that both subject groups regarded eating behaviour as the main cause of obesity, but that practice nurses rated biological factors as less important causes of obesity and lack of patient motivation as a less important cause of failed weight loss than the GPs. In addition, practice nurses regarded obesity as more serious and rated it as more treatable, preventable and felt more confident and competent at intervening. These differences in beliefs were reflected in differences in behaviour with the GP's reporting being more likely to intervene using standard weight management interventions such as calorie controlled diets.

Conclusion: The practice nurses reported overall more positive attitudes towards obesity in terms of causality, consequences and solutions, and felt more positive about managing these patients. The results are discussed in terms of the variability in beliefs between health professionals and the role of these beliefs in predicting both their own behaviour and the subsequent patient's behaviour.

Introduction

One area of health promotion targeted by the Health of the Nation (1) is dietary change as a strategy for reducing the prevalence of obesity. Obesity is associated with cardiovascular disease, diabetes, joint trauma, cancer and hypertension (2). Consequently, weight management has been identified as one of the most common health promotion clinic activities engaged in by practice nurses who undertake the majority of routine health promotion work within primary care (3-5). However, the success rates from primary health care interventions for weight loss are low (6,7). Traditional explanations of the behaviour of health care professionals, have emphasised the role of knowledge. Accordingly, evidence suggests that both GP's and practice nurses lack the knowledge and skills to give appropriate lifestyle advice, particularly in relation to diet (8-10). Consequently, health education and promotion has been identified as a key area for further training in general practice (4). However, little is known about either the practices of the primary health care team or the decision making processes which may contribute to behaviour.

Recently social cognition models (eg. Theory of Planned Behaviour and the Health Belief Model, 11, 12), which were originally developed to predict patient behaviour, have been applied to health care professionals. In an attempt to progress beyond a traditional knowledge based model of health care professionals behaviour, the research indicates that the cognitions of health professionals differ along the dimensions suggested by the various psychological models (13-16). This variation between health professionals has been shown to influence the decision-making process leading to differences in both treatment and patient health outcomes. In particular, correlations have been found between expectations regarding success (eg. self-efficacy and outcome expectancies) and the behaviour of health professionals; constructs

which have previously emerged as powerful predictors of patient health related-behaviour (16). Therefore, health professionals' beliefs represent a potential target for change in maximising the effectiveness of current health promotion programmes within general practice.

Using constructs derived from the two main social cognition models, (the Theory of Planned Behaviour and the Health Belief Model) as a theoretical framework, the present study aims to examine and compare GP's and practice nurses' beliefs about obesity and weight loss and to examine the relationship between these beliefs and behaviour.

Method

Subjects: Ten FHSA's were randomly selected using the Directory of Health Services Authorities (1992) as a sampling frame. Practice nurses were identified using FHSA records. A structured questionnaire was mailed to 900 practice nurses. The practice nurses were asked to complete the questionnaire and, in addition, to give a questionnaire to a GP in their practice who they felt had 'an interest in weight related issues'. A follow-up reminder was sent 6 - 8 weeks after the first mailing.

Procedure

A cross-sectional design was used. Subjects were asked to complete the following questions, rated on 7 point Likert-type scales with scores ranging from 'not at all' (1) to 'completely' (7) :

i) Beliefs about the causes of obesity: On the basis of a factor analysis the individual beliefs about the causes of obesity were summated to produce three factors: i) individual/social differences (eg. personality, sedentary lifestyle, socio-economic status, parental eating habits),

ii) eating behaviour (eg. increased calorie intake, eating the wrong type of food, binge eating, eating for comfort) and iii) biological causes (eg. genetics, hormones, metabolism, number of fat cells).

ii) Beliefs about the causes of failed weight loss attempts (lack of patient motivation, inadequacy of current weight loss methods, lack of support),

iii) Beliefs about the consequences of obesity (health risks of obesity; coronary heart disease, psychological problems, joint trauma, hypertension, diabetes, general seriousness).

iv) Beliefs about the solutions to obesity (benefits of weight loss, preventability / treatability of obesity, importance of attempting weight loss even with the risk of failure, role of previous failed weight loss in predicting future failure).

v) Beliefs about own behaviour (eg. self-efficacy (as measured by perceived confidence of giving advice), perceived competence (as measured by outcome expectancy - weight loss)).

v) Actual behaviour: Subjects were asked about their threshold point for intervening (weight in kg / body mass index) and method for determining overweight and obesity (body mass index, skinfold, weight, appearance). Behaviour was also assessed in terms of amount of current weight loss practices (eg. frequency of giving weight loss advice (<1x a wk / 1x a wk / >1x a wk), duration of weight loss advice session (<5min / 5-10min / 11-20min / >20min) and type of current practices (eg. use of calorie controlled diets, medical interventions, nutritional advice, referral, exercise, recommending eating less in general, very low calorie diets).

Profile characteristics

Subjects also recorded their age, sex and occupation.

Results

Data were analysed using SPSS/PC. Practice nurses and GPs beliefs were examined using descriptive statistics. Comparisons between practice nurses and GP's were then made using ANOVA. Finally the relationship between beliefs and behaviour for both practice nurses and GPs was examined using Stepwise Multiple Regression Analysis.

Profile characteristics

586 practice nurses and 177 GP's completed the questionnaire. The response rate for practice nurses was 65%. The number of GPs who received a questionnaire from their practice nurse is unknown, a response cannot therefore be calculated. All practice nurses were female, 103 GP's were male and 74 female. The mean age for practice nurses was 41yrs $\pm$ 7.61 and GP's 42yrs $\pm$ 8.41.

The means for the beliefs about the causes of obesity and the causes of failed weight loss attempts are shown in table 1.

- Insert Table 1 about here -

i) Beliefs about the causes of obesity: The means indicate that both practice nurses and GPs rated eating behaviour as the most important cause of obesity followed by individual

differences and then biological factors. Comparisons between the practice nurses and the GPs indicated that practice nurses rated biological factors as a more important cause of obesity than the GPs ($F [1,397] = 4.26, p < 0.05$). However, there were no differences between practice nurses' and GP's ratings of either individual/social differences or eating behaviour as potential determinants.

ii) Beliefs about causes of failed weight loss: The means suggest that whereas GPs rated lack of patient motivation as the most important cause of failed weight loss, practice nurses prioritised lack of support. However, both subject groups regarded the inadequacy of current methods as the least important factor. In accordance with this, comparisons between the practice nurses and the GPs suggested that the GPs rated lack of patient motivation as a significantly more important cause of failed weight loss than the practice nurses ($F [1,397] = 6.06, p < 0.05$). No group differences were found for ratings of lack of support or inadequate weight loss methods.

The means for the beliefs about the consequences and solutions to obesity are shown in table 2.

- Insert Table 2 about here -

iii) Beliefs about the consequences of obesity: The results indicated that practice nurses rated obesity as more serious than the GPs ($F [1,760] = 26.66, p < 0.001$). In terms of individual health risks, whereas practice nurses rated CHD, then hypertension then Diabetes as the most important risks, GPs prioritised Diabetes, followed by hypertension and joint trauma. Further differences were also found between the two groups with the practice nurses rating coronary heart disease and stroke as significantly greater risks ($(F[1, 760]=3.89, p < 0.05)$ and $(F[1,760]=5.25, p < 0.05)$ respectively) and Diabetes, joint trauma and psychological problems as significantly lesser risks ($(F[1, 760]=16.93, p < 0.001)$, $(F[1,760]=7.47, p < 0.01)$ and

($F[1,760]=5.76$, $p<0.01$) respectively).

iv) Beliefs about the solutions to obesity: Comparisons between the practice nurses and the GPs indicated that the practice nurses viewed obesity as more treatable ($F [1,760] = 59.01$, $p<0.001$), more preventable ($F [1,760] = 8.89$, $p<0.01$), considered previous failed weight loss attempts as less predictive of future success ($F [1,397] = 6.39$, $p<0.05$), reported a more positive attitude towards attempting weight loss despite the risks of failure ($F (1,397] = 5.06$, $p<0.05$) and considered weight loss as more beneficial ($F [1,760] = 22.78$, $p<0.001$) indicating an overall more positive attitude towards the potential for change than the GPs.

The means for the beliefs about own behaviour and actual behaviour are shown in table 3.

- Insert Table 3 about here -

v) Beliefs about own behaviour: Comparisons between the GPs and the practice nurses indicated that the practice nurses reported both greater self-efficacy ($F [1,760] = 26.01$, $p<0.001$) and greater outcome expectancy ($F [1,760] = 64.7$, $p<0.001$) in dealing with weight related issues than the GPs.

vi) Actual behaviour:

Reason for intervention: 46% of GP's and 58% of practice nurses rated the threshold for intervening with a healthy patient as a BMI of 25-29.9. The BMI was identified by 81% of practice nurses and 84.1% of GP's as the predominant method for assessing the degree of obesity.

Amount of current practices: The results indicate that practice nurses spent more time with a patient discussing weight loss / dietary change in comparison to GP's ($F [1,679] = 231.94$, $p < 0.001$) but that the two groups were comparable in the frequency of their advice.

Type of current practices: The results showed very similar rankings for types of weight loss advice with both subject groups ratings general nutritional advice as most common, followed by eating less in general and exercise. However, in terms of the least used type of intervention, practice nurses rated medical intervention and GPs rated very low calorie diets. Comparisons between the GPs and the practice nurses indicated that practice nurses reported giving general nutritional advice more often than GP's ($F [1,679] = 34.48$, $p < 0.001$), and that GP's reported increased frequency of recommending calorie controlled diets ($F [1,679] = 8.39$, $p < 0.01$), very low calorie diets ($F [1,679] = 20.50$, $p < 0.001$), medical interventions ($F [1,691] = 125.49$, $p < 0.001$), advising patients to eat less in general ($F [1,697] = 10.23$, $p < 0.001$) and referring patients to outside agencies ($F [1,679] = 18.89$, $p < 0.001$). However, GP's and practice nurses did not differ in terms of the frequency of recommending exercise.

vii) The relationship between beliefs and behaviour: A stepwise multiple regression was used to examine the relationship between beliefs and behaviour. Frequency of giving advice and duration of time spent giving weight loss advice was summated to provide an index of weight management. All beliefs and profile characteristics were entered into the analysis. The results showed that professional group (Beta = -0.382, $p < 0.001$) and self-efficacy (Beta = 0.324) accounted for 30% of the variance in weight management behaviour. This indicates that practice nurses and those with high self-efficacy spend more time overall than GP's and

those with low self-efficacy.

Discussion

The aim of the present study was to examine and compare practice nurses and GPs beliefs about obesity and to evaluate their current practices.

In terms of the causes of obesity, although both practice nurses and GPs rated eating behaviour as the most important cause, practice nurses indicated that they were more likely to take biological factors such as genetics and metabolism into account than GPs. In line with this, whereas the practice nurses regarded a lack of support as the most important cause of failed weight loss, GPs prioritised lack of patient motivation. This suggests that in terms of both the causes of obesity and the causes of failed weight loss, practice nurses appear less likely to attribute blame to the patient.

In terms of beliefs about the consequences of and solutions to obesity, practice nurses rated obesity as more serious, more preventable, treatable and rated the benefits of weight loss as greater than the GPs. In addition, the practice nurses reported being more likely to offer weight loss advice even with the risk of failure than the GPs. This suggests that practice nurses regard obesity as a problem more worthy of intervention and management both in terms of its health consequences if untreated and health benefits if treatment is successful. This supports the above results regarding causality indicating that GPs are more likely to regard obesity as the patient's fault and subsequent interventions as less likely to have beneficial consequences. This is also supported by the ratings of beliefs about their own behaviour with practice nurses reporting feeling more confident in their ability both to give weight loss advice and in being able to bring about behavioural change.

These differences in beliefs are reflected in differences in current weight management practices. The predominate weight management intervention reported by both GP's and practice nurses was giving generalised nutritional advice. However, overall, GP's reported using standard weight loss interventions such as calorie controlled diets and recommending that patients eat less in general. It is possible that these different practices reflect differences in beliefs, with the GPs tendency to blame the patient for failed weight loss and to rate the role of biological causes as less important than the practice nurses, expressing itself in interventions which place the responsibility for change directly with the patient. This association between beliefs and behaviour and the differences between professional group are supported by the analysis of the relationship between beliefs and behaviour with the best predictors of time invested in weight related intervention being confidence in giving advice and professional group.

The results of the present study therefore suggest that different professional groups may have different beliefs about a particular health problem. In addition, the results indicate that these different beliefs may contribute to differences in practice. For example, in the present study practice nurses reported more positive attitudes to obesity in terms of its causes, suitability for intervention and management and the likelihood of the success of any intervention than the GPs. This supports previous research which has highlighted the role of beliefs in behaviour (9, 15, 16) and suggests that although differences in knowledge may contribute to professional behaviour, the variation in health beliefs found in patients may also be characteristic of health professionals.

To conclude, at present, practice nurses are responsible for the majority of weight related interventions in primary care. The results from the present study indicate that they feel more positive towards obesity and more confident and competent than the GPs in carrying out this task. However, the effectiveness of interventions for obesity at the level of primary care remains low (6,7). Perhaps further examination of the relationship between professional beliefs and behaviour could help to clarify the extent to which the practice nurses positive attitudes and intentions are turned into behaviour. Furthermore, an examination of the professionals beliefs and behaviour in the context of the subsequent patient's beliefs and behaviour could help to identify ways to bridge the gap between the professional's interventions and the patient's change in health status.

References

1. HMSO (1992) The Health of the Nation, London, HMSO.
2. Bray, G.A. (1986). Effects of obesity on health and happiness. In K.D. Brownell and J.P. Foreyt (Eds). Handbook of eating disorders: Physiology, psychology and treatment of obesity, anorexia and bulimia. New York: Basic books.
3. Ross, F., Bower, P., and Sibbald, B. (1994) Practice nurses characteristics, workload and training needs, British Journal of General Practice, 44, 15-18.
4. Hibble, A. (1995) Practice nurse workload before and after the introduction of the 1990 contract for general practitioners, British Journal of General Practice, 45, 35-37,

5. Robinson, G., Beaton, S., and White, P. (1993) Attitudes towards practice nurses- survey of a sample of general practitioners in England and Wales, British Journal of General Practice, 43, 25-29.
6. Imperial Cancer Research Fund OXCHECK study group (1994) Effectiveness of health checks conducted by nurses in primary care. Results of OXCHECK study after one year, British Medical Journal, 308, 308-312.
7. Family Heart Study (1994) Randomised controlled trial evaluating cardiovascular screening and intervention in general practice. Principal results of British family heart study, British Medical Journal, 308, 313-320.
8. Francis, J., Roche, M., Mant, D., Jones, L., and Fullard, E. (1989) Would primary health care workers give appropriate dietary advice after cholesterol screening, British Medical Journal, 306, 1652-1656.
9. Cade, J., and O'Connell, J (1991) Management of weight problems and obesity: knowledge, attitudes and current practices of general practitioners', British Journal of General Practice, 41,147-150.
10. Murray, S., Narayan, V., Mitchell, M., and Witte, H. (1993) Study of Dietetic knowledge among members of the primary health care team, British Journal of General Practice, 43, 229-231.

11. Ajzen, I., and Madden, J.T. (1988) Prediction of goal-directed behaviour. Attitudes, intentions, and perceived behavioural control. Journal of Experimental Social Psychology, 22, 453-474.
12. Janz, N., and Becker, M. (1984) The health belief model: a decade later, Health Education Quarterly, 11,1-47.
13. Mullen, P.D., and Holcomb, J.D. (1990) Selected predictors of health promotion counselling by three groups of allied health professionals. American Journal of Preventative Medicine, 6,153-160.
14. Thompson, S.C., Schwankovsky, L., and Pitts, J. (1993) Counselling patients to make lifestyle changes: the role of physician self-efficacy, training and beliefs about causes, Family Practice, 10, 70-75.
15. Johnston. M., and Marteau, T.M. (1987) The health beliefs of the health professionals. In H. Dent (ed). Clinical Psychology Research and Developments, London Croom Helm.
16. Marteau, T. M., and Johnston, M. (1990) Health professionals: A source of variance in health outcomes, Psychology and Health, 5, 47-58.

Table 1: Beliefs about the causes of obesity and failure to lose weight

	Practice nurses		GPs		
	Mean $\pm$ SD	Rank	Mean $\pm$ SD	Rank	p value
Causes of obesity					
Biological	4.21 $\pm$ 1.13	3	2.97 $\pm$ 1.12	3	<0.05
Individual differences	5.24 $\pm$ 0.72	2	5.28 $\pm$ 0.69	2	ns
Eating behaviour	5.94 $\pm$ 0.73	1	5.82 $\pm$ 0.69	1	ns

Causes of failed weight loss					
Lack of pt. motivation	3.97 ± 1.54	2	4.34 ± 1.35	1	<0.05
Inadequacy of methods	3.85 ± 1.58	3	3.82 ± 1.59	3	ns
Lack of support	4.26 ± 1.46	1	4.26 ± 1.28	2	ns

Table 2: Beliefs about the consequences of and solutions to obesity

	Practice nurses		GPs		
	Mean $\pm$ SD	Rank	Mean $\pm$ SD	Rank	p value
Consequences of obesity					
Seriousness	6.0 $\pm$ 0.91		5.6 $\pm$ 1.08		<0.001
Health risks of obesity					
CHD	6.07 $\pm$ 0.9	1	5.91 $\pm$ 0.9	4	<0.05
Stroke	5.77 $\pm$ 1.1	4	5.56 $\pm$ 1.0	5	<0.05
Cancer	4.27 $\pm$ 1.4	7	4.34 $\pm$ 1.3	7	ns
Hypertension	6.05 $\pm$ 0.9	2	6.13 $\pm$ 0.8	2	ns
Joint trauma	5.66 $\pm$ 1.2	5	5.93 $\pm$ 0.9	3	<0.01
Diabetes (Type 2)	5.86 $\pm$ 1.1	3	6.23 $\pm$ 0.9	1	<0.001
Psychological problems	4.96 $\pm$ 1.3	6	5.22 $\pm$ 1.1	6	<0.01
Solutions to obesity					
Benefits of weight loss	6.28 $\pm$ 0.9		5.89 $\pm$ 1.0		<0.001
Preventability	5.16 $\pm$ 1.0		4.88 $\pm$ 1.2		<0.01
Treatability	5.02 $\pm$ 1.0		4.3 $\pm$ 1.23		<0.001
Role of failed weight	5.72 $\pm$ 1.5		5.35 $\pm$ 1.4		<0.05

loss on future success					
Attempting weight loss despite risk of failure	5.41 ± 1.5		5.07 ± 1.5		<0.05

Table 3: Beliefs about behaviour and actual behaviour

	Practice nurses		GPs		
	Mean $\pm$ SD	Rank	Mean $\pm$ SD	Rank	p value
Beliefs about own behaviour					
Self efficacy (confidence)	4.5 $\pm$ 0.96		4.08 $\pm$ 1.1		<0.001
Outcome expectancy (competence)	3.92 $\pm$ 1.1		3.16 $\pm$ 1.2		<0.001
Amount of practice					
Duration	2.43 $\pm$ 0.6		1.56 $\pm$ 0.7		<0.001
Frequency	2.57 $\pm$ 0.6		2.5 $\pm$ 0.7		ns
Type of practice					
Calorie controlled diets	3.73 $\pm$ 1.72	4	4.13 $\pm$ 1.5	5	<.01
Very Low Calorie Diet	1.16 $\pm$ 0.7	6	1.31 $\pm$ 0.7	7	<.001
Medical Intervention	1.1 $\pm$ 0.4	7	1.43 $\pm$ 0.6	6	<.001
Referral	3.69 $\pm$ 1.5	5	4.26 $\pm$ 1.5	4	<.001
Exercise	5.0 $\pm$ 1.6	2	4.89 $\pm$ 1.6	3	ns
Eat less in general	4.97 $\pm$ 1.8	3	5.44 $\pm$ 1.6	2	<0.001
General Nutritional Advice	6.68 $\pm$ 0.8	1	6.24 $\pm$ 1.1	1	<.001