ABSTRACT

The literature provides strong support for the persuasiveness of fear regarding threatening topics. Social marketers commonly use fear appeals to change undesirable behaviours (e.g. smoking, drink-driving and domestic violence). The ethical nature of using fear for persuasive purposes is however a matter of contention.

Limited research exists regarding the use of positive emotions in health-promotion. In particular, the relative persuasiveness of eliciting a positive emotional response amongst audience members as opposed to the negative emotional response of fear has yet to be examined. As such, this research project seeks to address this gap using an experimental methodology that addresses the critically important social issue of overweight and obesity. Furthermore, respondents’ perceptions of the ethicality of using both types of appeals will be assessed and recommendations for marketers regarding the use of fear appeals in health promotion will be made.
1. **INTRODUCTION**

1.1. **THE USE OF FEAR APPEALS**

Fear appeals have been used to address some of society’s most pressing public health issues including AIDS, smoking, and drunk driving (Witte et al. 1998). They have proven effective in the promotion of self-protective behaviours across a variety of contexts (Rogers and Deckner 1975; Sternthal and Craig 1974; Maddux and Rogers 1983) and are used by both social marketers and health promoters to modify behaviours (Hastings and McDermott 2006; Ray and Wilkie 1970). Despite their apparent success, fear appeals can, and do, fail (Covello, von Winterfeldt, and Slovic 1986) and debate continues regarding their overall effectiveness and ethicality (Hastings, Stead, and Webb 2004).

1.2. **THE ROLE OF HEALTH PROMOTION**

The justifications for government sponsored public health campaigns include its increasing responsibility to protect the public and counter unhealthy commercial interests, government capability for collective efficiency in disseminating information, reduction of health care costs and the protection of innocent others (Faden, 1987). Campaigns need to be attentive to cost-efficacy (very difficult to quantify), justice and autonomy. Alternatives to health communication campaigns are disincentive programmes, regulations and legislative prohibitions.

The principles of marketing have been applied to the social and health promotion arena for many decades. Commercial marketers can teach health promoters about consumer orientation (the need to empathize with the perceptions, motivations, and needs of the consumer) in order to make their communications more effective. To achieve mutually beneficial exchange is a marketing principle which may be new to those used to the more conventional medical approach of “do this or suffer” (Hastings and Haywood 1991). Fear arousal can result in audience dissociation and limitation of future options. On the other hand, using an educative approach alone can create awareness but not necessarily behavioural change. Marketing aims to alter behaviour in the target audience while maintaining freedom of choice and offering benefits rather than merely sacrifice (Grier and Bryant 2005). Communications that support autonomy are likely to result in more long-term change (Moller, Ryan, and Deci 2006). Ethical analysis of health communications must be alert to unintended adverse effects such as stigmatization, victim-blaming, expanding social gaps, uncertain basis and the elevation of health as a value above all others (Guttman and Salmon 2004).

1.3. **THE OBESITY CRISIS**

The global obesity epidemic in more developed countries is beyond question. According to the US Centre for Disease Control, 64% of the adult US population are overweight or obese (Moller, Ryan, and Deci 2006). Australia is not much different with recent research showing that the prevalence of obesity has more than doubled in the past two decades. In 1999-2000, the prevalence rates for overweight and obesity in Australia were 39% and 20.8% respectively defined by Body Mass Index. By most measures, approximately 60% of our nation’s population was either overweight or obese in 1999-2000 (Cameron et al. 2003) and one must wonder to what degree these statistics have worsened. The obesity crisis brings with it enormous medical and societal costs in dealing with the health co-morbidities. Overweight and obesity results in increased heart disease, hypertension, diabetes, musculoskeletal problems, gall bladder disease, skin problems, cancers, infertility, asthma severity...and the list goes on (Cameron et al. 2003; Eagle et al. 2004).
2. LITERATURE REVIEW

2.1. KEY DEFINITIONS

Fear appeals are defined by the content they feature and reactions they elicit (O'Keefe 1990). Fear appeals have been described as psychoactive, persuasive messages that scare people by depicting negative threats such as ill-health, social disapproval and death due to unhealthy behaviours (Hyman and Tansey 1990; Snipes, LaTour, and Bliss 1999). Threats are conveyed using vivid, often gruesome imagery and personalistic language (Bennet 1996; Dillard 1994; Leventhal and Trembly 1967; Witte 1992b). The desired outcome of fear appeals is attitudinal and behavioural change in accordance with a communicator’s wishes, for example getting an obese person to adopt a healthier diet and to exercise regularly (adaptive behaviours).

**Fear**

Fear is defined as a negatively valanced emotion which is accompanied by a high level of arousal. The emotion of fear is elicited through exposure to a threat considered by the subject as both significant and personally relevant (Easterling and Leventhal 1989; Ortony and Turner 1990). Fear has also been described as a “primitive instinct” that guides and activates human behaviour by generating feelings of anxiety and tension which people seek to reduce or eliminate (LaTour and Zahra 1989).

**Threat**

A threat is an external stimulus such as an environmental or message cue (Witte 1992b). Individuals undergo a response to threats which can be cognitive and/or emotional. Messages are directed at the individual in order to evoke fear and consequent avoidance of unwanted outcomes (LaTour and Rotfeld 1997). There are two key components to threat response; namely perceived severity, how serious an individual believes a given threat to be, and perceived susceptibility, the likelihood one feels of being affected by the threat (Witte et al. 1998).

**Efficacy**

Efficacy can exist as an environmental message or cue leading to perceived efficacy (Witte 1992b). Efficacy stimuli, if perceived, focus on the effectiveness of a recommended response (response efficacy) and/or one’s perceived ability to perform that response (self efficacy) (Maddux and Rogers 1983). Perceived response efficacy therefore refers to the beliefs one holds about a response effectively eliminating a threat (e.g. exercising regularly and healthy eating habits will prevent heart disease). However, self-efficacy refers to one’s belief that they have the ability to undertake the recommended response (e.g. “I am able to exercise regularly and adopt healthy eating habits”).

**Outcome (dependent) variables**

A successful fear appeal results in message acceptance and leads to changes in attitude, intention and, ultimately behaviours enabling an individual to respond to and control a threat (Witte 1992b). An unsuccessful fear appeal, however, results in message rejection and may elicit maladaptive responses which place an individual’s health at greater risk. With respect to public health issues, maladaptive responses lead to continuation of dangerous behaviours.
2.2. EFFECTIVENESS OF FEAR APPEALS

Considerable research has been dedicated to understanding how the variables of fear, threat and efficacy influence fear appeal effectiveness. The stronger the fear appeal (measured by fear arousal) the greater the observed changes in attitude, intent and behaviour (Witte and Allen, 2000). Stronger manipulations of message severity and susceptibility result in positive effects on response efficacy and self-efficacy alike. A number of studies have found a positive linear relationship between the emotional response of fear and persuasion (Boster and Mongeau 1984; Sutton 1982; Witte and Allen 2000). Perhaps self efficacy and response efficacy are the most crucial elements in a fear appeal and should therefore be maximised (Snipes, LaTour, and Bliss 1999). By increasing the response costs for an individual to carry out a coping response, the likelihood of engaging in maladaptive behaviours is increased. Empirical research suggests that when perceived coping efficacy is low, increases in the perceived threat will increase the likelihood of maladaptive behaviours (Kleinot and Rogers 1982; Rogers and Mewborn 1976; Witte 1992a). Increasing the level of threat should be consistent with increasing response efficacy. For threat appeals to work, people must believe they can manage the danger. Attempting to simply scare the daylights out of them is likely to have a boomerang effect on persuasion (Self and Rogers 1990).

Research provides support for the importance of individual differences in moderating how fear appeals are processed (Tanner Jr, Hunt, and Eppright 1991; Witte 1992b). In particular, individual differences are believed to influence perceptions of threat and efficacy components (Witte 1992b). The argument is made that some personality types respond differently to persuasive health promotion and disease prevention messages. This includes those who are highly anxious, lack coping skills, are low in self-esteem or feel particularly vulnerable to threat. As a result, these individuals more readily engage in maladaptive behaviours than “normal” people (Bennet 1996; Boster and Mongeau 1984; Dabbs and Leventhal 1966). The influence of trait-anxiety, (repressors, poor copers and avoiders) is such that they are likely to reject strong fear appeals compared to good copers who are more likely to accept them and engage in adaptive behaviours (Witte 1992b). Increasing the level of efficacy variables has positive effects on most of us, but, interestingly, this does not apply to depressed individuals and also has a negative effect in anti-social personalities (Self and Rogers 1990). Given the inherent tendency of practitioners to increase the threat components of a fear appeal, there are concerns that fear appeals will be increasingly ineffective and even unethical in some segments of the audience.

Overall there are mixed findings regarding the influence of individual variables such as gender, age and ethnicity on fear appeal effectiveness (Kirscht et al. 1978; Leventhal, Jones, and Trembly 1996; Rhodes and Wolitski 1990). People are unique and complex creatures and it should come as no surprise that one size does not fit all.

2.3. ETHICALITY OF FEAR APPEALS

Marketing’s role in addressing major societal issues such as AIDS, drug-use and domestic violence has increased (Hastings and Haywood 1991) and, therefore, its down side and ethical dimensions must be investigated more closely (Bowie 2002). Health promotion relies heavily on statistics and emotion to convey the severity and susceptibility of a plethora of threats and often fails to meet strict standards of truthfulness, sincerity and accuracy (Guttman 1997). The exaggeration of threatening statistics may be considered ethically justifiable from a utilitarian perspective but could not be justified from a Kantian viewpoint. Furthermore, researchers have sought to reconcile the use of strong ‘psychoactive’ emotions with their impact on vulnerable members of society (Hyman and Tansey 1990). Snipes, Latour and Bliss (1999) determined consumers are more likely to view strong fear appeals as ethical if it is felt they can self-efficaciously undertake the coping response.
recommended. Overall, modern utilitarian may justify fear arousal because of its ability to promote safer behaviours and enhance general welfare. This then raises the possibility of causing harm by changing behaviours to avert the first harm (e.g. reducing melanoma by sun avoidance but creating vitamin D deficiency and osteoporosis instead). Classical utilitarian could also argue that constant bombardment of the public by fear appeals resulting in high anxiety levels creates a negative aggregate utility and is not in the interests of a ‘common good’.

The depiction of threats using gory and gruesome imagery raises a number of ethical concerns, accordingly, one could argue that the use of such imagery shows a general lack of societal responsibility (Treise et al. 1994; LaTour and Zahra 1989). We must consider whether these graphic images constitute an invasion of privacy, particularly when they are placed in public places (Nebenzhal and Jaffe 1998). Given health promotion issues compete for peoples’ limited attention amongst a sea of other messages, there is a tendency to increase the level of shock used in order to “break through the clutter” (Smith 2000). A constant tension exists between the utilitarian concerns to change people’s behaviour and deontological concerns such as individual liberty and the right to privacy (Buchanan, Reddy, and Hossain 1994; Guttman and Salmon 2004).

It is often argued that advertising has a conditioning effect on society (Lantos 1987). The issue of a constant bombardment of fear appeals on consumers was raised by Spence and Monipour (1972) suggesting the long term effect could be the creation of an anxiety riddled society. Consistent with this logic, society is inundated by messages reinforcing the importance of good health. It is difficult to predict the long term impact of a mass accumulation of ‘benevolent’ public health campaigns. A dangerous consequence could be a society of “worried well” that becomes so preoccupied with health that services are overwhelmed or those who lack good health are marginalised (Barsky 1988).

Fear appeals are often most persuasive to those who are already practicing the desirable behaviours and least to those the message is primarily aiming to influence (Stuteville 1970). These messages may actually elicit the very behaviours they are trying to stop, prompting smokers to light up another cigarette or a woman with an eating disorder to eat even less (Stephens, Hill, and Hanson 1994; Stewart and Martin 1994). One could argue that public health serves a role to promote social equity and it is unethical if it cannot reach everyone. Fear appeals have the potential to perpetuate social gaps and reinforce rather than reduce existing disparities (Aruffo, Coverdale, and Vallbona 1991). On the other hand, targeting specific groups also carries ethical dimensions, as it can result in stigmatisation (Grier and Bryant 2005; Guttman and Salmon 2004; Smith and Cooper-Martin 1997). Fear appeals have also been blamed for causing collateral damage, for example, creating stress in children whose parents smoke (Hastings, Stead, and Webb 2004).

2.4. INCONSISTENCIES AND METHODOLOGICAL WEAKNESSES

For several decades, fear appeals have been the ‘weapon of choice’ used by health promoters to change undesirable behaviours. Despite this, the empirical findings to explain how they work are inconsistent if not contradictory (Witte and Allen 2000). Many reasons have been offered to account for the inconsistencies in fear appeal research findings, and these reasons may offer future guidance to researchers.

A major criticism of fear appeal research has been that it is based on often misapplied and misunderstood theories derived from psychology journals and that there is little attention to detail when applying these constructs to the marketing paradigm (Rotfeld 1988). As well as this, mixed findings on the influence of key effectiveness variables may be due to lack of clarity defining the variables (Hastings, Stead, and Webb 2004). For example the external threats which aim to produce
fear in subjects have been confused with the actual fear arousal experienced by subjects (LaTour and Rotfeld 1997). By defining the degree of fear aroused as synonymous with threat severity, studies have merely relied on researcher intuition to distinguish between high and low fear conditions.

While fear appeals aim to change behaviours, few real world studies have been able to confirm their success (Ben-Ari, Florian, and Mikulincer 2000; Biener, McCallum-Keeler, and Nyman 2000). They are seldom undertaken in isolation from other public health measures including legislative and educational ones (Kass 2001). Fear appeal research has placed an overemphasis on internal rather than external validation. There is a lack of understanding in regards to how messages are actually processed in the natural audience environment. Subsequently, little is known about how a fear-appeal performs within the mass-media landscape (Hastings, Stead, and Webb 2004; Soames Job 1988) or the long term effectiveness of campaigns. Even when studies are conducted in naturalistic settings, data collection is rarely continued for a prolonged period, making assessment difficult where relapse occurs such as smoking and weight gain (Pierce, Macaskill, and Hill 1998).

The literature reveals a dependence on narrow and inappropriate subject samples (e.g. students) and this makes it difficult to generalise to the broader community of varying ethnicity, education level, age and personality type. Homogeneous sampling may partly account for the inattention given to the moderating effect of individual complexities (Hastings, Stead, and Webb 2004; Rotfeld 1988).

Strong arguments have been made by scholars that fear is a central variable in need of closer consideration. The majority of primary data studies have controlled for cognition yet still shown an effect for fear on intention (Dillard 1994). Witte’s (1992b) extended parallel process model is a promising conceptualisation of how fear plays a central role in energising behavioural change. There is a critical need to introduce measures of fear arousal in future fear appeal research so that the role of fear in persuasion can be more conclusively established (King and Reid 1989; Henthorne, LaTour, and Nataraajan 1993; LaTour and Pitts 1989).

Lastly, there is a need to broaden the theoretical debate beyond simply issues of persuasive effectiveness. The ethicality of using fear appeals has become an issue of increasing contention among practitioners, academics and those in public health (Hastings, Stead, and Webb 2004). Issues include the risk to those with maladaptive responses, the exposure of the community to increasingly graphic and gory imagery as well as the creation of higher and higher levels of anxiety.

2.5. ALTERNATIVES TO FEAR APPEALS

Recent studies suggest fear appeals elicit affective responses beyond fear including surprise, anger, sadness (Dillard et al. 1996) irritation (Kirscht and Haefner 1973) and disgust (Kohn et al. 1982). An important question therefore exists regarding what impact these other emotions have on the processing of a fear appeal message. A single, all encompassing theory of the fear appeal may not be possible given that after decades of research no sound or supported theory has been established (LaTour and Pitts 1989; LaTour and Rotfeld 1997; Rotfeld 1988). There is a need for a broader emotional perspective on persuasion, Dillard (1994) positing that fear appeals should be surrounded by many other questions that seek to understand the relationship between affect and persuasion. He argues that fear appeals provide too narrow a focus for meaningful theory building. Research must go beyond the study of a single emotion and aim to broaden the theoretical base and arrive at a general theory of emotion in persuasion.
A review of the literature suggests serious doubts should be raised regarding the effectiveness of fear appeals as well as ethical concerns about their usage. The question should be not what fear appeal, but rather what else might be effective (Lewis et al. 2007; Menasco and Baron 1982; Monahan 1995 Ruiter et al. 2003). Appeals based on positive emotions including hope, excitement, love and happiness may also change people’s behaviour towards healthier lifestyles without engendering deleterious effects (Hastings, Stead, and Webb 2004). There is growing research into the use of empathy strategies (Slater 1999), positive role models (deTurck, Rachlin, and Young 1994), humour (Conway and Dubé 2002; Weber, Martin, and Corrigan 2006) and empowerment (Reichert, Heckler, and Jackson 2001). Further support for the use of positive appeals can be found in the argument that an additive relationship exists between components of a fear appeal (Maddux and Rogers 1983; Mulilis and Lippa 1990; Rogers and Mewborn 1976; Ruiter et al. 2003; Witte and Allen 2000). This suggests that communicators can promote behavioural change by providing effective coping responses and increasing perceived self-efficacy to adopt healthier behaviours in the absence of fear arousal (Ruiter, Abraham, and Kok 2001).

The earliest comparison between the persuasive effectiveness of fear versus a positive appeal was conducted by Evans (1970) but disappointingly only a handful of studies have occurred since. There has been almost an unquestioning collective belief held by marketers that fear appeals provide the panacea for persuasion on health related topics (Hastings, Stead, and Webb 2004). Evans found that a positive affect was most effective in changing actual behaviour over a six week period, despite the high fear condition having produced the highest self-reports of intended behavioural change. A major limitation of this study is that intuition was the measure used to differentiate between “high” and “moderate” levels of fear arousal. Furthermore, no attempt was made to control for arousal and therefore the validity of comparing the effectiveness of negative affect (fear) and positive affect is greatly diminished. It is quite possible that the ‘high’ fear arousing ad-treatment used by Evans (1970) was in fact only moderate in strength, and vice versa. A similar study compared the persuasive effects of mild humour and mild fear appeals (Brooker 1981). Humour was found to be more effective than fear but less effective than a straightforward appeal in changing behaviours. As with Evans study; Brooker did not adequately control for arousal as ad-treatments were determined to be equal in arousal by a five member judging panel using a three-point scale. Future studies need to control for respondent arousal if positive and negative affect can be properly compared (LaTour and Pitts 1989).

A recent qualitative study regarding the use of fear appeals in road-traffic accident prevention provides tentative support for the use of positive emotional appeals (Lewis et al. 2007) as an alternative to fear-appeals. Lewis et al. (2007) conducted a series of focus groups where candidates were shown television advertisements addressing the issue of either speeding or drink-driving. Candidates viewed a number of ad-treatments which varied in terms of their use of positive and negative emotion. There was broad consensus between participants that emotion plays an important role in road-safety advertisements. Participants believed positive emotional appeals would convey preventative messages more effectively than negative, however there was concern that humour may trivialise a serious issue (Lewis et al. 2007). These studies provide tentative support for the use of positive emotion in health related topics.
3. RESEARCH QUESTIONS AND HYPOTHESES

3.1. RESEARCH QUESTIONS

This study seeks to explore two main research questions;

1) Can a positive emotion be as effective as a fear appeal in changing attitudes and behaviour?
2) Do consumers view a fear appeal as being less ethical than a positive emotion such as joy or happiness?

3.2. HYPOTHESES

Individual differences play a key role in the elicitation of maladaptive responses to fear appeals. Therefore individuals who exhibit low coping skills (e.g. enjoy comfort eating) and a sub-optimal health condition (such as overweight or obesity) are far less likely to act in accordance with fear appeal recommendations (due to low perceived self-efficacy) than ‘normal’ subjects. Arousal must be held constant in order to systematically compare a fear appeal with an alternative positive emotion. This leads to the development of Hypothesis 1;

\textbf{H1: When arousal is held constant, a fear appeal will not generate significantly different behavioural intentions than a positive emotional appeal by those considered medically overweight}

Secondly, empirical research provides tentative support that under some circumstances consumers view a fear appeal as unethical. Individuals with low coping skills or who already engage in a sup-optimal health behaviours have lower perceived self-efficacy. Therefore many individuals feel they cannot effectively eliminate the communicated threat. Subsequently, these individuals are likely to view a fear appeal as more unethical compared to a positive message (which does not feature a threat) than ‘normal’ subjects who feel they can effectively eliminate the threat. This leads to the development of Hypothesis 2;

\textbf{H2: When arousal is held constant, a fear appeal will be considered more unethical than a positive emotional appeal by those considered medically overweight}

4. IMPORTANCE OF STUDY

Fear appeals are used extensively in social marketing and health promotion. There is a growing body of evidence which suggests individual differences play a critical role in shaping how fear appeals are processed and thus whether they will be effective. These individual differences can play a key role in eliciting maladaptive behaviours, which an individual employs to minimise unpleasant feelings of fear. Individuals who engage in sup-optimal lifestyles (e.g. smoking) display a predisposition to maladaptive responses and this reduces message effectiveness. There are many unresolved ethical questions about fear appeals including whether graphic imagery can be justified and whether it contributes to unhealthy levels of anxiety within the community. The ineffective use of fear in health promotion campaigns may result in far more serious consequences than the tangible waste of time, effort and money. This includes producing the opposite of the intended effect and actually causing the target segment to continue with an unhealthy behaviour with disastrous outcomes (e.g. a dangerously unhealthy diet). Ineffective fear campaigns may in fact ‘immunise’ the affected segment against the message.
In light of the legitimate concerns held about the effectiveness and ethicality of fear appeals, it is paramount that future research examines the role of positive emotions in promoting safer and healthy behaviours. It is critical that the effectiveness and ethical dimensions of using fear are weighed against available alternatives. Fear appeals must not be treated as simply the ‘panacea’ of behavioural change on health related topics, particularly given that past research has failed to investigate the alternative of positive emotion. This research is an important step to expanding our knowledge on the use of positive emotions in social marketing and health promotion, both in terms of their effectiveness and perceived ethicality. This study will also help demonstrate the key role individual differences play in the persuasion process. Health promoters face mounting challenges, of which arguably the obesity epidemic is the most significant. This study hopes to provide valuable implications at a health persuasive communications level to help tackle this mounting public health problem.

5. RESEARCH DESIGN AND METHODOLOGY

A quasi-experimental design will be used which consists of a participant viewing one of two print advertisements. Therefore a participant will view either a fear arousing ad-treatment or one designed to evoke a positive emotion, which will be randomly assigned. After viewing the ad-treatment participants will be asked to complete a short five-minute self-administered questionnaire. The questionnaire will be used to measure the effectiveness and perceived ethicality of the emotion laden ad-treatment with reference to the participant.

Sampling

A convenience sample will be used to recruit participants who are patients sourced from attending the suburban medical practices who agree to take part in the study. All participants will be aged 18 years and over. It is estimated that around 7-10 GPs located throughout suburban Adelaide will be recruited to assist the study. The data collection period will last for around six weeks or until around 1000 responses are collected (500 participants viewing one of either two ad-treatments). It is hoped that through rigorous pre-testing and careful selection of the final ad-treatments, around 500 responses will achieve approximately equal levels of arousal (250 of each ad-treatment). The sampling source of medical practices across metropolitan Adelaide is likely to provide sampling frame far more representative of the broader population (exposed to health promotion messages) than a homogenous student sample which is often used in fear appeal research. Furthermore, using medical practices as the sampling location simulates naturalistic conditions in a superior way to a lecture theatre and hence external validity is greatly enhanced. Viewing the ad-treatments will not be greatly dissimilar to the experience of seeing an advertisement in a newspaper or magazine while waiting to see the doctor. In addition, a medical practice waiting room is full of noise and distractions in the same way as a typical media viewing environment.

Experimental controls

Two controls are central to the experimental validity. Firstly, an innovative self-report measure called affect grid developed by Russel and Mendelsohn (1989) will be used to ensure that fear and the positive emotion ad-treatments generate approximately equal levels of mild-emotional arousal. A major flaw in previous studies attempting to compare effectiveness between emotions is a failure to adequately control for arousal. Previous studies often relied on perceptions of threat severity or induced arousal; however expert judgment and researcher intuition are unreliable controls at best.
The affect grid developed by Russel and Mendelsohn (1989) is a single-item scale providing a quick means of assessing affect along the dimensions of pleasure-displeasure and arousal-sleepiness.

Secondly, the experiment will control for the key individual difference of being overweight. As it is predicted (aided by the literature) that those who are overweight will respond differently to a fear arousing ad-treatment than those in a normal range, it is crucial that comparisons can be made between groups (i.e. those who are considered underweight, in the normal range or overweight). A widely used weight classification method is the ‘Body Mass Index’. It was developed to correct the inadequacies of body weight alone as a measure of mass by adjusting weight for height using the formula ‘body mass index = weight (in kilograms) divided by height (in metres)²’ (Seidell et al. 1988). BMI is highly, but not perfectly, correlated with fat mass (Gallagher et al. 1996). In this study, height and weight will be taken by the GP so that accurate and reliable measures can be achieved in order to calculate Body Mass Index. Research has shown that while weight and height self-reports on average only contain small errors within normal weight people; however self-reported weight and height in non-normal weight groups is often highly unreliable. Errors in self-reporting weight are related to one’s overweight status, with bias and unreliability increasing directly with the magnitude of overweight. Self-reporting errors relating to height are most greatly correlated with a person’s age with bias and unreliability in self-reporting increasing directly with age after 45 years old (Rowland 1990). Research shows that using self-reported BMI for categorical variables is likely to lead to misclassification and the problem is compounded by subgroup differences, particularly in overweight groupings. This necessitates the objective measure of GP recorded height and weight, as BMI classifications will be compared in order to test the hypotheses of this research study (Rowland 1990).

**Measurement scales**

**Effectiveness Measure**: The effectiveness measurement scale that will be constructed to measure behavioural intentions will be adapted from Rippetoe and Rogers (1987). This scale has been validated and proven to be reliable in recent research (Arthur and Quester 2003). The wording of the questions will be adapted to account for people of all weight classifications. A five item scale will be used with two adaptive and three maladaptive styles of coping with the threat of overweight and obesity. The adaptive measures will be “Within the next two months I intend to adopt more healthy eating habits” and “Within the next two months I intend to exercise more regularly”. These adaptive intention measures parallel with the coping responses offered in both ad-treatments. The maladaptive measures will be “I try not to think about the health dangers posed by being overweight”, “If you are destined to die from an obesity related disease, you will. There is really very little you can do about it”, “Given what I know about obesity related diseases, I sometimes feel it’s almost useless to try maintain a healthy diet and exercise regularly”. These maladaptive measures relate to avoidance, fatalism and hopelessness respectively.

**Ethicality Measure**

The ethicality measure will be based on the Reidenbach and Robin (1990) multidimensional ethics scale). Previous studies have tended to reply on single-item measures of ethicality, framing questions such as ‘very ethical’ and ‘very unethical’. Ethics, however, is a complex construct and single item measures are too specific and narrow for such a topic because individuals draw upon multiple ethical philosophies to guide an ethical content laden decision (Reidenbach and Robin 1988). For this reason a multi-item measure will be utilised in this study as it integrates teleological,
deontological and relativism philosophies. The scale is made up of three ethical decision making dimensions. The Reidenbach and Robin (1990) multidimensional ethics scale has shown a high degree of correlation with univariate measures of perceived ethicality and this indicates a high degree of convergent validity and a high degree of reliability (LaTour and Henthorne 1994).

6. LIMITATIONS

This research study looks at the impact of persuasive messages on intentions and not actual behaviour to adopt healthier eating habits and exercise regularly. Given that emotion can often dissipate rapidly, actual behavioural change may be far less than intention reports (Soames Job 1988). Including actual behaviours (e.g. healthier eating and regular exercise) in the study would require a follow-up measure outside the laboratory and this would come at a considerable time and cost. Additional behavioural measures such as allowing participants to register for a healthy lifestyle pocket-guide etc could be considered in future studies.

A distinguishing feature of this study from other work on multifaceted efforts to deal with the obesity issue is its sole focus on the health promotion component. It is accepted that health promotion that is ineffective alone can become effective when combined with other efforts such as regulatory programmes and medically based public health initiatives. Being overweight (or obese) poses many threats in addition to the one which will be presented in the final fear ad-treatment. Furthermore, there are other positive outcomes to a healthy lifestyle apart from the one which will be depicted in the chosen positive emotion ad-treatment. Respondents may have already developed both adaptive and maladaptive ways of coping with the danger of being overweight, and therefore the effectiveness measures may not indicate any behavioural change because methods of coping have already been chosen. While this is true, this effect should be consistent across the fear and positive emotion ad-treatments.

A forced exposure method will be used in the study and as a result it is hard to predict exactly how effective the ad-treatments would be perceived in a cluttered media environment. While the experiment will not take place in a ‘naturalistic’ setting, participants will be in a public place surrounded by noise and distractions, and in many ways, this mimics a normal environment in which a magazine or paper would be read (containing a print advertisement). Print media may not be the most effective medium for generating an emotional response and therefore the amount of fear or positive emotion aroused may be limited. Therefore future studies ideally will also be conducted using television, radio and other media; however these would face considerable practical methodological challenges.

7. CONCLUDING REMARKS

At the time of writing, pre-testing of the questionnaire and mock-up treatment advertisements is being conducted. Data collection will commence in mid August. The present study hopes to provide important research findings and practical implications about the effectiveness and ethicality of using fear and positive emotion in health promotion.
8. REFERENCES


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