



**Behaviour Change Management and Unhealthy Behaviours: A Qualitative Study of Beliefs held by Undergraduate Medical Students**

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**ABSTRACT**

It has been estimated that around 50% of deaths can be attributed primarily to unhealthy behaviour; a number that could be vastly reduced with effective behaviour change management (BCM) and preventative care. However, research has demonstrated that GPs hold negative views towards BCM and thus do not utilise these methods as often as they should (Bruce & Burnett, 1991; Chisholm, 2009). Despite this, behaviour change (BC) training remains infrequent in undergraduate medical education. The aim of the study was to explore undergraduate medical students' beliefs surrounding BCM and to identify any links or discrepancies that may exist between those who have received BC training and those who have not. Fifty-eight undergraduate medical students completed a qualitative questionnaire designed to gain a comprehensive understanding of such beliefs. Nineteen of the participants had taken part in a BC training session whilst 39 had no such training. Responses were coded and analysed using thematic analysis and 6 themes were identified: the importance of BCM; the 'burden' of preventable disease to the NHS and society; appropriate BC methods; inappropriate BC methods; the doctor-patient relationship and responsibility. Differing attitudes were seen in those who had received BC training and those who had not. The findings provide an account of some of the beliefs surrounding BCM that currently exist in the undergraduate medical population. The results also provide support for the inclusion of structured BC training within undergraduate medical education. It is hoped that with the inclusion of such training, the next generation of doctors will be able to better understand and apply BCM, and that some of the negative views that currently exist in doctors and undergraduates will cease to be barriers in the future.

KEY WORDS:	BEHAVIOUR CHANGE	MEDICAL STUDENTS	OBESITY	SMOKING	MEDICAL TRAINING
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## Introduction

It has been estimated that around 50% of deaths can be attributed primarily to unhealthy behaviours (Mokdad, Marks, Stroup, & Gerberding, 2004). Unhealthy behaviours are those found to negatively influence the chance of contracting a preventable disease and are behaviours which are in principle, open to individual choice (Uitenbroek, Kerekovska, & Festchieva, 1996). Research has consistently demonstrated that unhealthy behaviours such as smoking, alcohol consumption, poor diet and limited physical activity are linked with high levels of morbidity and mortality (English, 1992; Mokdad et al., 2004). Furthermore, in a longitudinal study monitoring health behaviours, those who didn't smoke, were physically active, had moderate alcohol intake and high fruit and vegetable consumption had considerably lower mortality rates; the equivalent to being 14 years younger in chronological age (Khaw et al., 2008).

The health risks associated with smoking and alcohol misuse are well documented. English (1992) illustrates that alcohol is linked to more than 60 different diseases, whilst on average, one in two long-term smokers die prematurely, half of these in middle age (Doll, Peto, Wheatley, Gray, & Sutherland, 1994). Despite this, 28.6% of the European population are still regular smokers (WHO, 2007) and in the UK, 39% of men and 31% of women exceed the daily sensible drinking limits on a regular basis (NHS, 2009).

Additionally, rates of obesity are of growing concern; more than 65% of men and 55% of women in England are thought to be overweight (NHS, 2006). Obesity is associated with poor diet and a sedentary lifestyle and has been linked to illnesses such as hypertension, colon cancer and myocardial infarction. Moreover, it is estimated that obese women are almost 13 times more likely to suffer from type 2 diabetes (NHS, 2006). Recently, increases in diabetes-related hospital admissions have highlighted the impact of health-related behaviours, not only on individual health, but also on NHS spending. It is estimated that the NHS spends £1 million an hour on diabetes treatment alone (Diabetes UK, 2008); an amount that could be vastly reduced with successful preventative medicine.

The aim of preventative medicine as opposed to traditional 'curative' care is to prevent illness using health promotion and behaviour change management (BCM) (Jason & Botelho, 2000). The importance of preventative care was highlighted in October 2007, when the National Institute for Health and Clinical Excellence (NICE) published 'Guidelines for behaviour change at population, community and individual levels' (NICE, 2007). The guidelines highlighted the importance of health promotion and behaviour change (BC) as a preventative tool within primary care in the hope that the rates of preventable disease in the UK would be considerably reduced as a result (Abraham, Kelly, West, & Michie, 2009). The government have also acknowledged the importance of tackling unhealthy behaviours and have introduced various public health initiatives aiming to reduce smoking and obesity; for example the NHS have launched the 'Change for Life' campaign, urging the general public to live a healthy lifestyle, boasting the slogan 'eat well, move more, live longer' (NHS, 2010).

With the focus of modern medicine shifting towards preventative care, doctors are frequently expected to provide health promotion services and BCM to patients, particularly in primary care settings (Kaner, Heather, McAvoy, Lock, & Gilvarry, 1999). This has been encouraged by the introduction of NHS targets such as the Quality and Outcome Framework (QOF) where general practices can earn rewards for monitoring certain chronic diseases, some of which are associated with unhealthy behaviour such as diabetes, coronary heart disease and hypertension. GPs are also offered incentives for measuring blood pressure, cholesterol and smoking rates and for managing these risk factors within reasonable limits (Roland, 2004). The aim of the scheme is to monitor and control negative health behaviour and reduce preventable diseases.

Although the move towards preventative medicine appears to be supported by medical institutions and government bodies, rates of preventative health care remain low (Yarnall, Pollak, Ostbye, Krause, & Michener, 2003). The majority of preventative medicine is conducted in primary care, yet the approach to BCM in these settings has been described as uncoordinated and inconsistent (Epstein & Ogden, 2005). Additionally, there have been concerns that health professionals are failing to acknowledge the importance of BCM and are not utilising preventative methods as often as advised (Epstein & Ogden, 2005). Research suggests that this may be due to barriers that prevent GPs engaging in health promotion; for example when interviewed, GPs expressed having little time within consultations to engage in health promotion and felt that government policies were not supportive of preventative care (Kaner, et al., 1999). This study was conducted before the introduction of QOF and the NICE guidelines, however, emerging research suggests that GPs now have multiple elements to include within a 10-minute consultation and as such, time has become an even greater barrier for health promotion (Chisholm, 2009).

Despite the necessity for BCM, it has been acknowledged that health behaviours that lead to serious illness can be notoriously difficult to change (Marteau & Lerman, 2001; Michie, Jochelson, Markham, & Bridle, 2009). Very few health interventions have been found to be effective; purely informing people that they are at risk of developing a disease is rarely sufficient to provoke change (Marteau & Lerman, 2001). Furthermore, research demonstrates that although some complex interventions may produce desirable BC immediately, reduction is rarely long-term and usually returns to baseline at follow up, especially in the case of weight loss (Epstein & Ogden, 2005). Causes of unhealthy behaviour can be extremely complex and often involve social, psychological, cultural and economic factors that make changing behaviour multifaceted and challenging (Abraham, et al., 2009). This complexity has been empirically supported; Michie and colleagues (2009) found that lower socioeconomic and social status were associated with high rates of unhealthy behaviour and poorer health outcomes. Moreover, specific interventions using fewer BC methods were more effective in this population than those with higher socioeconomic status.

Due to the difficulties associated with changing behaviour, many attempts to create interventions have been unsuccessful (Epstein & Ogden, 2005). Traditionally, health care practitioners have relied on 'informational power'; sharing facts and figures about behaviour and illness and 'expert power'; using their professional credentials

to persuade patients of the effectiveness of BC (Elder, Ayala, & Harris, 1999). However, epidemiological findings continue to display high percentages of the population suffering from preventable disease, thus these techniques appear to be insufficient to combat the problem (Marteau & Lerman, 2001). It has been suggested that this may be because such interventions are not rooted in established psychological theory (Michie, Jochelson, et al., 2009), as reviews of evidence have shown that effective interventions are those based on theories of behavioural change (Jepson, 2000).

Several traditional psychological theories have been used to create successful interventions, and many take into account intentions to behave, environmental constraints, norms for behaviour, self-standards and self-confidence; thus dealing with BC from multifaceted angles (Elder, et al., 1999). For example, physical activity behaviour has been explained using the Theory of Reasoned Action (Dzewaltowski, Noble, & Shaw, 1990), which states that behaviour is determined by an individual's attitude and their subjective norms surrounding acceptable behaviour (Ajzen & Fishbein, 1980). In contrast, Social Cognitive Theory (SCT) (Bandura, 1989) highlights the importance of self-efficacy in an individual's decision to partake in physical activity (Dzewaltowski, et al., 1990). Alternatively, the Health Promotion Model has been used to predict exercise behaviour (Taymoori, Lubans, & Berry, 2010), highlighting the affects of competing demands and alternative behaviours which have powerful reinforcing properties for physical activity behaviours (e.g. watching television).

Although some studies into these explanations have produced moderately optimistic results, many BC theories are unable to wholly explain the complexities of health behaviour. For example, studies have demonstrated that the Health Promotion Model accounts for only 34% variance in physical activity (Taymoori, et al., 2010). In spite of this, it has been argued that designing an effective behavioural intervention requires an understanding of the mechanisms that underpin BC and must include rigorous methods to test its theoretical basis (Michie et al., 2008). Moreover, studies have shown that doctors themselves confirm the importance of understanding the theories that underlie BC (Perkins, Wall, Jones, & Simnett, 1999) and see proven efficacy of an intervention as an incentive to initiate BCM with a patient (Kaner, et al., 1999).

BC interventions often use one or multiple BC techniques. A vast range of theory-based techniques have been used previously in interventions, with varying degrees of success. For example, collaborative goal setting (where the clinician and patient together decide on a relevant goal) has been found to be effective in changing the behaviour of patients at risk of coronary heart disease (MacGregor et al., 2006) whilst self-monitoring (such as keeping a behaviour diary) has been found to be successful in increasing physical activity and healthy eating (Michie, Abraham, Whittington, McAteer, & Gupta, 2009). Another useful technique is motivational interviewing; a method that aims to help people work through their ambivalence about BC (Rollnick, Heather, & Bell, 1992a). Motivational interviewing has been shown to increase levels of physical activity in patients with chronic heart disease, increase adherence to asthma medication and reduce levels of smoking (Brodie & Inoue, 2005; Broers et al., 2005). Subsequently, the NICE guidelines state that BC techniques should be evidence-based and that any ineffective interventions should

be discontinued (Abraham, et al., 2009). Despite this, 'expert power' and 'information power' continue to be the most widely used techniques in primary care (Elder, et al., 1999).

When successful techniques *are* identified, replication can be problematic as techniques can often be ill-defined and overlap in content (Abraham & Michie, 2008). Consequently, researchers have called for a precise, standardised set of vocabulary and definitions for techniques used within interventions. In response to this, Abraham & Michie (2008) developed an evidence-based taxonomy of BC techniques which allows intervention content to be described accurately, and consequently evaluated and replicated. It is hoped that the introduction of this rigorous scientific reporting will enable future studies to identify successful theory-based interventions and disregard those which are unsuccessful.

The next step in tackling unhealthy lifestyle behaviours is to train health professionals in successful methods of BC. Much of the training medical students receive continues to be oriented towards treatment of illness (Elder, et al., 1999) however, 58% of GPs feel that they could conduct effective BCM given adequate training (Kaner, et al., 1999). There have been several successful attempts to teach medical students the necessary skills, however, formal BC training remains infrequent in undergraduate education (Moser & Stagnaro-Green, 2009). Manchester Medical School has introduced a pilot BC teaching session into their medical training curriculum and a study using a coding manual developed from Abraham and Michie's (2008) BC taxonomy (Hart & Peters, 2009) found that after the session, students showed improvement in both knowledge of BC and practical skill (Wallworth, 2009).

Although medical institutions and governmental bodies have publicly expressed their support for preventative services, little is known about the beliefs that individual health care professionals hold regarding BC and how these views affect the way in which patients are cared for. A study conducted around 20 years ago found that although GPs considered prevention an important part of their work, there were several barriers preventing them from regularly conducting BCM (Bruce & Burnett, 1991). Participants were not certain of their ability to conduct BCM successfully and raised concerns over their anticipated workload; they also expressed misgivings about whether change was possible in their patients. Further legislation and guidelines on disease prevention and health promotion has been issued following this study, however, research conducted in 2009 found that these themes continued to cause concern amongst GPs and GP trainees (Chisholm, 2009). Chisholm (2009) found that in primary care, BCM remained an important tool which affected levels of disease burden, NHS spending and health professionals' workload. However, GPs were not confident when conducting BCM and felt that patients were unlikely to be receptive to their methods. New themes that arose included a concern that BC may be damaging to the GP-patient relationship due to its potential to cause the patient offense and uncertainty over who was ultimately responsible for BCM. Participants in this study suggested that nurses should be the main provider of such services; however, alternative research found that GPs saw the patient themselves as responsible for managing their own behaviour (Epstein & Ogden, 2005). Other research has suggested that nurses too are confused over their role in preventative care (Gott & O'Brien, 1990).

Alternative research has established that GPs have strict time constraints and thus feel they do not have sufficient time to undertake a task as complex as BC, especially if this compromises treatment of more immediate health concerns (Chisholm, 2009; MacGregor, Wong, Sharifi, Handley, & Bodenheimer, 2005; Yarnall, et al., 2003). Lack of formal BC training has also been identified as a barrier preventing GPs from conducting successful BCM. Studies have shown that doctors feel that they are not sufficiently trained and are keen to learn more (Ng, et al., 2009, Chisholm, 2009). Moreover, 58% of GPs felt that they *could* provide successful BCM given sufficient training (Kaner, et al., 1999).

Although some studies have focused on GPs perceptions of BCM, none have focused specifically on the attitudes of medical students; in particular those that have received previously unavailable training. It is imperative to establish if the negative beliefs expressed by GPs are present in the undergraduate population and if these beliefs can be targeted and modified using BCM training. If this is conducted successfully, it is hoped that the next generation of doctors will receive the required training and thus be able to better understand and utilise BCM in their future careers.

#### Research aims

- To explore undergraduate medical students' beliefs surrounding BCM.
- To identify any links or discrepancies that may exist between those who have received structured training and those who have not.

#### Method

##### Apparatus

A questionnaire was developed in order to gain insight into medical undergraduate students' beliefs of BC (see appendix 5.2.). The questions were partially based on key issues identified in previous studies of GP and GP trainees' views (Bruce & Burnett, 1992; Chisholm, 2009). It was deemed important to establish whether beliefs seen in GPs were present in the undergraduate population thus questions were developed to ascertain this. However, as no research had been conducted with a specific focus on students' views, the majority of questions were open-ended and allowed free-worded answers in order to gain detailed responses. Questions focused on important health behaviours, appropriate and inappropriate BC methods, issues surrounding responsibility and the doctor-patient relationship. The questionnaire allowed participants to indicate what BC training (if any) they had received.

The questionnaire also contained 4 scenario-based questions that aimed to gain insight into students' ability to understand and apply BC methods in relation to major health behaviours; smoking, drinking alcohol, diet and exercise. However, during analysis it became apparent that the 4 scenario-based questions and confidence scales should not be included as these questions assessed understanding of BC methods and it appeared appropriate that given the research aims, focus should be directed specifically towards beliefs and attitudes rather than understanding.

## Participants

Fifty-eight medical students from the University of Manchester took part in the study. Nineteen had taken part in a BC training session whilst 39 had no formal BC training. Thirty-three of the participants were female and 25 were male. Ages ranged from 19 to 26 with the median age being 22.

Participants were recruited using convenience sampling, utilising three recruitment methods. Firstly, all medical undergraduates at the University of Manchester were emailed detailing the study and provided with a link to an online version of the questionnaire. Secondly, an announcement was listed on Medlea, the University's online resource for medical undergraduates. Thirdly, in order to study beliefs from students who had taken part in structured BC training, students who had optionally taken part in a pre-existing training session were asked to participate.

## Behaviour Change Training Session

All 5<sup>th</sup> year students were asked to take part in a 3-hour pilot BC teaching session; this was optional and 34 students attended. The session involved introducing students to the techniques included in the Abraham & Michie's (2008) taxonomy and allowing them to practically apply BC methods to realistic patient scenarios both independently and in groups. At the end of the session, students were given the option of completing the questionnaire; 19 chose to take part.

## Design

The study used a qualitative questionnaire design; this was chosen for various reasons. Firstly, the limited range of research into medical students' views on BC discounted a comparative study and quantitative methodology and it is widely accepted that qualitative methods should be used to explore research areas about which little is known, in order to gain novel understandings (Stern, 1980). Chisholm's (2009) research provided a general structure of beliefs that currently exist within the medical community, however, only five medical students were included in this research and it was noted within its write-up that, "in initial interviews, responses from individuals presently undergoing medical training varied compared to practicing GPs who received their medical training previously and have had more patient contact and direct experience of managing BC issues" (p 19). Due to the small sample size and the variation in views from the undergraduate participants, little is known about the attitudes this group hold concerning BCM and so it is crucial that this group is studied in more detail. Secondly, qualitative methods should be used to obtain the intricate details about phenomena such as feelings, opinions and views that are difficult to extract through more conventional methods (Strauss & Corbin, 1990), thus the method allowed for the collection of detailed responses which were necessary to determine the complex beliefs of the sample. It was important to capture a range of views as well as disparity between participants to fully explore the current research questions and as such, qualitative methods were appropriate. In addition, a quantitative research design would not have allowed for novel beliefs to be expressed in responses.



Questionnaires were used as opposed to interviews in order to reach a larger number of participants; time constraints would not allow for a similar number of in-depth interviews. Moreover, it was intended that participants could give free and open answers due to the anonymity afforded by the absence of a researcher (Esposito, Agard, & Rosnow, 1984). Focus groups were not utilised as the study objective was to obtain a range of individual views on BCM rather than collective opinion; it was also expected that participants would feel more comfortable providing truthful responses in the absence of their peers. Free-word questionnaires were also appropriate as it allowed the researcher to restrict responses to the general boundaries of the research questions by directing participants towards relevant topics (Blee, & Taylor, 2005).

Thematic analysis was used to extract common themes within responses. Thematic analysis was chosen as it allows organisation and description of the data set in rich detail as well as interpretation of various aspects of the research topic (Boyatzis, 1998). A full literature review was conducted prior to data analysis as Tuckett (2005) argues that engagement with relevant literature can enhance analysis by increasing sensitivity to more subtle features of the data. Analysis begun with immersion in the data, which involved repeated reading of the data whilst actively searching for meanings and patterns (Braun & Clarke, 2006; Tuckett, 2005). Initial codes were then developed; that is the most basic element of the raw data that can be assessed in a meaningful way (Boyatzis, 1998). This was executed by scrutinising participant responses systematically and identifying interesting aspects of the data that would later form the basis of themes across the data set (Tuckett, 2005). This was a recursive process which involved moving back and forth between the entire data set and analysis of the data; codes that were relevant to the research questions and that had been discussed by multiple participants were identified as potential emergent themes. These emergent themes were inspected in detail and factors such as how often the issue was highlighted by participants and the range of beliefs about the issues were noted and used to determine how significant themes were in relation to the research questions. Investigation of emergent themes involved individual inspection and categorisation of codes as well as reordering and repositioning the data until it was clear that the analysis fully reflected the data set as a whole (Braun & Clarke, 2006).

Initially the analysis was organised into two sections comprising firstly of themes that were found across both trained and untrained participants. Secondly, the trained and untrained groups were analysed separately. This allowed for any similarities or discrepancies between participant groups to become exposed. This was necessary as it became apparent soon into the analysis that there was a considerable amount of disparity between the two groups in several topic areas. As such, it was decided that analysis would benefit further by first combining groups and focusing on the key themes that emerged within the data set as a whole and then outlining any obvious discrepancies seen between the trained and untrained groups.

## **Procedure**

Prior to data collection ethical approval was obtained from both the University of Bath and the University of Manchester (see appendix 5.3.). Participants that were recruited via email or using Medlea were provided with a link to an online version of

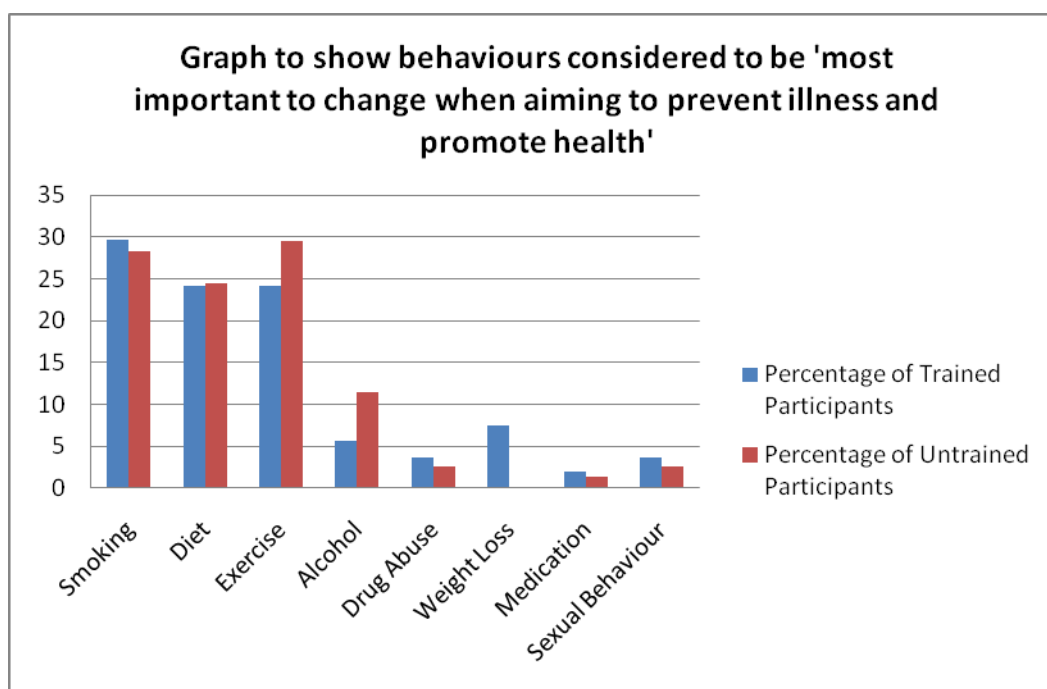
the BC questionnaire. Before they were able to complete the questionnaire, a briefing statement was provided and participants were asked to indicate whether they consented to inclusion in the study. Those involved in the training session were provided with a paper questionnaire, an information sheet (see appendix 5.4.) and consent form (see appendix 5.5.) subsequent to their completion of the training.

Participants were instructed to respond freely and assured that all data would remain confidential. Participants were able to respond in their own time and were provided with a de-brief sheet once they had completed the questionnaire. They were informed that they would receive a portfolio certificate if they took part in the research (see appendix 5.6.) which was sent via email once all data was collected.

## Results

### Important Health Behaviours

Before completing specific questions assessing beliefs, participants were asked to identify key health behaviours that they considered important to modify using BCM. The graph below illustrates results from both the trained and untrained groups



Perhaps unsurprisingly, smoking, diet, exercise and alcohol consumption were viewed as most important to change when aiming to prevent illness and promote health. It was important to understand the behaviours students were considering when responding to questions about BC. Throughout analysis, it was assumed that when students referred to 'unhealthy behaviours' or 'changing behaviours', they are doing so with the above behaviours in mind.

### Themes

Six themes were identified during analysis: the importance of BCM; the 'burden' of preventable disease to the NHS and society; appropriate BC methods; inappropriate

BC methods; the doctor-patient relationship and responsibility. Within each theme, beliefs within the sample as a whole are presented first, then discrepancies seen between the trained and untrained groups are outlined. Participant identification numbers and group (trained or untrained) codes are displayed in parentheses.

### **The Importance of BCM**

Almost all participants saw BCM as important in preventing disease, promoting health and increasing quality of life.

*'So that patients live a healthier, happier, longer life and have a better quality of life' [17, Trained]*

Participants provided specific examples of diseases that could be prevented using successful BCM.

*'Reduce cardiovascular risk factors, diabetes etc' [19, Trained]*

Furthermore, BC was seen as important not only for personal health but for the health of others, particularly in relation to second-hand smoking.

*'Each have major implications on health of the patient and some effect the health of others too' [4, Trained]*

Although participants saw BC as primarily important in terms of physical illness, some also saw unhealthy behaviour and its consequences as potentially damaging to the psychological wellbeing of patients. They viewed BCM as potentially beneficial to mental health and a task that would be psychologically and socially advantageous for the patient.

*'I also think it can be a 'vicious circle' – poor body image can have an impact on psychological health. Somebody who is unhappy may not have the motivation to change. In changing this behaviour, the person who exercises and eats a good diet may develop, over time, a positive body image and a positive attitude to life. This may also have a good effect on psychological health and the person may be more inclined to look after themselves in other areas of health behaviour' [45, Untrained]*

There were no obvious discrepancies between groups within this theme, all participants had a good understanding of the effects of unhealthy behaviours on general health due to their undergraduate medical training and the majority of responses were grounded in such knowledge.

### **The 'Burden' of Preventable Disease to the NHS and Society**

A substantial group of participants used the term 'burden' in relation to the cost that preventable disease can have to the NHS and society's resources.

*'They are major contributors or preventative factors to serious illness and disease and are, I think key, in some of the most common illnesses and biggest health burdens in our society' [34, Untrained]*

Participants held the view that if people changed behaviours that are known to be damaging to health, such as smoking, then the 'burden' to the NHS would be vastly reduced.

*'In an ideal world, imagine how fantastically reduced the burden on the NHS would be if nobody smoked?' [45, Untrained]*

Furthermore, participants acknowledged that BCM was a tool that had the potential to reduce preventable diseases and consequently preserve NHS resources.

*'These behaviours have been shown to have great impact on health and quality of life as well as on NHS resources. By getting patient's to improve diet, quit smoking etc it will have benefit for the population as a whole' [5, Trained]*

This theme emerged consistently throughout analysis; however in the untrained group only, it became apparent that there was some feeling of resentment towards patients who had become unwell as a result of negative health behaviour. There also appeared a reluctance to spend time and money treating these people over those who were unwell through 'no fault of their own'.

*'These are modifiable factors which can remove pressure from the NHS and allow it to treat people who are sick through no fault of their own' [23, Untrained]*

### **Appropriate BC Methods**

Participants confidently provided examples of BC methods that they perceived to be appropriate, however their responses were varied. Many saw the most efficient way to initiate BC with a patient was through education, first verbally within a consultation, followed by provision of leaflets or information packs on BC.

*'Education. Check that they have taken in all the information you have given them. Give them a chance to ask questions. Reinforce this knowledge with a booklet giving a summary of what you have said. Provide them with organisations that might help' [21, Untrained]*

Furthermore, participants from both groups saw the most effective education as providing potential consequences of unhealthy behaviour.

*'The best method involves a clear, but tactful discussion of risk assessment. The patient needs to be informed about his/her potential to develop a certain disease and be informed of the appropriate lifestyle choices he/she can adopt to evade such circumstance' [40, Untrained]*

A common view of successful BC included the use of specific goal setting or step-wise goal setting in order to avoid the patient feeling overwhelmed in their task to change behaviour.

*'I think it is important to try to change behaviour step-by-step, as people in general are creatures of habit and do not welcome massive change...they need to know how they can change and they need help to set reasonable progressive targets/goals' [45, Untrained]*

There were also suggestions towards the use of specific therapies such as Cognitive Behavioural Therapy, Motivational Interviewing and Hypnotherapy.

*'I have done hypnotherapy for 3 years which is very successful in getting people to give up smoking, I think this shows that often people seek out complementary therapies in addition to medical treatment' [49, Untrained]*

Psychology was seen as a central facet of BC; participants suggested that methods based on psychological theory such as the Health Belief Model and conditioning theories had the potential to be most effective.

*'For behaviours such as exercise, operant conditioning could be suitable. For example, for a number of hours of exercise they do weekly they could obtain a reward such as vouchers for their favourite store and this would encourage them to exercise more' [48, Untrained]*

Although there were many similarities between the groups in relation to appropriate BC methods, there was one clear divergence; during the training session participants were provided with information on successful BC techniques, so unsurprisingly trained participants provided specific techniques from Abraham and Michie's (2008) taxonomy.

*'Self-monitoring of behaviour. Information of consequences' [9, Trained]*

Furthermore, trained participants thought it important to identify any barriers that might prevent patients from succeeding; continuous monitoring and support was viewed as crucial throughout the BC process.

*'Acknowledge that it is difficult, make a plan and identify clear goals. Arrange review and support' [10, Trained]*

These features of BCM were emphasised as being important throughout the BC training session, therefore it is unsurprising that distinctions between the groups were observed in these areas.

### **Inappropriate BC methods**

There were also varied views on which BC techniques should be considered inappropriate. Many participants acknowledged that the use of scare tactics was both inappropriate and ineffective, often resulting in the opposite of the intended effect. Though conversely, several participants noted that not fully explaining the

situation for fear of scaring the patient would also be unproductive. Other participants highlighted a need for a compromise where consequences are explained in a way that ensures patients are not scared or feel as though the situation is beyond their control.

*'Scare tactics (are inappropriate), but on the flipside, pussyfooting or playing down the risks of behaviours can be detrimental to health. A compromise between these extremes is necessary' [30, Untrained]*

Participants also believed that losing patience or becoming angry was highly inappropriate.

*'Doctors becoming angry is never good and occurs all too often. Patience is key' [58, Untrained]*

Disparity between the trained and untrained groups emerged only in relation to the manner in which BCM was delivered, rather than any specific inappropriate techniques. Trained participants had a substantial awareness that a doctor's professional responsibility placed them in a position where they should provide guidance, but they should never force a patient to make a change that they are not comfortable with. The idea of forcing, dictating or being patronising toward patients was considered to be counter-productive, especially given the idiosyncratic nature of BC.

*'Also, dictating how they can achieve these behaviour patterns is not useful...each patient is different' [9, Trained]*

In addition, participants acknowledged that BC should not be influenced by a doctor's own idealised views on acceptable health behaviours.

*'Asking someone to make changes they consider to be unacceptable to them. Asking the patient to conform to your ideals' [2, Trained]*

### **The Doctor-Patient Relationship**

In relation to whether participants considered BCM to be potentially damaging to the doctor-patient relationship, a great degree of variation was observed in those who were trained and those who were not trained. Trained participants' responses were in general, more positive; many held the view that if BCM was conducted in an appropriate way, offense would be avoided and it would not have a detrimental effect on the doctor-patient relationship.

*'If it's done in the right way, it should positively enhance the doctor patient relationship. Working together to address the problem' [3, Trained]*

Around a third of those who were untrained held the view that BCM had the potential to damage the doctor-patient relationship and that the relationship should be preserved at all cost, even if it meant that BCM was avoided.

*'I agree, because the patient may feel they do not trust the doctor anymore so they would not confide any secrets or feelings to the doctor...it should only be used as the very last resort if the patient really does not understand the extent of the damage their behaviour is causing' [46, Untrained]*

Several participants in both the trained and untrained group expressed the view that disruption to the doctor-patient relationship would be mediated depending on how the subject was broached. If conducted in a sensitive manner with consideration for the patient's feelings, offense and embarrassment could be avoided.

*'It depends on the approach to the subject by the doctor. If they are sensitive, patients are less likely to be offended' [19, Trained]*

Furthermore, it appeared that trained participants saw themselves as having a responsibility to raise the issue of BC even if this meant potentially damaging such a relationship, although offense to patients should be avoided if at all possible.

*'I agree that its possible for this to happen but I don't think it's a good enough reason NOT to attempt to initiate change in your patient's lifestyle if it would be beneficial to their health. It's equally possible, for example, that a patient would be upset (and feel like the health service hadn't done their job) if they were diagnosed with lung cancer and had never been offered help or support to stop smoking. As health professionals there are many occasions in our daily work where we will have to do things that may upset or offend our patients – it's our responsibility to try and deal with these situations head on through good communication and reasoning rather than trying to avoid them' [25, Untrained]*

However, several untrained participants suggested that damaging the doctor-patient relationship was unimportant and considered BC to be crucial, therefore offending the patient was justified as an unfortunate but sometimes necessary consequence.

*'Causing offence in the short term is justified to improve health in the longer term. If people don't like this, it's tough' [30, Untrained]*

Although views on this subject were varied, it appears that those who had training were likely to agree that although BCM had the *potential* to damage the doctor-patient relationship, if conducted in an appropriate, sensitive way this would be avoided. Furthermore, trained participants saw themselves as having a responsibility to raise the issue of BC even if this meant potentially damaging such a relationship, although offence to patients should be avoided at all cost. Untrained participants were more likely to believe that BCM was damaging to the doctor-patient relationship; some considered this to be a necessary consequence whilst others saw this as a reason to avoid BCM altogether.

## **Responsibility**

Finally, participants reported a range of opinions regarding who they considered to be responsible for managing BC. Many participants viewed patients to be responsible for changing their own behaviour.

*Because a person's health is primarily their responsibility' [3, Trained]*

Consequently, participants viewed any BC intervention initiated by a doctor as likely to fail if the patient did not already have the intention to change.

*'If you lack the intention to change in the first place then no outside support is going to facilitate change' [47, Untrained]*

Although many held this view, the majority of participants did emphasise that primary care doctors had at least some role in BCM, however, this was to a varying extent. Untrained participants saw primary care as responsible only for an initial consultation where patients should be referred onto multidisciplinary team members and services.

*'Good consultation with a doctor [is most effective way to get someone to change their health behaviour], spoken in a way that they can understand...referrals to other medical professionals i.e. stop smoking clinic, CBT' [56, Untrained]*

However, trained participants saw GPs as *central* to encouraging the patient to make their own decisions about BC.

*'Empowering the patient to make their own choices about lifestyle changes' [6, Trained]*

Moreover, a common view within the trained group was to view the doctor and patient as working together to find the most successful method of change for the patient.

*'Coming up with joint strategies to change behaviours not just telling patient's what to do' [5, Trained]*

In fact, some considered the GP as the person best placed to provide BCM due to their unique relationship with the patient.

*'GP may well be the best person to offer advice as they know the patient and can use their relationship to work with the patient towards their goal' [14, Trained]*

The untrained group however, placed the responsibility of BC onto other groups such as family and friends.

*'Good supportive environment from doctors, friends and family' [33, Untrained]*

Some also considered governmental bodies as responsible for managing unhealthy behaviours by utilising the media and increasing taxation.

*'Posters, TV, gentle reminders...increased taxation. Increased resources for exercise being made available e.g. more gyms with childcare attached. I*

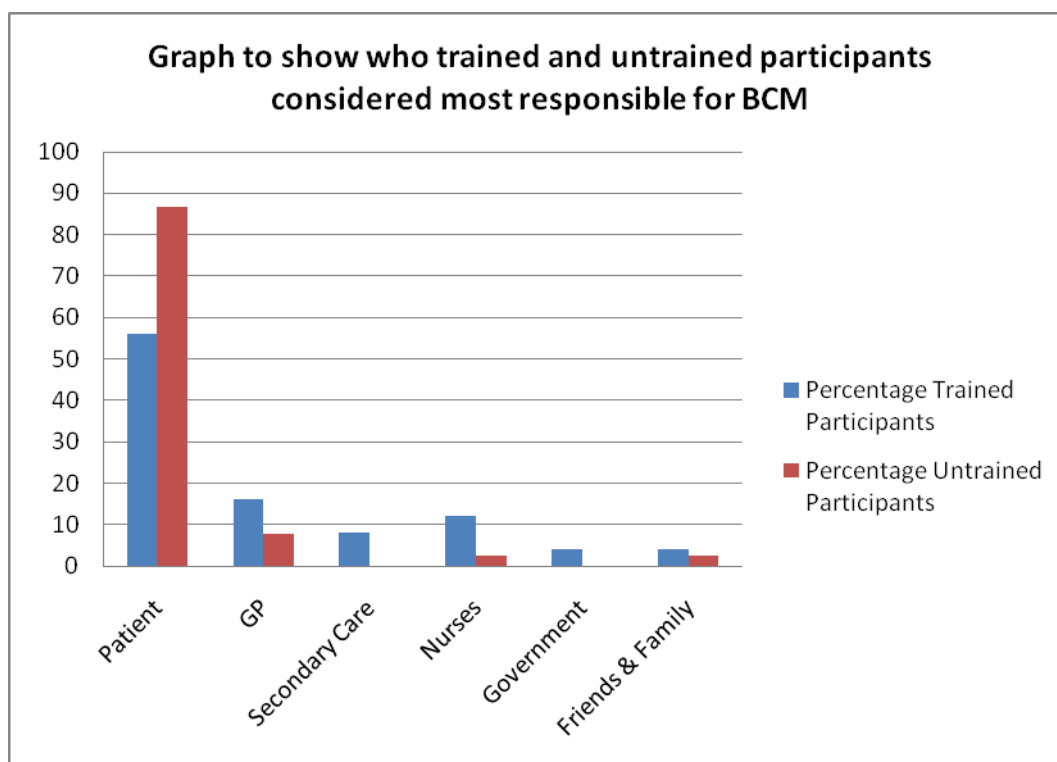


*really think people need to be reminded on a daily basis and media is the best for this' [24, Untrained]*

Alternatively, others saw individual employers as responsible for the health of their employees by encouraging stop-smoking clinics and offering sports facilities to their employees.

*'It would be good if big employers (like NHS) could offer minigyms onsite that people could use for 30mins during lunch break...encouraging staff to exercise 30 mins at lunchtime would probably have benefits for employers...as well as health benefits for staff' [53, Untrained]*

In addition to written responses, participants were asked to rank who they thought was most responsible from 1 to 8. Those included were primary care doctors, secondary care doctors, nurses, the government, the patient themselves and the patient's friends and family. The results are shown in the graph below.



Although varying views surrounding responsibility were found in free-worded answers, when participants were asked to indicate categorically who they considered to be ultimately responsible for BCM, the patient was seen by both groups as responsible for managing their own health. However, it does appear that the views of those who were trained were considerably more varied; many saw not only the patient but doctors in both primary and secondary care and nurses as responsible.

## Discussion

### Comparison with Existing Literature

The research aims were firstly, to explore undergraduate medical students' beliefs surrounding BCM and secondly, to identify any links or discrepancies that may exist between those who have received structured BC training and those who have not. Results revealed a range of beliefs concerning BCM and preventative care and six themes were identified during thematic analysis: the importance of BCM; the 'burden' of preventable disease to the NHS and society; appropriate BC methods; inappropriate BC methods; the doctor-patient relationship and responsibility. This was the first study to focus solely on beliefs of the undergraduate medical population; however, the results will be discussed in relation to previous research studying the views of other health professionals.

Unsurprisingly, participants in the present study saw smoking, diet, exercise and alcohol as the most important behaviours to confront using BCM. Although this was expected, this is an encouraging finding; demonstrating that participants have a clear understanding of the behaviours that have the potential to be most detrimental to health (Mokdad, et al., 2004) and thus should be targeted using preventative medicine. However, alcohol consumption was rated as least important of the four behaviours. The reasons for this finding are not clear given that high alcohol intake has medical consequences that are no less significant than those of obesity and smoking behaviours. Despite this, similar results were found in a study of Swedish GPs who rated the importance of addressing alcohol use as relatively low in comparison to all other health behaviours (Geirson, Bendtsen, & Spak, 2005). The authors anticipated that this was likely to be a result of a lack of practical skill, lack of training in suitable intervention techniques, and unsupportive working environments. It may be possible that similar factors influenced participants' views on alcohol consumption in the present study; however this view was present in both the trained and untrained group suggesting that either the training session did not successfully emphasise the importance of changing alcohol-related behaviour or that lack of training may not be at the root of this view.

Participants in the present study saw BC as an important tool for preventing illness and promoting the physical and mental wellbeing of patients, as well as protecting the health of those around them. Such results are consistent with previous research in which GPs viewed BCM as an integral feature of their work (Bruce & Burnett, 1991). It is also interesting that in the same study, younger doctors were considerably more enthusiastic about the preventative role of the GP (Bruce & Burnett, 1991). In addition, a study conducted after the introduction of recent guidelines surrounding BCM (NICE, 2007) found that medical trainees and GPs reported BCM to be an increasingly important feature of primary care; affecting levels of disease and increasing life expectancy rates (Chisholm, 2009). This view was expressed by both trained and untrained participants in the current study.

The majority of participants were able to identify several potentially effective BC methods. Many emphasised the importance of educating patients, with particular emphasis placed on providing consequences of unhealthy behaviours in relation to

disease onset. Although this has been found to be the most widely used BC technique in primary care (Elder, et al., 1999), information-giving techniques have been found to provoke resistance and ambivalence in patients (Rollnick, Heather, & Bell, 1992b; Velasquez, 2001), and purely informing people that they are at risk of developing a disease is rarely sufficient to provoke any to change (Marteau & Lerman, 2001). This view was observed in both trained and untrained participants; as a result it is suggested that future training could advise that the use of information-giving techniques as a lone method of BC is unlikely to be effective without the use of supplementary psychologically-based techniques (Jepson, 2000).

In terms of specific BC methods, participants saw specific goal setting as useful alongside therapies such as CBT; they also thought that successful BC techniques would be those that are based on psychological theory. This is encouraging considering that reviews of evidence have shown that effective interventions are those based on theories of BC (Jepson, 2000). Those who had received formal training built on this by providing specific BC techniques from Abraham & Michie's taxonomy (2008). Support and review sessions from a doctor were viewed as integral to the BC process by this group, as well as other specific therapies such as motivational interviewing. Motivational interviewing has been shown to increase levels of physical activity of patients with chronic heart disease, increase adherence to medication and reduce levels of smoking (Brodie & Inoue, 2005; Broers, et al., 2005) and as such, acknowledgement of this method after training should be viewed positively.

Participants offered diverse ideas surrounding the effectiveness of certain BC techniques. There were conflicting views surrounding the use of scare or shock tactics; some participants considered this as the most effective method of BC whilst others viewed such methods as highly inappropriate and counter-productive. Discrepancies between groups were seen in terms of awareness of the potential for doctors to impose their views on others; forcing, patronising or dictating to patients were seen to be highly inappropriate by trained participants. Such discrepancies are reflected in other studies where GPs and trainees reported confusion regarding which techniques were appropriate and effective to use within BC consultations (Bruce & Burnett, 1991; Chisholm, 2009).

Participants from both groups expressed beliefs concerning the burden of preventable disease to both society and the NHS. Furthermore, they saw BCM as a way to reduce cost to the NHS and time within individual consultations. These findings are in line with Chisholm's (2009) study, as participants emphasised the impact of such behaviour on NHS spending and doctors' workloads. In the present study, some untrained participants expressed a feeling of resentment towards patients who had illnesses that were a result of engaging in negative health behaviour, as well a reluctance to spend time and money treating these individuals over those who were ill through 'no fault of their own'. This appears to be a novel finding that is not apparent in existing literature. It is suggested that this may be due to the anonymity of the questionnaire design; most existing research uses semi-structured interview formats and it may be the case that health professionals would be uncomfortable expressing potentially controversial views in a face-to-face setting (Esposito, Agard, & Rosnow, 1984).

The greatest discrepancies between groups were observed in themes surrounding the doctor-patient relationship and responsibility. A substantial number of those who had not completed training thought that BCM might damage the doctor-patient relationship. This is unsurprising given that research has demonstrated that doctors place great emphasis on the doctor-patient relationship; sometimes at the cost of useful clinical outcomes (Chew-Graham, May, & Roland, 2004). However, the majority of those who *had* completed training expressed the view that BCM should not be damaging to such a relationship, rather that it should strengthen the relationship. The remaining trained participants thought that this would be mediated depending on the approach and tact demonstrated by the health practitioner. Chisholm (2009) found similar, conflicting views from GP and GP trainees. Some reported trepidation that addressing BC topics would be detrimental to this relationship whilst others cited various reasons why this relationship would aid BC. In the present study, a small number of untrained participants conveyed an unexpected opinion that offending the patient or potentially damaging the doctor-patient relationship was unimportant; addressing BC was more important and if the relationship was damaged, this was a necessary consequence. Again, this was a novel finding which may be unique to undergraduates that have not received BC training and have not had practical experience of BC consultations. Despite this, the results suggest that those who have received BC training may possess more optimistic views in relation to the doctor-patient relationship. Although the limitations of the methodology imply that this finding is not conclusive; it is encouraging, and provides supplementary support for the inclusion of BC training into undergraduate medical curricula.

Finally, participants portrayed conflicting views over who they understood to be primarily responsible for conducting BCM. This is unsurprising given that in previous research, GPs expressed confusion surrounding whether it should be the patients' or their own responsibility to initiate BC (Rollnick, et al., 1992b). Most participants in the present study saw the patient themselves as responsible for changing health behaviour; however, trained participants also saw the value in a medicine-based intervention. Results from Chisholm (2009) found that likewise, GP trainees viewed the patient as ultimately responsible however; they also felt GPs were responsible for raising health promotion issues and were best positioned to initiate the process of change. Epstein & Ogden (2005) found that GPs viewed patients to be responsible for managing their own weight loss but further believed that patients wished for the medical profession to assume responsibility. Untrained participants highlighted the importance of social support and saw the government, media and individual employers as having a role in aiding BC interventions. However, only trained participants saw GPs as *central* to encouraging the patient to make their own judgements about BC. They also considered successful BC interventions to be those in which the doctor and patient worked collaboratively to formulate an intervention. This is encouraging given that researchers have advocated GPs as best placed to deliver BC interventions due to their unique relationship with the patient (Walsh, Swangard, Davis, & McPhee, 1999). Many participants in Chisholm's study (2009) considered nurses to be responsible for BC; however, this was not replicated in the present findings; only a small number of participants saw nurses as having any responsibility in instigating BCM.

## Strengths and limitations

This study was the first to focus solely on undergraduate medical students' beliefs surrounding BCM and to search for any discrepancies amongst those who have received structured BC training and those who have not. It is crucial to study these beliefs as it is hoped that with the introduction of structured training into all undergraduate medical curricula, newly-qualified doctors will be able to better understand and apply BCM and some of the negative views that exist in current doctors will cease to be barriers in the future. Further strengths of the current study include the relatively large sample that would have been difficult to attain using other qualitative methods. Moreover, the questionnaire design allowed for complete anonymity which reduced the possibility of demand characteristics and permitted participants to disclose more truthful answers (Esposito, et al., 1984).

Despite such strengths, it is essential that limitations within the present study are considered. Firstly, the study used a structured questionnaire method; thus noteworthy views or ambiguous responses that were identified within a written response could not be expanded upon and follow-up questions could not be delivered. Furthermore, as questions were resolute throughout data collection, participants were guided by the content of the questions; semi-structured interviews would have allowed participants to speak freely and expand upon aspects of BCM that were most salient to them (Strauss & Corbin, 1990). Although such methodology has its limitations, as stated previously, it allowed for a greater degree of anonymity compared to other methods and as such, several novel findings were established within the data. For example, some untrained participants expressed resentment towards those that were unwell as a result of unhealthy behaviour. This finding is not present in previous literature and it is suggested that the anonymity of the present study allowed participants to express genuine feelings, regardless of how controversial their opinions appeared (Esposito, Agard, & Rosnow, 1984). The range of potentially controversial views conveyed by participants within the current study support this assumption.

There are also difficulties in the respect that those included in the study were not yet qualified, practicing doctors and as such there may be discrepancies between how they intended to perform BCM and genuine actions in their future career. This was found to be the case in a study by Ng and colleagues (2009), who found disparity between BC strategies medical students thought they employed and those they actually used in mock consultations. Furthermore, there are problematic factors concerning the use of BCM in real-life consultations that medical students may not have acknowledged. For example, the impact of time constraints featured heavily in previous research with GPs (Bruce & Burnett, 1991, Chisholm, 2009) but was rarely mentioned in the present study.

There may also be issues with generalisation of the sample. All participants were students of the University of Manchester Medical School and all had similar medical training; a factor which may have impacted upon some of the results. However, as the study focused solely upon views of BCM rather than their understanding and ability of using BC principles, the impact of this is likely to be minor. Another issue that may impact upon generalisation of the results is the potential for confounding

variables. Those who agreed to take part in the study may have been more enthusiastic about preventative care or competent at BCM; the BC session was not compulsory and it is likely only those who were enthusiastic about the subject may have attended. It may be the case then that the results represent views only from those that were motivated, high-achieving students. However, if this were the case, the views are likely to be from the more confident end of the spectrum and due to the negative aspects of some beliefs that were expressed; the results are likely to be especially salient.

Finally, those who had taken part in the training session were fourth-year students, whilst those who completed the questionnaire online were from a range of year groups (1-5). Therefore, it is possible that the views expressed may have been influenced by the level of skill and knowledge held by the participant, and that any variations seen between the trained and untrained group may be a consequence of this. However, close inspection of the data revealed no substantial variation in responses from those at differing skill levels; a wide range of views were expressed amongst all year groups.

### **Practical Implications**

There were a wide range of views expressed by participants, some of which were observed in previous research with qualified, practicing GPs and others which were novel to undergraduates and the present study. Additionally, those who had received BC training had differing views in several areas compared to those who had not. Firstly, in terms of responsibility, those who had training were less likely to rate the patient as most responsible and were more likely to implicate themselves and other health professionals in the process of BC. Furthermore, those who had not received training expressed negative beliefs in relation to the effect of BCM on the doctor-patient relationship. Finally, some untrained participants expressed resentment towards patients who had become unwell as a result of negative health behaviour and a reluctance to spend time and money treating these people over those who were unwell through 'no fault of their own'. It is therefore likely that some of the negative views expressed by GPs (Bruce & Burnett, 1991; Chisholm, 2009) arise throughout their career as a result of personal experience; however, others are likely to develop and be maintained during their medical school training. This finding, coupled with research demonstrating that students show improvement in both knowledge of BC and practical skill following BC training (Wallworth, 2009) provides solid justification for the inclusion of structured BC training into the undergraduate medical curriculum.

However, some negative beliefs were expressed by those who had already received training, indicating that this is unlikely to be a comprehensive resolution to the problem. It is suggested that the training program could be modified to address some of the issues raised in the present study; specifically which BC techniques are most useful, the issue of responsibility and the doctor-patient relationship. However, there are difficulties with this; there have been mixed findings surrounding which BC techniques are effective (Elder et al, 1999) and confusion over who is ultimately responsible for managing BC. Some researchers have advocated GPs as best placed to deliver BC interventions (Walsh, et al., 1999) whilst others implicate nurses, dieticians and psychologists (Broers, et al., 2005; Glasgow, 2005). This

emphasises the importance of continuing research into successful BCM throughout the NHS.

### **Suggestions for future research**

Due to the limitations of the qualitative questionnaire design, it is suggested that future research should investigate the beliefs of the undergraduate medical population using a semi-structured interview design, where grounded theory is used to structure sampling, data collection and analysis (Charmaz, 2003, Strauss & Corbin, 1998). This will allow for any results gathered to be empirically-based using a robust methodology (Strauss & Corbin, 1998). It is also suggested that in order to comprehensively study whether beliefs are modified following structured BC training, it would be useful to conduct a comparative investigation where attitudes are measured before and after completion of the training session and then quantitatively compared.

It would also be beneficial to study the views of other groups of health professionals such as nurses, psychologists and dieticians, as well as patients themselves. For example, it would be important to discover where nurses' views fall within the topic of responsibility; earlier research suggests that nurses do not feel well equipped to provide BCM to patients (Lock, Kaner, Lamont, & Bond, 2002) however, other research has shown that GPs consider nurses to be best placed to deliver this service (Chisholm, 2009). It would also be imperative to examine the views of the patient themselves, particularly in relation to whether BCM is likely to cause offence to them or damage the doctor-patient relationship.

### **Conclusion**

The present study has provided an account of the current views surrounding BCM that exist in medical undergraduate students. In addition, it has highlighted discrepancies that exist between those who have received BC training and those who have not. The results portray views on the importance of BCM, the perception of the 'burden' of preventable disease to the NHS and society, views on appropriate and inappropriate BC methods, confusion over whose responsibility BCM is, and varying views in relation to the extent BCM is damaging to the doctor-patient relationship. The results mirror those found in studies of GP and GP trainees' views (Bruce & Burnett, 1991, Chisholm, 2009) however, several novel findings were uncovered. It is proposed that this may be due to the anonymity afforded by the use of questionnaires.

In light of the weaknesses of the study, it is suggested that future research should investigate undergraduates' beliefs using semi-structured interview methodology and the views of other health professionals should be studied in detail. Despite this, the findings provide supplementary support for the inclusion of structured BC training in undergraduate medical education. As a result, it is hoped that the next generation of doctors will be able to better understand and apply BCM and that some of the negative views that exist in doctors and undergraduates will cease to be barriers in the future.

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