Subjective Well-Being in Frail Older Persons: Why Social Comparison Orientation and Self-Management Are Important


Abstract

In the present study, we explored the relationship between the tendency to engage in social comparison, the so-called Social Comparison Orientation (SCO), and subjective well-being in a questionnaire study among 124 older persons with varying levels of frailty. Furthermore, we examined how this relationship was affected by Self-Management Ability (SMA), i.e., the ability to sustain a certain level of well-being during old age. SCO was positively associated with overall subjective well-being at T2, but not with life satisfaction at T1. For both measures of well-being, we found a positive relationship with SCO among older persons with higher levels of frailty and higher levels of SMA. These findings suggest that the tendency to engage in social comparison serves an adaptive function during old age, especially among frailer older persons who are able to successfully self-manage their situation.

Keywords: Social comparison, frailty, subjective well-being, self-management, aging
Subjective Well-Being in Frail Elderly People: Why Social Comparison Orientation and Self-Management Are Important

"In Lourdes, I carefully watched the people around me. People do not go there to observe a miracle or something alike. They go there to observe others who are worse off than they are..." (Yeop van het Hek, New Year's Eve show, December 31, 1995). This quotation by a Dutch performer illustrates how social comparison can serve as a means of cognitive adaptation to threats and losses (e.g., Gibbons & Gerrard, 1991). We argue that the tendency to engage in social comparison, so-called Social Comparison Orientation (SCO), serves an adaptive function among older persons suffering from a gerontological condition called frailty. Since many of the adverse outcomes of a frail condition are irreversible, frail older persons have to rely more strongly on cognitive processes to maintain a certain level of subjective well-being than do non-frail older persons. The adaptive function of SCO among frail older persons will be especially manifest when they are able to exert control over their situation, that is, when they are high in Self-Management Ability (SMA), because under these circumstances, the social comparisons frail older persons engage in will pose less threat and may provide hope and inspiration. In sum, the present study examined whether there is a positive relationship between SCO and well-being, especially among older persons with higher levels of frailty and SMA.

The adaptive function of a Social Comparison Orientation

In his theory of social comparison, Festinger (1954) identified the drive in humans to evaluate their opinions and abilities. In the absence of objective criteria, these evaluations are made by comparing one's opinions and abilities with those of similar others. Many of us engage in social comparison occasionally to determine our standing on a relevant domain. "How am I doing compared with my colleagues?" "Are my opinions similar to those of my peer group?" "Do other people feel the same way I do?" However, not all people are equally susceptible to social comparison information. Research by Buunk and Gibbons (Gibbons & Buunk, 1999; Buunk & Gibbons, 2006) has shown that people differ in the extent to which they experience a need for social comparison. Gibbons and Buunk conceptualized this dispositional need as the individual Social Comparison Orientation (SCO). Studies among populations experiencing some type of threat, like those high in burnout (Brenkmanmetier, Van Yperen, & Buunk, 2001; Buunk, Ybema, Gibbons, & Ipenburg, 2001) and patients with cancer (Brennenbroek, Buunk, Stieglitz, Hagedoorn, Sanderman, 2003), have shown that those with higher levels of SCO react more strongly when confronted with social comparison information.

Even though the SCO is defined as a dispositional personality trait, there will also be substantial situational variance in the need for social comparison based on information. In the original study by Gibbons and Buunk (1999), for example, individuals who scored high on state measures like perceived stress or experienced negative affect were found to report higher levels of SCO. According to these researchers, periods of stress, novelty or change may increase the amount of social comparisons that individuals engage in because these comparisons provide an evaluative standard.

Because old age is a period replete with challenge and transition, the need for social comparison information may increase as people grow older. Indeed, there is a curvilinear relationship between SCO and age: whereas SCO decreases in the period from childhood until middle age, it increases again when people reach a pensionable age (Buunk, 1999). Apparently, people are more motivated to engage in social comparison after retirement, perhaps because they have to rely more on cognitive processes to cope with the uncertainty and losses associated with old age. By engaging in social comparisons with age peers in similar situations, elderly people can make an adjusted assessment that allows them to reinterpret their present lives in a positive manner (e.g., Baiter, & Baiter, 1990). For example, an elderly woman whose husband suffers from cardiovascular disease may still regard herself as relatively privileged in comparison with her widowed neighbor. There is substantial evidence demonstrating this positive effect of self-enhancing social comparisons on the subjective well-being of older persons (e.g., Friedewijk, Buunk, Steverink & Slaets, 2004a/b; Kwan, Love, Ryff, & Essex, 2003).
Social comparison may become especially important as a means of adaptation when older persons suffer from a gerontological condition called "frailty". This condition denotes a lack of physiological and psychosocial reserves, which makes frail older persons more vulnerable to adverse outcomes, including dependence on others, chronic illness, and admission to an institution (e.g., Rockwood, Hogan, & MacKnight, 2002; Rockwood, Fox, Stolee, Robertson, & Beatie, 1994). Furthermore, a frail condition is associated with a lowered well-being (Strawbridge, Shema, Balfour, Higay, & Kaplan, 1998). The positive consequences of social comparison have been shown to buffer older persons against the negative effect of age-related health problems on psychological outcome measures (Heidrich & Ryff, 1993). Likewise, SCO may serve an adaptive function among frail older persons.

**Self-management ability as a determinant of the relation between SCO and well-being**

In the literature on social comparison, control is considered an important determinant of the affective consequences of social comparison (e.g., Majdn, Testa, & Blysma, 1991). When a person under stress is able to exert control over his or her situation, comparing him or herself to similar others can be inspiring and motivating (Taylor & Lobel, 1989), and may evoke positive feelings about his or her own situation (Wills, 1981). For example, a patient with angina pectoris who feels able to manage his or her condition may experience hope after seeing another patient coping well, because he feels he may improve just like this person. In fact, social comparison with a successful other can, in itself, produce greater perceived control over self-improvement, and thereby improve subjective well-being (Michinov, 2005). On the other hand, a patient who does not feel able to prevent a future heart attack may feel insecure after seeing another patient coping well, because he or she is doing much worse. Furthermore, this patient may experience distress after seeing a person who is doing poorly, because he or she does not feel able to prevent deterioration towards the position of this other person. Indeed, studies have shown that people with a high sense of control respond more positively to social comparison (Buunk, et al., 1999; Huguet, Dumas, Montell, Genestoux, 2001; Michinov, 2001; Testa & Major, 1990; Ybema & Buunk, 1995). This is why the adaptive function of SCO may be especially pronounced among frail older persons who are able to exert control over their situation. When frail older persons with a high SCO can exert control over their situation, downward comparisons will not pose a threat and upward comparisons may even be perceived as inspiring and motivating.

To investigate how control affects the adaptive function of SCO in old age, we included the level of Self-Management Ability of older persons in our study. Because frail older persons suffer from a mixture of problems in multiple life domains, a measure of control should contain the cognitive and behavioral abilities necessary to deal with different kinds of age-related problems. Even though SMA has never been considered in the literature on social comparison, we believe that this concept is more comprehensive of perceived control in old age than related concepts like mastery or self-efficacy.

The Self-Management Ability Scale (SMA-S; Schuurmans, Steverink, Schuurmans, et al., 2005) distinguishes six abilities necessary for successful aging: having a positive frame of mind, being self-efficient, taking initiative, investing resources, taking care of a variety of resources, and taking care of multifunctional resources (Steverink, Lindenberg, & Slaets, 2005). These self-management abilities are directed at the realization of both physical dimensions of well-being (i.e., comfort and stimulation) and its social dimensions (i.e., affection, behavioral confirmation, and status) (Lindenberg, 1996). According to the self-management of well-being theory by Steverink et al. (2005), SMA are the abilities people need for managing resources in such a way that sustainable positive well-being is reached. When people are able to obtain a large variety and multifunctionality of resources, the physical and psychosocial losses due to the aging process can be substituted or compensated for. This allows them to remain in control of their lives, even when they are suffering from a frail condition. Successful self-managers may experience more positive consequences of a high SCO, because their positive frame and self-efficacy allow for a positive interpretation of social comparison information.
In sum, in this study we aimed at exploring the adaptive function of SCO among older persons with varying levels of frailty and SMA. To this purpose, we investigated the relationship between SCO and well-being among older persons with varying levels of frailty. The robustness of this relationship was examined by measuring two different dimensions of well-being, that is, life satisfaction and overall subjective well-being, at two different points in time. Furthermore, we investigated whether the ability to sustain a certain level of well-being, so-called SMA, influenced the relationship between SCO and well-being.

Method

Sample and procedure

The present study was part of the larger research project “GRIP on Life”, with GRIP standing for the Groningen Intervention Program. For this project, a large sample of community-dwelling older persons aged 65 years and older was approached in September 2004 and asked to participate in different studies. The research sample used in the present study consisted of a subsample of 124 slightly to moderately frail older persons who agreed to participate in an intervention study later on. Prior to their participation in the intervention study, the data of this subsample were collected on two different occasions. In September 2004 (T1), the predictors SCO and SMA and one dimension of well-being were measured, and in January 2006 (T2), another dimension of well-being was measured.

Thirty-eight percent of the research sample was male (n = 47), and 62% female (n = 77). The gender of 2% of the respondents was unknown (n = 2). The average age of respondents was 73.6 (SD = 6.4), the oldest respondent being 91 years old. At the time of completion, 60% of the respondents had a partner with whom they shared a house, 2% had a partner with whom they did not share a house, and 38% did not have a partner. This information was unknown in respect of 2% of the respondents.

Instruments

Frailty. To determine the levels of frailty of the respondents, we used the Groningen Frailty Indicator (GFI; Steverink, Sluuts, Schuurmans, & Van Lis, 2001; Schuurmans, Steverink, Lindenberg, Frieswijk, & Sluuts, 2004). This is a simple 15-item questionnaire designed to screen older persons for their levels of frailty in physical, cognitive, and psychosocial domains. The answering categories are “yes”, “sometimes”, and “no”. An example of a physical item is “Are you able to do your shopping without any help?”. An example of a psychosocial item is “Do you sometimes miss having other people around you?”

Self-Management Ability. To measure SMA, we used the Self-Management Ability Scale (SMA-S; Schuurmans et al., 2005). This scale (α = .90) consists of 6 subscales, one for every aspect of SMA (Steverink et al., 2005), each subscale containing 5 items. Within the subscales of taking initiative, investing, self-efficacy, variety, and multifunctionality, the different abilities are related to the physical and social dimensions of well-being described in the Social Production Function theory (SPF theory; Lindenberg, 1996), namely, comfort, stimulation, affection, behavioral confirmation, and status. An example of an item for ‘taking initiative’ is: “How often do you make an effort to have friendly contacts with other people?” The ability ‘having a positive frame’ is a more general cognitive frame, and its subscale is not directly related to specific dimensions of well-being. An example of an item is “When you have a bad day, how often do you think that things will be better tomorrow?” Items of the subscales of ‘taking initiative’, ‘investing’, and ‘having a positive frame’ could be answered on a six-point scale ranging from 1 (never) to 6 (often). For self-efficacy, items could be answered on a five-point scale, ranging from 1 (I’m sure that I cannot) until 5 (I am sure that I can). For variety, items could be answered on a six-point scale, ranging from 1 (none) until 6 (more than six). For multifunctionality, items could be answered on a five-point scale ranging from 1 (strongly disagree) until 5 (strongly agree). All subscales were transformed to a range of 5 until 30, with higher scores representing higher levels of SMA. Because the subscales are internally consistent and unidimensional, they could be averaged to form a composite score of SMA. However, they can not be distinguished...
empirically, because of their theoretical connections and the partial overlap between items (Schuurmans, ten, et al., 2005).

Social Comparison Orientation. Individual differences in SCO were measured using the Iowa-Netherlands Comparison Orientation Measure (INCOM; Gibbons, & Buunk, 1999). In this 11-item scale (α = .82), respondents are asked how strongly they agree with statements on social comparison habits, for example, "I always like to know what others in a similar situation would do." Answers could be given on a five-point scale, with a higher score indicating a higher SCO.

Subjective Well-being. Well-being was measured in two different ways at two different points in time. At T1, we measured the cognitive dimension of well-being, i.e., life satisfaction, using a Dutch version of the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985; Dutch translation by Arrindell, Heesink, & Beij, 1999). This is a brief scale, consisting of 5 items (α = .80), which approaches life satisfaction as a cognitive-judgmental process. Answers could be given on a five-point scale, with a higher score indicating a greater satisfaction with life.

At T2, we measured overall subjective well-being with the 15 item version of the SPF-Index Level Scale (SPF-IL; Nieboer, Lindenberg, Boomslag, & Van Bruggen, 2005). This scale integrates affective and cognitive components of well-being (α = .83). It consists of five subscales, each representing one of the dimensions of well-being from the SPF theory (Lindenberg, 1996). An example of a question for affection is "Do people pay attention to you?" Answers could be given on a four-point scale, ranging from never (1) to always (5).

Table 1 contains the means and standard deviations for the INCOM, GFI, SMA-S, SWLS, and SPF-IL as well as the correlations between these scales.

<table>
<thead>
<tr>
<th>Variables</th>
<th>M (SD)</th>
<th>simple correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCO</td>
<td>2.95 (1.02)</td>
<td>Frailty .65, SMA .28, SWLS .27, SPF-IL .27</td>
</tr>
<tr>
<td>Frailty</td>
<td>2.66 (1.56)</td>
<td>.11</td>
</tr>
<tr>
<td>SMA</td>
<td>2.66 (1.56)</td>
<td>.25</td>
</tr>
<tr>
<td>SWLS</td>
<td>2.60 (2.72)</td>
<td>.19</td>
</tr>
<tr>
<td>SPF-IL</td>
<td>3.85 (1.02)</td>
<td>.47</td>
</tr>
<tr>
<td>Well-being</td>
<td>2.84 (2.61)</td>
<td>.19</td>
</tr>
</tbody>
</table>

Table 1. Means, standard deviations, and correlations between main variables.

1. For part of the respondents, overall subjective well-being was also measured at T1.

Results

The effects of SCO, frailty, and SMA, and the interactions between them were examined by executing two hierarchical regression analyses on both life satisfaction and overall subjective well-being. To facilitate the interpretation of results, the predictors were standardized: with standardized variables, the unstandardized regression coefficients (β-weights) reflect the relative contribution of the predictors, controlling for differences in variance (Aiken & West, 1991). In the first step, the main effects were entered into the regression equation; in the second step, the two-way interactions; and in the third step, the three-way interaction. Because we had a clear expectation of the relationship between the predictors, all effects were tested one-tailed. Cases containing missing values were deleted pairwise. To verify whether the predictors made a unique contribution to well-being at T2, life satisfaction at T1 was included in the regression model of overall subjective well-being.

Life satisfaction

As indicated in Table 2, 11 % of variance in life satisfaction was explained by the main effects, Δβ (3, 105) = 4.49, p < .01. There was a significant main effect of frailty on life satisfaction (β = .15, p < .01) with older persons experiencing higher levels of frailty reporting less life satisfaction. There was neither a significant main effect of SCO nor of SMA.
Entering the two-way interaction terms in the equation yielded an increase of 3% of explained variance in life satisfaction, which was not significant, \( \Delta F (3, 102) = 1.21, ns \). As shown in Table 2, none of the two-way interactions between SCO, frailty and SMA was significant.

Last, we entered the three-way interaction (SCO x frailty x SMA) into the equation. This yielded an additional 3% of explained variance in life satisfaction, \( \Delta F (1, 101) = 3.83, p < .05 \). To probe this significant three-way interaction, we determined the two-way interaction effect of SCO and SMA separately for high and low levels of frailty. Following Cohen and Cohen (1983), the value for high levels of frailty was set at one standard deviation above the mean and the value for low levels of frailty was set at one standard deviation below the mean. The two-way interaction of SCO and SMA on life satisfaction for high and low levels of frailty was then generated by substituting these new values of frailty (+1 SD or -1 SD) in separate regression equations (Aiken & West, 1991). The regression equation in which the level of frailty was set at +1 SD resulted in the B-weight of the two-way interaction between SCO and SMA with high levels of frailty, while the regression equation in which the level of frailty was set at -1 SD resulted in the B-weight of the two-way interaction of SMA and SCO with low levels of frailty.

For older persons with low levels of frailty, no interaction between SCO and SMA on life satisfaction was found (\( \beta = -.10, \text{ns} \)); see Figure 1a. For older persons with high levels of frailty, there was a significant interaction effect between SCO and SMA on life satisfaction (\( \beta = .20, p < .05 \)). To determine the simple regression lines of SCO on life satisfaction, we substituted new variables for high and low levels of SMA (+1 SD for high and -1 SD for low levels of SMA) in separate regression equations. As shown in Figure 1b, SCO was positively related to life satisfaction only among more frail older persons with high levels of SMA (\( \beta = .47, p < .01 \)). There was no relationship between SCO and life satisfaction among more frail older persons with low levels of SMA (\( \beta = -.04, p = \text{ns} \)).

**Overall subjective well-being (measured at T2)**

As indicated in Table 2, 25% of variance in overall subjective well-being was explained by the main effects, \( \Delta F (3, 100) = 9.35, p < .001 \). There was a significant main effect of SMA on overall subjective well-being (\( \beta = .16, p < .001 \)) with better self-managers reporting higher levels of well-being. Furthermore, there was a marginally significant main effect of SCO (\( \beta = .06, p = .05 \)), with older persons high on SCO reporting higher levels of overall subjective well-being. There was no significant main effect of frailty.

2 These results are almost similar to the ones found at T1. However, since overall subjective well-being at T1 was only measured among part of the research sample \( N = 50 \), the significance level of main effects was smaller at this time.
Entering the two-way interaction terms in the equation yielded an increase of 1% of explained variance in life satisfaction, which was not significant, $\text{df} (3, 97) = 2.44, \text{ns}$. As shown in Table 2, none of the two-way interactions between SCO, frailty, and SMC were significant.

Last, we entered the three-way interaction (SCO x frailty x SMC) into the equation. This yielded an additional 6% of explained variance in overall subjective well-being, $\text{df} (1, 96) = 8.65, p < .01$. To probe this three-way interaction, new values for high (+1 SD) and low levels of frailty (-1 SD) were entered in separate regression equations. For older persons with low levels of frailty, we found a significant two-way interaction effect between SCO and SMC on overall subjective well-being ($B = .11, p < .05$). To determine the simple regression lines of SCO on overall subjective well-being, we substituted new variables for high and low levels of SMC (+1 SD for high and -1 SD for low levels of SMC) in separate regression equations. As shown in Figure 2a, there was no relationship between SCO and overall subjective well-being among less frail older persons with high levels of SMC ($B = .02, p < .50$). However, there was a positive relationship between SCO and overall subjective well-being among less frail older persons with low levels of SMC ($B = .23, p < .01$).

For older persons with high levels of frailty, there was also a significant interaction effect between SCO and SMC on overall subjective well-being ($B = .14, p < .01$). As shown in Figure 2b, SCO was positively related to overall subjective well-being only among more frail older persons with high levels of SMC ($B = .25, p < .01$). There was no relationship between SCO and overall subjective well-being among more frail older persons with low levels of SMC ($B = .08, \text{ns}$).

Hence, the significant interaction between SCO x SMC x frailty resulted from the differential conditions under which a positive relationship between SCO and overall subjective well-being was found: for the less frail, a significant relation between SCO and well-being was found among older persons with low levels of SMC, whereas for the more frail, this relation was only found among those with high levels of SMC.

**Discussion**

In this study, we investigated the relationship between SCO, SMC and well-being among older persons with varying levels of frailty. The results showed a positive relationship between SCO and overall subjective well-being, but not between SCO and life satisfaction, so there was only moderate support for our assumption that SCO serves an adaptive function in old age. Furthermore, we did not find an interaction between SCO and SMC, meaning that SCO did not have a more beneficial effect on well-being with higher levels of SMC. However, when level of frailty was considered, better self-managers did benefit more from higher levels of
SCO than poorer self-managers, but only with high levels of frailty. Since the positive effect of SCO among frail older persons with high levels of SMA was found on both life satisfaction and general subjective well-being six months later, we consider it to be quite robust.

Among less frail older persons with higher levels of SMA, there was no relationship between SCO and well-being. Such older persons have suffered little or no age-related losses, and are quite capable of obtaining the resources necessary for the production of well-being. Consequently, social comparison may have been of little importance to these older persons. When less frail older persons were low on SMA, SCO proved to be more beneficial. Less frail older persons with lower levels of SMA only reached the same level of well-being as less frail older persons with higher levels of SMA when they had a strong tendency to engage in social comparison. Apparently, cognitive processes like SCO become increasingly important when people do not possess the abilities to sustain a certain level of well-being with increasing age.

As expected, among more frail older persons with higher levels of SMA, SCO was positively related to well-being. By engaging in self-enhancing comparisons, these frail older persons may have redefined their situation in a positive way. Among more frail older persons with lower levels of SMA, there was no relationship between SCO and well-being. Apparently, successful self-management is a necessary condition among more frail older persons in order to derive benefits from SCO. When frail older persons possess high levels of SMA, social comparison may be perceived as less threatening, and it could even provide hope and inspiration. On the other hand, when frail older persons are low on SMA, social comparison may be perceived more negatively. Indeed, in a recent study among older persons (Frieswijk, Buunk, Steverink, & Slaets, 2004b), a frail condition was found to interfere with the adaptive interpretation of social comparison information. When confronted with a person doing worse, frail older persons experienced fear of deteriorating just like this person, rather than feelings of superiority. According to the results of this study, these frail older persons may have been low on SMA.

Before we discuss the theoretical implications of the current study, we have to mention its limitations with regard to external validity, causality and interpretation. First, although our findings were relatively robust, it may not be possible to generalize them to the entire population of older persons. The sample we used in the current study consisted of older persons with slight to moderate levels of frailty who agreed to participate in a scientific study on two different occasions. Because older persons at both extremes of the frailty-dimension were excluded, i.e., those with a score of zero on the GFI and those with a score higher than five, the effects of frailty on the relationship between SCO and well-being in our sample may not have been as strong as for the average population of older persons. Furthermore, our sample may have differed from the average population of older persons with regard to SMA. People who return a questionnaire probably score high on features like taking initiative and self-efficacy, with the result that the level of SMA may have been higher in our research sample than in the group of non-respondents. Second, although we found that SCO is predictive of subjective well-being, even in the long term, the correlational nature of our study interferes with the drawing of conclusions regarding the direction of causality. The results of this study do not allow us to provide definitive answers to the question of whether one's SCO influences subjective well-being or whether subjective well-being influences one's SCO. It is possible that older persons who feel more satisfied with their lives are less threatened by social comparisons, and thus more open to comparing themselves. Future research, in which an experimental design is used, could rule out this alternative explanation. Third, although the tendency to make social comparison was assessed, we did not measure the direction of these comparisons, nor their affective consequences (Ybema & Buunk, 1995). Without these measures, the cognitive process behind the adaptive function of SCO can only be inferred indirectly. However, there is evidence suggesting that successful self-managers are better able to interpret social comparison information adaptively (Frieswijk, Buunk, Steverink, & Slaets, 2006), which corroborates our interpretation of the interaction between SCO and SMA.
All the same, the current study provides evidence for a robust relationship between SCO and the well-being among frail older persons with higher levels of SMA. Whereas some researchers have found that with increasing age, temporal comparison becomes more important than social comparison (Riedersdorff & Guimond, 2005; Suls & Mullen, 1982), our findings suggest that especially in old age, people may benefit from the tendency to compare oneself to others. Studies among younger age groups, for example, student populations (Gibbons & Buunk, 1999; Buunk, Oldersema, & De Dreu, 2001) and working adults (Buunk, Zuurvagen, Gonzalez-Roma, & Subirats, 2003; Buunk, Ybema, et al., 2001) have shown a consistently negative relationship between SCO and dimensions of well-being. Apparently, there is not only a quantitative increase in the tendency to engage in social comparison when people reach a pensionable age (Buunk, 1999), but there might also be a qualitative change in the function of this tendency. Although the current results do not allow for any definite conclusions about the theoretical status of SCO among older persons, be it a dispositional trait or an adaptive strategy, this issue seems worthy of further exploration.

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