A Social Cure in Times of Pandemic Distancing

Multiple Group Membership and Well-Being in Senior Citizens

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Abstract. Background: Being a member of multiple social groups (multiple group membership, MGM) has beneficial effects on several health outcomes as stated by the social identity theory. MGM can also buffer the negative influences of life-altering events on well-being. The COVID-19 pandemic can be characterized as such an event. Aims: The present study investigated whether MGM is associated with better well-being for older people during the pandemic and if it has a buffer effect on the relationship between pandemic-induced fear and well-being. Method: A cross-sectional survey was conducted with a representative sample (N = 2,062) of citizens of Dresden, Germany aged 60 or older during the COVID-19 pandemic. MGM was operationalized in two different ways: as a self-assessment of the number of different social groups participants considered themselves a member of and as the number of formal groups people participated in, such as sports groups, clubs, or religious groups. Results: It was found, as expected, for both indicators that people who were members of multiple social groups reported better well-being than people with just one group membership. Participants with no group memberships had the lowest psychological well-being. MGM did, however, not buffer the negative impact of the pandemic-induced fear on well-being. Limitations: Limitations are based on our measurement methods (cross-sectional design and self-reported data). Conclusion: MGM is an important resource for older people even during a pandemic. Potential limitations of the social cure imposed by social distancing rules are discussed and related suggestions for practice are presented.

Keywords: multiple group membership, social cure, older people, COVID-19, well-being, fear

A Brief History of the Research on Social Integration and Health

When the containment of the COVID-19 pandemic required strict social distancing measures many voiced their concerns about how these preventative measures might influence people’s loneliness and mental health. While these concerns rarely come without a political agenda, they are not without an empirical foundation. Already in the 1970s Berkman and Syme (1979) reported longitudinal evidence on the connection between a lack of social contacts and increased mortality. Further research showed consistent associations between low social support and varying health outcomes (House et al., 1988). Regarding the mechanism through which social support affects mental health, two main theories were developed (Cohen, 2004). The stress-buffering model claims social ties to be protective of the pathogenetic effects of stressful events, by changing the appraisal of the event, dampening the affective response, and benefitting from the actual support. The main effect model proposes that social support is beneficial for health regardless of the presence of stressful events, by having a positive social influence regarding health behaviors, providing more information, and inducing favorable affective states. While there is empirical evidence for both models, the main effect model is supported more consistently (Cohen, 2004). However, social environments can also have a detrimental effect on a person’s health, by spreading diseases, potential conflict, misguided help, or exploitation (Cohen, 2004).

The Social Identity Theory of Health and Its Relation to the Pandemic

Building upon these older finding the social identity approach to health was developed by Haslam and colleagues (2018). It emphasizes the importance of social groups and the social identity derived from belonging to said social groups for the individual’s health and well-being. Being a member of multiple social groups (multiple group membership, MGM) has been shown to positively influence a wide range of health issues, including depression and other chronic mental health conditions, recovery from addiction, eating disorders or acquired brain injuries, or dealing with...
chronic physical diseases (for a detailed overview see: Haslam et al., 2018). According to the theory MGM provides resources for dealing with the challenges of daily life mainly through four mechanisms. Firstly, MGM results in a sense of connectedness and a positive orientation to others. Secondly, members may find meaning, purpose, and worth when identifying with a certain group. Thirdly, there can be a gain in control, efficacy, and power. Lastly, but most important in this context is the social support offered by other group members (Haslam et al., 2018). In social identity theory, social support is considered an interindividual phenomenon that influences intraindividual attribution and appraisal processes – highly identified group members perceive ingroup support as more benevolent (Häusser et al., 2020). It is also important to belong to multiple social groups, in order to profit from more resources and to be more resilient when important group membership is lost.

In line with the aforementioned buffering model, MGM and identification with groups have been proven to buffer the negative effects life-altering events generally have on well-being. Unique to the social identity approach are the assumed underlying two pathways: allowing for continuity as well as gain in social identity (Iyer et al., 2009). For example, transitioning to retirement tends to have negative effects on the well-being of some retirees. A British longitudinal study found that retirees who maintained group ties during this transition were far less likely to die prematurely while controlling for factors such as physical health and age (Steffens et al., 2016). The study also found that life satisfaction 6 years post-retirement was reduced by 10% with every group membership that people lost and did not replace. The COVID-19 pandemic with its far-reaching consequences for daily life can be understood as a similar life-altering event. The social identity approach, therefore, is a suitable theoretical approach to investigate the impact of the pandemic on older adults’ well-being (Stuart et al., 2022).

### Influence of the Pandemic on the Well-Being of Older Adults

In order to investigate the role of MGM, we first summarize longitudinal studies about the consequences of the onset of the pandemic on mental health and well-being and how this changed as the months went by. A systematic meta-analysis of the general population including 65 studies concluded that mental health worsened during the early months of the pandemic but improved over time in the summer of 2020. Comparing different mental health measures the increase was strongest and persisted longest for depression as opposed to anxiety and general mental health (Robinson et al., 2022).

Focusing on older adults, a few studies compared different measures of well-being pre-pandemic with the first months of the pandemic in different countries. Most of them reported a substantial decline in at least one measure of well-being or mental health (most often loneliness and depressive symptoms) with the onset of the pandemic (Barellos et al., 2021; Ejiri et al., 2021; Krendl & Perry, 2021; Raina et al., 2021; Stolz et al., 2021; van der Velpen et al., 2022). But some studies reported an increase in life satisfaction (Wettstein et al., 2022) and social network size (Ungar et al., 2022), or no change in loneliness (Kivi et al., 2021) and mental health (van Tilburg et al., 2020). A longitudinal study by Hansen and colleagues (2021) found that well-being among adults over 65 years in Norway was stable between January and June 2020 but broadly and substantially declined in December 2020.

Other longitudinal studies investigating changes in older adults’ well-being during the first year of the pandemic found inconclusively that the elevated levels of mental health symptoms and loneliness either remained unchanged (Joseph et al., 2022; Lin et al., 2022; López et al., 2022a; Raina et al., 2021) or improved over the course of 2020 (Kotwal et al., 2021; Stolz et al., 2021; van der Velpen et al., 2022). A German longitudinal study found a continuous decline in well-being from May to December 2020 (Tsai et al., 2022).

In conclusion, most studies found an increase in mental health problems and a worsening of well-being for older adults during the first wave of the pandemic. Whether these improved or persisted over the course of 2020 is inconsistent and seems to depend on the specific measures used in the different studies, country differences, and other variables that might affect well-being but were not controlled in all studies.

### The Role of Pandemic-Induced Fear

One important factor related to the decline in well-being could be the extent to which people felt threatened by the pandemic. A multitude of empirical evidence suggests that increased threat or worries about the pandemic are associated with more psychological distress (Blix et al., 2021), lowering well-being (Bidzan-Bluma et al., 2020; Humphrey et al., 2022; Kivi et al., 2021), more isolation (Mistry et al., 2021), more loneliness (Hajek & König, 2022), worse general mental health (Kaycho-Rodríguez et al., 2022), increased anxiety (Kaycho-Rodríguez et al., 2022; López et al., 2022b), more depressive symptoms (Kaycho-Rodríguez et al., 2022; Hajek & König, 2022; Wettstein et al., 2022), as well as lower life-satisfaction and quality of life (Bidzan-Bluma et al., 2020; Hajek & König, 2022). In a Spanish longitudinal study with older adults, worries about the pandemic remained at a constant level throughout 2020 (López et al., 2022b). This might contribute to the persisting negative influence of the pandemic on well-being which has been found in several studies (Joseph et al., 2022;
For the negative relationship between pandemic-induced fear and well-being, several possible mediators have been proposed, namely social isolation/reduced social connectedness (Humphrey et al., 2022) and increased stress (Lathabavan & Vispute, 2021). Other correlates of pandemic-induced fear include female sex, being unemployed, having been diagnosed with COVID-19 oneself or having a close family member with COVID-19, constant exposure to information about the pandemic, and feeling overwhelmed (Caycho-Rodríguez et al., 2022; Mistry et al., 2021). In summary, a heightened perceived threat from the pandemic is an important factor for the reported well-being.

The Influence of Social Ties on Well-Being During the Pandemic

Social identity theory proposes MGM as a moderator/buffer in the relationship between fear and well-being. It implies, that people with a more diverse social identity can access more resources to minimize the pandemic-induced fear and are thus not as susceptible to a decline in well-being. To our knowledge, so far there are no published studies where this has been investigated in the context of the pandemic. However, there is some evidence for a buffering impact of better social ties for other mental health problems. A larger social network, more social contact, and better perceived social support seemed to be protective against loneliness and poor well-being in a study on older adults in Scotland (Tomaz et al., 2021). Satisfaction with communication (but not the frequency thereof)buffered the negative influence of the pandemic on loneliness and depression for older adults in Switzerland (Macdonald & Hüllr, 2021). The relationship between loneliness and depression was investigated by Krendl and Perry (2021) in a longitudinal study of older adults in the USA. Loneliness positively predicted depression. Perceived relationship strength moderated this relationship such that loneliness only predicted depression for people who felt closer to their networks during the pandemic than before. For those who felt not close to their networks, depression was higher irrespective of the reported loneliness (Krendl & Perry, 2021).

Finally, Li and colleagues (2021) identified five profiles of social support (low, predominantly family, predominantly friends, moderate and high) and found significant differences in mental health between these profiles. Social support was found to moderate the positive relationship between resilience and mental health, such that it served as a buffer against the negative impact of low resilience on mental health (Li et al., 2021). This study also highlights the importance to distinguish between different kinds of social support. Therefore, we focus on what is known about different sources of social support next.

Close Family Contacts

Living alone (compared to living with one’s spouse) was a risk factor for loneliness, more depressive symptoms, and a lower quality of life in older adults during the pandemic (Hajek & König, 2022). Not only the partner, but a parent/child relationship can be beneficial during troubling times. A diary study among 77 Chinese mothers and (adult) child pairs during the first wave found that receiving more emotional support on a given day was associated with providing more support on that day for mothers and children alike, suggesting daily reciprocity (Jiang & Fung, 2022). During the first wave about 50% of adults over 50 years in Spain, France, and Italy increased non-personal contact with their family, mostly through video calls and instant messaging (Arpino et al., 2021). This increased use of the Internet seems to have positive consequences for older adults. Data from the German Ageing survey showed that compared to daily users, older adults that used the Internet less frequently for contact with friends and family reported more loneliness, depressive symptoms, and lower life satisfaction (Hajek & König, 2022).

Neighborhood and Organized Social Groups

Social cure research found that high identification with one’s neighborhood has a direct positive influence on mental health and weakens the negative effects that a low socioeconomic neighborhood has on perceived neighborhood quality, which in turn influences mental health (Fong et al., 2019). A greater community closeness in the neighborhood during the pandemic was associated with better mental health (Kemme et al., 2021; Martin et al., 2021). Tomaz and colleagues (2021) also identified increased contact with neighbors and people in the community as a positive coping mechanism against loneliness for older adults. A lot of social activities in formal groups came to a halt during the pandemic. There are very few studies on the influence this had on older adults. However, the available evidence suggests overwhelmingly negative effects of suspended social activities in line with previously presented research about the pandemic’s influence on mental health in general (Casper et al., 2021). An exemplary study on female line dancers over 65 years suggests that these negative influences on mental health are reversible, three months after the activities in the social groups were resumed (Aliberti & Raiola, 2021).

Current Study

This study seeks to extend the current literature in three important steps. Firstly, we will investigate whether fear of the pandemic is negatively associated with the well-being of senior citizens. Secondly, we attempt to replicate the finding that MGM is associated with better well-being by
using two different operationalization of group membership. On the one hand, we ask for formal memberships in different social groups (e.g., sports clubs, or religious groups). This formal group membership variable is similar to approaches in traditional research about social contacts, for example, the Social Network Index (Berkman & Syme, 1979), where participants indicate whether they are members of certain formal groups. Similarly, a lot of newer studies following the social identity approach operationalize MGM by having the participants list all groups they are members of (e.g. Haslam et al., 2008). However, we suspected that activity in most of these formal groups was suspended during the time of our survey due to the lockdown. Hence, on the other hand, we asked participants about their subjective evaluation of being a member of multiple groups, one group, or no group after offering a short definition of social groups. This was done to account for restrictions caused by the lockdown and to more strongly emphasize the importance of identification with social groups, which is central to the social cure approach. We do not expect differences in the direction of the hypothesized effects for the two different operationalizations. Thirdly, we examine whether MGM can buffer the assumed negative impact of the pandemic-induced fear on well-being. Based on the theories and findings summarized above, our corresponding hypotheses are:

Hypothesis 1 (H1): Fear of the pandemic is negatively related to well-being.

Hypothesis 2 (H2): MGM is positively related to well-being compared to having one or no group membership for (a) subjective group membership and (b) formal group membership.

Hypothesis 3 (H3): MGM moderates the relationship between fear and well-being. Persons with more group memberships show a weaker relation between fear and well-being than people with one or no group membership for (a) subjective group membership and (b) formal group membership.

Methods

Procedure

The data used for this paper were taken from the LAB60+ study, which was carried out by TU Dresden in cooperation with the City Administration of City Administration of Dresden, Department of Employment, Social Affairs, Health, and Housing. A detailed report on the study is available for download in German (Landeshauptstadt Dresden & Technische Universität Dresden, 2022). The ethics commission of TU Dresden confirmed the study (file number: BO-EK-582122020). Participation was voluntary. A representative stratified sample by age, gender, and city district for the population over 60 years was chosen randomly by the registration office. The goal was to reach at least 1% of the target group. Hence, 6,004 community-dwelling residents were invited to take part in a 45-minute survey asking about their living conditions, health, and social participation. The letter included the invitation with a QR code for online participation, a paper version of the questionnaire, a return envelope, a consent form, a thank you note from the mayor of Dresden, Germany, and a pencil and writing pad as incentives. The participants could either choose to use the QR code, fill out the questionnaire and consent form online, or they could use the paper version and mail it back. Consent forms and pseudonymized questionnaires were separated immediately upon arrival to ensure data privacy. A randomly selected subsample of 304 people (5% of the total sample) could choose a telephone interview as a third option for participation. During these approximately one-hour-long interviews, the participants answered a few additional questions unrelated to this paper. The survey took place from February to May 2021 during a national lockdown.

Sample Description

Two thousand three hundred and ninety-nine people participated in the LAB60+ study (response rate 40%). For the present analyses, only participants with sufficient information to generate the group membership variables were included, resulting in a final sample of N = 2,062.

Eighty-two (4.0%) people participated online, 26 (1.2%) people were interviewed on the telephone, and in 1,954 (94.8%) people submitted a paper questionnaire. Participants were on average 74.61 years old (SD = 8.31), with a range from 60 to 98 years. 48.2% of people were male and 51.5% were female.

Measurements

Sociodemographic Questions

Participants were asked to indicate their gender as listed in their legal documents as well as their year of birth. Age was calculated by deducting the year of birth from 2021 (year of data collection).

Well-Being

Well-being was measured with the German version of the WHO-5 Well-Being Index (WHO-5, Topp et al., 2015). Participants answered five statements about their feelings in the last two weeks on a scale from 0 to 5. The results are added up and multiplied by 4, thus ranging from 0 to 100, with higher scores indicating better well-being. The
reliability and validity of the German version have been evaluated and representative norms for older people exist (Brähler et al., 2007). The internal consistency (Cronbach’s α) in the present study was .90.

**Fear of COVID-19**

Fear of the COVID-19 pandemic was assessed with four self-formulated items measuring different aspects of the pandemic-induced fear. Participants were asked to indicate on a 4-point Likert scale how well the following statements about the Corona pandemic applied to them: “I am worried about the current Corona pandemic,” “I am afraid of contracting the disease,” “I am afraid of infecting another person with the disease,” and “I am afraid of losing social contacts.” The total value is the average of the answers, with higher values indicating more fear. Cronbach’s α for the scale was .78.

**Dispositional Negative and Positive Affect**

Dispositional negative and positive affect were measured as control variables with three adjectives each (interested, proud, and elated for positive affect and irritated, anxious, and upset for negative affect). Participants indicated on a 5-point Likert scale for each adjective how they felt in general. Answers were then averaged for positive affect and negative affect respectively if there were at least two valid values out of the three items. Higher values indicate more positive or negative affect. The internal consistency was .56 for positive affect and .67 for negative affect.

**Multiple Group Membership**

MGM was operationalized in two different ways. The two group membership measures moderately coincided (weighted Cohen’s k = .47; Landis & Koch, 1977). Before answering the questions about MGM participants were given examples of different social groups. “People differ in the number of social groups they feel they belong to. These groups could take any form – for example, they could be work groups, professional groups, friend groups, or sporting clubs.” (Haslam et al., 2008, p. 677).

**Subjective Group Membership**

Participants indicated their agreement with two different statements: “At the moment, I am a member of lots of different groups” and “I am currently a member of only one group.” Depending on the answers they were sorted into one of three groups: participants with memberships in different groups if they agreed with the first statement and disagreed or declined to answer for the second (MGM, N = 420), participants with only one group membership if they agreed with the second statement and disagreed or declined to answer for the first (OneGM, N = 638) and participants with no group membership if they disagreed with both statements (NoGM, N = 1,004). If the answers were inconsistent, that is, agreeing with both statements, the answer was coded as missing.

**Formal Group Membership**

Secondly, for formal group membership participants indicated a list of eight kinds of organized groups whether they participated in them at least occasionally (sports club, other sporting groups, church or charity, hobby club, occupational organization, political group, self-help group, and others). If participants reported participation in two or more different groups, they were sorted into the MGM group (N = 624), if they participated in one group in the OneGM group (N = 686), and if they did not participate in any groups they were sorted into the NoGM group (N = 752).

**Statistical Analysis**

Statistical analyses were performed using IBM SPSS Statistics for Windows, version 28.0. Missing data were treated as missing completely at random if less than 5% of the values per variable were missing. This was the case for all study variables. We used multiple imputations with N = 5 imputations to fill in the missing values but compared the results of all analyses with those for unfulfilled data. Since there were no differences in significance only the results for the imputed data are being reported. To test Hypothesis 1a multiple linear regression was calculated with well-being as the outcome and fear and the control variables as predictors. The prerequisites for multiple linear regression, that is, linear relationship, multivariate normality, no multicollinearity, and homoscedasticity were all checked. The significance level was set at p < .05.

To compare the three different groups for the MGM variables we conducted multiple analyses of variance (ANOVA). Since this analysis cannot be conducted for multiply imputed data in SPSS we used the software R with the statistical packages “mice” and “mitm” for the ANOVAs (Grund et al., 2016). To account for a possible alpha error inflation due to multiple tests a Bonferroni correction was employed and the significance level was set at p < .01. If the ANOVA was significant, we used Hochberg’s post hoc test when variances were equal and the Games-Howell post hoc test if they were not, to assess which groups differed significantly from each other. The results for the post hoc tests were not pooled but examined individually for all five datasets and are only reported as significant if p was smaller than .01 in all datasets.

For the moderator analysis, the two group membership variables were first dummy coded with NoGM as a reference. Fear of pandemic was mean-centered and then we calculated interaction terms with the dummy variables. Then two multiple linear regression analyses with the outcome well-being, the predictors, interaction terms, and
control variables were calculated. The significance level was set at \( p < .05 \).

**Results**

**Descriptive Results**

Variable means and correlations are displayed in Table 1. The overall mean for well-being in the study was 58.17. All variables show significant correlations with the outcome variable of well-being. More fear of the pandemic, higher age, female gender, less positive affect, and more negative affect are negatively correlated to well-being. None of the predictor variables have a higher than medium intercorrelation (Bosco et al., 2015).

**The Relation Between Fear of the Pandemic and Well-Being**

There is a medium-sized negative correlation between fear of the pandemic and well-being, \( r = -0.20, p < .001 \) (Bosco et al., 2015). This means, people reporting more fear also indicated lower well-being. In a multiple linear regression with well-being as the outcome, fear was a significant predictor of lower well-being, \( B = -2.59, p < .001, R^2 = .35 \). The control variables age, gender, positive and negative affect all significantly predicted well-being as well (see Table 2).

**Table 1. Means and correlations of study variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean 1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Well-being</td>
<td>58.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. COVID-19 fear</td>
<td>2.70</td>
<td>-.20**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Age</td>
<td>74.61</td>
<td>-.13**</td>
<td>.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Gender(^1)</td>
<td>1.52</td>
<td>-.14**</td>
<td>.08**</td>
<td>-.00</td>
<td></td>
</tr>
<tr>
<td>5. Positive affect</td>
<td>3.11</td>
<td>.38**</td>
<td>-.04*</td>
<td>-.22**</td>
<td>-.08**</td>
</tr>
<tr>
<td>6. Negative affect</td>
<td>1.90</td>
<td>-.46**</td>
<td>.24**</td>
<td>-.10**</td>
<td>.06**</td>
</tr>
</tbody>
</table>

Note. \( N = 2,062. \) \(^1\)Gender was coded 0 = male, 1 = female. Well-being was measured on a scale from 0 to 100. COVID-19 fear was measured on a scale from 1 to 4. Negative and positive affect were measured on a scale from 1 to 5. **\( p < .01; * p < .05 \).

**Table 2. Multiple linear regression for the outcome well-being**

<table>
<thead>
<tr>
<th>Variable</th>
<th>( B )</th>
<th>SE</th>
<th>( t )</th>
<th>( p )</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>85.43</td>
<td>5.35</td>
<td>15.96</td>
<td>&lt; .001</td>
<td>[74.94, 95.92]</td>
</tr>
<tr>
<td>COVID-19 fear</td>
<td>-2.59</td>
<td>0.62</td>
<td>-4.19</td>
<td>&lt; .001</td>
<td>[-3.80, -1.38]</td>
</tr>
<tr>
<td>Age</td>
<td>-0.28</td>
<td>0.05</td>
<td>-5.28</td>
<td>&lt; .001</td>
<td>[-0.38, -0.18]</td>
</tr>
<tr>
<td>Gender</td>
<td>-3.68</td>
<td>0.88</td>
<td>-4.20</td>
<td>&lt; .001</td>
<td>[-5.40, -1.96]</td>
</tr>
<tr>
<td>Positive affect</td>
<td>10.44</td>
<td>0.62</td>
<td>16.75</td>
<td>&lt; .001</td>
<td>[9.22, 11.66]</td>
</tr>
<tr>
<td>Negative affect</td>
<td>-13.80</td>
<td>0.63</td>
<td>-21.86</td>
<td>&lt; .001</td>
<td>[-15.04, -12.56]</td>
</tr>
</tbody>
</table>

Note. \( R^2 = .35; N = 2,062. \)

**Table 3. Cross table for the two group membership variables**

<table>
<thead>
<tr>
<th>Subjective group membership</th>
<th>NoGM</th>
<th>OneGM</th>
<th>MGM</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NoGM</td>
<td>627</td>
<td>248</td>
<td>129</td>
<td>1,004</td>
</tr>
<tr>
<td>OneGM</td>
<td>104</td>
<td>338</td>
<td>196</td>
<td>638</td>
</tr>
<tr>
<td>MGM</td>
<td>21</td>
<td>100</td>
<td>299</td>
<td>420</td>
</tr>
<tr>
<td>Total</td>
<td>752</td>
<td>686</td>
<td>624</td>
<td>2,062</td>
</tr>
</tbody>
</table>

Note. NoGM = no reported group memberships, OneGM = one reported group membership, MGM = multiple reported group memberships. Weighted Cohen’s kappa = .47.

**The Relation Between MGM and Well-Being**

Two different operationalizations for MGM categorizing participants into three groups (NoGM, OneGM, and MGM) were compared. A cross-table for the two different operationalizations can be found in Table 3. The results for the ANOVAs comparing the three groups for each operationalization can be found in Table 4.

For the subjective group membership measure the three groups differed significantly in their reported well-being, \( F(1, 2,556) = 60.46, p < .001 \). Games-Howell post hoc test revealed that all three groups differed significantly from each other. This means participants with multiple subjective group memberships (MGM, \( M = 64.86 \)) reported higher well-being than participants with one subjective group membership (OneGM, \( M = 59.38 \)) which in turn reported higher well-being than participants with no subjective group membership.
Fear was not significant on the MGM ($M_{GM} = 53.22$, $M_{OneGM} = 59.47$, $M_{NoGM} = 62.72$). There were very similar results of well-being between the three groups, $F(1, 11,321) = 59.89$, $p < .001$. However, there was a significant difference in the pandemic-induced fear between the three groups, $F(1, 11,778) = 0.79$, $p = .373$. There were also no significant differences for positive affect, $F(1, 682) = 48.38$, $p < .001$, and negative affect, $F(1, 95,915) = 7.73$, $p = .005$. Overall, having more group memberships is associated with better well-being, but makes no difference in the reported pandemic-induced fear.

## MGM as a Moderator Between Fear and Well-Being

Two moderator analyses for the different operationalizations of group membership were carried out to test whether MGM is a moderator for the relationship between fear and well-being when controlling for age, gender, and affect. The results can be found in Table 5. Fear of the pandemic, age, gender, positive and negative effect were again significant predictors, similar to the first regression analysis. Being in...
the OneGM group versus the NoGM group is a predictor for better well-being for both subjective group membership, $B = 2.61, p = .008, R^2 = .35$, as well as formal group membership, $B = 2.52, p = .013, R^2 = .36$. The difference in well-being is even greater when comparing the MGM group to the NoGM group for subjective group membership, $B = 3.57, p = .002$, as well as formal group membership, $B = 4.35, p = .001$.

The interaction terms of the group membership variables and fear were, however, not significant for both group membership operationalizations. This means there is no moderating effect of group membership between fear and well-being.

**Discussion**

In our study, we were able to show that fear of the pandemic was negatively associated with well-being in older citizens (H1). We also found a main effect of MGM on well-being (H2), but MGM did not moderate the relationship between pandemic-induced fear and well-being (H3). Indicators of subjective versus formal multiple-group membership produced the same results. In the following paragraphs, we discuss these results and compare them to the literature.

The present study found that more fear of the pandemic was associated with lower well-being in older adults, supporting Hypothesis 1. This is consistent with other empirical studies (Bidzan-Bluma et al., 2020; Humphrey et al., 2022; Kivi et al., 2021; Lathabhanvan & Vispute, 2021; Shah et al., 2022). The average well-being (MV = 59.4) in this study was 11% lower than in a German norm sample for the WHO-5 from 2004 including 734 persons over the age of 60 (MV = 66.8, Brähler et al., 2007). While having the disadvantage of a cross-sectional design, and thus being unable to make causal inferences, this lower mean was probably due to the COVID-19 pandemic and the lockdown. The WHO-5 scores in the current study were similar to those of another study in Germany conducted in December 2021 where adults over the age of 65 had a mean WHO-5 score of 53.9 (Tsai et al., 2022).

Moreover, we found that MGM – operationalized in two different ways – was associated with more well-being compared to having no or only one group membership. This was in support of Hypothesis 2. We differentiated between subjective and formal group membership because participants could technically be members of formally organized groups (e.g., sports or hobby clubs), but very likely there were no or reduced group activities at the time of the survey due to the lockdown. These circumstances could be more accurately reflected in the subjective group membership.

**Table 5.** Moderator analysis with the outcome well-being for both group membership measures

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>SE</th>
<th>$t$</th>
<th>$p$</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subjective group membership</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>75.08</td>
<td>5.36</td>
<td>14.00</td>
<td>&lt;.001</td>
<td>[64.57, 85.60]</td>
</tr>
<tr>
<td>COVID-19 fear</td>
<td>−2.40</td>
<td>0.85</td>
<td>−2.82</td>
<td>.005</td>
<td>[−4.08, −0.73]</td>
</tr>
<tr>
<td>Dummy 1</td>
<td>2.61</td>
<td>0.98</td>
<td>2.67</td>
<td>.008</td>
<td>[0.70, 4.53]</td>
</tr>
<tr>
<td>Dummy 2</td>
<td>3.57</td>
<td>1.16</td>
<td>3.08</td>
<td>.002</td>
<td>[1.30, 5.84]</td>
</tr>
<tr>
<td>Fear x Dummy 1</td>
<td>−0.70</td>
<td>1.40</td>
<td>−0.50</td>
<td>.620</td>
<td>[−3.46, 2.06]</td>
</tr>
<tr>
<td>Fear x Dummy 2</td>
<td>0.01</td>
<td>1.63</td>
<td>0.01</td>
<td>.996</td>
<td>[−3.19, 3.21]</td>
</tr>
<tr>
<td>Age</td>
<td>−0.25</td>
<td>0.05</td>
<td>−4.65</td>
<td>&lt;.001</td>
<td>[−0.36, −0.15]</td>
</tr>
<tr>
<td>Gender</td>
<td>−3.61</td>
<td>0.88</td>
<td>−4.12</td>
<td>&lt;.001</td>
<td>[−5.33, −1.89]</td>
</tr>
<tr>
<td>Positive affect</td>
<td>10.22</td>
<td>0.63</td>
<td>16.26</td>
<td>&lt;.001</td>
<td>[8.98, 11.45]</td>
</tr>
<tr>
<td>Negative affect</td>
<td>−13.64</td>
<td>0.63</td>
<td>−21.55</td>
<td>&lt;.001</td>
<td>[−14.88, −12.39]</td>
</tr>
<tr>
<td><strong>Formal group membership</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>74.91</td>
<td>5.34</td>
<td>14.02</td>
<td>&lt;.001</td>
<td>[64.43, 85.38]</td>
</tr>
<tr>
<td>COVID-19 fear</td>
<td>−3.38</td>
<td>0.94</td>
<td>−3.60</td>
<td>&lt;.001</td>
<td>[−5.23, −1.54]</td>
</tr>
<tr>
<td>Dummy 1</td>
<td>2.52</td>
<td>1.02</td>
<td>2.48</td>
<td>.013</td>
<td>[0.53, 4.51]</td>
</tr>
<tr>
<td>Dummy 2</td>
<td>4.35</td>
<td>1.07</td>
<td>4.05</td>
<td>&lt;.001</td>
<td>[2.24, 6.46]</td>
</tr>
<tr>
<td>Fear x Dummy 1</td>
<td>2.06</td>
<td>1.40</td>
<td>1.48</td>
<td>.140</td>
<td>[−0.68, 4.80]</td>
</tr>
<tr>
<td>Fear x Dummy 2</td>
<td>0.56</td>
<td>1.46</td>
<td>0.38</td>
<td>.703</td>
<td>[−2.30, 3.41]</td>
</tr>
<tr>
<td>Age</td>
<td>−0.25</td>
<td>0.05</td>
<td>−4.77</td>
<td>&lt;.001</td>
<td>[−0.36, −0.15]</td>
</tr>
<tr>
<td>Gender</td>
<td>−3.54</td>
<td>0.87</td>
<td>−4.06</td>
<td>&lt;.001</td>
<td>[−5.25, −1.83]</td>
</tr>
<tr>
<td>Positive affect</td>
<td>10.11</td>
<td>0.63</td>
<td>16.11</td>
<td>&lt;.001</td>
<td>[8.88, 11.34]</td>
</tr>
<tr>
<td>Negative affect</td>
<td>−13.65</td>
<td>0.63</td>
<td>−21.53</td>
<td>&lt;.001</td>
<td>[−14.89, −12.40]</td>
</tr>
</tbody>
</table>

Note. $R^2_{\text{subjective}} = .35; R^2_{\text{formal}} = .36; N = 2,062$. Dummy 1 = OneGM compared to NoGM; Dummy 2 = MGM compared to NoGM. Variables forming products were mean-centered.
membership variable. An indicator for this was that while for both operationalizations most people had no group memberships, the percentage of the NoGM group was biggest in the subjective condition. The subjective MGM variable also partly reflected the identification with multiple groups, which is central to social identity theory (Haslam et al., 2018). The main effects of MGM on well-being have been very well established in the social cure literature (Haslam et al., 2018), older literature on the main effect model of social support on health (Cohen, 2004), and also in the context of the pandemic (Tomaz et al., 2021).

Contrary to our expectations, we did not find a buffer effect of MGM for the relationship between fear and well-being. The groups did not differ in their fear of the pandemic for either operationalization. Thus, Hypothesis 3 was not supported. In the past, there was also mixed evidence for the moderating effect of social support and well-being during stressful life events (Cohen, 2004). Thus, we would like to discuss different possible explanations for why we did not find a moderator effect. One underlying statistical reason could be that the three groups did not differ in their fear of the pandemic. Hence, it is possible that the protective effect of MGM did not lie in reducing fear of the pandemic but in the stress, people experience through this fear. This means, people in the MGM group might still have considered the pandemic a threatening life event, but being in multiple groups offered them different ways of coping and reduced their overall stress reaction. Since we only measured pandemic-related fear but not pandemic-induced stress we cannot discern if this was actually the case. From a theoretical standpoint social identity theory proposes a beneficial effect of MGM during life-altering events, if there is room for the development of new identities and no conflict with old identities (Iyer et al., 2009). In that sense, a pandemic could be considered a special form of a life-altering event for three reasons. Firstly, having many social contacts did put people at a higher risk for infection, possibly contributing to higher levels of pandemic-induced fear (Cohen, 2004). Secondly, due to the lockdown, many “old” social identities, such as working/volunteering outside the home or being a member of a club were severely disrupted. At the same time, the strict shelter-in-place orders hindered the development of new identities. Thirdly, one of the assumed underlying mechanisms of MGM on health is receiving social support from other group members, a function that would have been severely complicated by the lockdown. These points might explain why we did not find the anticipated buffer effect.

As one reviewer kindly remarked, this does not mean that identity gain and social support were completely impossible at the time of the survey. We already reported empirical findings that increasing neighborhood contact was protective for the mental health of older adults (Tomaz et al., 2021) and low contact solutions via the Internet had beneficial effects as well (Arpino et al., 2021; Hajek & König, 2022). In many places, there was also an increase in social cohesion and willingness to help. In the LAB60+ study from which the current data were taken, an overwhelming majority of all participants – regardless of age and gender – helped others during the pandemic or could imagine helping others (71.5%). Regarding the kinds of help, participants were most often willing to help with shopping or running errands (87.8%), letting someone use their car (48.8%), and psychological/emotional support (36.8%). With regard to the need for support, only a small proportion of participants have used or needed help (14.4%) (Landeshauptstadt Dresden & Technische Universität Dresden, 2022). Not only did just a small percentage of older adults accept help during the pandemic, but most people also reported having no group membership regardless of the operationalization. This is why we came to the conclusion that at least some of the aforementioned restrictions to MGM and social support applied, possibly resulting in us not finding the hypothesized buffer effect.

**Future Research and Practical Implications**

The results of the current study suggest that a pandemic might not be a life-altering event in the classical sense investigated by the social cure research, such as for example retiring. Future research should focus on the effects the pandemic had on social group memberships of older people, that is, the loss and possible gain of social identity. Contrary to our expectations we did not find a buffering effect of MGM, so in the future, the characteristics of social groups that influence this buffering effect should be investigated in more detail (e.g., frequency of activities, duration of membership, personal relevance of the group). Another future research suggestion would be to find other moderators besides MGM that have a protective influence in times of pandemic to help people live through future crises.

An important practical implication from our results is that older people should acquire and maintain diverse social group memberships because MGM has positive implications for well-being. Most people in our study reported having no group memberships, possibly due to the lockdown situation. Efforts should be made by individual social groups and local politicians to ensure older people re-join social groups once the pandemic is over, as well as finding different low physical contact solutions to interact with their members during lockdowns. Possible ways by which older people can be reached are advertisements in local newspapers, TV and radio stations, and through the existing community centers.
Limitations, Strengths, and Conclusion

Because of the cross-sectional study design, no conclusions could be drawn regarding the causality of the findings. The contribution of the pandemic to the changes in well-being could thus not be investigated. All measures used in the present study were subjective and might thus have contributed to single-source bias. To counteract this problem to the best of our ability we utilized two different operationalizations for the study’s main construct MGM. The similar results speak for the robustness of the findings. One important strength of the current study is the representative sample and that we controlled for dispositional effects. The stratified sample was drawn representative for gender, age, and city district in order to reach 1% of the population over 60 in Dresden and our findings could not simply be explained by dispositional differences in effect.

Nevertheless, to conclude, this study yielded important findings. There was a negative correlation between fear of the pandemic and well-being in older citizens. While MGM was associated with better well-being, it did not buffer the negative effects of fear. This alludes to the fact that pandemics might be a special category of life-changing events in the sense of the social identity theory because of the effects of social distancing rules.

References


Publication Ethics

Informed consent was obtained from all participants included in the study. All procedures in studies involving human participants were performed in accordance with the ethical standards of the institution’s Human Research Ethics Committee (file number: BO-EK-582122020).

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Lena Marie Uhlmann, conceptualization, data curation, formal analysis, validation, project administration, writing – original draft, writing – review and editing; Jürgen Wegge, conceptualization, funding acquisition, supervision, writing – review and editing. All authors approved the final version of the article.

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