

The Influence of Message Framing on Intentions to Support Healthy Settings: An Experimental Study in Preschool and the Workplace

Doreen Reifegerste

Institute of Communication Science
Friedrich-Schiller-University Jena
doreen.reifegerste@uni-jena.de

May-Britt Schumacher

Stefan Hoffmann

Kiel University
Institute of Business Administration
stefan.hoffmann@bwl.uni-kiel.de

Uta Schwarz

TU Dresden
uta.schwarz@tu-dresden.de

Lutz M. Hagen

TU Dresden
lutz.hagen@tu-dresden.de

Abstract

This paper investigates the effects of content-related and formal framing of health communication within settings-based approaches (i.e., health promotion on the social and structural, as opposed to purely individual level). Although the importance of environmental strategies in health promotion is wellknown, research about how to communicate with decision-makers and convince them of the importance of such strategies in different settings has been neglected. We therefore conducted two experiments to examine how persons in charge of the health of others can be persuaded to accept, support, and participate in prevention programs for preschools and workplaces. We found that framing strategies in both settings tested were effective in increasing the intention of people in charge to take responsibility for the health of others, although various moderating variables have to be taken into account. Study 1 demonstrated that social framing and the presentation of exemplars increased a sense of responsibility and response efficacy in parents, while Study 2 demonstrated the importance of moderating variables like company size, experience with workplace health promotion, and professional position in corporate management.

Key Words: Healthy settings, Workplace health promotion, Message framing, Parents

Health promotion that is embedded in the social contexts in which people engage in daily activities (e.g., work sites or schools) are effective in improving the health of diverse target groups (Corcoran, 2013; Dooris et al., 2007). As social and organizational conditions can facilitate well-being, healthful behaviors, and disease detection, the creation of supportive environments in settings-based approaches can be more long-lasting and effective than measures directed at individuals (Naidoo & Wills, 2009). Additionally, programs within the settings of

people's everyday lives— "where they learn, work, play, and love" (World Health Organization, 1986)— do not require personal involvement or pose selective participation criteria, giving such programs greater chances of reaching a wide range of target groups. Such programs may also have carry-over effects to the relatives or friends of those directly involved.

The persons responsible for the health of others vary by setting; either in their private roles as parents or caring relatives, or in their professional role as educators, corporate management, or health-care personnel, they have social responsibility for others and make decisions

about allocating resources and changing processes and structures. Successful settings-based programs therefore require the support of these decision-makers (Downey & Sharp, 2007). In child-care settings, communication is directed at parents and educators, because they decide which projects on nutrition, physical activity, or stress management are implemented. Likewise, in workplace health promotion (WHP), employers, members of the workers' council, or human resource personnel have to be persuaded of the value of prospective programs serving employees. This senior staff, however, often has other goals (e.g., improving sales or performance) that may conflict with the aims of health promotion. Communication that is to be successful in encouraging these health-promoting programs must therefore use a variety of persuasion strategies to ensure the commitment of these powerful indirect target groups to achieve health promotion in target groups like children or employees (Downey & Sharp, 2007). This indicates that health communication in settings-based approaches has to be researched separately, as processes and effects might work differently in this context than they do in direct health communication.

To date, a number of studies have explored (e.g., Vander Ploeg, Maximova, Kuhle, Simen-Kapeu, & Veugelers, 2012) the key roles played by parents and employers in the health of others. These studies indicate that health messages targeting parents enhanced risk perception as it pertained to their children's health and stimulated parent-child communication (Thompson et al., 2011). Such health messages were also found to increase parental support of their children's physical activities (Craig et al., 2009; Price, Huhman & Potter, 2008) and healthy diet (Coulter & Pinto, 1995), as well as to improve parental willingness to vaccinate their children (O'Keefe & Nan, 2012). However, only a few studies explored which specific communication strategies were effective in persuading parents or management to take part in settings-based programs (Bayer et al., 2009; Muto et al., 1997). To address this research gap, we applied the concept of framing to health communication in settings-based approaches. Within this framework, we investigate how health information should be framed to encourage more employers and parents to accept, support, and participate in such programs. Results may contribute to a better understanding of how information is provided and decisions are made in the two completely different settings of preschools and workplaces. Knowing how to appropriately frame information for parents or employers is important for policy makers, health

insurance providers, and other health professionals.

The Role of Message Framing in Settings-Based Approaches

An important question for public health advocates is how health information can be framed to best motivate their target audience: among messages that convey essentially identical information, one type of frame can be more effective than another in encouraging target groups to adopt healthy behaviors or modify unhealthy ones. The persuasive impact of gain- and loss-framed content, which is based on prospect theory, has been intensively researched (for a meta-analysis, see Gallagher & Updegraff, 2012), but also other types of content-related (e.g., social appeals) or formal framing (e.g., exemplars) have also proven themselves to be effective in health communication (Keller & Lehmann, 2008).

Content-related Framing

Most framing research focuses on communication that directly targets individuals, despite the fact that health messages to parents or employers need to be different, as indirectly targeted recipients are generally less concerned about health (Hoffmann & Schlicht 2013). Instead, appeals to a caring motive, concern for others, guilt, and moral responsibility (Downey & Sharp, 2007; Neuberger et al., 2011) seem to be the most relevant frames to motivate decision-makers to care about the health of others. Messages focusing on danger to others—stressing how unhealthy behaviors or non-engagement in supportive actions has serious consequences for partners family members, coworkers, or peers—can also be successful in encouraging healthy intentions and behavior (Pechmann, Zhao, Goldberg, & Reibling, 2003; Mistry & Latimer-Cheung, 2014). For example, receiving information on how sexually transmitted infections can be spread to others was found to increase students' intentions to get tested for herpes (Hullett, 2004), as well as to improve their attitudes towards condom usage (Cheah, 2005). Receiving information about secondhand smoking was found to enhance risk perception (Pechmann et al., 2003) and to reduce intentions to smoke (Miller et al., 2007), and messages reminding parents of their responsibility for supporting physical activity in their children elicited greater feelings of guilt in mothers (Mistry & Latimer-Cheung, 2014). Together, these findings suggest that appeals to a caring motive can support a sense of responsibility.

Communication to indirect target groups is made more difficult because other goals, such as economic interests, personal desires for health, or a desire for social approval may conflict with social responsibilities for others (Downey & Sharp, 2007). When the desire to improve or maintain others' health is only one motive among a long list of competing motives, it is more difficult to raise awareness and motivate the persons in charge to support settings-based programs. To improve willingness to engage in such

programs, information about the positive or negative consequences of health promotion that addresses these additional relevant motives must be included: for example, economic framing (in the case of employers)(Downey & Sharp, 2007) or social approval framing (in the case of parents). Social appeals pointing out the impact on one's reputation among others might be useful in raising the intention to participate in settings-based approaches (Keller & Lehmann, 2008).

Formal Framing

Unlike content-related frames, formal frames define the mode of presentation (Scheufele, 2004). In health appeals, a distinction is often made between episodic and thematic framing (Iyengar, 1991). In episodic framing, the message focuses on a specific case or exemplar; in thematic framing, the message often presents statistics or abstract facts. Research on the influence of exemplars has consistently shown that people tend to form their judgments based on single-case information, often ignoring the more valid base-rate information presented in the form of statistics. Exemplification theory therefore predicts that presentations of single cases or testimonials in health communication increase risk perception and protective behaviors (Zillmann, 2006). This has been proven in a number of studies for different direct target groups and health issues; for example, exemplars influenced intentions about both smoking (Kim, Bigman, Leader, Lerman, & Cappella, 2012) and vaccination (De Wit, Das, & Vet, 2008) more positively than did statistical information (for an overview, see Zillmann, 2006).

Assumptions about health messages targeting people in charge can be drawn from several studies concerning the perception of responsibility for the health of others. Exemplars were, for example, associated with an intention and response to donate money to an AIDS organization (Hoeken & Hustinx, 2007), and Yu et al. (2010) found that exemplar appeals improved prevention intention and the perceived severity of fetal alcohol exposure. Therefore, we assume that episodic frames also have stronger effects on indirect target groups in settings-based approaches.

Hypotheses

The aim of the present study was to identify effective content-based and formal frames to promote the intention of those in charge (the indirect target group) to care about the health of those in their charge. First, we wanted to know what general effects could be expected from appeals to the responsible people: we hypothesized that parents or employers

exposed to health communications promoting settings-based approaches would have higher health-promoting attitudes and intentions than those presented with no information. Secondly, based on the existing literature on the motives for being concerned about the health of others, we assumed that content-related framing would have a varying impact on the recipients, due to recipients' other goals and motivations. Thirdly, we expected that formal episodic framing, using exemplars, would increase the health-promoting attitudes and intentions of the indirect target groups. Finally, as a research question, we were interested in the influence of various moderating variables on the effectiveness of the message framing, as research about engagement in settings-based programs has shown that attitudes and intentions are moderated by socio-demographic factors, personality traits, and organizational attributes (Jung et al., 2012).

To test these hypotheses and the research question, we experimentally explored the effects of framing on decision-makers in two different settings. Study 1 compares how social or health-related framing, as well as exemplar or statistic-based information affects parents with children in a preschool setting. Study 2 complements the first study in two ways. In Study 2, the effects of social responsibility framing are compared with the consequences of economic framing, as well as the effects of exemplar- or statistic-based information, on persons in charge of health decisions in companies.

Method Study 1

Design and Procedure

Study 1 is an experimental study that uses text vignettes (see Hoffmann & Schlicht 2013 for a similar approach). The design was a 2 (content frame: health vs. social consequences) x 2 (formal frame: exemplar vs. statistical information) between-subjects factorial design with a control group. This study was conducted in several large German cities. Participants were 89 parents ($n = 77$ women, $n = 12$ men) with children aged 3–6 years who attended a number of different preschools. The parents were randomly assigned to one of five conditions. The four experimental groups read articles about a settings-based program in preschools, while the control group did not read an article and was only given the questionnaire. The mean age of the sample was 32.75 years ($SD = 5.78$; Range: 22–53). All participants except those in the control group read a fictitious newspaper article about a settings-based program in day-care centers, ostensibly for the purpose of evaluating the quality of the articles. The experiment was administered as paper-and-pencil survey by students of marketing courses and took about 20 minutes. After completing the survey, participants were debriefed and thanked. Participating parents were recruited personally by interviewers on playgrounds or in day-care centers and

were each paid 10 Euro for participating in the experiment.

Stimulus Material

We developed four different versions of an article about a real settings-based program that takes place in child-care centers, "Tiger Kids" (for details of the program, see Bayer et al., 2009). The four versions of the stimuli differed in terms of both type of content and type of formal framing. In the health-related version of the content framing, the article discussed risks of obesity, such as Type 2 diabetes and cardiovascular disease; in contrast, the social version of the content framing discussed social consequences of childhood obesity, such as social exclusion. In the versions that used formal framing, the positive consequences of Tiger Kids were either presented as statistical effects or as an exemplar. The former version described a scientific study, which reported a 60 % increase in healthy eating for children who participated in the program; the latter version featured a mother describing how she improved nutrition for her children by adopting suggestions made by the settings-based program. The title, subtitle, general information about the program, and length of the article and were kept constant in all four experimental versions, and qualitative interviews were conducted before the study to ensure that the articles were appropriately understandable.

Measures

Risk Perception. To determine whether manipulating the content framing was effective, participants rated their opinion about given health- and social-related statements. Two scales for risk perception, one health- and one social-related, were developed. Perception of health-related risks was measured with two statements ($\alpha = .58$; e.g., "Obese children have a higher risk of poor health"). The social risks scale consisted of four items ($\alpha = .86$; e.g., "Obese children are often outsiders"). Agreement was measured using a 7-point Likert-type scale from -3 ("totally disagree") to +3 ("totally agree").

Response Efficacy. Respondents' sense of efficacy in taking action relating to their children's health was assessed using four statements ($\alpha = .58$; e.g., "If you change the nutrition of children, their health can be influenced"). Agreement was measured using a 7-point Likert-type scale ranging from -3 ("totally disagree") to +3 ("totally agree").

Self-efficacy. Respondents' sense of self-efficacy was measured using 8 items ($\alpha = .84$) adapted from Schwarzer (2004). Agreement was measured using a 5-point Likert-type scale ranging from -2 ("totally disagree") to +2 ("totally agree"). Parents had to state whether they would be able to

provide healthy nutrition for their children if obstacles occurred (e.g., "Children don't like the taste of healthy food").

Attribution of responsibility. To measure the degree to which responsibility for children's health was attributed to parents or to the day-care center, we developed two scales. The first measured the degree to which responsibility for children's health was attributed to parents (four items; $\alpha = .51$) and the second measured the degree to which responsibility for children's health was attributed to the day-care center (three items; $\alpha = .73$). Agreement was measured using a 7-point Likert-type scale ranging from -3 ("totally disagree") to +3 ("totally agree") for items like "Parental role models determine whether or not children eat healthily," or "The selection of food in preschool influences children's eating habits."

Intention. The main variables of interest in Study 1 were parents' intention to adopt health behaviors suggested by the program ($\alpha = .84$) and parental support of the project ($\alpha = .91$). One of the three items assessing the intention to transfer measures of the program into daily life stated "I will try to talk more about healthy nutrition with my children." The intention to participate in the program was measured with four statements (e.g., "If such a program would be conducted in our preschool, I would support it"). Agreement for both scales was measured using a 7-point Likert-type scale ranging from -3 ("totally disagree") to +3 ("totally agree").

Moderating Variables. The social and health orientation of the parents, as well as the age and weight of the children were measured as potentially moderating variables. Social orientation (Sen et al., 2011) was measured with three items relating to the role of social norms in parents' lives (e.g., "My in-laws expect that I pay attention to the healthy nutrition of my children") and three items for susceptibility to social influences (e.g., "It is important to me that other people like what I do"). The health-orientation scale consisted of items adapted from Gould (1988), like "I constantly supervise the health of my child."

Results Study 1

To test our first hypothesis, we conducted a multivariate analysis of covariance. The dependent variables were risk perceptions, responsibility attributions, and perceived efficacy. The analysis confirmed that recipients in the experimental groups had significantly higher risk perception ($F(1, 82) = 7.89$; $p < .01$) and response efficacy ($F(1, 82) = 7.13$; $p < .01$) than the control group (who did not receive any information about settings-based programs). These effects were in the same direction for the other dependent variables but were not significant (see Table 1).

To test the influence of the different framing

versions we analyzed the four experimental groups (the control group was excluded, as participants did not receive stimulus materials), with intentions introduced as further dependent variables. Varying the framing had different significant main effects: a framing of social consequences led to a higher attribution of responsibility both to parents ($F(1, 69) = 8.47; p < 0.01$) and to the day-care center ($F(1, 69) =$

6.00; $p < 0.05$) than did a framing of health risks. Additionally, episodic framing (i.e., presenting a single case, rather than a representative view) had significant positive effects in both the attribution of responsibility to parents ($F(1, 69) = 5.44; p < 0.05$) and response efficacy ($F(1, 69) = 4.54; p < 0.05$). Interactions and other variables were not significant.

Table 1 Impact of Articles and Framing Versions on Dependent Variables (Study1)

	Framing Versions				Control Group (No Article)
	Social	Health	Exemplars	Statistics	
Responsibility of Parents	2.82 ^a	2.57 ^b	2.79 ^a	2.59 ^b	2.48 ^b
Responsibility of DCC	1.97 ^a	1.48 ^b	1.77	1.71	1.53
Health Risk	2.32 ^a	2.12 ^a	2.22 ^a	2.24 ^a	1.58 ^b
Social Risk	1.57	1.59	1.51	1.67	1.46
Response efficacy	2.28 ^a	2.33 ^a	2.42 ^a	2.17 ^b	1.88 ^b
Self-efficacy	0.63 ^a	0.50	0.54	0.60 ^a	0.22 ^b
Intentions to adopt	1.41	1.08	1.15	1.38	--
Intentions to support	2.10	1.82	1.86	2.10	--

Note. Means in a row with different superscripts are significantly different from one another, $p < 0.05$.

As a robustness check, social and health orientation were included as covariates for the attribution of responsibility; we controlled for the age and body-mass index (BMI) of children, as well as the gender and age of the parents. The results remained stable, indicating that the random assignment of participants to message conditions had been successful.

Method Study 2

Study 2 replicated the experimental design of the first study, but within a workplace health-promotion context. Our goal was to determine whether different framings of communications about workplace health interventions would have different efficacies in convincing employers to adopt these interventions.

Design and Procedure

The design for this study was a 2 (content frame: economic vs. social consequences) x 2 (formal frame: exemplar vs. statistic) between-subjects factorial design with a control group. The 172 participants comprised 98 women and 74 men. The mean age of the sample was 41.1 years (SD =10.7; Range 21–65). Sixty-one identified themselves as “executives” and 48 as members of management who

are often responsible for health-related changes. More than half (54.2 %) had no experience with WHP.

Participants were randomly assigned to the four experimental conditions or to the control group. Experimental groups read a fictitious article about a setting-based program for workplace health promotion. The control group was not exposed to an article but directly transferred to the survey questions. Recruitment and participation took place online via various websites and newsletter mailing lists for target business groups. At the end of the questionnaire, participants were informed about the study aims and debriefed. As an incentive, participants were entered into a lottery for one of four 25 Euro gift certificates for Amazon.

Stimulus Material

We developed four different versions of articles about workplace health promotion. The stimuli differed in terms of both content and formal framing. In the social-related framing versions, the article focused on the social aspects of WHP (i.e., positive consequences for employee work-life balance and life satisfaction). The economic-related framing versions argued that productive employees improve corporate competitiveness, and that WHP reduces employee illness-related expenses. Reflecting these different orientations, the title and subtitle of the first version were “That’s Doing Good: Health Promotion in Companies. Show Social Responsibility with WHP”; in contrast, the

economic version was entitled "This Pays Off: Health Promotion in Companies. Economic Success with WHP."

Within the two formally framed versions, the consequences of WHP were either presented as statistical effects or as an exemplar. The statistical version described the improvements of 2,000 companies thanks to WHP. The episodic (i.e., exemplar) version cited the spokeswoman of a company that participated in WHP. The spokeswoman described either the positive social or economic consequences for her company. Layout, introduction, final passage with recommendations, general information about the program, and length of the article and were consistent for all four experimental versions.

Measures

Stimulus Evaluation. To determine whether the manipulation of the content and the formal framing had any effects on the evaluation of the stimulus, participants rated their evaluation of the articles on a 7-point semantic differential scale for eight bipolar items. Half of these bipolar items were cognitive adjectives (e.g., informative – non-informative) and the other half were affective adjectives (e.g., pleasant – unpleasant). All adjectives were chosen from a list of pairs often used for research in persuasive communication (Bruner, Hensel, & James, 2005) and reached sufficient reliability ($\alpha = .87$).

Intentions. Employers' intentions to support workplace health promotion were measured with four items ($\alpha = .90$) based on Schwarzer's (2008) Behavioral Intentions Scale (example item, "I intend to get further information about WHP programs"). Responses were given on a 7-point scale Likert-type scale ranging from 1 ("totally don't intend") to 7 ("totally intend").

Moderating Variables. Size and sector of the company, as well as participant job title, experience

with WHP (i.e.; the company that the participants worked for had experience with WHP), and gender were measured as potentially moderating variables.

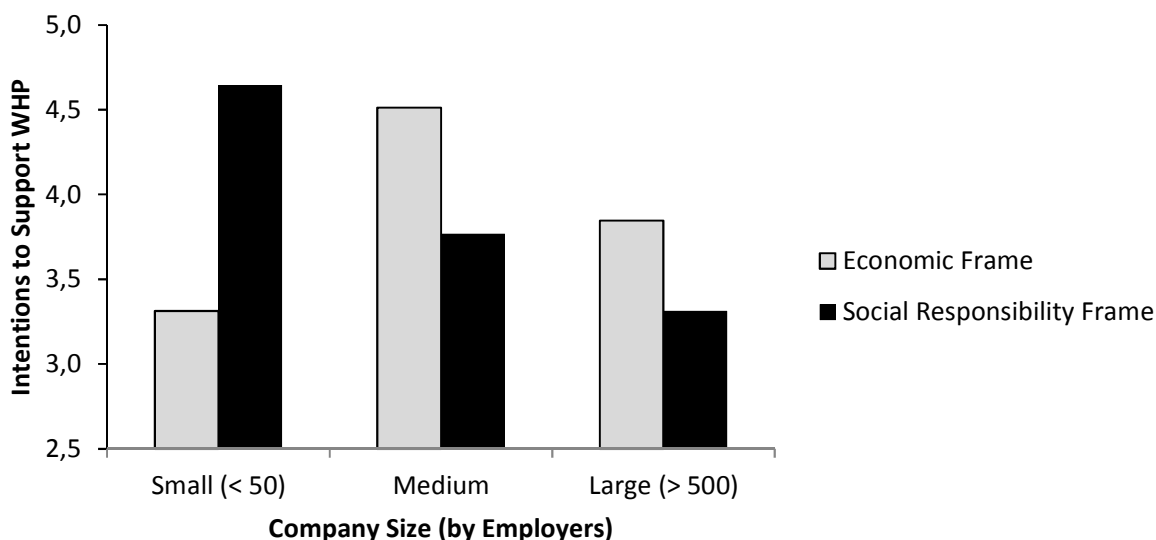
Results Study 2

Hypothesis 1 posits that receiving a communication about a settings-based approach will lead to higher health-promoting attitudes and intentions. A main effect for the stimulus material was indeed found in Study 2 ($F(3, 167) = 4.74; p < 0.05$). Recipients who read the stimulus had significantly higher intentions to engage in workplace health promotion ($M = 3.84; SD = 1.43$) than did participants in the control group, who received no information about settings-based approaches ($M = 3.12; SD = 0.30$).

The influence of content and formal framing was analyzed using the four experimental groups. For workplace health promotion, varying the content and formal framing had no main or interaction effects on the evaluation of the stimulus or on intentions. Economic framing was slightly better rated ($M = 4.60; SD = 1.11$) than was social framing ($M = 4.49; SD = 0.92$), but this difference was not significant ($F(1, 138) = 0.40; p = 0.05$). All forms of framing, either economic ($M = 3.90; SD = 1.78$) and social ($M = 3.79; SD = 1.55$) or thematic ($M = 4.04; SD = 1.68$) and episodic ($M = 3.62; SD = 1.63$) lead to relatively high intentions to support WHP. These results indicated that both content and formal framing can be persuasive in a business context.

A mixed ANOVA was performed to determine if interaction variables influenced the effects of framing on evaluation and intentions. The interaction between size of the company and both ways of framing was found to be significant for intentions ($F(2, 140) = 4.60; p < 0.01$): respondents of small companies (fewer than 50 employees) had higher intentions after reading the social framing, while participants working for companies with 50 or more employees were more motivated after reading the economically framed message (see Figure 1).

Figure 1 *The Impact of Framing and Company Size on Intentions to Support Workplace Health Promotion (WHP) (Study 2).*



Additionally, respondents of companies with WHP experience preferred the episodic information, while those with little or no experience of health promotion at their workplace rated the statistical depiction of benefits significantly better ($F(1, 132) = 4.73; p < 0.05$).

Executives were more in favor of the social than of the economic framing, rating socially framed messages more highly. In contrast, members of the workers' council gave better evaluations for the economic framing ($F(1, 68) = 5.61; p < 0.05$); this interaction was also significant for intentions ($F(1, 68) = 5.48; p < 0.05$). Although women were generally more motivated to engage in WHP ($M = 3.96; SD = 1.61$) than men ($M = 3.37; SD = 1.80$), there was no significant difference among framing versions.

Discussion

There were four research questions posed in this research. In answer to the first question, the results of both studies indicated that communications about settings-based approaches to people in charge of other's health resulted in significant increases in attitudes and intentions in favor of such programs. Although parents and workplace decision-makers are not the direct targets of the health-promotion measures, they can be motivated to improve the

health of others. After receiving these communications, parents of pre-school age children were more aware of their responsibility for their children's food choices, and were more inclined to support a child-care center nutrition program after reading about such a program. Workplace decision-makers for health-related topics had higher intentions to engage in workplace health promotion after they studied an information sheet about the positive consequences of such programs.

These findings suggest that communication about the success of settings-based program scan significantly improve the support of those responsible for implementing such programs. In line with our hypotheses, those parents or employers who were exposed to health communications promoting settings-based approaches would have higher health-promoting attitudes and intentions than those presented with no information. Although a number of reports of interventional studies proved, that parents or employers have to be involved in order to conduct a success fulsettings-based program, so far little research has tested whether their support can be generated by mass communication material on its own. Alternative or complementary persuasion measures (e.g., personal communication, events) might also be relevant and should be analyzed systematically in combination with the print or online materials. Bayer et al. (2009) only studied the combined effect of all interventions measures for children,

day care teachers and parents on outcome variables (e.g.; physical activity, habits of food and drink consumption) of their Kindergarten program. Neither did they single out isolated effects of the applied newsletters, information evenings and Tipp Cards for the parents on outcome variables, nor did they analyze specific evaluations of these materials by the parents.

In answer to the second and third question, varying the content and formal framing of the programs in the stimulus material prompted different effects in health-related attitudes and intentions of the parents. Many experts in health communication demand to tailor health communications for different target audiences to increase effectiveness of prevention campaigns (Keller & Lehmann, 2008; Kreps, 2003). Empirical evidence of former research also indicates that higher personal relevance for the target audience improves health-related attention, attitudes, intentions, and behaviors (Keller & Lehmann, 2008; Rimer & Kreuter, 2006). While targeting has often been tested for direct audiences, it was seldom studied, how needs and interests of audiences responsible for the health of others can be utilized for communication strategies in settings-based approaches. Muto et al. (1997) conducted a survey among health professionals in companies to find out about successful persuasion strategies for workplace health promotion but they did not provide results of experimental research.

In Study 1, the parents' sense of responsibility was better increased by stressing social-related consequences and presenting episodic information. So far the effectiveness of social appeals has been primarily studied for other target audiences (adolescents, young adults, or partners) and other health topics (sexually transmitted diseases, smoking, or alcohol; Keller & Lehmann, 2008). Our study indicates that social consequences (e.g.; social exclusion) can be also more effective than health-related consequences in persuading parents to support a settings-based program improving physical activity and nutrition among their children.

Exemplars or case studies are typically more persuasive than abstract arguments or statistics. However, these effects disappear when audiences are highly involved (Keller & Lehmann, 2009). Therefore it was surprising, that parents, who tend to be highly interested in the health of their children (Craig et al. 2009) could be convinced by exemplars.

In contrast, employers, members of the workers' council, or human resource personnel should be less involved in the health of the employees. However, the respondents of the survey by Muto et al.

(1997) stated that statistics were among the most successful and most frequent methods used to persuade higher management, whereas case reports were far less frequently used in workplace health promotion. Our study indicates that there is an interaction between formal framing and WHP experience of the target audience. Those who have already conducted WHP might find the case studies of companies more credible because they can relate them to their own experience. Consequently, both thematic framing (i.e., statistics) and episodic framing (i.e.; case studies or exemplars) can be effective measures to convince in companies. The different results might be explained by the fact that Muto et al. (1997) asked about thematic or episodic framing of risk information (e.g.; case reports of occupational diseases or statistics on disease and absenteeism) whereas our content focused on efficacy information (e.g.; case reports of successful companies).

The answer to the final research question is that several moderating variables influence the effectiveness of the message framing in material about workplace health promotion. In Study 2, the overall results indicated no differences between the different versions of framing; however, a detailed analysis a number of moderating influences, such as company size and experience of the company with WHP. The social aspects of WHP were more important for smaller companies than for bigger ones. Former research indicated the positive impact of larger company size on the provision and systematization of health promotion activity (Jung et al., 2012). It is therefore important to know how smaller companies can be persuaded to increase WHP.

Our findings regarding the different motives of executives and members of the workers' council match with a previous study about WHP intentions. Downey and Sharp (2007) identified moral responsibility (i.e.; an individual's feeling of personal moral obligation to perform the behavior) in a cross-sectional study as a significant predictor of intentions to implement WHP for Canadian general managers, but not for human resource managers. Again, this underlines the importance of targeting also the indirect audiences of health communication, such as parents and employees. Framing the messages according to their needs, motives, and attitudes might improve effectiveness of settings-based communication materials. This way arguments that are often described as an obstacle for health promotion (e.g.; cost, practicability for smaller companies, social consequences) can be used as frames to persuade those, who are responsible for the health of others.

Implications

On the basis of the empirical results of these studies, we offer two recommendations for health educators, health communicators, and public policy

makers:

Target the non-targeted. Informing the people in charge about the positive consequences of settings-based approaches can increase their sense of responsibility for other people's health, as well as their intentions to support settings-based programs. Identify indirect target groups and craft messages to persuade them, as opposed to addressing the target group directly.

Framing makes a difference. The type of framing used to present the consequences of settings-based approaches matters. Conduct research to determine if focusing on economic or social consequences, or using episodic or statistical framing is most effective in persuading your target group: different people in charge have different motives, meaning that different arguments and frames will be effective in convincing them.

Limitations and Further Research

Our studies focused on very short-term results, only measuring effects immediately after exposure to stimuli. Further research should therefore consider the longer-term implications of multiple types and styles of communication. Additionally, other types of framing and variables: personal sense of responsibility, company size, and personality traits such as management style are all promising possibilities for investigation and should be tested in further studies. As the present two studies were only a first step towards examining communication in settings-based approaches, and assessed only two indirect target groups, the validity of the findings of the present study with regard to other groups cannot yet be known. Other groups in charge of other persons' health, such as non-parental relatives, or teachers, would also be interesting indirect target groups.

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