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SOCIAL COMPARISON AND COPING AMONG CANCER PATIENTS

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Abstract. Social comparison, refers to relating one´s own situation to that of others. This article presents an overview of our research program on social comparison strategies among patients with many different types of cancer. A variety of paradigms was used, including experiments, diary studies, survey studies, computer facilitated studies, and intervention studies. Social comparisons are quite common among cancer patients, because they are often confronted with anxiety, stress, and uncertainties. Patients may compare themselves with others better off (*upward comparisons*), for example others who have a better prognosis, and with others worse off (*downward comparisons*), for example others who have a worse prognosis. Overall, upward comparisons tend to be preferred and to contribute more to well-being than downward comparisons. However, the effects of social comparison on well-being depend to an important extent on whether the focus is on *identification* (looking for similarities with the comparison target), or on *contrast* (using the other as a standard to evaluate one´s own situation). Especially upward identification and downward contrast tend to have positive effects on well-being, and to be associated with active coping. The preferences for, and the effects of, social comparison are to a lato a large extent dependent on Social Comparison Orientation (SCO), i.e., the dispositional tendency to engage in social comparisons, and on Neuroticism, with individuals high in this trait responding more negatively to particularly upward comparison. Intervention studies based on social comparisons, in which cancer patients receive audiotaped bogus interviews with other cancer patients, show that exposure to others coping well has long-term positive effects on quality of life especially for those high in SCO. The effects of exposure to patients talking about their emotional experiences are mixed, and even negative for those high in Neuroticism. However, audiotaped social comparison information may have especially positive effects for those who experience their cancer as very threatening.
Keywords: cancer, social comparison, coping

Introduction

Social comparison is a fundamental process in which individuals assess their own traits by comparing these to those of others who are similar (Buunk et al., 2019). Currently, social comparisons are regarded as one of the most influential social factors shaping well-being, health behaviors, and decision-making (Dijkstra et al., in press; Klein & Rice, 2020). Engaging in social comparisons can provide individuals with valuable insights that help them assess or improve their circumstances. A growing body of research has focused on social comparison processes in cancer patients, particularly in terms of how these comparisons influence coping strategies. This interest stems from the fact that cancer patients often face significant uncertainty. For example, they may not know how they will respond to treatment, feel uncertain about their prognosis, or worry about the potential for the cancer to return after extensive treatment (e.g., Guan et al., 2020). It has long been acknowledged that stress and uncertainty can drive individuals to seek social comparisons, and this is especially true for cancer patients. In fact, many cancer patients report that social comparison is crucial for adapting to their condition, highlighting that only others who have gone through similar experiences can truly understand what they are facing (e.g., Maharay et al., 2021)

In this article, embedded in the relevant literature, the major results of our research program on social comparison strategies among cancer patients are presented, including how social comparison may affect well-being, how such strategies may function as a form of coping. Ultimately, by integrating social comparisons into interventions, patients may be better equipped to manage their emotions, set realistic goals, and develop healthier coping mechanisms.

Direction of social comparison and individual differences

In our research program a variety of paradigms was used, including experiments, diary studies, survey studies, computer facilitated studies, and intervention studies. In many of our studies, the preferred direction of comparison when seeking out comparison information has been an important issue. That is, people may compare themselves with others doing better (*upward comparisons*), for example in the case of cancer, with other patients who have a better prognosis, or who receive more support from their spouse, or even with healthy others. They may also compare themselves with others doing worse (*downward comparisons*), for example in the case of cancer, with other patients who have cancer in a more advanced stage, or who receive less support from their spouse, but also with other patients with more serious diseases. In an early study 30 patients with Hodgkin or non-Hodgkin disease suffering from various forms of cancer were asked to keep a diary of their

daily social comparisons for a period of a week (Van der Zee et al.,1996). For each comparison, patients evaluated their relation to the comparison other, the dimension of comparison, whether they felt better-off (downward comparison), of worse-off (upward comparison), and their feelings after the comparison. Remarkably, a small majority of the total of 296 comparisons was with healthy others. People reported about the same amount of upward as of downward comparisons. The more upward the comparison was, the more negative affect it evoked, which is, as will be described later on, does often not occur among cancer patients.

An important focus of this research program has been the role of two individual difference variables. The first is social-comparison orientation (SCO), which refers to the extent to which individuals tend to evaluate their own characteristics by comparing them to others and relate events in others' lives to their own. Those high in SCO are typically more interested in what others think and how they behave, displaying heightened sensitivity to others' actions and opinions. They often lack intellectual autonomy (Buunk et al., 2019) and are particularly focused on their own motives and feelings. SCO tends to decrease over the lifespan but increases again after the age of sixty, a period that aligns with the age of many cancer patients (cf. Buunk et al., 2020).

The second personality variable explored in this program in relation to social comparison processes is neuroticism, a basic personality trait with a genetic basis (Castellini et al., 2023). Neuroticism is characterized by vulnerability, anxiousness, moodiness, rigid tendencies, depression, frustration, guilt, self-consciousness, and low self-esteem. One aspect of neuroticism involves an intense sensitivity to the negative emotional implications of evaluative information. As a result, individuals high in neuroticism may fixate on the negative emotional consequences of both upward and downward comparisons. For example, when comparing themselves to others who are doing better, they may think, "Oh no, I am doing much worse," while when comparing to those who are doing worse, they may conclude, "Oh no, I will probably end up like them."

In one of the first major studies in our program, the desire for upward and downward social comparisons as affected by SCO and Neuroticism was studied with a computer program that was developed to enable cancer patients to access fictious descriptions of fellow patients' disease-related experiences that were either better off (upward comparison), or worse off (downward comparisons) than the typical cancer patient (Van der Zee, Oldersma et al., 1998). A total of 88 Patients were recruited through advertisements in the newsletters of Dutch contact organizations for patients with specific forms of cancer and at a meeting of the Dutch contact organization for patients with Hodgkin's and non-Hodgkin´s disease.

Patients selected more interviews featuring upward comparison others than downward comparison others. Additionally, they spent more time reading and showed more favorable reactions to upward comparison information. Individuals with higher SCO, in particular, were more likely to engage in social comparison and respond to it. Neuroticism was associated with a greater interest in social comparison but with less favorable reactions to such comparisons, whether the comparison was upward or downward.

The role of neuroticism in moderating the effects of social comparison was also explored in an experimental study by Van der Zee, Buunk et al. (1998). In this study, fifty-seven women with breast cancer received social comparison information about a fellow patient who was either doing better (upward condition) or worse (downward condition) than they were. They were then asked about their emotional reactions to this information. As expected, patients had more positive reactions to upward comparison information than to downward comparison information. However, neuroticism was linked to more negative and less positive responses to upward social comparison information, but it did not influence reactions to downward comparisons. In other words, individuals high in neuroticism had less positive responses to upward comparison information. Vice versa, this suggests that for those high in neuroticism, being confronted with a fellow patient who is doing well may feel especially threatening, and that being confro Patients selected more interviews featuring upward comparison others than downward comparison others. Additionally, they spent more time reading and showed more favorable reactions to upward comparison information. Individuals with higher SCO, in particular, were more likely to engage in social comparison and respond to it. Neuroticism was associated with a greater interest in social comparison but with less favorable reactions to such comparisons, whether the comparison was upward or downward.

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comparison information. This suggests that for those high in neuroticism, being confronted with a fellow patient who is doing well may feel especially threatening, and

Identification and contrast in social comparison.

The finding that in the studies just described individuals that patients selected more upward than downward comparisons, and responded often more positively to upward comparisons is noteworthy, because traditionally it has been assumed that confrontation with information about others who are doing worse evokes positive feelings (e.g. relief) because it makes one realize that one is better off. Vice versa, confrontation with others doing better was assumed to result in feelings of frustration, pointing to the fact that one is worse off (cf. Taylor et al., 1990). However, in the past decades it has become clear that the responses to upward and downward comparisons depend to an important extent on whether individuals *identify* or *contrast* themselves with the comparison target. In the case of identification, people tend to focus on the actual or potential similarity between themselves and the comparison target, try to recognize features of themselves in the other, and may regard the other's position as similar or attainable for themselves.

When individuals compare themselves to a colleague, they often use the other person's position as a benchmark for evaluating their own situation. For example, upward comparisons, when driven by identification, can inspire feelings of hope and motivation (e.g., Meier et al., 2020), whereas downward comparisons, when viewed in contrast, can lead to feelings such as pride (e.g., Gürel et al., 2022) and relief (e.g., Habib et al., 2015). Similarly, upward comparisons in the context of contrast may evoke or intensify emotions like shame, guilt, or depression, while downward comparisons in the case of identification may trigger or strengthen feelings of worry and anxiety (e.g., Sharpe et al., 2023). Fellow patients facing similar health challenges who are in a better situation can provide valuable information that may aid in problem-solving. For instance, a woman with breast cancer might look at a fellow patient's optimism and resilience as a source of inspiration, learning effective coping strategies in the process. Identification with someone who is doing better can foster hope that one's own situation will improve.

Thus, contrary to traditional assumptions, when patients identify with fellow patients, upward comparisons—rather than downward ones—can actually be comforting, whereas downward comparisons may be more discouraging. To maintain positive well-being, cancer patients may need to compare themselves to those in worse situations while identifying with those who are better off. It's important to note, however, that every social comparison likely involves a blend of both identification and contrast.

As a consequence of the foregoing analysis, individuals may differ in the extent to which they follow four strategies: upward identification, upward contrast, downward identification, and downward contrast. Van der Zee et al. (2000) developed brief scales for each of these strategies (for the items, see Table 1). The items in were answered on a fve point scale running from not at all (1) to strongly (5)

Table 1. The questionnaire for identification and contrast

Downward identification
Following downward comparison I
...experience fear to decline ...fear that my future will be similar ...fear that I will go along the same way
Downward contrast
Following downward comparison I
...am happy that I am doing so well myself ...feel relieved about my own situation ...realize how well I am doing
Upward identification
Following upward comparison I
...realize that it is possible to improve ...am pleased that things can get better ...have good hope that my situation will improve
Upward contrast
...it is threatening to notice that I am doing not so well ...I feel frustrated about my own situation I...feel depressed realizing that I am not so well off

In a sample of 112 cancer patients undergoing chemotherapy or radiotherapy, the validity of these scales obtained support. First, the internal consistency and stability of the scales were high. Interestingly, higher order factor analyses showed two basic factors labeled `positive interpretation' (encompassing upward identification

and downward contrast) versus `negative interpretation' (encompassing upward contrast and downward identification). In addition, it was shown that the tendency to identify oneself with others who are doing better and to contrast oneself against others who are doing worse were moderately but significantly associated with a basic tendency to engage in confrontive coping styles, including active coping, reinterpretation and growth, and social support seeking.

Interventions with social comparison information.

Our research program on social comparison among cancer patients has resulted on a number of interventions. In one of these, before undergoing radiotherapy 226 cancer patients with a variety of cancers (most breast and prostate cancer) were given one of three audiotapes that were based on interviews with patients, interviews with members of the medical staff and the scientific literature (Bennenbroek et al., 2003). All scripts were written to be equivalent to the other scripts as much as possible on the topics that were addressed, the order of the subjects, the use of language, and a total length of 25 minutes. As noted by Maharaj et al. (2021) in their study of men who had survived prostate cancer, knowing what to expect from a therapeutic treatment empowers men and their partners to manage the illness and effects of treatment. The scripts represented an interview where one male and one female patient who have already undergone radiation treatment were recounting their experiences.

On the *procedural* tape, a man and woman discussed the process of radiation therapy, for example: *'So, every day to the hospital, with a taxi that brought me there, and home again. Except in the weekends. No treatments during the weekend' 'You then go to the radiation room, and you lie on a table, which they then place under the radiation device. They tell you it's really important to lie still, so you concentrate on that'.*

On the *emotion* tape on the man and woman focused on the emotional reactions to their illness and treatment focused, for example: *'I can't say that I was scared. It is overwhelming, though. It is all so new and unfamiliar ...'. They are very nice at the hospital. Of course I have felt uncomfortable, especially in the beginning. But I felt they were very understanding and respectful´*.

On the *coping* tape the man and woman y focused on the way they had been positively coping with their situation, for example: *'I wanted to stay positive, I would say to myself: 'Come on, you may be apprehensive, but in a few days you will know that's not at all necessary'. 'A lot changes when you hear you have cancer. But you have to remember that a lot of people are working very hard to make you healthy again'.*

By using audiotapes, standardized information could be provided to a large number of patients, including those who might struggle to understand written materials due to reading difficulties, for example. The audiotapes allowed patients to access the information whenever and wherever they wanted, as often as they needed, increasing the likelihood that they would process and understand the sometimes complex information effectively. Data were collected before radiation therapy, and again two weeks and three months after therapy ended. Two weeks following the radiotherapy, most patients reported that they had indeed engaged in social comparison with the patients on the audiotapes, comparing themselves similarly across the three tapes. All patients indicated that they had learned more about radiation therapy and felt their self-efficacy had improved, with particularly positive effects observed in those who listened to the procedural and coping tapes.

Further analyses revealed that, with increasing levels of neuroticism, all tapes elicited more negative emotions, particularly the emotion tape, which triggered a more negative mood than the procedural or coping tapes (Buunk et al., 2009). For individuals high in neuroticism, listening to fellow patients discuss their emotions was clearly more distressing than hearing about how others coped with radiation therapy. However, those high in neuroticism who listened to the coping tape reported significantly less negative mood than those in the control group. This suggests that exposure to models demonstrating positive coping strategies, or presenting procedural information, had a relatively positive impact on individuals with high neuroticism. These findings indicate that negative mood in individuals high in neuroticism may be alleviated through at least two different pathways. The coping models were designed to be successful but not overly so, possibly making them non-threatening and inspiring. The procedural information likely provided cognitive clarity and reassurance, which helped patients manage the stress of the situation.

In the follow-up study conducted three months later, the impact of the three tapes on quality of life was found to be moderated by social-comparison orientation (SCO) (Buunk et al., 2011). Specifically, those with higher SCO who listened to the emotion tape reported a lower quality of life, while those with higher SCO who listened to the coping tape reported a higher quality of life, even more so than the control group.

The research described in the previous section was followed up by a study by Brakel et al. (2012), in which cancer patients were exposed to an audio CD on which a female oncological expert told about the experiences of cancer patients, based on the fictitious patients in the previous study. The study contained the emotion and

coping information, but there was also a condition containing the emotions as well as the way of coping of cancer patients. In line with the previously described Identification-Contrast model, on the basis of a pretest patients were classified as either contrasters (those who particularly tended to contrast themselves with other cancer patients), or identifiers (those who particularly tended to identify themselves with other cancer patients). The results showed for those in poor health a strong positive effect on the quality of life of the combined intervention, but only among the identifiers, whereas the contrasters showed a strong positive effect on their quality of life of the emotion intervention. Thus, those in poor health who tended to contrast themselves with other patients benefitted most from listening to the emotions expressed by other cancer patients, whereas those who tended to identify themselves with other patients benefitted most from listening to the emotions combined with the coping styles of other cancer patients. These findings clearly suggest that the effectiveness of offering social comparison information to patients depend on the type of information as well as on the social comparison style of the patients´.

A next study by Brakel et al. (2014) was conducted among 61 individuals who had at least 12 months earlier completed their cancer treatment and a control group of 88 patients who received no intervention. Participants were exposed to an audio CD, which used the role models expressing their way of positive coping or their emotions from the study of Bennenbroek et al. (2003), but the interviews were on the basis of previous research particularly adjusted to the characteristics of each patient. Especially patients with a high perceived life threat, reported a higher life satisfaction after listening to the CD than the control group that did not receive audiotaped information. However, for patients who perceived a low life threat, life satisfaction was significantly lower compared to the control group. This study suggests that patients who view their condition as less threatening did not benefit from the social comparison information and may have even experienced a decline after being exposed to it. The social comparison information could have disrupted the psychological equilibrium these patients had established for themselves. It's possible that they were confronted with the realization that they were not doing as well as they believed, which could lead to a form of downward identification. Therefore, caution is needed when exposing former cancer patients to social comparison information. Interestingly, the type of cancer did not seem to influence these effects.

Conclusions

Among many cancer patients social comparisons tend to play an important role in dealing with their illness. Most comparisons are with other patients in a similar situation, but may also occur with healthy individuals. The descriptive and experimental studies as well as the intervention studies suggest that comparisons with other patients doing well, and in particularly coping constructively, may in general be the most beneficial, especially for individuals high in SCO, i.e., those with a strong tendency to compare themselves with others. The effects of social comparison on well-being depend to an important extent on whether the focus is on *identification* (looking for similarities with the comparison target), or on *contrast* (using the other as a standard to evaluate one´s own situation. Upward identification and downward contrast tend to have more positive effects on well-being than downward identification and upward contrast. The fact that the first two comparison styles are positively related to various coping styles, including active coping, reinterpretation and seeking social support, suggests that indeed social comparisons may constitute a form of coping. However, our research program clearly suggest that one needs to be careful with offering social comparison information to patients. Patients high in Neuroticism may respond negatively to social comparison information about other patients, particularly when these other patients talk about their emotions or are better off. It must also be noted that one of the intervention studies showed that especially those with a high perceived life threat did benefit from audiotaped social comparison information, and that for those with a low perceived life threat such information did even have an adverse effect, maybe because it disturbed the balance they had achieved in the adaptation to their illness. Various studies presented here show that the preferences for, and the effects of, social comparison depend to a large extent on Social Comparison Orientation (SCO), i.e., the dispositional tendency to engage in social comparisons. It was further shown that the effects of social comparison depend on Neuroticism, with individuals high in this trait tending to respond more negatively to particularly upward comparison. In sum, social comparisons are common among cancer patients, may have negative effects on well-being, and one needs to be careful in what kind of social comparison information one offers to a particular patient.

References

1. Bennenbroek, F.T.C., Buunk, B.P., Stiegelis, H.E., Hagedoorn, M., Sanderman, R., Van den Bergh, A.C.M., Botke, G. (2003). Audiotaped social comparison information for cancer patients undergoing radiotherapy: Differential effects of procedural, emotional and coping information. *Psycho-Oncology, 12*, 567-579.
2. Brakel, T.M., Dijkstra, A. & Buunk, A.P. (2012). Effects of the source of social comparison information on former cancer patients' quality of life. *British Journal of Health Psychology, 17*, 667-681.
3. Brakel, T. M., Dijkstra, A., & Buunk, A. P. (2014). Targeting cancer patients' quality of life through social comparison: a randomized trial. *Psychology and Health, 29*, 950-966.
4. Buunk, A.P., Bennenbroek, F.T.C., Stiegelis, H., Sanderman, R., Brakel, T.M., Van den Bergh, A.C.M., & Hagedoorn, M. (2009). Neuroticism and responses to social comparison among cancer patients. *European Journal of Personality, 23*, 475-487.
5. Buunk, A.P., Bennenbroek, F.T.C., Stiegelis, H.E., Van den Bergh, A.C.M., Sanderman, R., & Hagedoorn, M. (2011). Follow-up effects of social comparison information on the quality of life of cancer patients: The moderating role of social comparison orientation. *Psychology & Health, 27*, 1-14.
6. Buunk, A.P., Dijkstra, P.D., & Bosma, H.A. (2020). Changes in Social Comparison Orientation over the lifespan. *Journal of Clinical and Developmental Psychology, 2*, 1-11.
7. Buunk, A.P., Dijkstra, P.D., Gibbons, F.X., & Krizan, Z. (2019). Individual differences in social comparison: The complex effects of Social Comparison Orientation. In J. Suls, R.L. Collins & L. Wheeler (Eds.), *Social comparison in judgment and behavior* (pp. 77-105) New York, NY: Oxford University Press.
8. Castellini, G., Merola, G. P., Boy, O. B., Pecoraro, V., Bozza, B., Cassioli, E., Rossi, E., Bessi, V., Sorbi, S., Nacmias, B., & Ricca, V. (2023). Emotional dysregulation, alexithymia and neuroticism: A systematic review on the genetic basis of a subset of psychological traits. *Psychiatric Genetics, 33(3)*, 79–101.
9. Dijkstra, P.D., Buunk, A.P. & Barelds, D. (in press). In J. Maddux (Ed.). Subjective well-being and life satisfaction: A social psychological perspective. Routledge.
10. Guan, T., Santacroce, S. J., Chen, D., & Song, L. (2020). Illness uncertainty, coping, and quality of life among patients with prostate cancer. Psycho-Oncology, 29(6), 1019–1025.
11. Gürel, Ç., Brummelman, E., & Overbeek, G. (2022). Proudly moving forward and feeling connected: Adolescents' daily temporal comparisons relate to a desire for growth and sense of relatedness. *Emotion, 22(6)*, 1224–1238.
12. Habib, M., Borst, G., Poirel, N., Houdé, O., Moutier, S., & Cassotti, M. (2015). Socio-emotional context and adolescents' decision making: The experience of regret and relief after social comparison. *Journal of Research on Adolescence, 25*, 81-91.
13. Klein, W. M. P., & Rice, E. L. (2020). Health cognitions, decision-making, and behavior: The ubiquity of social comparison. In J. Suls, R. L. Collins, & L. Wheeler (Eds.), *Social comparison, judgment, and behavior* (pp. 527–574). Oxford University Press.
14. Maharaj, N., Soheilipour, S., Bender, J. L., & Kazanjian, A. (2021). Understanding prostate cancer patients' support needs: How do they manage living with cancer? *Illness, Crisis, & Loss, 29(1)*, 51–73.
15. Meier, A., Gilbert, A., Börner, S., & Possler, D. (2020). Instagram inspiration: How upward comparison on social network sites can contribute to well-being. *Journal of Communication, 70(5)*, 721–743.
16. Sharpe, L., Michalowski, M., Richmond, B., Menzies, R. E., & Shaw, J. (2023). Fear of progression in chronic illnesses other than cancer: A systematic review and meta-analysis of a transdiagnostic construct. *Health Psychology Review, 17(2)*, 301–320.
17. Taylor, S.E., Buunk, B.P., & Aspinwall, L.G. (1990). Social comparison, stress, and coping. *Personality and Social Psychology Bulletin, 16*, 74-89.
18. Van der Zee, K.I., Buunk, B.P., De Ruiter, J.H., Tempelaar, R., Van Sonderen, E., & Sanderman, R. (1996) Social comparison and the subjective well-being of cancer patients. *Basic and Applied Social Psychology, 18*, 453-468.
19. Van der Zee, K., Buunk, B.P., & Sanderman, R. (1998). Neuroticism and reactions to social comparison information among cancer patients. *Journal of Personality, 66*, 175-194.
20. Van der Zee, K., Buunk, B.P., Sanderman, R., Botke, G., & Van den Berg, F. (1999). The big five and identification-processes in social comparison in adjustment to cancer treatment. *European Journal of Personality, 13*, 307-326.
21. Van der Zee, K., Buunk, B.P., Sanderman, R., Botke, G., & Van den Berg, F. (2000). Social comparison and coping with cancer treatment. *Personality and Individual Differences, 28*, 17-34.
22. Van der Zee, K.I., Buunk, B.P., Wheeler, R., Sanderman, R., Van den Berg, A., & De Jong, M. (1996). A diary study on naturally occurring social comparison processes among patients with Hodgkin and Non-Hodgkin's disease. *Psycho-oncology, 5(2)*, 204.
23. Van der Zee, K.I., Oldersma, F.L., & Buunk, B.P. & Bos, D.A.J. (1998). Social comparison preferences among cancer patients as related to neuroticism and social comparison orientation. *Journal of Personality and Social Psychology, 75*, 801-810.

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