
Socio-demographic variations in perspectives on cardiovascular disease and associated risk factors

S. Nic Gabhainn, C. C. Kelleher, A. M. Naughton, F. Carter,
M. Flanagan and M. J. McGrath

Abstract

Coronary heart disease (CHD) rates in Ireland are very high but little is known about attitudes to the disease. Qualitative attitudinal data were collected in focus group settings from 74 individuals across socio-demographic categories in order to assess knowledge of and attitudes to CHD and associated risk factors. Focus group questions were derived from group deconstruction of constructs from the Health Belief Model, Theory of Planned Behaviour, Protection Motivation Theory and Social Learning Theory. Participants were drawn from the personnel lists of local government and a health authority hospital. Eight types of groups were constructed according to the various permutations of the three variables: age, gender and occupational group. Analyses revealed good knowledge levels about risk factors among participants. However, participants exhibited mixed loci of control and low motivation to change behaviours. Men generally were less motivated to change than women; older men thought it too late and younger ones too soon. Though white and blue collar groups' views were similar, the discussion in white collar groups was more varied. Participants were sceptical about apparently contradictory medical advice which undermined motivation to change. The data complement earlier work and suggest preventative initiatives should be more focused.

Department of Health Promotion, Clinical Sciences
Institute, National University of Ireland, Galway, Ireland

Introduction

Cardiovascular diseases are a major cause of morbidity and mortality world-wide, and rates are particularly high in both parts of Ireland (Department of Health, 1994b). Following nearly a half century of epidemiological investigation we know there is a significant preventable component through environmental and lifestyle modification (WHO, 1985; Epstein, 1989; O'Reilly and Shelley, 1991). Health gains have been made with reductions in both morbidity and mortality in a number of countries, particularly in the US and Europe (WHO, 1988; Flora *et al.*, 1993; Winkleby *et al.*, 1994) and to a lesser degree in the UK and Ireland (Royal College of Physicians, 1991; Shelley *et al.*, 1991).

However, there is a widening class gradient in the pattern of cardiovascular diseases, in part attributable to variations in risk factor profiles across social classes (Rose and Marmot, 1981; Mulcahy *et al.*, 1984; Woodward *et al.*, 1992). A significant degree of scepticism exists within sections of the scientific community about the benefits of lifestyle modification [e.g. (Skrabanek, 1994)], particularly regarding the role of diet, and this may well influence lay perceptions of the efficacy of change. In addition there is a significant public health challenge in translating the scientific data into acceptable health promotion programmes for individuals and populations. In epidemiological terms, the strategy is to achieve a reduction in the total numbers of cases by modification of the risk factor profile of all individuals. This strategy may mean making appreciable lifestyle change for small relative gain on the part of the individual and little

reduction in his or her absolute risk. The common sense perception of individuals may well mean that they see little gain in personal terms and indeed may have anecdotal experience of apparent exceptions to the rule—people who develop the disease despite making all the right lifestyle changes. An important question is how this affects people's attitudes to standard health promotion programmes and indeed whether those attitudes differ according to socio-economic factors.

While evidence mounts as to the risk profiles of different socio-demographic groups (Davey-Smith *et al.*, 1990; Woodward *et al.*, 1992), it has been argued that it is not practical to generalize about health attitudes or behaviours across different sub-groups as socio-demographic factors can exert considerable influence (Pill, 1991; Winkleby *et al.*, 1994). Substantial data have been reported indicating behavioural differences between groups [e.g. (Blaxter, 1990; Eaton and Reynes, 1993)] but relatively little work has been done systematically comparing the attitudes of these groups to risk or to the factors hypothesized to underlie healthy lifestyle behaviours or behaviour change.

Nevertheless, some perspectives on health issues and hypothetical underlying constructs have been shown to differ across a variety of socio-demographic groups including gender, social class and age. For example, women report lower self-efficacy beliefs towards exercise than men (Schuster and Waldron, 1991) and more external health locus of control (Stockton, 1985). Lower socio-economic groups have been identified as having lower knowledge scores and higher risk rates for coronary heart disease (CHD) (Osler *et al.*, 1992), but are more likely to display an optimism bias (Silagy *et al.*, 1993) than those of higher socio-economic status. Similarly, older adults are more likely to perceive themselves as vulnerable to illness (Kelleher, 1991; Rowland and Dickinson, 1994). There are limited Irish data available in the literature. Attitudes to health reported by Conroy and Shelley (Conroy and Shelley, 1986), McCluskey (McCluskey, 1989) and the Department of Health (Department of Health, 1994a) indicate the perceived importance of diet for health, and illustrate

measured scepticism and confusion over the benefits of behavioural change in addition to predominantly external health locus of control beliefs among Irish samples. Especially lacking are attitudinal data collected across a variety of constructs in a similar and systematic format which facilitates comparisons between elicited perspectives.

There is an overemphasis on data and models developed in particular cultural milieux, notably the US and larger English speaking countries, as well as a dearth of qualitative information regarding comparative perspectives on heart disease in different societies. Thus the current study undertook to collect specific Irish data in a qualitative fashion. Focus groups are an increasingly popular methodological tool effective for the collection of qualitative information from study participants in a group environment (Lankshear, 1993) and were considered to be an appropriate methodology to employ for this investigation.

Examination of the focus group method resulted in a series of methodological choices being made, particularly in relation to the content and detail of the questioning employed within each group session. It was not merely global attitudes to CHD that were of interest. While attitudes could be defined as positive or negative reactions to persons and objects or things, there is debate as to whether the term should refer primarily to affective responses (Fishbein and Ajzen, 1980) or should include behavioural and cognitive reactions in a 'tricomponential' model (Breckler, 1984; Downie *et al.*, 1990). Despite the relative ease of measuring unidimensional attitudes, affect-only models are not easily matched with the wide variety of factors affecting health behaviours and health outcomes (Stacy, 1994). Therefore in addition to attitudes, beliefs, perceptions, judgements as well as perspectives were considered relevant. This decision was taken in order to widen the scope of the work and make it more amenable to multi-disciplinary interpretation. In addition, the topic 'CHD' was approached from a wide angle and participants were to be probed about some aspects of their knowledge and behaviours. More importantly, the project was approached from within the framework

of theoretical models of health behaviour, primarily derived from psychology and health promotion. The Health Belief Model (Rosenstock, 1974) and the Theory of Planned Behaviour (Ajzen and Madden, 1986) are the most common models in the literature, and these were examined along with Protection Motivation Theory (Rogers, 1983) and aspects of Social Learning Theory (Bandura, 1977).

Methods

Design

This was a qualitative study using focus group methodology. The aim was to recruit two groups comprising approximately five to eight individuals in all combinations of the following categories; men and women, blue and white collar occupations, and under and over 45 years of age. Two full sets of permutations of these categories should result in 16 groups in total.

Participants

In order to identify a sample frame from which to recruit the quota of subjects, a local government authority was approached. This organization has a range of employees across the socio-demographic spectrum, and the management agreed to cooperate with the study by facilitating access and agreeing to assist in the selection of participants from personnel files. A full list of staff was provided for the relevant age ranges and in a number of cases there were only just a sufficient number of staff in the categories required, when this was the situation all staff were invited to attend the relevant focus groups. When there were excess numbers in the category, participants to be invited were selected randomly from personnel files and were similarly contacted directly by the research team inviting them to a session by appointment. Due to an employment embargo and the fact that domestic services were contracted out it was not possible to recruit sufficient blue collar women from this source. The local health authority was subsequently approached and permission was gained from management in a local teaching hospital to recruit domestic staff to the study.

Table I. Outline of study design showing categorization of the 13 focus groups (actual numbers participating in each category are given in brackets)

	Under 45 years		Over 45 years	
	Male	Female	Male	Female
White collar	A×2 (10)	B×2 (14)	C×1 (5)	D×2 (11)
Blue collar	E×1 (7)	F×1 (7)	G×2 (10)	H×2 (10)

Thirteen of the target 16 group sessions were held in total, comprising 74 employees. No staff member contacted refused the invitation but some did not actually attend as agreed. There were a number of practical difficulties in some categories in finding staff available to participate and in three categories only one group was run (see Table I).

Methodology

Focus group questions were derived from group deconstruction of a number of models of health behaviour in the health psychology and health promotion literature. Many of the theoretical perspectives overlapped with one another, some directly, merely using different names for the same constructs; others indirectly, where the understandable nature of a given construct tapped into some other more global construct or overlapped with part of its meaning. Where possible the original definitions and explanations of the constructs were used, but in a number of cases their parameters had to be deduced from their use in the literature. After deconstruction the major constructs identified were grouped into three categories. The first was 'knowledge', which consisted of knowledge of risk factors for CHD and perceived seriousness of CHD, and the second was 'control', comprising locus of control, self-efficacy and perceived susceptibility. The third set of constructs concerned 'change', and included motivation, cues to action, intentions, perceived barriers and benefits (of change), and subjective norm.

Focus group questions were formulated according to guidelines provided by Krueger (Krueger, 1994). Questions were designed to fit both the needs of the method and to tap the constructs of

interest. As such they were relatively open in format to stimulate discussion and the language used was straightforward to facilitate understanding. Three other guidelines were adopted: the sequence of questions was to be from the general to the specific, the order of questions was intended to move from the impersonal to the personal and the questions related to change were placed last, as they could be perceived as most threatening to the individual participant and thus the data collection process.

Procedure

Two pilot focus groups were conducted to test the suitability and nature of the group questions. A short self-administered closed questionnaire was also devised containing basic demographic questions and factual questions about heart disease. The focus groups were conducted according to pre-agreed guidelines by four of the authors randomly assigned to the roles of moderator and facilitator for each group. All groups were held during working hours in rooms provided by the respective employers. In the case of the local authority and hospital an office meeting room was provided, and for the blue collar older males the group was held in a work depot which also held some machinery and equipment. In all cases participants were offered tea or coffee on entry and were seated around a table in a format as close as possible to a circle. Recommendations as to the effective conduct of focus groups given by Morgan (Morgan, 1988, 1993) and Kreuger (Kreuger, 1994) were examined and adopted.

Analyses

Sessions were recorded on audio tape and transcripts underwent a thorough content analysis with pairs of researchers identifying examples and suggestions of the pre-defined constructs. Usually participants or groups discussed or alluded to specific constructs within the particular questions designed to tap into them but this was not always the case. Each construct was sub-divided according to its different perspectives apparent in the data. Thus the broad analysis categories were theoretic-

ally-driven and the refinements data-driven. Data once categorized were analysed by means of the software package QSR Nud.iST 3 (Non-numerical, Unstructured Data Indexing Searching and Theory Building).

Analytic techniques developed for such qualitative data include those that are ethnographic or strictly qualitative and those that emphasize content. Morgan and Spanish (Morgan and Spanish, 1985) recommend using a combination of these approaches in order to assess both theory and data. In these analyses the approach has been both theory- and data-driven as well as involving a search for new themes. The main considerations in analysis are outlined by Kreuger (Kreuger, 1994), who maintains that one should consider the content, context, internal consistency, frequency, intensity and specificity of verbal contributions while involved in the interpretation of its value. The issue of data quality is also subject to a number of criteria (Merton *et al.*, 1990), the most relevant here being that responses based on personal experiences are rated more credible (and thus given more weight) than hypothetical or second-hand stories.

Results

General findings

Basic data were collected from participants on their socio-demographic characteristics and their knowledge of their own risk factor status. The data presented below represent participants' self-reported status (Table II). Participants tended to report substantially elevated risk profiles compared with the general population. Note that those reporting a family history were asked about any heart disease and not merely about premature episodes.

Qualitative findings are presented under the three construct categories, knowledge, control and change, both overall and then according to socio-demographic patterns. In each case some generalizations are drawn and examples of verbatim statements from participants are given.

Table II. *Self-reported details of the male and female participants*

Demographic details	<i>N</i>	Average age	Average school leaving age	Married (%)	'Rural' dwellers (%)
Male	32	40	16	59 (19)	56 (18)
Female	42	37	18	36 (15)	74 (31)
Reported cardiovascular risk factors	<i>N</i>	Family history (%)	High blood pressure (%)	High cholesterol (%)	Diabetes (%)
Male	32	40 (12)	–	34 (11)	–
Female	42	48 (20)	12 (5)	14 (6)	3 (1)
Reported lifestyle factors	<i>N</i>	Stress (%)	Smoking (%)	Exercise (%) ^a	Dietary fat (%) ^b
Male	32	25 (8)	59 (19)	81 (26)	40 (12)
Female	42	43 (18)	40 (17)	69 (29)	36 (15)

^aPercentages reporting brisk exercise at least 3 times per week.

^bPercentages reporting that they eat fried food at least 4–6 times per week.

Knowledge

Cancer was repeatedly and consistently perceived as more serious than CHD across groups, followed in order by diseases such as AIDS, alcoholism, diabetes, mental health and asthma (e.g. 'We're more afraid of cancer than heart disease', 'Heart disease must be taken as a serious problem...it has to be high on the agenda [of importance]').

Cancer was seen to be especially serious by all the male groups (e.g. 'Cancer [is serious], especially skin cancer. All cancers'), though older white collar workers did consider CHD to be a serious problem (e.g. 'heart no. 1, cancer no. 2 and serious mental health problems no. 3'). AIDS was mentioned as a serious problem by blue collar participants generally, while alcohol dependence was considered important by young (under 45) men and older women (45 and over) (e.g. 'Aids is coming [to the fore] more... Drink [alcohol] I suppose').

Knowledge levels were high overall, with diet, heredity, age, lack of exercise, stress, gender, smoking, drinking, high blood pressure and diabetes being mentioned as risk factors, followed by more generalized comments (e.g. 'It's partly due to our diet', 'Men more than women', 'People who neglect their own health').

Frequency of mention of risk factors was generally quite similar across all groups, with some factors such as perceived stress being mentioned universally. This was, however, more emphatic on the part of older groups (e.g. 'I suppose people with responsibility [are at an increased risk]... Too many problems they have nowadays'). Lack of exercise as a risk factor was not emphasized by blue collar groups generally, particularly among the younger participants, although it was mentioned in passing (e.g. 'lack of exercise'). Older blue collar men were particularly interested in familial susceptibility and older men in general emphasized their perception of the role of alcohol as a negative risk factor (e.g. 'Alcoholism [is] our biggest problem. I think myself if a person goes to bed with a feed [of alcohol], I think its bad because it puts your heart pumping all the time').

Control

Control and issues surrounding the concept were found during all sections of the discussion regardless of the questions being addressed at any one time. Internal locus of control was mainly related to preventative behaviour. The pattern of these contributions almost invariably involved relatively impersonal suggestions (e.g. 'You could/can do

something about it yourself', 'You'd have complete control over dietary factors and exercise factors', 'Most responsibility lies with yourself rather than other people') rather than examples of personal control taking. Some participants exhibited an interesting degree of balanced internality and externality (e.g. 'Dietary factors—you'd have complete control of, stress—you mightn't be able to do much about it'). External locus of control was primarily indicated by comments on heredity as well as those on family- and work-related stress (e.g. '[people are] genetically programmed, if it runs in the family no matter what you do [you are] always at risk', 'Maybe if working in a stressful environment—they [employers] are the cause, could lessen the strain').

Self-efficacy was not distinguishable as a separate category and perceived susceptibility related to specific personal examples (e.g. 'I would [think about heart disease] because I was born with a heart murmur', 'I wouldn't think about it myself at all') and there was little discussion on what constituted a low susceptibility situation, except in regarding CHD as less serious than cancer (e.g. 'It's cancer really that you'd think about not heart disease').

The younger respondents were more likely than older ones to cite and discuss factors related to both internal and external locus of control, though younger men were relatively fatalistic about their own capacity for change (e.g. 'Others say if you worry you die young, so why worry'). The group with most external locus of control were older white collar women (e.g. 'Having to work long hours, not getting proper meals...because you have to travel and things like that', 'Not so much that type of stress (work related) as, stress caused by trying to make ends meet or that stress caused by family problems/worries'). Younger blue collar workers were least likely to identify and discuss examples of perceived susceptibility.

Change

The respondents were predominantly unmotivated to change, because of scepticism about medical advice (e.g. 'The conflicting message of medical

experts [to] cut out all the fats, dairy products, butter, cheese...then the next guy says the most natural thing is butter, who do you believe?', 'Research keeps changing, if you do this you don't know the result at the end of it. It's kind of up in the air') and lack of will power (e.g. 'Sometimes you mightn't have the time either [to implement medical advice] plus the fact that we're all inclined to sit into a car and drive off', 'laziness'). Despite the fact that general knowledge was quite good, lack of information was perceived as a potential barrier to change by respondents (e.g. 'We don't know enough about it').

Positive motivating factors to change included compliments on weight loss, being able to play with children and a sense of control (e.g. '[If you changed you would] Probably feel happier about yourself', 'You'd probably be less dependent on the state for benefits'). External cues predominated in discussion on possible behavioural or lifestyle change. These included the example of a sick person, the need for clear advice from doctors, more specific education and family pressures (e.g. 'more exposure to how bad it [illness] is, definitely more information', 'Until you go to a doctor and you're told that you have high cholesterol or whatever, its only then you'll have to get down to doing something about it'). Sizeable discussions about the medical profession ensued with dissatisfaction at the lack of clear advice and several anecdotes about unsatisfactory personal experiences (e.g. 'There has been lots of confusion over the past 10 years or so, especially in relation to cholesterol', 'I certainly would not agree with the doctor, I think they are way too far out—[they] repeat what they learned in college, [they] never change').

There was virtually no intention to change in any group, either because they already felt healthy enough or because it would make no difference (e.g. 'My philosophy in life is everything in moderation. You need a certain amount of fat in your diet, you need a certain amount of salt to prevent dehydration', 'I try not to think about it [getting ill]...say my prayers'). On the other hand, perceived barriers constituted the largest single

category. These centred on the difficulty of changing routines to alter lifestyles, the perception that this would interfere with tradition and the difficulty at a personal level of changing as well as lack of discipline (e.g. 'to change [behaviour or lifestyle] is to do without', 'Habits that are hard to break... eating habits', 'Also "better food" difficult to prepare, twice as long'). A number of anecdotal reports of failed attempts to lose weight, start exercising or stop smoking could have been interpreted as contributing to the concept of low self-efficacy for behaviour change and such failed attempts were also clearly a perceived barrier to possible change in the future.

Perceived benefits to change were the likelihood of living longer and generally feeling better and fitter (e.g. 'A fitter person, a healthier person and a richer person', 'live longer maybe'). There were also other perceived benefits, including reduced feelings of guilt and worry and a perception that money might be saved (e.g. 'Less medications—profits of the [pharmaceutical] multinationals would drop', 'Cost less, not buy cigarettes and alcohol and save [money]'). There was little mention of subjective normative factors either promoting or inhibiting change, but there was a general feeling that age might be important in that change should be more likely as one became older and that general historical or cultural factors might be important too (e.g. 'As one gets older you would be more careful and take more notice [of one's health]').

Men generally were less motivated to change than women, most particularly older men (e.g. 'Unless you're tied to the bed, you won't change', 'Nothing at my age would make me change'). The older participants were most emphatic in their discussions about the role of doctors (e.g. 'I met three guys this week who had a pain in their chests. The doctor told them they were sound [well]. I said you're guaranteed to die shortly if the doctor says you're alright'). Intention to change was most discussed by older men and yet behavioural change was perceived as least likely by them, while older blue collar women identified the widest variety of barriers to change (e.g. 'A [water] filter is expens-

ive', 'It's habit', 'fruit coming from foreign countries [is dangerous]', 'Time', 'You're tired when you're finished work').

Despite their scepticism and lack of motivation, the older groups all declared likely benefit from behaviour change while the younger blue collar groups were least specific about these likely benefits (e.g. 'longer life', 'feel better after it'). Across groups, age was seen as an important motivating factor for change, though older people, especially the men, tended to think it too late to change (e.g. 'They say it [positive health behaviour] should start in your youth, it's a matter of being trained') and younger people, particularly men, too early and not yet necessary (e.g. 'you might think about it [changing] every 6 months or something but you forget about it', 'That's the thing. You put it out of your mind. So you probably wouldn't consider it on a day to day basis. You don't want to').

Discussion

This was a systematic qualitative study on cardiovascular disease reflecting the perspectives of employed people across the socio-demographic spectrum. There was some evidence from the quantitative data that the participants had a relatively high risk factor profile for CHD. A good response was obtained reflecting a contemporary working population. The methodology proved useful and appropriate to this population, and the analyses undertaken revealed similarities with data collected by other methods in Irish populations. A major strength of the data are the specific findings relevant to the field of applied health promotion.

Many of the findings are consistent with earlier less detailed studies undertaken in Ireland. As in the Kilkenny Health Project, a community intervention programme which included a small qualitative study in one village (Conroy and Shelley, 1986), general knowledge levels were high with some evidence that more specific information might be required, e.g. in the case of alcohol consumption and blood pressure. Attitudes to cancer were similar to those found by McCluskey's (McCluskey, 1989) large study in the Eastern

Health Board area and in the Kilkenny Health Project in that it was rated more seriously in all three studies than heart disease. The perception that CHD is often quick and painless, and the belief that cancer is often enduring and incurable, may also be contributory factors.

While socio-demographic differences were not as wide as might be expected, there were differences consistent with the observed quantitative evidence which shows a clear class gradient in risk of heart disease. Although there were differences in emphasis across the various groups on many of the constructs, there were no substantial differences in attitude detected, e.g. in relation to cultural norms. Knowledge levels in particular were similar, suggesting that the class gradient seen in epidemiological studies can only be explained in part by level of education though it is frequently cited as a major factor in explaining such gradients. A recent study demonstrates that occupation is a better predictor than educational status of risk, although the latter did figure in heart disease (Davey-Smith *et al.*, 1998).

In the blue collar groups there was evidence of less debate and discussion about the issues generally and less apparent internalization of methods of preventing CHD. This highlights the need for lifeskills programmes [e.g. (Nic Gabhainn and Kelleher, 1995)] to focus more on this issue at school level. It is also possible that social change strategies would be more beneficial for those with least means and opportunity, and would be more welcome and perceived as potentially less victim blaming.

There were, however, age and gender issues of some importance. The last National Nutrition Survey in Ireland (National Nutrition Survey in Ireland, 1990) found that young men had the highest average fat intake in the population and in this study they were the least motivated group to change, justifying the approach taken in the recent public education campaign by the Irish Heart Foundation (Irish Heart Foundation, 1997) in targeting young men for intervention. The fact that older men clearly were well informed but unlikely to perceive themselves as either willing or able to

take action also merits further focused intervention, particularly through workplace intervention programmes. Such an approach should emphasize the benefits of change. For women, the approach needs to place more emphasis on the removal of barriers to change and indeed this perception of obstacles is in keeping with other studies (Department of Health, 1994a,b; Fleming *et al.*, 1997). In general terms the data presented support the view that public education campaigns at a settings level should be more focused and client led if they are to be successful.

The importance placed on advice from medical practitioners and the need for clear unequivocal guidelines, together with the frequency and intensity of anecdotes related by participants that appear to conflict with public health messages, fits well with the hypothesis that lack of behaviour change is related to scepticism about the scientific message. It is clear that the approach to public health education must be one of consensus and dissemination of best practice advice complemented by balanced reportage of debate. The media role in informing, educating and entertaining requires balance and ongoing considered debate if health education is to continue to be conducted through this route. It is also possible that clinicians who do not see media discussions of their opinions as in any way analogous to a surgery session may be underestimating the responsibility they have for their contributions. The potential for the generation of confusion on a wide scale was demonstrated here. This should be an issue for further discussion and debate both within the health and media professions.

This study has also indicated the appropriateness of the methods and models for similar samples. Focus groups proved themselves to be an extremely useful method of collecting data among this population. The data collected was rich and saturated with meaningful information. Difficulties in convening groups reflected the size of the population rather than unwillingness to co-operate on behalf of employers of participants. The medium of investigation used, a verbal or communication-based one, is likely to suit

white rather than blue collar workers and this may have influenced the findings to some degree. Nevertheless, maintaining homogeneity within groups is explicitly intended to assist in overcoming this. This requirement for homogeneity is difficult to match with the recommendation that group members be unfamiliar with one another. It was not possible in this case to construct groups with participants who were unfamiliar with one another and on examination of transcripts this familiarity did not appear to be a significant inhibitory factor. Nevertheless this will be an issue in any rural area or region of low population density, especially when homogeneity is a desired group quality and requires further consideration when choosing appropriate methods for investigation.

The data also add to the body of knowledge suggesting that wholesale borrowing from models developed in other cultural milieux may not always be appropriate. The lack of data reflecting the concept of self-efficacy independent of personal history is one such clear example. Similarly, both Morgan and Grube (Morgan and Grube, 1997) and Kiernan (Kiernan, 1995) present data indicating that perceived norms are relatively more important predictors of behaviour among Irish samples. It should, however, be possible to employ the data collected here to develop or 'culturize' other models. For example, participants' contributions, particularly in the areas of control and change could be useful in exploring the processes of change as described for example in the stages of change model (Prochaska and DiClemente, 1984) for specific use with Irish groups. Indeed using qualitative data in this way, to expand and illuminate the mechanisms of models for particular groups may be one of the most interesting ways of gaining full use from data collected. It is also desirable, in order to guide practice or to avoid masking relevant theoretical developments, that careful examination of constructs and supportive and relevant empirical research is conducted prior to the adoption of such models with new groups or in new cultures.

Acknowledgements

This study was undertaken with grant funding from the Health Promotion Unit, Department of Health as part of the Cardiovascular Disease and Health Promotion Research Group collaboration of the Royal College of Surgeons in Ireland (Professor Ian Graham and Dr Emer Shelley), National University of Ireland, Dublin (Professor Geoffrey Bourke and Professor Leslie Daly) and National University of Ireland, Galway (Professor Cecily Kelleher). We are grateful to Galway County Council and Merlin Park Hospital, Western Health Board, Galway for facilitating the study.

References

- Ajzen, I. and Fishbein, M. (1980) *Understanding Attitudes and Predicting Social Behaviour*. Prentice-Hall, Englewood Cliffs, NJ.
- Ajzen, I. and Madden, I. (1986) Prediction of goal directed behaviour: attitudes, intention and perceived behavioural control. *Journal of Experimental and Social Psychology*, **22**, 453–474.
- Bandura, A. (1977) Self-efficacy: towards a unifying theory of behavioural change. *Psychological Review*, **84**, 191–215.
- Blaxter, M. (1990) *Health and Lifestyles*. Routledge, London.
- Breckler, S. J. (1984) Empirical validation of affect, behaviour and cognition as distinct components of attitude. *Journal of Personality and Social Psychology*, **47**, 1191–1205.
- Conroy, R. and Shelley, E. (1986) *Health Beliefs and Attitudes in a Rural Irish Community*. The Kilkenny Health Project, Kilkenny.
- Davey-Smith, G., Bartley, M. and Blane, D. (1990) The Black report on socio-economic inequalities in health—ten years on. *British Medical Journal*, **301**, 373–377.
- Davey-Smith, G., Hart, C., Hole, D., McKinnon, P., Gillis, C., Watt, G., Blane, D. and Hawthorne, V. (1998) Education and occupational social class: which is the more important indicator of mortality risk? *Journal of Epidemiology and Community Health*, **52**, 153–160.
- Department of Health (1994a) *Attitudes Towards Healthy Eating*. Health Promotion Unit, Department of Health, Dublin.
- Department of Health (1994b) *Shaping a Healthier Future*. Department of Health, Dublin.
- Downie, R. S., Fyfe, C. and Tannahill, A. (1990) *Health Promotion: Models and Values*. Oxford University Press, New York.
- Eaton, C. B. and Reynes, J. (1993) Predicting physical activity change in men and women in two New England communities. *American Journal of Preventive Medicine*, **9**, 209–213.
- Epstein, F. (1989) The relationship of lifestyle to international trends in CHD. *International Journal of Epidemiology*, **18** (Suppl. 1), 203–209.

- Fleming, S., Kelleher, C. and O'Connor, M. (1997) Eating patterns and factors influencing likely change in the workplace in Ireland. *Health Promotion International*, **12**, 187–196.
- Flora, J. A., Lefebvre, R. C., Murray, D. M., Stone, E. J., Assaf, A., Mittlemark, M. B. and Finegan, J. R. (1993) A community education monitoring system: Methods from the Stanford Five City Project, the Minnesota Heart Health Program and the Pawtucket Heart Health Program. *Health Education Research*, **8**, 81–95.
- Irish Nutrition and Dietetic Institute (1990) *National Nutrition Survey*. Irish Nutrition and Dietetic Institute, Dublin.
- Irish Heart Foundation (1997) *Annual Report*. Dublin, Irish Heart Foundation.
- Kelleher, C. (1991) Promoting health in young people. *Irish Medical Journal*, **84**, 81–82.
- Kiernan, R. (1995) *Substance use among adolescents in the Western Health Board Area*. Thesis submitted to the Faculty of Public Health Medicine, Royal College of Physicians of Ireland.
- Krueger, R. A. (1994) *Focus Groups: A Practical Guide for Applied Research*. Sage, London.
- Lankshear, A. J. (1993) The use of focus groups in a study of attitudes to student nurse assessment. *Journal of Advanced Nursing*, **18**, 244–260.
- McCluskey, D. (1989) *Health—People's Beliefs and Practices*. Government Stationary Office, Dublin.
- Merton, R. K., Fiske, M. and Kendall, P. L. (1990) *The Focused Interview*, 2nd edn. The Free Press, Glencoe, IL.
- Morgan, D. L. (1988) *Focus Groups as Qualitative Research*. Sage, London.
- Morgan, D. L. (1993) *Focus Groups: Advancing the State of the Art*. Sage, London.
- Morgan, M. and Grube, J. W. (1997) Correlates of change in adolescent alcohol consumption in Ireland: implications for understanding influences and enhancing interventions. *Substance Use and Misuse*, **32**, 609–619.
- Morgan, D. L. and Spanish, M. T. (1985) Focus groups: a new tool for qualitative research. *Qualitative Sociology*, **7**, 253–858.
- Mulcahy, R., Daly, L., Graham, I. and Hickey, N. (1984) Level of education, coronary risk factors and cardiovascular disease. *Irish Medical Journal*, **77**, 316–318.
- Nic Gabhainn, S. and Kelleher, C. (1995) *Lifeskills for Health Promotion*. Centre for Health Promotion Studies, UCG, Galway.
- O'Reilly, O. and Shelley, E. (1991) The Kilkenny post-primary school survey: a survey of knowledge, attitudes and behaviour relevant to non-communicable diseases. *Irish Journal of Medical Science*, **160** (Suppl. 9), 40–44.
- Osler, M., Lous, J. and Rasmussen, N. K. (1992) Knowledge, attitudes and cardiovascular risk factors in Danish adults. *Scandinavian Journal of Social Medicine*, **20**, 151–157.
- Pill, R. (1991) Issues in lifestyles and health: lay meanings of health and health behaviour. In Bandura, B. and Kickbusch, J. (eds), *Health Promotion Research: Towards a New Social Epidemiology*. WHO Publications, London.
- Rogers, R. W. (1983) Cognitive and physiological processes in fear appeals and attitude change: a revised theory of protection motivation. In Caccioppo, J. R. and Petty, P. E. (eds), *Social Psychophysiology: A Resource Book*. Guildford, New York.
- Rose, F. and Marmot, M. G. (1981) Social class and coronary heart disease. *British Heart Journal*, **45**, 13–19.
- Rosenstock, I. M. (1974) The health belief model and preventive health behaviour. *Health Education Monographs*, **2**, 328–335.
- Rowland, L. and Dickinson, E. J. (1994) Look after your heart programme: impact on health status, exercise knowledge, attitudes and behaviour of retired women in England. *Journal of Epidemiology and Community Health*, **48**, 123–128.
- Royal College of Physicians (1991) *Preventative Medicine: A Report of a Working Party of the RCP*. Royal College of Physicians, London.
- Schuster, P. M. and Waldron, J. (1991) Gender differences in cardiac rehabilitation patients. *Rehabilitation Nursing*, **16**, 248–253.
- Silagy, C., Muir, J. and Coulter, A. (1993) Cardiovascular risk and attitudes to lifestyle: what do patients think? *British Medical Journal*, **306**, 1657–1660.
- Skrabanek, P. (1994) *The Death of Humane Medicine and the Rise of Coercive Healthism*. The Social Affairs Unit, London.
- Stacy, A. W., Bentler, P. M., and Flay, B. R. (1994) Attitudes and health behaviour in diverse populations: drunk driving, alcohol use, binge eating, marijuana use and cigarette use. *Health Psychology*, **13**, 73–85.
- Stockton, A. D. (1985) Health locus of control, cardiovascular disease and cancer health risks of elementary school children. *Dissertation Abstracts International*, **46**, 1.
- Winkleby, M. A., Flora, J. A. and Kraemer, H. C. (1994) A community based heart disease intervention: predictors of change. *American Journal of Public Health*, **84**, 767–772.
- Woodward, M., Shewry, M. C., Smith, W. C. and Tunstall-Pedoe, H. (1992) Social status and coronary heart disease: Results from the Scottish heart health study. *Preventive Medicine*, **21**, 136–148.
- WHO (1985) *Primary Prevention of Coronary Heart Disease*. Euro Reports Series 88. WHO, Copenhagen.
- WHO (1988) *Comprehensive Cardiovascular Control Programmes in Europe*. Euro Report Series 106. WHO, Copenhagen.

Received on April 26, 1998; accepted on September 13, 1998