Does socio-economic status and health consciousness influence how women respond to health related messages in media?

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Abstract

During the past few decades, people have been increasingly exposed to health-related messages in the mass media, conveying recommendations for healthy lifestyles. The present study investigates whether these messages represent a stressor, and whether coping responses increase levels of motivation or levels of negative affect. A sample of 403 women aged 45 years were surveyed twice, at an interval of 4 weeks. A substantial proportion of the participants perceived the health messages to be stressful (increased levels of threat). Overall, the participants reported a greater use of adaptive than non-adaptive coping when exposed to the health messages. Socio-economic status (defined in educational terms) was negatively correlated with non-adaptive coping, while health consciousness was positively correlated with adaptive coping. Adaptive coping was positively related, and non-adaptive coping was negatively related, to intentions and behaviours. Non-adaptive coping was associated with stronger negative emotions. The results indicate that less-educated women tend to respond more non-adaptively to health messages than more-educated women; for the former group, this has negative consequences in terms of increased levels of negative emotions and decreased levels of motivation to engage in healthy behaviours.

Introduction

During recent decades, the population has been increasingly exposed to health-related information through the media [1, 2]. People are informed of risk factors and are encouraged to adopt healthier lifestyles, such as increasing their consumption of fruits and vegetables and performing regular exercise [1, 3–5]. The potential of these behaviours to prevent diseases such as cancer and cardiovascular disease is often emphasized. In some cases, information concerning serious but potentially avoidable health consequences of behaviours may be perceived as threatening, even though an increased threat may not be an explicit purpose of the communicated message [6]. The substantial amount of information to which people are now exposed may be perceived by some people as confusing and even contradictory [1, 7]. Consequently, there is a growing concern about the potential negative consequences of health-related information in the mass media, especially on lower socio-economic groups [1, 2, 4].

The purpose of the present paper was to study how women appraise and cope with a selection of ordinary health messages (articles) in Norwegian newspapers. To what extent do these messages (i) increase their motivation to perform the relevant health-promoting behaviours and/or (ii) initiate negative emotions, such as distress, shame and irritability? The role of socio-economic status (SES) in

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explaining possible differences in coping was particularly emphasized. The empirical data stem from a study of 45-year-old women, because the health messages focused on risk factors for developing cancer, in particular, breast cancer.

**Coping**

Coping with a health threat involves the perceptions, cognitions and behaviours that people engage in to minimize the impact of the threat [8, 9]. The way that people cope seems to be influenced by both the characteristics of the person and the situation [10–13]. McCrae [14] reported that 2–16% of the variance in coping mechanisms can be accounted for by the type of stressor: different categories of stressors seem to be associated with particular patterns of coping. Of relevance to the present study is Parrott’s suggestion [15] that people seem to develop habitual or automatized ways of dealing with health-related messages.

Coping is usually seen to comprise two broad categories of response. Different labels have been used for these categories—for example, problem-focused/emotion-focused coping, approach/avoidance and active/passive coping [12]. Although no coping strategies appear to be universally good or bad, some coping strategies may be less beneficial than others [11, 16]. Strategies that involve denial, self-distraction and mental disengagement seem to be related to negative emotions and health outcomes. These negative strategies have been classified as ‘dysfunctional coping’ [16, 17]. In terms of health promotion, coping strategies that do not either directly manage the threat or deal with the reality of the situation have been classified as ‘maladaptive’. In contrast, the adaptive coping that may arise from health behaviour messages would imply motivation to comply with recommendations and to adopt lasting changes in an individual’s health-related behaviours [6, 18].

**SES and coping with health messages**

Thompson et al. [5] have suggested the existence of individual differences in the ways that people respond to health messages. Specifically, people with higher SES tend to follow recommendations for health-related behaviours more often than do those with lower SES. SES is a composite measure that typically incorporates measures of income, education and occupation [19]. However, educational background is often found to be the SES component most strongly related to health behaviour [e.g. 20, 21]. For example, although health authorities in many countries recommend that the daily diet include ‘five fruits and vegetables a day’; the diet of those with higher levels of education is more often consistent with these recommendations, compared with that of individuals with lower levels of education [5, 22, 23]. In addition, several studies have shown that physical inactivity is more prevalent among people with lower education [e.g. 24–26]. For example, a study from Norway showed that the proportion of physically inactive people is 40% among those with the lowest level of education, and 20% among those with the highest level of education [25].

A partial explanation for the development of such SES differences in health behaviour may be that people with different levels of education respond differently to health messages. In this respect, higher-educated men report a greater use of health-related print media messages and are more engaged in interpersonal communication about risk factors for cardiovascular disease than men with lower levels of education [27]. This may indicate that highly educated men respond more actively to health-related media messages. People from different SES groups may thus react differently to health messages.

This assumption is based on research that may support the existence of a correlation between SES and coping strategies [10, 28]. However, only a few studies have examined this relationship empirically, and the findings appear to be inconclusive [10]. A study by Pearlin and Schooler [9] showed that well-educated people generally tend to use more effective coping strategies. Ben-Zu [29] reported that level of education is positively correlated with problem-focused coping and negatively correlated with avoidance coping, while Adler et al. reported that SES is negatively correlated with passive coping, and that there is
no relationship between SES and active coping [28]. The latter finding supports Taylor and Seeman [10], who contend that there is more evidence for a relationship between SES and passive coping than for that between SES and active coping. Of particular relevance to the present paper is a study by Schafer, Schafer, Bultena and Hoiberg, which showed that there is no correlation between coping with the threat of unsafe food and SES, and suggested that ‘personal’ variables may be more important in explaining individual differences in coping with health threats [8].

**Health consciousness and coping with health messages**

One such individual factor may be the extent to which people find health messages to be personally relevant. When people perceive an issue as personally relevant, they pay more attention, weigh the arguments presented and generate their own thoughts on the material [15, 30]. In this respect, it has been suggested that health consciousness (HC)—the tendency to focus attention on one’s health—should be related to the level of an individual’s attention to health messages [31, 32]. There is evidence that people with high levels of HC tend to have a healthier lifestyle. For example, Gould [31] reported that HC is positively correlated with taking vitamins and avoiding high-calorific foods, but that HC is unrelated to levels of exercise and jogging. Jayanti and Burns [33] reported a positive correlation between HC and the tendency to engage in preventive health behaviours. Gould [31] reported that high-HC people talk more about health and read health magazines and ingredient labels more than low-HC people. However, Kaskutas and Greenfield [32] found no relationship between HC and the recall of health messages—specifically, messages and labels concerning alcohol. More important to the present research, Schafer et al. [8] reported that people who are health conscious are more likely to engage in problem-focused coping with respect to the threat of unsafe food.

To sum up, there is reason to regard media messages focusing on the relationship between health behaviours and the risk for disease as representing a potential threat/stressor that may activate coping responses. In particular, we expected high-SES women to report less use of non-adaptive coping strategies, and high-HC women to engage in more active coping. No particular relationship was expected between SES and HC. Furthermore, we expected non-adaptive coping to be negatively correlated with the intention to implement, and the actual implementation of positive health behaviours (exercise and fruit/vegetable consumption), but positively correlated with the experience of negative emotions. Similarly, we expected adaptive coping to be positively correlated with the intention to implement, and with the actual implementation of positive health behaviours.

**Method**

**Sample and procedure**

From the population of 45-year-old women residing in the city of Bergen, Norway, 800 were sampled at random by the Norwegian National Population Registry. Of these women, 793 were available for participation by mail, and they received a self-administered questionnaire with a pre-addressed and stamped envelope (Time 1). One reminder was sent to non-responders. Four weeks later (Time 2), a follow-up study was performed to assess the frequency of exercise and fruit/vegetable consumption during the previous 4 weeks. Four hundred and three women responded to the first questionnaire (a response rate of 50.8%), and 329 (81.6%) of them—41.5% of the total sample—responded to the follow-up questionnaire. Women who failed to respond to Time 2 questionnaire (assessing behaviour) reported slightly higher levels of non-adaptive coping at Time 1 (mean = 1.61; SD = 0.48) compared with women who responded to both questionnaires (mean = 1.48; SD = 0.40). No other significant differences were observed in the Time 1 variables between women who did or did not respond to the Time 2 questionnaire. All 403 women were included in the analyses of data from the first round, of this sample, 73.7% were married or lived in a partnership and 88.2% had
children; 63.3% worked full time, 27.5% worked part time and 7.9% were unwaged. Analyses including data on their behaviour were based on the responses of the 329 women who responded to both questionnaires.

The questionnaire included two pages containing copies of health-related messages appearing in Norwegian newspaper articles. The messages covered issues related to risk factors for cancer. The message headings were: ‘This is how you can prevent cancer’, ‘This is what you should do’, ‘You can reduce your risk for cancer’, ‘Lack of physical activity is as dangerous as smoking’, ‘800 women die from breast cancer every year’ and ‘Cancer in Norway’. The articles emphasized the benefits of changing health behaviours, such as performing regular exercise and increasing the consumption of fruits and vegetables. The participants were asked to read the articles and then to respond to questions on threats, coping, emotional reactions and behavioural intentions.

**Measures**

Two components of SES were measured. The number of years of equivalent full-time education was reported on a five-point scale: (i) <9 years (12.2%), (ii) 10–11 years (26.3%), (iii) 12 years (15.6%), (iv) 13–16 years (20.6%) and (v) >17 years (24.6%). Household income was reported in Norwegian Kroner (NOK) on an eight-point scale and recoded into five categories: (i) 100–199 900 NOK (11.7%), (ii) 200 000–299 900 NOK (18.1%), (iii) 300 000–399 900 NOK (11.7%), (iv) 400 000–499 900 NOK (20.6%) and (v) >500 000 NOK (35.5%).

Threat appraisal was measured by two items that were specifically constructed for the study: ‘People respond in various ways to information about health-related behaviour and cancer; we are interested in your response’. Examples of such messages were given on the previous pages: ‘To what extent do you find this type of information concerning health-related behaviour and cancer as (a) threatening, (b) scary’. Responses were on a five-point scale ranging from ‘to a small extent’ to ‘to a large extent’.

HC was measured by applying a scale developed by Gould [31]. The scale comprises nine items: examples include, ‘I’m alert to changes in my health’ and ‘I reflect about my health a lot’. Responses to all items were on a five-point scale ranging from ‘not at all typical’ to ‘very typical’.

Coping was measured by applying 16 items from the COPE instrument [13]. The participants were asked to report how they usually reacted when confronted with mass media messages describing the relationship between health behaviours and the risk of developing cancer. For the purpose of the present study, we included the active and planning subscales from COPE—as representing adaptive/functional coping—while items from the denial, mental and behavioural disengagement scales were used to represent non-adaptive/dysfunctional coping. Some of the items were slightly reworded to measure more precisely their coping reactions to health-related messages specifically (the exact wording appears in Table I). The responses were on a four-point scale ranging from ‘never’ to ‘a lot’.

The intention to engage in health-promoting behaviour (fruit/vegetable consumption and exercise) was measured by three items for each behaviour, such as ‘I intend to consume fruits and vegetables at least three times a day during the next four weeks’. Each item was rated on a five-point scale ranging from ‘very unlikely’ to ‘very likely’. The participants were instructed to report their negative emotions after reading the health messages. These emotions were measured by six items (distressed, scared, irritable, ashamed, nervous and afraid) from the Negative Affect Schedule [34]. The responses were reported on a five-point scale ranging from ‘very slightly or not at all’ to ‘extremely’.

Behaviour was measured at follow-up by two questions: (i) ‘During the past four weeks, how often have you consumed fruits/vegetables?’ The responses were on a six-point scale ranging from ‘seldom/never’ to ‘five or more times a day’. (ii) ‘During the past four weeks, how often have you performed physical exercise?’ The responses were on a five-point scale ranging from ‘have not exercised’ to ‘three or more times a week’. Table II
shows the descriptive statistics and reliability coefficients for all scales.

### Results

#### Threat and coping

The mean score for threat appraisal was 2.48 (SD = 1.13), indicating that health messages may be regarded as a threat or stressor. The 16 coping items were subjected to a principal component analysis. Two factors with eigenvalues >1.0 were extracted (4.6 and 3.1, respectively), which explained 48.3% of the total item variance. All items from the original ‘active’ and ‘planning’ subscales loaded on the first factor; items from the original ‘denial’, ‘mental disengagement’ and ‘behavioural disengagement’ subscales loaded on the second factor (Table I). The finding that the items measuring active and planning loaded on a common factor is consistent with previous research on the original scale, while the three ‘dysfunctional scales’ have previously been reported to load both on three separate factors and on a common second-order factor [13]. Hence, Carver et al. [13] has suggested that the dysfunctional scales can be used either separately or as broader dimensions, depending on the focus of the study. Based on this recommendation, results from previous research and the results of our factor analysis, we constructed two sum-score indices to represent adaptive versus non-adaptive coping.

The appraisal of threat was positively correlated with both forms of coping ($r = 0.13$ and $r = 0.28$ for adaptive and non-adaptive coping, respectively). There was no significant correlation between the two coping styles, indicating that they represent separate psychological phenomena. Overall, the participants reported a greater use of adaptive

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Table I. Descriptive statistics and factor loadings of coping items (rotated solution). ‘Indicate what you usually do when you are exposed to information about health habits and cancer ...

<table>
<thead>
<tr>
<th>Wording of item and original scale location</th>
<th>Mean</th>
<th>SD</th>
<th>F1</th>
<th>F2</th>
</tr>
</thead>
<tbody>
<tr>
<td>I think about how I might best improve my health habits</td>
<td>P</td>
<td>2.54</td>
<td>0.79</td>
<td>0.80</td>
</tr>
<tr>
<td>I take additional action to do something with my health habits</td>
<td>A</td>
<td>2.45</td>
<td>0.81</td>
<td>0.82</td>
</tr>
<tr>
<td>I concentrate my efforts on doing something with my health habits</td>
<td>A</td>
<td>2.42</td>
<td>0.80</td>
<td>0.71</td>
</tr>
<tr>
<td>I do what has to be done, one step at a time</td>
<td>A</td>
<td>2.42</td>
<td>0.81</td>
<td>0.64</td>
</tr>
<tr>
<td>I try to come up with a strategy about what to do</td>
<td>P</td>
<td>2.29</td>
<td>0.86</td>
<td>0.79</td>
</tr>
<tr>
<td>I make a plan of action to improve my health habits</td>
<td>P</td>
<td>2.23</td>
<td>0.83</td>
<td>0.76</td>
</tr>
<tr>
<td>I take direct action to improve my health habits</td>
<td>A</td>
<td>2.07</td>
<td>0.86</td>
<td>0.78</td>
</tr>
<tr>
<td>I think hard about what steps to take</td>
<td>P</td>
<td>1.93</td>
<td>0.82</td>
<td>0.69</td>
</tr>
<tr>
<td>I think about something else</td>
<td>MD</td>
<td>1.96</td>
<td>0.80</td>
<td>—</td>
</tr>
<tr>
<td>I concentrate on work or other activities to take my mind away from my health habits</td>
<td>MD</td>
<td>1.69</td>
<td>0.80</td>
<td>—</td>
</tr>
<tr>
<td>I just give up trying to improve my health habits</td>
<td>BD</td>
<td>1.49</td>
<td>0.63</td>
<td>—</td>
</tr>
<tr>
<td>I reduce the amount of effort I’m putting into improving my health habits</td>
<td>BD</td>
<td>1.47</td>
<td>0.69</td>
<td>—</td>
</tr>
<tr>
<td>I admit to myself that I can’t deal with it, and give up</td>
<td>BD</td>
<td>1.42</td>
<td>0.63</td>
<td>—</td>
</tr>
<tr>
<td>I say to myself this isn’t true</td>
<td>D</td>
<td>1.35</td>
<td>0.61</td>
<td>—</td>
</tr>
<tr>
<td>I refuse to believe in it</td>
<td>D</td>
<td>1.28</td>
<td>0.56</td>
<td>—</td>
</tr>
<tr>
<td>I pretend that I have never heard about it</td>
<td>D</td>
<td>1.21</td>
<td>0.52</td>
<td>—</td>
</tr>
</tbody>
</table>

A = active coping, P = planning, MD = mental disengagement, BD = behavioural disengagement, D = denial, F1 = Factor 1 loadings, F2 = Factor 2 loadings. Only loadings >0.30 are reported in the table.
coping (mean = 2.31; SD = 0.61) than non-adaptive coping (mean = 1.50; SD = 0.42). Table II presents the descriptive statistics and bivariate correlations among constructs.

**Correlates of coping**

Educational background was negatively correlated with non-adaptive coping and the level of threat. Hence, participants with a higher level of education perceived health messages as less threatening and were less likely to engage in non-adaptive coping when confronted with health messages; participants with a lower level of education perceived a higher level of threat and had a greater tendency to engage in non-adaptive coping. Education was negatively correlated with negative emotions, indicating that participants with a lower level of education experienced negative emotions to a greater extent than those with a higher level of education. No relationship was observed between household income and the level of threat, whereas income was weakly negatively correlated with negative emotions and non-adaptive coping. The level of education was positively correlated with the intention to engage in health-promoting behaviours ($r = 0.24$ and $r = 0.13$ for fruit/vegetable consumption and exercise, respectively), whereas household income was not (Table II). As expected, HC was positively correlated with adaptive coping, while no relationship between HC and non-adaptive coping was observed.

As expected, adaptive coping was positively correlated with the intention to consume fruit/vegetables and to exercise, whereas non-adaptive coping was negatively correlated with both intentions. Non-adaptive coping was positively correlated with negative emotions, while no relationship was observed between adaptive coping and negative emotions.

**Path analysis**

The hypothesized relationships supported by the correlation analysis were modelled in a path diagram. Because the level of education was more consistently correlated with coping and health

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**Table II.** Descriptive statistics and correlations between all measures

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>α</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household income</td>
<td>3.51</td>
<td></td>
<td></td>
<td>1.44</td>
<td>-0.06</td>
<td>0.28***</td>
<td>-0.12</td>
<td>0.13**</td>
<td>0.32***</td>
<td>0.03</td>
<td>0.12</td>
<td>0.13</td>
<td>0.04</td>
</tr>
<tr>
<td>Educational level</td>
<td>3.19</td>
<td></td>
<td></td>
<td>0.84</td>
<td>-0.10</td>
<td>-0.16**</td>
<td>-0.16**</td>
<td>0.03</td>
<td>0.32***</td>
<td>-0.01</td>
<td>0.12</td>
<td>0.34***</td>
<td>0.04</td>
</tr>
<tr>
<td>Threat appraisal</td>
<td>2.99</td>
<td></td>
<td></td>
<td>1.13</td>
<td>-0.07</td>
<td>-0.09</td>
<td>0.06</td>
<td>-0.09</td>
<td>0.16***</td>
<td>0.08</td>
<td>0.11</td>
<td>0.04</td>
<td>0.14</td>
</tr>
<tr>
<td>HC</td>
<td>2.48</td>
<td></td>
<td></td>
<td>0.64</td>
<td>0.92</td>
<td>0.73</td>
<td>0.09</td>
<td>0.07</td>
<td>0.12</td>
<td>0.12</td>
<td>0.04</td>
<td>0.11</td>
<td>0.04</td>
</tr>
<tr>
<td>Adaptive coping</td>
<td>2.31</td>
<td></td>
<td></td>
<td>0.61</td>
<td>0.79</td>
<td>0.39</td>
<td>0.16</td>
<td>0.09</td>
<td>0.12</td>
<td>0.16***</td>
<td>0.08</td>
<td>0.11</td>
<td>0.04</td>
</tr>
<tr>
<td>Non-adaptive coping</td>
<td>1.80</td>
<td></td>
<td></td>
<td>0.62</td>
<td>0.76</td>
<td>0.07</td>
<td>0.16**</td>
<td>0.07</td>
<td>0.14***</td>
<td>0.15**</td>
<td>0.07</td>
<td>0.11</td>
<td>0.04</td>
</tr>
<tr>
<td>Negative emotions</td>
<td>1.48</td>
<td></td>
<td></td>
<td>0.58</td>
<td>0.77</td>
<td>0.01</td>
<td>0.16**</td>
<td>0.07</td>
<td>0.14***</td>
<td>0.15**</td>
<td>0.07</td>
<td>0.11</td>
<td>0.04</td>
</tr>
<tr>
<td>FV intention</td>
<td>2.83</td>
<td></td>
<td></td>
<td>1.31</td>
<td>0.96</td>
<td>0.06</td>
<td>0.16**</td>
<td>0.07</td>
<td>0.14***</td>
<td>0.15**</td>
<td>0.07</td>
<td>0.11</td>
<td>0.04</td>
</tr>
<tr>
<td>Exercise intention</td>
<td>3.80</td>
<td></td>
<td></td>
<td>1.37</td>
<td>0.97</td>
<td>0.01</td>
<td>0.16**</td>
<td>0.07</td>
<td>0.14***</td>
<td>0.15**</td>
<td>0.07</td>
<td>0.11</td>
<td>0.04</td>
</tr>
<tr>
<td>FV behaviour</td>
<td>3.96</td>
<td></td>
<td></td>
<td>0.99</td>
<td>0.99</td>
<td>0.01</td>
<td>0.16**</td>
<td>0.07</td>
<td>0.14***</td>
<td>0.15**</td>
<td>0.07</td>
<td>0.11</td>
<td>0.04</td>
</tr>
<tr>
<td>Exercise behaviour</td>
<td>3.49</td>
<td></td>
<td></td>
<td>1.35</td>
<td>0.99</td>
<td>0.01</td>
<td>0.16**</td>
<td>0.07</td>
<td>0.14***</td>
<td>0.15**</td>
<td>0.07</td>
<td>0.11</td>
<td>0.04</td>
</tr>
</tbody>
</table>

α = Chronbach’s alpha. 
* P < 0.05, ** P < 0.01, *** P < 0.001.
behaviour than with household income, education was used as an indicator of SES in the path analysis. To test the path diagram against the empirical data, we applied structural equation modelling, using AMOS 4.0. By modelling latent factors, the importance of random measurement errors involved in ordinary sum-scores is reduced. Structural equation modelling yields total fit measures indicating the extent to which a hypothesized model is able to reproduce the observed empirical data [35].

The analysis showed that adaptive coping was predicted by HC ($\beta = 0.37$), whereas non-adaptive coping was predicted by the level of education ($\beta = -0.33$) (Fig. 1). Non-adaptive coping predicted negative emotions ($\beta = 0.42$) and intentions ($\beta = -0.29$ and $-0.30$, respectively), while adaptive coping predicted intentions ($\beta = 0.32$ and 0.30, respectively). The total model provided an excellent fit to the data, as indicated by the fit statistics, calculated using an unconstrained independence model: $\chi^2 = 246, 13; \text{df} = 146, P < 0.001$, a normed fit index of 0.95, and a comparative fit index of 0.98. The root mean square error of approximation was 0.04. The model explained 18.0% of the variance in intention to exercise and 18.5% of the variance in intention to consume fruits/vegetables, while 42.9% and 43.5% of the variance in the two behaviours, respectively, were explained by the model.

Discussion

The purpose of the present paper was to study the extent to which health-related messages in the media can be regarded as stressful and to examine

![Fig. 1. SEM model for the relationship between education, HC, coping, emotions, intentions and behaviour. Small boxes represent empirical indicators. Education: educational level, Negative emotions: the experience of negative emotions when exposed to health messages, AC: adaptive coping, NAC: non-adaptive coping, FV: fruit vegetable consumption.](http://her.oxfordjournals.org/)

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how women cope and respond to these messages. The mean score for threat indicated that, overall, women perceive the health messages to be threatening. The relationship between threat perceptions and coping was stronger for non-adaptive than for adaptive coping. However, the findings support the idea that it is valuable to study exposure to health messages in a coping perspective.

Overall, the participants reported a greater use of adaptive than non-adaptive coping strategies when exposed to the health messages; this is in accordance with research on how people cope with other types of stressors [13, 16, 29]. The actual levels of adaptive versus non-adaptive coping observed in the present study were similar with those reported in earlier studies, e.g. [16].

We observed that the two coping processes were unrelated, which indicates that they represent distinct psychological processes. This is in keeping with previous research where researchers have reported the two coping processes to be unrelated, weakly negatively related, or in some cases weakly positively correlated [13, 29]. The implication of these findings is that people may use a wide range of coping strategies simultaneously when exposed to health messages, just as for other types of stressors [11, 13].

**SES and coping**

The present study supports [20] and [21] in that, with respect to coping and health behaviour, education is more important than household income as an indicator of SES. There was no significant relationship between SES (education and income) and adaptive coping, whereas SES was negatively correlated with non-adaptive coping. Similar results have been reported by Adler et al. [28]. In addition, the negative correlation between education and non-adaptive coping has been reported in previous research addressing coping responses to other types of stressors; therefore, our results support the notion that there is a negative correlation between SES and non-adaptive coping [10].

The existence of a negative relationship between education and the use of non-adaptive coping strategies adds to the broader picture, in which there are differences in psychosocial resources and psychological styles between people who have different levels of education (and SES) [24, 28]. Lower levels of perceived control in relation to health and health behaviour may explain increased non-adaptive coping among lower-educated women [23]. However, it is also possible that less-educated women perceive the health messages as more threatening than do more-educated women. The finding that education was negatively correlated with perceived levels of threat supports this idea. Education was unrelated to adaptive coping in our study. In light of previous research findings on the positive association between higher education and health information seeking and communication [7], this finding is unexpected. It may be that when exposed to health messages, higher-educated women may feel that although they could cope adaptively there is little need for them to do so. This may explain why education was unrelated to adaptive coping.

**HC and coping**

The hypothesized positive relationship between HC and adaptive coping was empirically confirmed and was in accordance with findings reported by Schafer et al. [8]. One possible explanation may be that health messages induce different cognitive responses according to the level of HC. Hence, high-HC people may find the messages to be more personally relevant, may attend more to them, and may think more systematically about the arguments and recommendations included in the messages [30]. These results seem to be in agreement with the Elaboration Likelihood Model, suggesting that people are more likely to process information thoughtfully when an issue is personally relevant [36]. In the present study, this seems to be the case even though the behaviours of high-HC people already tend to be more health promoting. On the other hand, the finding that HC was unrelated to non-adaptive coping and the experience of negative emotions suggests that HC is different from health anxiety, which is often characterized by dysfunctional beliefs and fear of illness and death [37]: HC seems to be functional in a health-promoting perspective, because it relates positively
to adaptive coping and future intentions. It was interesting to note, however, that HC was unrelated to education, although this has also been reported by Gould [31]. Hence, HC does not seem to mediate the positive relationship between educational background and certain health-promoting behaviours.

Behavioral and emotional correlates of coping

As expected, higher levels of non-adaptive coping were related to weaker intentions to perform the health behaviours, and to increased levels of negative emotions. Adaptive coping was related to stronger intentions to perform health behaviours, and was unrelated to negative emotions. The present study indicates that increased levels of non-adaptive coping strategies seem both to increase the level of negative emotions and negatively to influence the motivation to perform the behaviours recommended in the health message. Consequently, it seems to be appropriate in health behaviour research to classify these coping strategies as dysfunctional or non-adaptive.

Conclusion

The results indicate that health-related messages are perceived as stressful by middle-aged women. The way in which they respond seems to be influenced by both their educational background and the level of their HC. In light of concerns about increasing social inequalities in health behaviour, it is important to attend to findings that suggest that lower-educated women cope in non-adaptive ways to health messages, and in doing so, incur negative emotional and behavioural consequences. For practical purposes, health messages that are constructed to increase motivation to perform healthy behaviours may represent a stressor and induce lower levels of motivation and increased levels of negative affect. To avoid this, a formative evaluation of all campaign messages is essential. Constructing messages tailored to low-SES women should be seriously considered (for an overview on the principle of tailoring, see for example Skinner et al. [38, 39]).

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References


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