Social comparison and coping with radiation therapy
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Chapter 6

Long-term effects of social comparison information on the global quality of life of cancer patients: The moderating role of social comparison orientation

Abstract
The present study examined whether the long-term effects of social comparison information on the global quality of life of cancer patients were moderated by social comparison orientation. Cancer patients were provided with social comparison information just prior to undergoing radiation therapy, using audiotapes. The first audiotape focused on procedural aspects, the second tape focused on coping strategies, and the third tape focused on emotional reactions. The results show that, with increasing social comparison orientation, a higher quality of life was reported after listening to the coping tape, while a lower quality of life was reported after listening to the emotion tape. These effects were found two weeks as well as three months after the radiation therapy had ended.

As is well known, the disease cancer and its treatment with radiation therapy can have profound effects on the physical and psychological well-being of patients. Traditionally, the emphasis has been on the physical aspects of the cancer experience, and professional care has focused mainly on the prolongation of life. However, since the 1970s and 1980s, there has been growing attention for the psychological consequences of cancer and cancer treatment, such as depression and anxiety (e.g., Chaturvedi, et al., 1996; Derogatis, et al., 1983). Indeed, because survival rates and physical symptoms were no longer considered sufficient criteria for the evaluation of medical treatments (Schou & Hewison, 1999), it was deemed important to incorporate psychological, social, as well as physical aspects of the cancer experience in one concept (Strain, 1990). As a result, the concept of quality of life was introduced. Even though the importance of the concept of quality of life has been widely acknowledged within the field of psychosocial oncology, opinions on the definition of the concept differ considerably (e.g., De Haes & Van Knippenberg, 1985). There seem to be two major areas of disagreement. First, researchers disagree whether quality of life is a global evaluation of the quality of life, or whether it encompasses several different components. Second, researchers disagree whether quality of life is a subjective evaluation made by the patient, or whether it is an objective evaluation of the circumstances. However, most

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researchers agree that quality of life is a multidimensional concept, including physical as well as psychosocial aspects (Muthny, Koch & Stump, 1990; Schou & Hewison, 1999).

Since the emergence of the concept, quality of life has been used in several different ways. For example, different forms of cancer and different treatments are compared on the basis of their differential effects on the quality of life of patients. In addition, the impact of a specific disease has been examined by comparing the quality of life of patients to the quality of life of healthy individuals. Furthermore, psychosocial interventions have been evaluated in terms of their effect on the quality of life of patients (Muthny, et al., 1990). In the present study, a global measure of quality of life was used to examine the long-term effects of social comparison information (i.e., information about how fellow patients are doing, feeling, and coping). Although many interventions have focused on providing patients with objective information about cancer or radiation therapy, it has been recognized that social comparison information can be a particularly relevant addition to patient information materials. The notion that information about patients in a similar situation could be advantageous to patients’ well-being is based on Festinger’s social comparison theory (1954). Festinger (1950, 1954) hypothesized that people have a drive to evaluate their opinions and abilities. When no objective (i.e., non-social) information is available, people will try to accurately evaluate their opinions and abilities by comparing themselves with similar others. In fact, some studies indicate that even when objective information is available, people remain interested in comparing themselves with others in a similar situation (Miller, 1977; Willemsen & Van den Berg, 1986).

On the basis of social comparison theory, it is assumed that cancer patients who experience a lack of information have a high need for social comparison. Indeed, research has shown that people faced with a serious health threat tend to compare themselves with others in a similar situation (e.g., Buunk, Gibbons & Reis-Bergan, 1997; Tennen, McKee & Affleck, 2000). Cancer patients often report that the kind of information they receive from fellow patients is unique, because only fellow patients can understand what they are going through (e.g., Gray, Fitch, Davis & Phillips, 1997). Intervention studies based on social comparison theory have indicated that cancer patients are extremely interested in social comparison information. Van der Zee, Oldersma, Buunk, and Bos (1998), for example, developed a computer program that provided cancer patients with the opportunity to read interviews in which the experiences of fellow patients were recounted. The majority of the patients found the information described in the interviews interesting, useful, and important. Furthermore, a study by Van der Zee et al. (1996) indicated that social comparison processes play an important role in contributing to the subjective well-being of cancer patients, even when physical and psychological health were controlled for. Especially comparing with
others who are worse off increased their subjective well-being by enhancing the sense of being better off than fellow patients. Similarly, Hagedoorn, Sneeuw, and Aaronson (2002) found that cancer patients who felt they were better off than other patients were able to sustain their quality of life in the face of worsening physical functioning, while those who felt they were equal or worse off than other patients were not able to do so.

In the present study, cancer patients who were about to undergo radiation therapy were provided with one of three types of audiotaped social comparison information. On each of the three audiotapes, individuals who acted as cancer patients who had already undergone radiation therapy recounted different aspects of their experiences with cancer and radiation therapy. However, on each audiotape, they focused on different aspects. On the first tape, they focused on the procedural aspects of the experience (procedural tape); on the second tape, they focused on the emotional aspects (emotion tape); and on the third tape, they focused on coping aspects (coping tape).

**Procedural tape**

On the procedural tape, the patients focused on their experiences with various aspects of radiation therapy: how the cancer was discovered, what happened during the treatments, which side effects they experienced, and how the check-ups went after the radiation therapy had ended. Interventions to prepare patients for radiation therapy have been effective in increasing knowledge about radiation therapy, reducing anxiety, and reducing disruption of daily activities (see Ream & Richardson, 1996, for a review). Information about radiation therapy enables patients to have a better idea of what to expect. Poroch (1995) found that patients who were provided with sensory and procedural information reported less anxiety and more satisfaction during radiation therapy. Information about experiences from fellow patients can be an important supplement here, as it provides cancer patients with the opportunity to compare themselves and their situation with (the situation of) fellow patients. Kulik and Mahler (2000) have suggested that when people are faced with a novel (health) threat, they experience an increased desire for social comparison information relevant to that threat. However, they further hypothesized that people tend to prefer to affiliate with others primarily for their ability to reduce uncertainty (i.e., provide cognitive clarity) about the threat situation, and to a lesser extent for their comparison potential. In other words, they hypothesized that cancer patients would use information from fellow patients who had already undergone the radiation therapy first of all to get a better idea of what to expect, and to a lesser extent as an opportunity to compare themselves or their situation.
**Emotion tape**
In addition to uncertainty about their disease and its treatment, patients may also experience uncertainty about their emotional reactions. Even though every individual reacts differently to these kinds of circumstances, fellow patients who have already undergone the treatment are able to provide information about the kinds of emotions they experienced during radiation therapy, thus providing a point of reference. Research has indicated that uncertainty about emotions can promote the need for social comparison (Cottrell & Eppley, 1977; Kulik & Mahler, 2000). However, little attention has been given to the specific consequences of comparing one’s emotions with those of similar others when facing a serious health threat. Spiegel and Diamond (2001) suggested that cancer patients who are uncertain about their emotional responses may learn from fellow patients that they reacted quite normally to the situation. Information from fellow patients about their emotional reactions can thus normalize and validate patients’ emotions. On the emotion tape, the patients, therefore, focused on their emotional reactions to cancer and radiation therapy.

**Coping tape**
On the coping tape, the patients focused on how they had coped with various aspects of cancer and radiation therapy. Presenting patients with a positive coping model may increase their self-efficacy and their ability to cope with the situation. Self-efficacy refers here to personal judgments of how well one can implement behavior to cope with one’s disease and treatment (Bandura, 1986). Models of positive coping with cancer and radiation therapy provide an opportunity for upward social comparison. By comparing with similar others who are coping well, patients may learn how to improve their own situation (Berger, 1977; Telch & Telch, 1985), and, at the same time, they may acquire hope and motivation (Taylor & Lobel, 1989). Indeed, studies indicate that people facing a health threat are particularly interested in information about fellow patients who are coping very well (e.g., Bennenbroek, Buunk, Van der Zee & Grol, 2002; Buunk, 1995). It seems that comparisons on the coping dimension, unlike comparisons on the illness severity dimension, are motivated by a desire to improve oneself. After all, fellow patients who are coping well can provide more useful information on how to improve one’s own situation than fellow patients who are better off physically.

**Social comparison orientation**
Although different types of social comparison information may have different long-term effects on the quality of life, each type of information may be more beneficial for some individuals than for others. In the present study, it was examined whether the quality of life of patients with a high social comparison
orientation is affected differently by the audiotapes than that of patients with a low social comparison orientation. Gibbons and Buunk (1999) introduced this notion of social comparison orientation to refer to the disposition of individuals who are strongly focused on social comparison, are particularly sensitive to their own standing relative to others, and who are interested in information about the thoughts and behaviors of others in similar situations. According to Gibbons and Buunk (1999), individuals high in social comparison orientation are characterized by a heightened uncertainty about themselves, accompanied by a relatively strong dependency on other people for their self-evaluation. A study among cancer patients (Van der Zee, et al., 1998) showed that patients high in social comparison orientation were indeed more inclined to select and attend to information about fellow patients. In addition, people high in social comparison orientation are more strongly affected by social comparison (Gibbons & Buunk, 1999). This seems to be particularly the case when it involves comparing oneself with others who are worse off (downward comparison). In several studies, it was found that people high in social comparison orientation experience more negative affect after downward comparisons (Buunk, Ybema, Gibbons & Ipenburg, 2001; Van der Zee, et al., 1998), supposedly because downward comparisons represent a undesired future for oneself.

The aim of the present study was to examine whether different types of social comparison information have long-term effects on quality of life, measured six to nine weeks later and four to five months later. The quality of life of the patients who had received one of the three audiotapes was compared with the quality of life of the patients in the control group, who had not received an audiotape. While an increasing number of studies indicate that social comparison orientation may moderate the short-term effects of engaging in social comparison, only a few studies have found long-term effects (e.g., Blanton, Buunk, Gibbons & Kuyper, 1999). In a study among nurses, Buunk, Zurriaga, Gonzalez-Roma, and Subiritas (in press) found that, especially among individuals with a high social comparison orientation, the frequency of comparisons increased feelings of relative deprivation (the perception of having less success at work than one deserves) nine to ten months later. Because the coping tape provided patients with explicit examples of how to cope with their illness and treatment, it was expected that the coping tape would have the most beneficial long-term effects on quality of life, especially among those high in social comparison orientation. Those high in social comparison orientation are more likely to use the social comparison information on the coping dimension to reflect on their own situation and to use this information to improve their situation than those low in social comparison orientation.
Method

Procedure

Patients were approached in the three hospitals with radiation therapy departments in the northern part of the Netherlands. In each department, an assistant would check incoming patient files to see whether patients met the inclusion criteria. The patients had to be newly diagnosed cancer patients with breast cancer, cervical cancer, head and neck cancer, or prostate cancer. They had to be treated with external radiation therapy with curative intent for a period of four to seven weeks. They could not be participating in another psycho-oncological study and had to have sufficient knowledge of the Dutch language.

Once it was determined that a patient met the inclusion criteria, (s)he was approached by his/her radiation oncologist with a request to participate in the study. The patients were given written information about the study, which they could read at their leisure. They could then send an informed consent form to the researchers, indicating that they would participate in the study. Of the 319 eligible patients, 226 agreed to participate in the study (71% response rate). The main reasons for non-response were not being interested (12%), feeling it was too burdensome (6%), or a poor physical or mental condition (3%). Next, patients were randomly assigned to one of the three experimental conditions, each with a different audiotape, or to the control group. Patients assigned to an experimental condition who did not own a tape recorder were provided with one. In the week prior to the start of their treatment, the patients received the questionnaire and an audiotape.

Sample

The majority of the respondents was female (65%). Their ages ranged between 29 and 81 years of age ($M = 60$). The sample consisted of patients who were treated for breast cancer ($N = 131$), prostate cancer ($N = 61$), cervical cancer ($N = 17$), and head and/or neck tumors ($N = 17$). About 36% of the patients had primary education or lower professional training, 49% had high school education or middle professional training, and 15% had a higher education or higher professional training. All patients were about to undergo radiation therapy. In addition, 53% of the patients had received or were receiving a secondary treatment; 46% surgery, 23% chemotherapy, and 31% other secondary treatment. The elapsed time since first diagnosis varied between 1 and 36 weeks, with an average of eight weeks.

Development of the audiotapes

A total of 20 cancer patients were interviewed in order to gather the necessary information for developing the audiotapes. These patients were either still undergoing radiation therapy or had recently received their last treatment. The scripts of the audiotapes were based on information extracted from these
interviews, information from medical staff, and information from relevant literature. The scripts of the audiotapes represented an interview in which one male patient and one female patient who have already undergone radiation treatment are recounting their experiences. Before the audiotapes were recorded, radiation oncologists and a number of cancer patients reviewed the scripts. On the basis of their comments and recommendations, some small alterations were made to the scripts. Next, the audiotapes were recorded with the help of professional actors, a director, and a sound technician. After recording, the audiotapes were once again reviewed and approved by the medical staff of all three hospitals involved in the present study.

**Similarities and differences in the audiotapes**

Each script was written to match the other scripts as much as possible on the subjects which were addressed, the order of the subjects, the use of language, and total length of the audiotape. The main subjects that were addressed on all the audiotapes were the way the diagnosis was made, the radiation treatment, the possible side effects of the treatment, and the changes after the treatment had ended. However, the audiotapes differed in the way these topics were addressed, as each audiotape focused on a different dimension. The audiotapes were roughly 25 minutes long.

**Instruments**

The patients received a questionnaire in the week prior to the start of their radiation treatments (T1), two weeks after the treatment had ended (T2), and three months after the treatment had ended (T3).

Individual differences in social comparison orientation were measured at T1, using the Iowa-Netherlands Comparison Orientation Measure (INCOM; Gibbons & Buunk, 1999). The participants could indicate on a 5-point scale whether they agreed with statements on social comparison habits, ranging from 1 = I disagree strongly to 5 = I agree strongly. For example: ‘I always like to know what others in a similar situation would do’. The reversed items (‘I am not the type of person who compares often with others’ and ‘I never consider my situation in life relative to that of other people’) were removed from the analyses, because of very low item-total correlations (r = -.006 and r = .159, respectively). Cronbach’s alpha for the resulting scale was $\alpha = .83$.

After the patient had listened to the audiotape, a manipulation check was performed to examine the extent to which the patients had compared themselves with the patients on the tape. The patients were asked to indicate whether or not they had compared themselves and/or their situation to (the situation of) the patients on the tape. They could respond with ‘No’, ‘Yes, I compared myself with
the man on the tape’, ‘Yes, I compared myself with the woman on the tape’, or
‘Yes, I compared myself with the man and the woman on the tape’.

Quality of life was measured using the Cantril (1965) self-anchoring scale. The
patients were asked to define a ‘worst possible life’ and a ‘best possible life’ for
themselves, and then to rate their lives on this personal scale. The scores range
from zero to ten, zero reflecting the worst life and ten reflecting the best life.

Quality of life was measured at three points in time. First, it was measured in the
week prior to the start of the treatment, and prior to listening to the audiotapes
(T1). Subsequently, quality of life was measured two weeks after the radiation
therapy had ended (T2), which was six to nine weeks later depending on the
number of the treatments. Finally, it was measured three months after the
treatment had ended (T3).

Results

Extent of comparison

First, the extent to which the patients in the experimental conditions had actually
compared themselves with the patients on the tapes was examined. The results
show that 93% of the patients who had received the procedural tape had indeed
compared themselves with the patients on the tape, while this percentage was
slightly lower among those who had received the coping and the emotion tapes
(79% and 82%, respectively).

Quality of life at T2

First, the decriptives of the quality of life at three point in time were measured
(see Table 1). No significant differnces in quality of life were found ($p' s > .05$). In
our main analyses, the moderating role of social comparison orientation on the
effects of the tapes on quality of life at T2 and at T3 was examined. To examine
these effects, multiple regression analyses were used. In the first step, quality

Table 1
Descriptives of the means of the quality of life at three moments in time

<table>
<thead>
<tr>
<th>Condition</th>
<th>Procedural Tape ($n = 57$)</th>
<th>Emotion Tape ($n = 54$)</th>
<th>Coping Tape ($n = 51$)</th>
<th>Control Condition ($n = 48$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of life T1</td>
<td>7.10</td>
<td>6.89</td>
<td>6.96</td>
<td>6.91</td>
</tr>
<tr>
<td>Quality of life T2</td>
<td>6.87</td>
<td>7.04</td>
<td>6.82</td>
<td>6.70</td>
</tr>
<tr>
<td>Quality of life T3</td>
<td>7.26</td>
<td>7.14</td>
<td>7.27</td>
<td>7.08</td>
</tr>
</tbody>
</table>
of life at T1 was entered, to be able to assess changes in the levels of quality of life. In the second step, social comparison orientation and the dummy variables concerning the experimental condition (i.e., the following contrasts: emotion vs. control, procedural vs. control, and coping vs. control) were entered. In the third step, the interaction terms between social comparison orientation and the dummy variables was entered (see Aiken & West, 1991). Additional regression analyses were performed to examine the other possible contrasts between conditions (emotion vs. coping, emotion vs. procedural, and procedural vs. coping), and to obtain the slopes of all four conditions (Aiken & West, 1991). To facilitate interpretation of the results, social comparison orientation was standardized (Aiken & West, 1991).

First, the influence of social comparison orientation on the effects of the tapes on the quality of life at T2 was examined (see Table 2). The regression analysis revealed a main effect of quality of life at T1. Not surprisingly, the patients who reported a higher quality of life prior to the treatment reported a higher quality of life two weeks after the treatment had ended, $B = .56$, $p < .001$. The analysis

**Table 2**

Summary of regression analysis for social comparison orientation (SCO) and the dummy variables D1 (coping vs. control), D2 (emotion vs. control), and D3 (procedural vs. control), predicting quality of life at T2 and quality of life at T3

<table>
<thead>
<tr>
<th>Step</th>
<th>R² change</th>
<th>B</th>
<th>R² change</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.22***</td>
<td>.56***</td>
<td>.21***</td>
<td>.51***</td>
</tr>
<tr>
<td>2</td>
<td>.01</td>
<td>&lt; .01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCO</td>
<td>-.07</td>
<td>-.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D1</td>
<td>.08</td>
<td>.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D2</td>
<td>.34</td>
<td>.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D3</td>
<td>.03</td>
<td>.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>.05**</td>
<td>.03†</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCO x D1</td>
<td>.25</td>
<td>.61*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCO x D2</td>
<td>-.83**</td>
<td>-.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCO x D3</td>
<td>-.17</td>
<td>.23</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*** $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$
Figure 1
Social comparison orientation as related to quality of life at T2 in all four conditions

revealed no main effects of the different tapes. However, a significant interaction effect was found (see Figure 1). The effects of the different audiotapes on quality of life at T2 were dependent on the levels of social comparison orientation. Additional analyses, which examined the other possible contrasts (emotion vs. coping, emotion vs. procedural, and procedural vs. coping) revealed a significant interaction between social comparison orientation and the contrast emotion vs. coping, $B = 1.02, p < .001$, and between social comparison orientation and the contrast emotion vs. procedural, $B = -.72, p < .05$.

Furthermore, the simple slopes of the three different audiotapes and the control group were tested. These analyses revealed that the slopes were significant for the coping tape, $B = .43, p < .05$, and for the emotion tape, $B = -.66, p < .01$, although in opposite directions. That is, with increasing levels of social comparison orientation, a lower quality of life at T2 was reported by those who had listened to the emotion tape, while a higher quality of life at T2 was reported by those who had listened to the coping tape. The slopes for the procedural tape, $B < .01, ns$, and the control group, $B = .11, ns$, were not significant.

**Quality of life at T3**

Next, the influence of social comparison orientation in moderating the effects of the tapes on quality of life at T3 was examined (see Table 2). Regression analysis again revealed a significant main effect of quality of life at T1. The patients who reported a higher quality of life prior to the treatment reported a higher quality of life three months after the treatment had ended, $B = .50, p < .001$. And again, no significant main effects of the audiotapes were found. However, the
Figure 2
Social comparison orientation as related to quality of life at T3 in all four conditions

Analysis did reveal a significant interaction effect (see Figure 2). The effects of the different audiotapes on quality of life at T3 were dependent on the levels of social comparison orientation. Additional analyses, which examined the other possible contrasts (emotion vs. coping, emotion vs. procedural, and procedural vs. coping) revealed no further significant interactions. Furthermore, the simple slopes of the three different audiotapes and the control group were tested. These analyses revealed that the slope for the coping tape was significant, \( B = .49, p < .05 \), while the slopes for the procedural tape, \( B = .10, ns \), for the emotion tape, \( B = -.21, ns \), and for the control group, \( B = -.19, ns \) were not. In other words, with increasing levels of social comparison orientation, a higher quality of life at T3 was reported by those who had listened to the coping tape, while social comparison orientation did not influence the effects on the quality of life at T3 of the control group or of the procedural and the emotion tapes. Furthermore, post-hoc analysis (Aiken & West, 1991) revealed that among those with a high social comparison orientation, those who listened to the coping tape reported a significantly higher quality of life at T3 than those in the control group, \( B = .94, p < .05 \).

Discussion
In the present study, the role of social comparison orientation in moderating the long-term effects of three different types of social comparison information was examined. It was found that social comparison orientation influenced the effects of the different types of social comparison information considerably. By including social comparison orientation as a moderator, the results clearly reveal the long-term beneficial effects of the audiotapes, particularly of the coping tape.
It is important to note that the majority of patients did indeed compare themselves with the patients on the audiotapes. These results indicate that, although the patients may or may not have used social comparison information to reduce uncertainty and promote cognitive clarity (Kulik and Mahler, 2000), they definitely used the information to compare themselves with the patients on the audiotapes.

Two weeks after the radiation therapy had ended, the effects of the audiotapes on the quality of life of the patients were strongly influenced by social comparison orientation. With increasing social comparison orientation, patients reported a higher quality of life at T2 after listening to the coping tape, while they reported a lower quality of life at T2 after listening to the emotion tape. Apparently, the coping tape had beneficial effects on global quality of life, particularly for those high in social comparison orientation. This suggests that coping information mainly has beneficial effects when one is inclined to relate the information to one’s own situation.

Surprisingly, patients with a low social comparison orientation who had listened to the emotion tape reported the highest quality of life at T2, which was significantly higher than the quality of life of the patients in the control group. It is not clear why this is the case. It could be that the emotion information is particularly beneficial for those who are not inclined to relate the information on the tapes to their own situation. However, it is not clear whether those low in social comparison orientation do not use social comparison information to reflect on their situation at all, or merely less than those high in social comparison orientation. A study by Michinov and Michinov (2001) provides another possible explanation. They found that individuals low in social comparison orientation were attracted to others who were highly similar to them on attitudes, while those high in social comparison orientation did not show this preference. In the present study, the emotion tape was specifically designed to present comparison others who would be highly similar to the respondents. Therefore, it may be that those low in social comparison orientation reacted positively to this tape because it presented comparison others with whom they preferred to compare themselves. Although Gibbons and Buunk (1999) described the prototypical high comparer, they did not describe the prototypical low comparer. The results of the present study suggest that those low in social comparison orientation react in a highly unique way to social comparison information and that they do not simply show the opposite reaction to those high in social comparison orientation. Further research is, therefore, needed to identify the way individuals low in social comparison orientation deal with social comparison information.

Three months after the radiation therapy had ended, highly similar effects to those after two weeks were found. With increasing levels of social comparison orientation, patients who had listened to the coping tape again reported higher
levels of quality of life at T3. More importantly, they reported a significantly higher quality of life than those in the control group, indicating the long-term beneficial effects of the coping tape for those with a high social comparison orientation. The effects of the emotion tape on the quality of life at T3 were no longer influenced by social comparison orientation.

The results of the present study have several important implications. First, it is one of the few studies to examine the long-term effects of social comparison information. While previous studies have shown that the frequency of social comparison may have long-term effects on affect (Buunk, et al., in press), and performance (Blanton, et al., 1999), the present study is the first intervention study to show the long-term effects of social comparison information on the quality of life in a sample of cancer patients. The results clearly emphasize the importance of supplementing patient education materials with social comparison information, because such information may not only have short-term, but also long-term beneficial effects on quality of life. Furthermore, the present study emphasizes the importance of personality characteristics, in particular social comparison orientation. By including social comparison orientation in our research, the differential long-term effects of the audiotapes have been clearly demonstrated that would otherwise have been hidden. It is, therefore, very important to acknowledge the role of social comparison orientation in future research. It is important to consider the specific characteristics of the patient when providing patients with information. To ensure optimal effects of patient education materials, attention should be paid to the kind of material which suits the individual best. Bensing, Visser, and Saan (2001) made similar recommendations in their article on patient education in the Netherlands. They argued that information materials are more effective when they are tuned to individual preferences and needs. When providing patients with social comparison information, coping information seems to be the most beneficial for those high in social comparison orientation, while emotion information seems to be the most beneficial for those low in social comparison orientation.

However, some considerations may limit our conclusions. One limitation lies in the fact that quality of life was measured using a one-item scale. Therefore, the criteria on which the patients based their quality of life assessment are unknown. In other words, it is not known what factors influenced the evaluation of their quality of life, nor the relative importance of these factors. However, the use of a one-item measure has important advantages. A major advantage lies in its non-normative nature. That is, instead of the researcher, the patient decides what constitutes a high or a low quality of life. The patients evaluate (the quality of) their lives on the basis of their own criteria. In the present study, the subjective assessment of quality of life made by the patients themselves seems to be the most relevant measurement of their quality of life. Furthermore, a one-item measure of quality
of life is comprehensive and unambiguous. In this light, Bernheim (1999) argued that quality of life could actually be captured best by a global assessment, as it is the result of great many interactions between contributing components, which cannot be accurately measured using multi-item questionnaires.

To summarize, the present study has provided some important insights into the long-term effects of social comparison information and the important role social comparison orientation plays in these processes. For patients with a high social comparison orientation, coping information seems to have highly beneficial short-term as well as long-term effects on quality of life. The present study is an important confirmation of the notion that providing information about similar others who are coping well is a successful strategy for enhancing well-being (Ybema & Buunk, 1995).