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**Does sibling similarity predict
relationship quality in Finland?
A two-generational investigation**

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Does sibling similarity predict relationship quality in Finland? A two-generational investigation

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Abstract

Similarity is often assumed to associate with better relationship quality between siblings, but evidence of this has been scarce and mixed. Using the Generational Transmissions in Finland surveys collected in 2012, we employed within-sibling regressions and examined whether sibling similarity is associated with relationship quality in older (born 1945–1950) and younger (born 1962–1993) generations. Sibling similarity was measured by gender, age, financial condition and parenthood status similarity and relationship quality by contact frequency, emotional closeness, practical help and conflict. The effect of resemblance tends to vary between different sibling similarity indicators, relationship quality measures and generations. In both generations, same-gender dyads had more contact, practical help and were emotionally closer than mixed-gender dyads. Similarity was more often associated with increased relationship quality in the younger than the older generation. The results are discussed with reference to life course and support exchange perspectives.

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Introduction

Sibling ties are the social relationships of longest duration across the human life course (Cicirelli, 1995). Although research on sibling relationships is now rapidly increasing, sibling relationship quality in adulthood is still an understudied topic in sociology (Walker et al., 2005). For example, there are many more studies investigating relationship quality between adult children and their elderly parents than sibling ties among adults (e.g., Ikkink, Van Tilburg & Knipscheer, 1999; Tomassini, Kalogirou, Grundy, Fokkema, Martikainen, Van Groenou & Karisto, 2004). In the present study, we investigate the association between sibling similarity and relationship quality.

Here, sibling relationship quality is measured by four factors, namely contact frequency, emotional closeness, conflict, practical help and financial support. These different indicators are considered because previous studies have shown that sibling relationships include not only helping and emotional closeness but also conflict and disagreements (Bedford, 1989; Connidis, 2007). While increases in contact and emotional closeness tend to measure better relationship quality among siblings, an increase in conflict may indicate the opposite (Salmon & Hehman, 2014). Although sibling conflict tends to be more common in childhood and adolescence, it also exists in adulthood (e.g., Dunn, 2004; Tanskanen et al., 2016). With that said, however, in adulthood siblings often provide support and safety nets for each other (Pollet & Hoben, 2011).

Perhaps the most comprehensive previous study concerning sibling similarity and relationship quality is the work by Voorpostel, van der Lippe, Dykstra and Flap (2007), who investigated how sibling similarity influences informal support between adult Dutch and found mixed results. Although they found that sister–sister dyads had closer relationships compared to mixed-gender sibling dyads, and those pairs where both siblings were childless were closer than pairs with one sibling with and the other without children, they were unable to provide convincing support for the importance of sibling similarity. Verbakel and De Graaf (2004) found that similarity was not associated with contact frequency among Dutch siblings. Finally, using small-scale data from the US, Eriksen and Gerstel (2002) found that same gender siblings provided more financial support and same parental status siblings more practical help to one another compared to sibling pairs with different gender and parenthood statuses. However, in

most of their models, similarity was not associated with either increased or decreased help among siblings.

Previous studies investigating the association between sibling similarity and relationship quality have been both scarce and methodologically limited. To our knowledge, since to date, no studies have investigated an association between sibling similarity and relationship quality with within-sibling (or sibling fixed-effect) models, meaning that the previous results may be related rather between-sibling than within-sibling effects. To examine associations that are free from variance shared by siblings one should use within-sibling models that exclude between-sibling effects. Here, we employ within-sibling regression models and investigate association between sibling similarity and relationship quality with nationally representative data of two generations of adult Finns.

Sibling similarities and differences

In sociological research, the relationships between family members are often considered from the life course perspective. According to the life course perspective, there is interdependency between family members, meaning that the lives of individuals belonging to the same family units are linked together (Cox & Paley, 1997; Elder, 1994). Additionally, relationship quality between any two siblings can be predicted to relate to one another, although all sibling dyads tend not to be equally close with each other. Indeed, studies have shown that several demographic and socioeconomic characteristics influence the relationship quality between adult siblings, making some dyads closer than others (e.g., Tanskanen & Danielsbacka, 2014; White, 2001). According to the life course perspective, more similar sibling dyads are predicted to be closer to each other compared to less similar dyads because similar sibling pairs could have more shared interests and may feel more connected with each other, while the more variation between siblings, the less connected they might be (Voorpostel et al., 2007). Thus, sibling similarity is assumed to be associated with better relationship quality between siblings.

Opposite predictions can be derived from the exchange perspective, which has its roots in economics but is also used to explain relationship quality and support among family

members (Becker, 1991). To date, the exchange perspective is rarely used to explain sibling relationship quality but rather other family relations. For example, the exchange perspective is used to explain the gender division of labor in families: females who are homemakers exchange their own working career for home and childcare tasks and in return benefit from their husband's income (Cherlin, 2001). The general prediction based on the exchange perspective is that individuals with different features and resources can engage in exchange and thus maximize profit (Klein & White, 1996). Sibling dyads that include differences create an opportunity to exchange support and resources, meaning that the exchange perspective can make testable predictions concerning relationship quality among sisters and brothers. Based on the exchange perspective, mixed sibling dyads should have better relationship quality compared to dyads with similar siblings. Here we use four measures indicating sibling similarities and differences, namely gender, age, financial condition and parenthood status.

Gender

According to the similarity perspective, the gender composition between siblings plays a role in the case of relationship quality, meaning that same-gender dyads should be closer compared to mixed-gender dyads. Thus, sister-sister and brother-brother pairs should have better quality relationships compared to pairs including both sisters and brothers. Several studies have shown that sister-sister pairs tend to be closer and provide more support to each other than other sibling constellations (Pollet & Hoben, 2011). However, some have also found that females provide more support to their siblings than males, regardless of the sibling's gender (ibid.). This is in contrast with the similarity prediction and could be explained by the kin keeping role of women. The kin keeper theory states that for biological, psychological and socio-cultural reasons, women typically interact with relatives more than men do (Bracke et al., 2008; Trivers, 1972).

Another prediction concerning support between different gender dyads can be derived from the support exchange perspective. Females and males tend to provide different types of support to their relatives, for example, a previous study showed that females probably provide more support with domestic issues and males with household maintenance (Liebler & Sandefur, 2002). This type of gender division of labor in informal support may mean that females need more support from their brothers and

males from their sisters because the skills sisters and brothers have complement each other. If support exchange between sisters and brothers exists, one may assume that the relationship quality between mixed-gender pairs should be better compared to that of same-gender pairs.

Age difference

The age difference between siblings could be an important factor shaping relationship quality between siblings (Pollet, 2007). According to the similarity perspective, the smaller the age difference, the closer the relationship between siblings should be. In the case of a small age difference, it is more likely that siblings have shared childhood experiences, which could result in more emotional closeness and support between siblings in adulthood (Pollet & Hoben, 2011). Moreover, a small age difference increases the probability that siblings are in the same position in their life course careers, meaning that they could also have more shared interests with each other. In line with the similarity perspective, some previous studies have shown that when the age difference between siblings increases, the contact frequency and emotional closeness tend to decrease (e.g., Pollet, 2007; Tanskanen & Danielsbacka, 2014).

In contrast, according to the exchange perspective, one may predict that siblings with a greater age difference channel more support to each other because they have different resources and thus can benefit from resource exchange, while siblings with the same age have more similar needs and resources and thus are less able to engage in support exchange. For example, older siblings can have more knowledge and experience than younger siblings, who can in turn benefit from advice received from big sisters and brothers. Moreover, age differences tend to be related to different need and opportunity structures (Szydlik, 2008). Among older adults, in particular, when the age difference between siblings is large, older siblings with poor health may receive practical and other support from younger siblings who probably have better physical health (Gold, 1989). Finally, previous studies have shown that when the age difference increases, sibling rivalry in childhood tends to decrease. If this rivalry remains in adulthood, it could influence sibling relationship quality in later life (Danielsbacka & Tanskanen, 2014), meaning that increased age difference can prevent sibling conflict. Thus, based on this perspective, a higher age difference between siblings could be assumed to relate with

better relationship quality.

Financial condition

Similar financial conditions among siblings may influence their relationship quality because incomes could be closely related to lifestyles and consumption opportunities. Those individuals with high incomes can participate in expensive leisure activities and hobbies that are not available to low-income individuals. Moreover, incomes are often related to educational level in the way that higher incomes correlate with higher education and social status. This means that financial conditions may also predict social and cultural capital, and those with better positions tend to have more capital, perhaps leading to closer relations between those with more similar positions.

Another possibility is that individuals with more resources tend to invest these resources in their lower resource siblings, meaning that individuals with lower positions can benefit from the support received from their siblings with higher standing. Previous studies have shown that individuals with higher socioeconomic standing tend to have more contact with their siblings compared to their lower standing counterparts (e.g., Pollet, 2007). It could also be that sibling relations are reciprocal in that those with better financial conditions channel monetary resources to their siblings and receive practical help or emotional support back. Thus, based on the exchange perspective, siblings who have different economic positions should have closer relations compared to siblings with similar positions.

Parenthood status

Family addition is one of the most important events during the life course, and previous studies have shown that the presence of common offspring may strongly shape the relations among family members (Hughes, 1988; Salmon & Shackelford, 2011). Similarity in parenthood status can affect emotional and practical support among siblings because being in similar life course phases may facilitate the support given and received (Connidis, 2001). According to parenthood status, individuals who are parents themselves may have more shared interests with their siblings with children compared to siblings without children. For example, siblings with children can provide important

advice, knowledge and support to each other that can ease them through everyday life. Similarly, childlessness could be associated with better relationship quality in sibling pairs without children. Thus, similar sibling dyads (either both are childless or both have children) may have better relationship quality than sibling pairs with one parent and one childless person.

However, there are reasons to expect that sibling dyads including one parent and one childless person are closer to each other compared to parent–parent or childless–childless dyads. First, the time of any individual is always limited, meaning that individuals with children may not have similar opportunities to interact with their relatives compared to childless individuals. Second, the existence of a niece or nephew creates shared reproductive interests between siblings, which can encourage individuals to invest time and resources in their siblings with children (Pollet & Hoben, 2011). Although the existence of a niece or nephew is similarly associated with the shared reproductive interests among siblings with and without children, those who are parents themselves may not have time or other resources to invest in their siblings with children. Indeed, two previous studies have shown that childless women tend to invest more time in their nieces and nephews compared to women with children (Pollet et al., 2006; Tanskanen, 2015). Third, by investing in their siblings with children, childless individuals may try to avoid potential social isolation related to the fact that they do not have their own children (Wenger et al., 2000). Finally, parents and childless individuals may have different resources, which can encourage them to exchange support. Thus, one may predict that sibling pairs with one parent and one childless sibling are closer to each other than siblings with similar parenthood status.

Objective

This study explores whether similarity is associated with sibling relationship quality measured by contact frequency, emotional closeness, conflict, practical help and financial support. We investigate four questions: Do same-gender sibling pairs have better relationship quality compared to mixed-gender sibling pairs? Is low or high age difference between siblings associated with better relationship quality? Is similarity in financial condition associated with improved relationship quality? Is similarity in parenthood status related to relationship quality?

Data and Methods

We use data from the Generational Transmissions in Finland (Gentrans) project. The aim of Gentrans is to gather information on two generations: the Finnish ‘baby boomer’ generation born between 1945 and 1950 ($M = 1947$, $SD = 1.67$) (the older generation), and their adult children, born between 1962 and 1993 ($M = 1976$, $SD = 5.6$) (the younger generation). We use the second wave of Gentrans, which was collected in 2012 by Statistics Finland via regular mail. The surveys of the older and younger generations were gathered separately. During the data collection in 2012, respondents from the older generation were around 65 years old (between 62 and 67) and those from the younger generation mostly in their 20s, 30s and 40s. The older generation’s survey included altogether 2,278 respondents, and the younger generation’s survey included 1,753 respondents (Danielsbacka et al., 2013). In the present analyses, we included only respondents with at least one living sibling, leaving us with the data of 1,734 respondents in the older and 1,348 respondents in the younger generation samples.

In the present study, the dependent variables are contact frequency, emotional closeness, conflict, practical help and financial support, which the respondents reported separately for up to four of their oldest siblings. In the case of contact frequency, respondents were asked via a five-point scale (from 0 = never to 4 = several times a week) to report how often they have had contact with their siblings either personally, by phone or by Internet during the last 12 months. Emotional closeness was measured by asking respondents how close they feel to their siblings using a five-point scale (from 0 = very distant, to 4 = very close). Regarding conflict, the respondents were asked “Have you had conflict with your sibling? How often?” Respondents reported conflict with each of their siblings on a scale of 1 = never to 4 = often. In the case of practical help, respondents were asked how often they have given practical help to their sibling in the last 12 months (from 0 = never to 4 = daily or several times per week). Finally, respondents were asked to consider whether they have given financial support to siblings in the last 12 months (0 = no, 1 = yes). Distributions of dependent variables are presented in Table 1.

[TABLE 1]

The independent variables are gender, age difference, financial condition and parenthood status constellations. The sibling gender constellation variable included two dyads, namely 1) same gender and 2) mixed gender. We also ran additional analyses where sister-sister, mixed and brother-brother dyads were compared with each other because previous studies have shown that sister-sister pairs may have a special bond (e.g., Pollet & Hoben, 2011; Tanskanen & Danielsbacka, 2014). Age difference between siblings was coded as 1 when the age difference was three years or less and 2 when the age difference was more than three years. This was done because age difference less than three years can be defined as moderate, meaning that siblings can be considered as “age peers” (Voorpostel et al., 2007). In the Gentrans surveys, self-perceived financial condition was measured by asking how respondents consider their own economic situation on 4-point scale (from 1 = low income to 4 = wealthy). The same scale was used to measure respondents’ assessments concerning the financial conditions of their four oldest siblings. In the analyses, siblings in the same financial condition category were treated as having the same condition (1 = same condition, 2 = different condition). Finally, the parenthood status variable was coded in two classes: 1 = similar status (both have children or both are childless) and 2 = mixed status. The distributions of independent variables are presented in Table 2 for younger and older generations, respectively.

[TABLE 2]

For the purposes of analysis, the data were reshaped into a long format so that observations represent the siblings of the original respondents. In the case of the younger generation, this resulted in a total of 2,447 person-observations of 1,348 unique individuals, and in the case of the older generation a total of 4,277 person-observations of 1,734 unique individuals. In analyses, we controlled for respondents’ age, education, number of siblings and geographical distance between siblings because previous studies have consistently shown that these variables tend to associate with sibling relationship quality (Pollet & Hoben, 2011). Moreover, the four sibling similarity variables (i.e., gender, age difference, financial condition and parenthood status constellations) were mutually adjusted in all models (i.e., these variables were included in the same models at the same time).

We used multilevel ordinary least squares regression models where the sibling-observations were nested within responding persons. We run within-sibling (or sibling fixed-effect) models that are designed to reduce omitted variable bias (Carlin et al., 2005). In practice, within-sibling regressions take into account all confounding shared by siblings. Although our dependent variables were not always normally distributed, we did not use logit models because of their limitations (see Mood, 2010 for discussion). However, we ran several sensitivity analyses using logit models with similar results (not shown) as the main analyses, and we can consider that the loss of information appears to have been very small.

Results

Younger generation

Table 3 presents results concerning the associations between sibling similarity and contact frequency and show that same-gender dyads had significantly more contact than mixed-gender dyads. Moreover, sister-sister dyads had more contact than other gender constellations (fixed-effect model: sister-sister = ref.; mixed $\beta = -0.62$, SE = 0.06, $t = -10.88$, $p < 0.001$; brother-brother $\beta = -0.45$, SE = 0.09, $t = -4.74$, $p < 0.001$), and brother-brother dyads had more contact compared to the “mixed” group (fixed-effect model: brother-brother = ref.; mixed $\beta = -0.17$, SE = 0.08, $t = -2.22$, $p = 0.027$; results are not shown in tables). Age similarity was associated with the amount of contact in that similar sibling dyads had more contact compared to different dyads. Moreover, sibling dyads with similar financial conditions had more contact than sibling dyads with different conditions. Finally, in the total model, we found a significant difference showing that those with similar status had more contact. However, this difference did not exist in the fixed-effect model.

[TABLE 3]

In Table 3, the results concerning the associations between sibling similarity and emotional closeness are presented. Gender, age and financial condition resemblance were all associated with increased closeness. In addition, we found that sister-sister dyads were emotionally closer than mixed-gender dyads or brother-brother dyads (fixed-effect model: sister-sister = ref.; mixed $\beta = -0.44$, SE = 0.06, $t = -7.94$, $p < 0.001$;

brother-brother $\beta = -0.46$, $SE = 0.09$, $t = -5.01$, $p < 0.001$). Parenthood status similarity was not associated with increased closeness in the total model, but the effect existed in the fixed-effect model.

In Table 3, the associations between sibling similarity and practical help are presented, and they show that that gender similarity was associated with increased support. Moreover, respondents provided more help in sister-sister dyads than mixed-gender dyads, but there was no difference between sister-sister and brother-brother dyads (sister-sister = ref.; mixed $\beta = -0.10$, $SE = 0.04$, $t = -2.91$, $p = 0.004$; brother-brother $\beta = -0.0001$, $SE = 0.06$, $t = -0.001$, $p = 0.999$). Additionally, respondents in brother-brother dyads provided more help compared to the “mixed” group (brother-brother = ref.; mixed $\beta = -0.10$, $SE = 0.05$, $t = -2.18$, $p = 0.030$; results are not shown in tables). There were no significant differences in the cases of age, financial condition or parenthood status resemblance.

Table 3 shows the results concerning the associations between sibling similarity and conflict, revealing that gender and age similarity were associated with increased conflict. Moreover, sister-sister dyads had significantly more conflict than mixed-gender dyads and marginally significantly more than brother-brother dyads (sister-sister = ref.; mixed $\beta = -0.23$, $SE = 0.04$, $t = -5.33$, $p < 0.001$; brother-brother $\beta = -0.13$, $SE = 0.07$, $t = -1.76$, $p = 0.078$). Brother-brother dyads had marginally significantly more contact compared to the “mixed” group (brother-brother = ref.; mixed $\beta = -0.10$, $SE = 0.06$, $t = -1.76$, $p = 0.079$; results are not shown in tables). There was no significant difference in conflict based on financial condition similarity. Finally, in the total effect model, there was no significant difference in the case of parenthood status similarity. However, there was a significant difference in the fixed-effect model.

The results of fixed-effect models concerning the younger generation are summarized in Table 4. Based on these results, eight cases out of 16 provided support for the life course model prediction that sibling similarity is associated with better relationship quality. In three cases, the exchange model predicting that mixed sibling dyads have better relationship quality was supported. In four cases, no support for either life course or exchange models was found.

[TABLE 4]

Older generation

Table 5 presents the results concerning the associations between sibling similarity and contact frequency in the older generation. Same-gender dyads had more contact than mixed-gender dyads. Sister-sister dyads had significantly more contact than mixed-gender dyads or brother-brother dyads (sister-sister = ref.; mixed $\beta = -0.63$, SE = 0.04, $t = -16.78$, $p < 0.001$; brother-brother $\beta = -0.54$, SE = 0.06, $t = -9.29$, $p < 0.001$), and brother-brother dyads had more contact compared to the “mixed” group (brother-brother = ref.; mixed $\beta = -0.09$, SE = 0.04, $t = -2.06$, $p = 0.040$; results are not shown in tables). Similar-aged siblings had more contact than different-aged siblings, but this difference was significant only in the fixed-effect model. There was no significant difference between dyads with similar financial conditions and dyads with different conditions. According to the total effect model, dyads with different parenthood status had more contact than similar dyads, but this difference disappeared in the fixed-effect model.

[TABLE 5]

In Table 5, the results concerning the associations between sibling similarity and emotional closeness are presented. Same-gender dyads were closer than mixed-gender dyads. Sister-sister dyads were emotionally closer than mixed-gender dyads or brother-brother dyads (sister-sister = ref.; mixed $\beta = -0.42$, SE = 0.03, $t = -12.57$, $p < 0.001$; brother-brother $\beta = -0.44$, SE = 0.05, $t = -8.51$, $p < 0.001$; results are not shown in tables). There were no statistically significant differences in emotional closeness based on sibling age, financial condition or parenthood status similarity.

In Table 5, the associations between sibling similarity and practical help are presented. More help was provided among same-gender than mixed-gender dyads. Moreover, respondents provided more help in sister-sister dyads than mixed-gender dyads, but there was no significant difference between sister-sister and brother-brother dyads (sister-sister = ref.; mixed $\beta = -0.06$, SE = 0.02, $t = -3.39$, $p = 0.001$; brother-brother $\beta = -0.04$, SE = 0.03, $t = -1.45$, $p = 0.147$; results are not shown in tables). There were no significant differences in practical help based on age similarity or financial condition similarity. There was significantly more helping in dyads with mixed parenthood status compared to similar parenthood status dyads.

Table 5 shows the results concerning the associations between sibling similarity and conflict. Same-gender dyads had more conflict than different gender dyads. There were no differences between sister-sister, mixed-gender and brother-brother dyads (results are not shown in tables). Similar-aged sibling dyads had more conflict compared to different-aged dyads. In the total effect models, there were significant differences in conflict based on financial condition similarity (similar dyads had less conflict) and parenthood status similarity (similar dyads had less conflict). However, these differences disappeared in the fixed-effect models.

Table 6 provides a summary of the results concerning the older generation. This table shows that four cases out of 16 provided support for the life course model prediction that sibling similarity is associated with better relationship quality. Moreover, three cases provided support for the exchange model predicting that mixed sibling dyads have better relationship quality. In nine cases, no support for either life course or exchange models was found.

[TABLE 6]

Conclusions

In this study, we have investigated an association between sibling similarity and relationship quality in two generations. We measured sibling similarity by gender, age, financial condition and parenthood status similarity and relationship quality by contact frequency, emotional closeness, practical help and conflict. We tested predictions derived from the life course and exchange perspectives. According to the life course model, there should be better relationship quality in similar rather than different sibling dyads. In contrast, the exchange model predicts that mixed-gender sibling dyads should have better relationship quality.

First, we investigated sibling relationship quality in a sub-group based on gender constellation and found support for the similarity prediction. In both generations, same-gender dyads had more contact, practical help and were emotionally closer than mixed-gender dyads. In a previous study, Eriksen and Gerstel (2002) found that same-gender sibling dyads provided more help to each other compared to mixed-gender dyads. We also found that sister-sister dyads had, in general, better relationship quality compared

to other gender constellations. These results are in line with previous studies showing that gender tends to shape sibling relations (e.g., Pollet, 2007; Tanskanen & Danielsbacka, 2014). In contrast to similarity prediction, we found that mixed-gender dyads had more conflict compared to same-gender dyads in both generations. Also in contrast to the similarity prediction, in both generations, age similarity and in the younger generation also parenthood status similarity were associated with increased conflict. These findings of conflict occurrence can be defined as being in line with the prediction derived from the exchange perspective. However, the results could be related to the fact that the conflict indicator used here tends to measure small disagreements rather than severe conflict. Previous studies have shown that those sibling dyads that had more contact and were emotionally closer also had more conflict (Salmon & Hehman, 2015; Tanskanen et al., 2016). Thus, conflict could indicate better rather than worse relationship quality between siblings.

Compared to results on the association between gender constellations and sibling relationship quality, the results based on age similarity between siblings were more mixed. Support for the similarity prediction was found in both generations in the case of contact frequency, which was more common among similar-aged than different-aged siblings. These results are in line with previous studies showing that when the age difference between siblings increases, the contact frequency tends to decrease (e.g., Pollet, 2007; Tanskanen & Danielsbacka, 2014). Only in the younger generation were similar-aged dyads closer with each other compared to different-aged dyads. Conflict was more common in similar-aged than different-aged dyads, which contradicts the primary similarity hypothesis predicting that conflict indicates poor sibling relations and thus should be less frequent in similar sibling pairs. However, these results could be related to the conflict indicator used here that may measure better rather than worse relationships between siblings, as discussed above. Finally, we found no difference between similar- and different-aged siblings in practical help in either the younger or the older generation.

In line with the similarity prediction, we found that in the younger generation, financial condition resemblance was associated with an increased amount of contact and increased ratings of emotional closeness. These results could be related to the fact that those siblings with similar conditions may share more similar lifestyles and consumption opportunities than siblings with different conditions. Additionally,

Verbakel and De Graaf (2004) found that a difference in income was associated with decreased contact. However, in the younger generation, financial condition similarity was not associated with an increased or decreased amount of practical help, which indicates that financial wealth reflects different resources compared to those that are needed for practical help. Moreover, in the younger generation, sibling conflict was not more or less common in sibling dyads according to financial condition. Finally, we were unable to find significant associations between financial condition similarity and sibling relationship quality indicators. To conclude, it seems that financial condition similarity tends to play a greater role in sibling relationships in the younger than the older generation.

Concerning parenthood status, in the younger generation, those with similar conditions were emotionally closer with each other compared to those with different conditions. This is in line with the similarity prediction. In the older generation, parenthood status was associated with practical help in that there was more support in different than in similar dyads. This is in line with the exchange model and may be related to the fact that younger individuals are often in better health than older ones, and thus, the exchange of practical help could be needed between different-aged siblings. However, the result contradicts findings by Eriksen and Gerstel (2002), who found that siblings with the same parental status provided more practical help to each other than siblings with different parental statuses. In the present study, in both generations, there were no significant associations between parenthood status similarity and contact frequency.

Although our empirical results provided more support for predictions derived from the life course rather than the exchange perspective, we did not find convincing support for either of these perspectives. Thus, our results are in line with the previous study by Verbakel and De Graaf (2004) who were unable to find support for similarity predictions when investigating contact frequency between siblings. Similarly, the investigation by Eriksen and Gerstel (2002) showed that in most cases, siblings with similar characteristics did not provide more help to each other than siblings with different characteristics or vice versa. Finally, in line with the study by Voorpostel and colleagues (2007), we found only limited support for the similarity prediction. However, our results contradict those of Voorpostel and colleagues (2007) because they found more support for the exchange than the similarity perspective.

To our knowledge, the present study is first that has employed within-sibling-pair models when analyzing sibling relationship quality. We found that there were some significant differences between total and within models. For example, in the case of the younger generation, we found in the total model that sibling dyads with similar parenthood status had more contact than dyads with different status. However, this difference disappeared in the within-sibling model. Moreover, in the older generation, we found that in the total model, parenthood status similarity was associated with increased conflict among siblings, but this effect disappeared in the within-sibling model. Thus, based on these results, one can argue that it is important to study sibling relationship quality with within-sibling-pair models because the results based on total models may be misleading. With that said, however, the results in most of the total and within-sibling-pair models were similar.

In addition to use of the within-sibling-pair models, our study has other strengths. The results are based on nationally representative data that allowed us to control for several potentially confounding factors. Moreover, with these data, we were able to study sibling relations in two adult generations. Our study also has some limitations. In the data, relationship quality was measured only from one side of the sibling pair, while the other side may have different views concerning relationship quality. The data contained no information on health, education or partnership status of the respondents' siblings, meaning that these potentially important similarity measures were missing from our analyses. Finally, because of the cross-sectional structure of the data, we were not able to investigate whether there are longitudinal changes in sibling relationship quality and how sibling similarity may influence quality. Thus, we call for future studies to analyze sibling relationship quality throughout the course of life.

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Table 1. Distribution of relationship quality variables

	Younger generation				Older generation			
	Total no.	No. Of persons	Mean (SD)	Within SD	Total no.	No. Of persons	Mean (SD)	Within SD
Contact frequency	2,447	1,348	2.14 (1.09)	0.56	4,277	1,734	1.72 (0.99)	0.62
Emotional closeness	2,447	1,348	3.81 (0.98)	0.51	4,277	1,734	3.67 (0.89)	0.52
Practical help	2,447	1,348	0.53 (0.65)	0.33	4,277	1,734	0.15 (0.44)	0.27
Conflict	2,447	1,348	1.87 (1.87)	0.39	4,277	1,734	1.65 (0.75)	0.39

Notes. Total no. = Number of total person-observations; No. Of persons = Number of persons; SD = Overall standard deviation; Within SD = Within-sibling standard deviation.

Table 2. Descriptive statistics

	Younger generation				Older generation			
	Total no.	No. Of persons	%	Mean (SD)	Total no.	No. Of persons	%	Mean (SD)
Respondent's age	2,447	1,348		36.2 (5.87)	4,277	1,734		0.64 (1.65)
Respondent's education								
Primary or lower secondary level	89	44	3.6		1,384	527	32.4	
Upper secondary level	1,070	578	43.7		2,160	887	50.5	
Lower degree level tertiary education	655	372	26.8		263	122	6.2	
Higher degree level tertiary education or doctorate education	633	354	25.9		470	198	11.0	
Respondent's number of siblings	2,447	1,348		2.67 (1.92)	4,277	1,734		4.44 (2.40)
Gender similarity								
Same gender	1,222	899	49.9		2,189	1,313	51.2	
Mixed gender	1,225	887	50.1		2,088	1,309	48.8	
Age similarity								
Similar age	826	716	33.8		1,677	1,152	39.2	
Different age	1,621	1,031	66.2		2,600	1,424	60.8	
Financial condition similarity								
Similar condition	1043	761	42.6		1,650	964	38.6	
Different condition	1404	936	57.4		2,627	1,341	61.4	
Parenthood status similarity								
Similar status	1,461	978	59.7		3,298	1,507	77.1	
Different status	986	741	40.3		979	655	22.9	

(Table 2 continued)

Geographical distance between
siblings

Less than 1 km	46	43	1.9	101	86	2.4
1-5 km	165	154	6.7	382	300	8.9
5-24 km	651	471	26.6	822	598	19.2
25-100 km	468	364	19.1	889	593	20.8
100-500 km	839	567	34.3	1,600	918	37.4
More than 500 km	278	215	11.4	483	331	11.3

Notes. Total no. = Number of total person-observations; No. Of persons = Number of unique persons;
SD = Overall standard deviation.

Table 3. Younger generation: Association between sibling similarity and relationship quality

	Contact frequencies										
	Total					Within-sibling					
	β	SE	t	p	95% CI	β	SE	t	p	95% CI	
Gender similarity	-0.50	0.04	-13.88	< 0.001	-0.57 -0.43	-0.45	0.05	-9.81	< 0.001	-0.54 -0.36	
Age similarity	-0.12	0.04	-3.06	0.002	-0.19 -0.04	-0.14	0.05	-2.81	0.005	-0.23 -0.04	
Financial condition similarity	-0.14	0.04	-3.62	0.000	-0.21 -0.06	-0.11	0.05	-2.11	0.035	-0.21 -0.01	
Parenthood status similarity	-0.09	0.04	-2.29	0.022	-0.16 -0.01	-0.07	0.05	-1.34	0.180	-0.17 0.03	
	Emotional closeness										
	Total					Within-sibling					
	β	SE	t	p	95% CI	β	SE	t	p	95% CI	
Gender similarity	-0.45	0.05	-9.81	< 0.001	-0.54 -0.36	-0.50	0.04	-13.88	< 0.001	-0.57 -0.43	
Age similarity	-0.14	0.05	-2.81	0.005	-0.23 -0.04	-0.12	0.04	-3.06	0.002	-0.19 -0.04	
Financial condition similarity	-0.11	0.05	-2.11	0.035	-0.21 -0.01	-0.14	0.04	-3.62	< 0.001	-0.21 -0.06	
Parenthood status similarity	-0.07	0.05	-1.34	0.180	-0.17 0.03	-0.09	0.04	-2.29	0.022	-0.16 -0.01	
	Practical help										
	Total					Within-sibling					
	β	SE	t	p	95% CI	β	SE	t	p	95% CI	
Gender similarity	-0.09	0.02	-3.88	< 0.001	-0.13 -0.04	-0.10	0.03	-3.47	0.001	-0.15 -0.04	
Age similarity	-0.03	0.02	-1.06	0.287	-0.07 0.02	-0.03	0.03	-0.84	0.402	-0.08 0.03	
Financial condition similarity	-0.02	0.02	-1.03	0.303	-0.07 0.02	0.01	0.03	0.22	0.828	-0.06 0.07	
Parenthood status similarity	0.01	0.02	0.62	0.534	-0.03 0.06	0.01	0.03	0.38	0.705	-0.05 0.07	

(Table 3 continued)

	Conflicts											
	Total					Within-sibling						
	β	SE	t	p	95% CI		β	SE	t	p	95% CI	
Gender similarity	-0.18	0.03	-6.52	< 0.001	-0.23	-0.12	-0.18	0.03	-5.31	< 0.001	-0.25	-0.11
Age similarity	-0.15	0.03	-5.01	< 0.001	-0.20	-0.09	-0.15	0.04	-4.17	< 0.001	-0.22	-0.08
Financial condition similarity	0.05	0.03	1.81	0.070	-0.004	0.11	0.06	0.04	1.49	0.137	-0.02	0.13
Parenthood status similarity	-0.03	0.03	-1.20	0.231	-0.09	0.02	-0.08	0.04	-2.04	0.042	-0.15	0.00

Notes. Reference categories: gender similarity = mixed gender, age similarity = different age, financial condition similarity = different condition, parenthood status similarity = different status; n = 2,447 person-observations of 1,348 unique individuals.

Table 4. Younger generation: Summary of results

	Gender similarity	Age similarity	Financial condition similarity	Parenthood status similarity
Contact frequencies	SIMIL	SIMIL	SIMIL	NO
Emotional closeness	SIMIL	SIMIL	SIMIL	SIMIL
Practical help	SIMIL	NO	NO	NO
Conflicts	MIXED	MIXED	NO	MIXED

Notes. Support for life course model predicting that similar dyads have better relationship quality = SIMIL; Support for exchange perspective predicting that different mixed dyads have better relationship quality = MIXED; No support for either prediction = NO.

Table 5. Older generation: Association between sibling similarity and relationship quality

	Contact frequencies											
	Total						Within-sibling					
	β	SE	t	p	95% CI		β	SE	t	p	95% CI	
Gender similarity	-0.40	0.03	-15.29	< 0.001	-0.45	-0.35	-0.41	0.03	-13.72	< 0.001	-0.46	-0.35
Age similarity	-0.05	0.03	-1.81	0.071	-0.10	0.004	-0.06	0.03	-1.96	0.050	-0.12	-0.00002
Financial condition similarity	-0.06	0.03	-1.95	0.051	-0.11	0.0002	-0.05	0.04	-1.38	0.168	-0.12	0.02
Parenthood status similarity	0.14	0.03	4.26	< 0.001	0.08	0.21	0.07	0.04	1.67	0.095	-0.01	0.16

	Emotional closeness											
	Total						Within-sibling					
	β	SE	t	p	95% CI		β	SE	t	p	95% CI	
Gender similarity	-0.23	0.02	-9.79	< 0.001	-0.27	-0.18	-0.24	0.03	-9.32	< 0.001	-0.30	-0.19
Age similarity	-0.01	0.02	-0.23	0.816	-0.05	0.04	-0.01	0.03	-0.45	0.653	-0.06	0.04
Financial condition similarity	-0.01	0.03	-0.41	0.678	-0.06	0.04	0.02	0.03	0.51	0.614	-0.05	0.08
Parenthood status similarity	0.02	0.03	0.62	0.533	-0.04	0.08	-0.01	0.04	-0.39	0.699	-0.09	0.06

	Practical help											
	Total						Within-sibling					
	β	SE	t	p	95% CI		β	SE	t	p	95% CI	
Gender similarity	-0.04	0.01	-3.05	0.002	-0.06	-0.01	-0.04	0.01	-2.94	0.003	-0.07	-0.01
Age similarity	0.01	0.01	0.50	0.618	-0.02	0.03	0.01	0.01	0.45	0.655	-0.02	0.03
Financial condition similarity	-0.02	0.01	-1.70	0.089	-0.05	0.00	-0.02	0.02	-1.19	0.232	-0.05	0.01
Parenthood status similarity	0.07	0.02	4.50	< 0.001	0.04	0.10	0.06	0.02	2.90	0.004	0.02	0.10

(Table 5 continued)

	Total						Conflicts					
							Within-sibling					
	β	SE	t	p	95% CI		β	SE	t	p	95% CI	
Gender similarity	-0.05	0.02	-2.76	0.006	-0.09	-0.01	-0.04	0.02	-2.22	0.027	-0.08	-0.01
Age similarity	-0.08	0.02	-4.21	< 0.001	-0.12	-0.04	-0.06	0.02	-2.96	0.003	-0.10	-0.02
Financial condition similarity	0.05	0.02	2.12	0.034	0.00	0.09	0.04	0.03	1.65	0.099	-0.01	0.09
Parenthood status similarity	0.06	0.02	2.36	0.018	0.01	0.11	0.06	0.03	1.89	0.058	-0.002	0.11

Notes. Reference categories: gender similarity = mixed gender, age similarity = different age, financial condition similarity = different condition, parenthood status similarity = different status; n = 4,277 person-observations of 1,734 unique individuals.

Table 6. Older generation: Summary of results

	Gender similarity	Age similarity	Financial condition similarity	Parenthood status similarity
Contact frequencies	SIMIL	SIMIL	NO	NO
Emotional closeness	SIMIL	NO	NO	NO
Practical help	SIMIL	NO	NO	MIXED
Conflicts	MIXED	MIXED	NO	NO

Notes. Support for life course model predicting that similar dyads have better relationship quality = SIMIL; Support for exchange perspective predicting that mixed dyads have better relationship quality = MIXED; No support for either prediction = NO.