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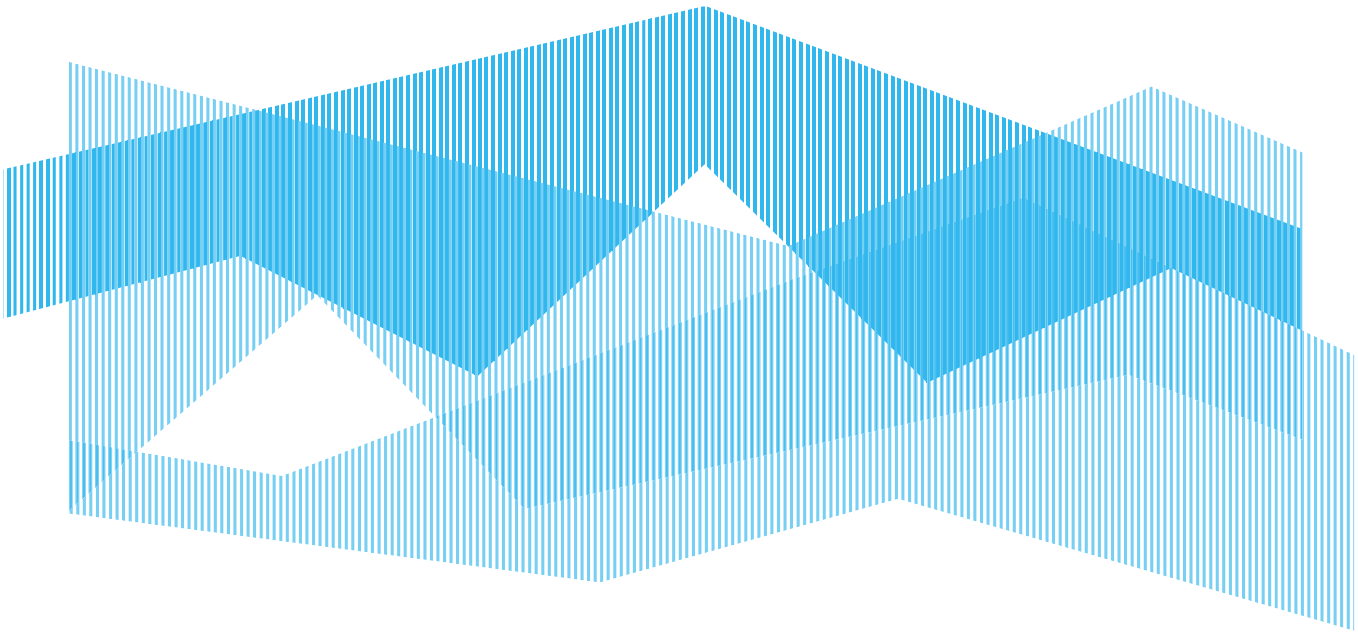

Changes of Social Networks during the Covid-19 Pandemic: Who is affected and what are its Consequences for Psychological Strain?

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Abstract

Contact restrictions and distancing measures are among the most effective non-pharmaceutical measures to stop the spread of the SARS-CoV2 virus. Yet, research has only begun to understand the wider social consequences of these interventions. This study investigates how individuals' social networks have changed since the outbreak of the pandemic and how these changes relate to psychological strain. Based on an online survey of the German adult population, four types of change are distinguished: loss, gain, and intensification of ties, as well as pandemic-related conflicts. One in two respondents has experienced at least one of these four changes. Loss is more frequently reported than gain of ties, and intensification occurred more frequently than conflicts. Loss of ties and conflicts are furthermore associated with higher levels of psychological strain.

JEL Codes: L14 Transactional Relationships • Contracts and Reputation • Networks; I31 General Welfare, Well-Being
Keywords: Network Change, Social Ties, Health Risks, Covid-19

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Changes of Social Networks during the Covid-19 Pandemic: Who is affected and what are its Consequences for Psychological Strain?

1. Introduction

Background and Research Questions

The COVID-19 pandemic and ensuing containment measures have had far-reaching implications for the lives of many people around the globe, affecting their health, incomes, and well-being. While much research has been devoted to understanding these ramifications, relatively little work has focused on the consequences of the pandemic for social networks, the relationships that define and are the essence of peoples' social lives. The beneficial nature of social ties, often called social capital, has been shown to be of crucial importance for economic, educational and health outcomes (Granovetter 1974; Ferlander 2007; Frank et al. 2008). Yet, during the pandemic social ties have been mainly understood as channels of contagion (Block et al. 2020; Karaivanov 2020), and less as channels of support or resilience (Rashid and McGrath 2020). COVID-19 containment measures have imposed severe restrictions on personal contacts and meeting opportunities. While we know that contact restrictions have had detrimental effects on individuals' mental health (Gersons et al. 2020; Kuhn et al. 2020), we know surprisingly little about their potential longer-term effects on peoples' social ties (an exception being the study by Arpino et al. 2020).

Studying and understanding the impact of the pandemic on social network changes is important for a number of reasons: First, it has been argued that changes in social networks might be an important mechanism to understand why the lockdown measures have affected wellbeing and mental health (Kuhn et al. 2020; Witteveen and Velthorst 2020). However, this has hardly been tested empirically, possibly due to unavailability of suitable data. Second, negative network changes, such as conflicts or loosening ties, undermine social cohesion. Disruption or dissolution of ties threaten social resilience and limit the capabilities for individual and societal recovery. Third, under "normal" circumstances, network changes occur slowly, as one ages (Carstensen 1992). Both quantitative and qualitative network changes can be linked to the onset of frailty, but also life course transitions (van Tilburg 1998; Bidart and Lavenu 2005). The exceptional situation of the pandemic has brought about a number of sudden changes and new challenges in various domains of life (e.g., employment, parenthood and partnership, leisure and health) for almost everyone. These changes may have accelerated network dynamics and allow us to study network developments, which otherwise would have occurred slower. Fourth, there is increasing evidence on the mental health consequences of the pandemic for various groups: children and youth, the elderly, workers, non-employed, men and women (Pieh, Budimir, and Probst 2020; Shanahan et al. 2020; Witteveen and Velthorst 2020). The longer the pandemic lasts, and the longer individuals are exposed to lockdown conditions, the more detrimental these measures seem to be for mental health and well-being (Greyling, Rossouw, and Adhikari 2020; Muro, Feliu-Soler, and Castella 2021). First studies already warned that a second, mental health, pandemic may arise as a consequence (Gersons et al. 2020). Studying the "social capital", which protect from psychological distress becomes thus highly relevant. Finally, the COVID-19 pandemic is a global crisis with severe consequences for national economies, health care organizations and political systems. It thus constitutes an exogenous – unforeseen and irreversible – shock. Studying exogenous shocks allows researchers in the social sciences to gain understanding about the mechanisms behind slow societal change.

The study of network changes during the pandemic and its consequences for psychological well-being thus has the potential to yield relevant insights for a broad range of disciplines and applications: Policy makers, mental health professionals, social workers, family scholars, social science researcher and clinicians should be equally interested in the network dynamics and their consequences during the pandemic. In this study we thus ask: How have social networks of individuals changed since the outbreak of the COVID-19 pandemic? Which groups are at risk of experiencing different types of network changes – and who is protected from network loss? How do network changes relate to psychological distress experienced during the pandemic?

2. Conceptual Framework

The ebb and flow of COVID-19 infections and ensuing containment measures over more than one year are very likely to have affected people's social networks. In Germany, a first, strict lockdown was imposed between March and May 2020, a second, lenient one in fall 2020, and a third, strict, one between December 2020 and May 2021 (Hale et al. 2021). During the first and the third lockdown, schools remained closed, home office was mandatory where possible, and most sports, cultural and leisure facilities remained closed. Moreover, private gatherings of more than five people were placed under a ban. Thus, social life came to a halt, restricting the opportunities for social contacts in general, and in particular for meeting existing social ties as well as for forming new ties.

This is likely to have implications for both the quantity (i.e., the number of people in one's network) and the quality (i.e., the closeness and support potential) of individuals' social ties. On the one hand, people might have lost old ties (quantitative changes), or social ties may – as a qualitative change – have become conflicted (Borkowska and Laurence 2020). Moreover, despite these negative consequences of the pandemic, there might also be potentials for positive change. For instance, people may have re-oriented their networks to neighborhoods and may have made new friends or acquaintances there. Especially during the first lockdown, a wave of new helping arrangements emerged (Koos and Bertogg 2020; Bertogg and Koos 2021). Moreover, the joint experience of the exceptional condition may have intensified close – especially family – ties.

One can thus expect to observe four types of network changes due to the pandemic: First, we assume that a *loss of network ties* has been common due to contact restrictions and limited opportunities to meet. Sudden external shocks, such as societal crises, may weaken social ties (Rivera, Soderstrom, and Uzzi 2010; Hilmar 2020). Moreover, the situational factors which normally enable friendship formation (Fehr 2008) have been limited by the containment measures, suggesting that friendship formation has been difficult during the crisis. Second, however, given the wave of helping arrangements which emerged during the first lockdown (Carlsen, Toubøl, and Brincker 2020; Bertogg and Koos 2021), and the temporarily relaxed restrictions during summer 2020, *new ties* might have been *gained*, for instance, when an acquaintance became a friend or neighbors started organizing childcare jointly. The pandemic might also have changed the qualitative nature of ties. Restrictions might have caused a focus on key ties, such as one's nuclear family and close friends (Arpino et al. 2002). These ties may have intensified with regard to their contact frequency or emotional closeness. Finally, despite being widely accepted in the overall population, the containment measures have also been met with opposition among certain groups. This has resulted in anti-masking or anti-lockdown protests (Volk

2021). Thus, the differences in the perceived risks and attitudes towards the containment measures might have fueled *conflicts* among families, friends, and colleagues (Sabat et al. 2020).

The likelihood of experiencing these changes should – however – also depend on individuals' characteristics. First and foremost, *individuals health risks* of severe pathologies with Covid-19 infections have made them more cautious and lead to a stronger restriction of in-person contacts. Particularly, during the first wave of the pandemic, the government declared a so-called "risk group" which needed to be protected (and had priority in the vaccination campaign). In addition, having been infected oneself or having known someone who was infected may have led to additional vigilance, or – due to quarantine and isolation – measures a longer period without any social contacts.

Moreover, *socio-demographic characteristics* are likely to play a role. Partnered individuals and individuals with children did not depend so much on social contacts outside their household for (emotional) support, and may have experienced intensification. Depending on whether one is employed or not, the contact with work colleagues may have faded. Age groups, gender and education have been shown to be strongly related to network size and quality, but also (life course-related) network changes.

Finally, the potential for network change strongly depends on the size and structure of *pre-pandemic networks*: who has more ties is also more likely to lose ties, whereas individuals who were already isolated before the pandemic are not very likely to have lost many social ties. For that reason, it is plausible to assume that all these factors – health risks, socio-demographic characteristics and pre-pandemic network – are important when trying to understand who experiences which type of network change, and who does not.

3. Data and Method

Data

Our analyses are based on data collected in the context of a larger surveys program "Covid-19 and Inequality"[1] The survey program was designed, organized and collected by scholars from various disciplines at the Cluster of Excellence "The Politics of Inequality" at the University of Konstanz. Two multi-topic, multi-purpose online panel surveys were collected during different stages of the Covid-19 pandemic. We use data from one of these two surveys, implemented into an online access panel (Respondi) which relies on a quota sample of the German adult population. Quotas were used for region, gender, age, and educational level. We compared our sample with the general German population by making calculations based on Census data. Our sample yields a high similarity with the overall population.

The three panel waves were collected during three different stages of the pandemic. The first wave of data was collected at the end of the first lockdown in May 2020, which was very strict, with schools and childcare,

[1] For a summary of the surveys program, see: https://www.exc.uni-konstanz.de/en/inequality/research/covid-19-and-inequality-surveys-program/
Data are available at GESIS: https://doi.org/10.7802/2116 (wave 1) and https://doi.org/10.7802/2334 (wave 2)

and all non-essential shops and businesses closed, and work from home being made mandatory for all professions where this was possible. The second wave of data was collected during the more lenient "lockdown light" in fall 2020. We fielded that wave in November 2020. The third wave of data was collected at the end of the third lockdown, which lasted from mid-December 2020 until early May 2021. Its end varied regionally, depending on the averaged three-day incidence level in each county.

For the analyses presented here, we rely on data of the third panel wave, because only after one year of the pandemic, changes in networks due to the pandemic could feasibly be assessed. The timing of the third panel wave allows us to ask respondents about their network changes after five months of lockdown, throughout which schools and childcare facilities were closed, recommended work from home and most leisure and culture facilities, such as theaters and sports centers, closed. After list-wise deletion of respondents with missing values on either the dependent or independent variables, our final sample based on the third panel wave consists of 4,027 individuals aged 18 to 98 years.

Dependent Variables: Network Change and Psychological Strain

This study uses four different types of change in networks during the pandemic, depicting the intersection of qualitative and quantitative change, respectively positive and negative network developments. The changes were asked in the third panel wave, about 14 months after the pandemic broke out and the first lockdown measures were implemented. Network changes were assessed subjectively, as a self-reported variable. We used six dichotomous items to measure network change. Respondents were asked to select all items that apply. From these six items, we calculated four dependent variables as follows: "I have gained new acquaintances during the pandemic" and "I have gained new friends during the pandemic" were combined into the dichotomous variable "Gain", which takes on the value "1" if either new acquaintances or friend were gained and "0" if the respondent did not select either of these two items. Analogously, "I have lost contact with acquaintances during the pandemic" and "I have lost contact with friends during the pandemic" were combined into the dichotomous variable "Loss", which takes on the value "1" if contact with either acquaintances or friends were lost. Intensification is represented by the variable "Some of my ties have intensified" and implies both intensification of contacts frequencies and emotional closeness. Conflict, finally, was measured with the item "With some of my social ties, there were conflicts due to the pandemic".

Psychological strain was measured with the following question: "Have the lockdowns been mentally straining for you", followed by a five-point scale ranging from "not at all" to "very much". We dichotomized this scale in order to psychological strain (4, 5=yes; 1-3=no). Based on this dependent variable, logistic regression models were run. Alternatively, we also calculated the model using the continuous five-point scale and estimating an OLS regression model.

Explanatory variables: Risk profiles, pre-pandemic networks, and socio-demographic characteristics

Individual Covid-19 *risk profiles* were measured with four variables: Current health status was measured as a self-reported variable with five categories (from 1 "severe illness" to 5 "excellent health"), as chronic conditions

increase the risk for severe pathologies. In addition, belonging to a “risk group” (a number of criteria was defined in the beginning of the pandemic, such as old age or a chronic condition) increases such a risk. We thus also asked respondents whether they belong to a risk group (1=yes). Two further dichotomous variables asked whether the respondent had been infected with Covid-19, or whether someone in their network had been infected.

Furthermore, we account for the intensity and diversity of *social ties prior to the pandemic* by using six scales combined into two indices. The six scales were assessed as follows. For six groups of network ties, we asked our respondents, how often they had been in contact with before the outbreak of the pandemic. The six group were: family members who do not live in the same household, friends, colleagues, members of one’s association, members of one’s religious community, and other acquaintances. The answers were measured on a six-point scale, ranging from “Never” (coded as “0”), to “Daily” (coded as “5”). For those respondents where a specific network group did not apply or not exist, we coded them as “0” (equivalent to the category “Never”). Thus, higher values on each scale indicate more frequent contacts. These six scales were combined into two indices, depicting the typical distinction between weak and strong ties. The index pertaining to “strong ties” was attained by adding up the values of contact frequencies for family member and friends (total scale range 0-10). “Weak ties” were measured adding up the other four scales (total scale range 0-20). In order to make effect sizes comparable across scales, both scales were z standardized. Higher values on that scale not only depict more frequent contacts, but also more different groups of network ties.

Sociodemographic control variables include respondents’ gender and age, employment situation, partnership and family status, and the highest level of education attained. Gender was measured with a dichotomous variables (1=Female). Age was measured in four groups in order to allow for non-linear effects (18-34 years, 35-49 years, 50-64 years and 65 years or older). Employment situation was measured with three categories: Employed, Retired and Economically inactive (the latter including those who are homemaking, permanently ill or disabled, in education, or unemployed). Partnership was measures with a dichotomous variable taking on the value “1” for respondents who are married or cohabiting. Family statues measured the presence of children with three categories: “No children”, “Children under 17 household”, and “Children >16 in the household, or own children who are not living in the household”. Education was measured using the highest level of professional education attained, using the International Standard Classification of Education (ISCED), recoded into three categories (low, Intermediate, and High). ISCED levels 1-2 indicate only compulsory schooling or lower secondary education and were recoded to “low education”. ISCED levels 3 and 4 indicate upper secondary education, including vocational training or general schooling with a higher education access degree (A-Levels), and were recoded to “Intermediate education”. ISCED 5 and 6 indicate a tertiary education degree and were recoded to “High” education.

Statistical Analyses

Statistical analyses used Stata SE / Version 16.1. All models were built stepwise, but in the following, only full models are presented. Descriptive analyses apply population-based weights, whereas multivariate models control for the relevant characteristics. Since the scale level of the network change variables is dichotomous

(yes vs. no), we apply logistic regression models. The results are presented as Average Marginal Effects, which can be interpreted as percentage changes in the likelihood of experiencing a particular network change. Psychological strain was measured on a five-point scale in the original metric, but we dichotomized it to distinguish between those who experienced strain (“yes”) versus those who did not. In order to examine psychological strain due to network changes, we also rely on logistic regression models.

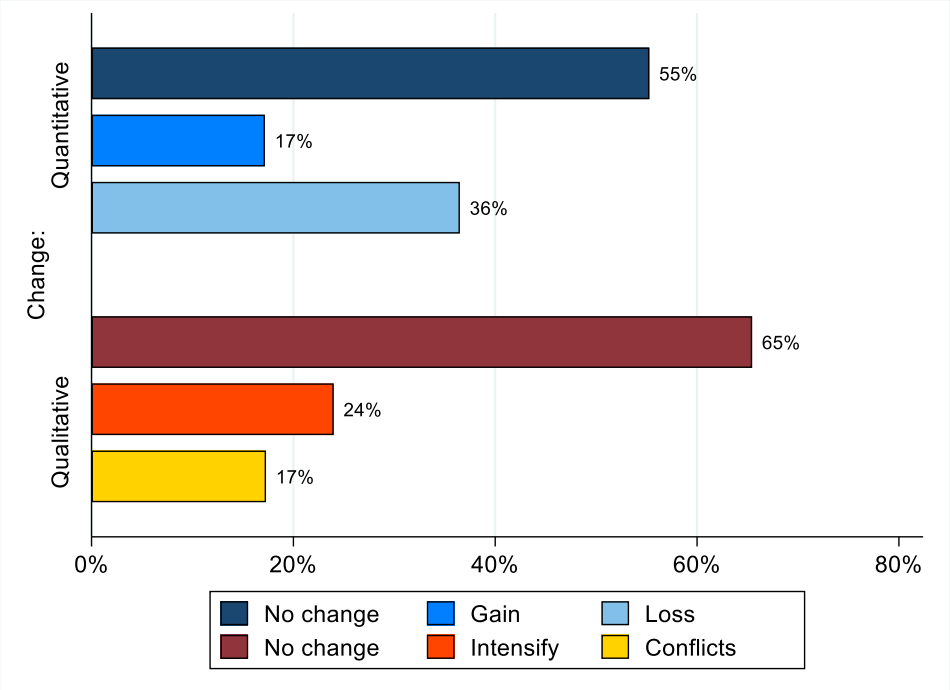
The empirical analyses are conducted in two steps. First, we analyze the frequency of network changes (descriptively) and thereafter, we analyze how individual health risks, sociodemographic characteristics and pre-pandemic networks affect network changes. In the second step, we turn to psychological strain, which we will explain with the four types of network changes analyzed in the first step, while adjusting for health risks, socioeconomic characteristics and pre-pandemic networks.

4. Findings

Network Change

How frequent were network changes during the Covid-19 pandemic? Moreover, are there differences in between the different types of changes? We find that more than one third of all respondents (36%) report losing ties during the pandemic, while only 17% report gaining new ones. Roughly, one out of four respondents (24%) report an intensification of existing relationships. Yet, 17% report that during the pandemic there have been conflicts due to the pandemic with friends or acquaintances. Nevertheless, a slight majority of respondents does not report any change in their social relationships (55 per cent report no quantitative change, and 65 percent report no qualitative changes). Taken together we observe that social networks have been rather stable, but a substantial share of one third of people have lost ties. However, about one of four respondents (24%) report an intensification of social relationships.

Figure 1: Change in Social Ties



Source: Covid-19 and Inequality, Respondi Survey, wave 3 (May 2021). Sample: German adult population, 18-98 years. n= 3,903 respondents, Own calculations, applying population weights.

Factors predicting network change

In the next step, we ask how individuals' health risks may have affected network changes. We measured COVID-19 risk profiles with four variables (the first four plotted coefficients in Figure 2). These coefficient plots can be interpreted as a higher likelihood if the coefficient is to the right side of the red reference line at zero, and as a negative likelihood if the coefficient is on the left side of the reference line. The values on the horizontal axes are interpreted as differences in percentage points, and the confidence intervals indicate whether a difference is statistically significant at the 5%-level: if the confidence interval does not touch the reference line, the difference is statistically significant.

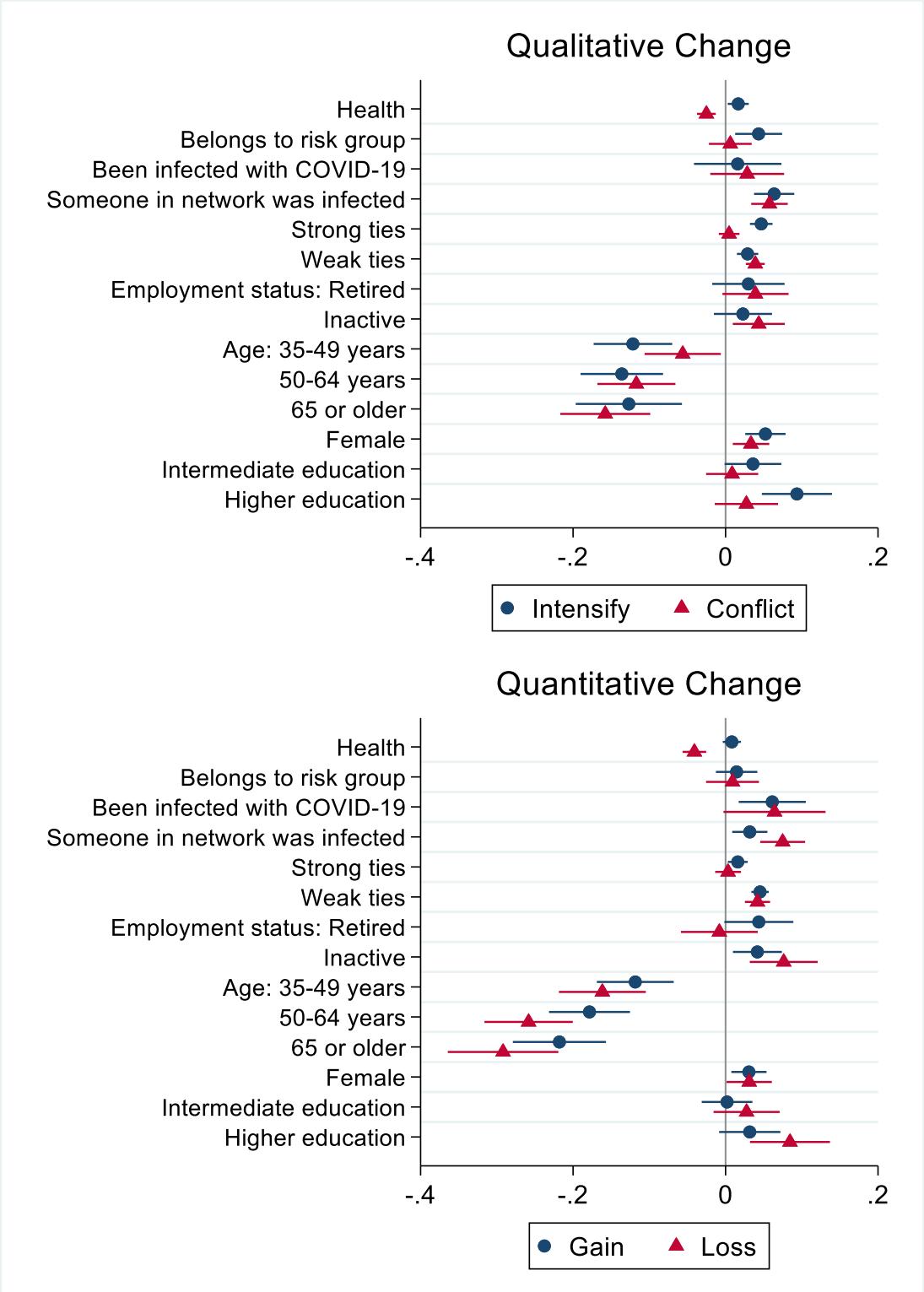
Our results indicate better general health enables individuals to intensify their relations and protects against both conflicts and loss. Those who were part of a risk group due to age or a chronic condition were more likely to report intensified ties, but no other changes. Having been infected with COVID-19 surprisingly increases the likelihood of gaining new ties. Knowing others who had been infected increases the likelihood of all four types of change.

With regard to *network characteristics prior to the pandemic* (the middle two coefficients), we find that those with larger and more dense networks were protected or even had the opportunity for positive network change. However, the exact type of network change affected also seems to vary by the type of pre-pandemic network ties. Those who reported that they have had more frequent contacts with different types of strong ties (family members and friends) before the pandemic, are more likely to also report that they have formed new ties or that some of their ties have intensified. More contacts with different types of weak ties (such as members of

one's associations and religious groups, or colleagues) prior to the pandemic, on the other hand, increase the likelihood of all four types of change.

Socio-demographic characteristics (the bottom 8 coefficients plotted in Figure 2) relate to the four types of network changes as follows: Economically inactive individuals had a higher risk of losing ties or experiencing conflicts, but also of gaining new ties than those who were employed (the reference category). As additional analyses have shown, this group predominantly consists of unemployed and students. Retired individuals have comparable likelihood of all four types of network changes as employed persons; there is a slight tendency that they are somewhat more likely to form new ties, but this difference is not significant at the 0.05 level. Older respondents, aged 59-64 years old or 65 and older, have more stable social networks: They are less likely to report changes than the youngest group aged between 18 and 34 years (the reference), and this applies to all four network changes. Women are more likely to form new or intensify existing ties, but also to report conflicts. Higher educated individuals more frequently report loss, but also intensification than individuals with only compulsory schooling (the reference category). These findings are robust when controlling for life course events, such as starting or losing a job, starting or finishing an education, moving, or changes in partnership status.

Figure 2: Determinants of Network Change



Source: Covid-19 and Inequality, Respondi Survey, wave 3 (May 2021). .Sample: German adult population, 18-98 years. n= 3,903 respondents, Own calculations, applying population weights. Full model in the Appendix, Table A1.

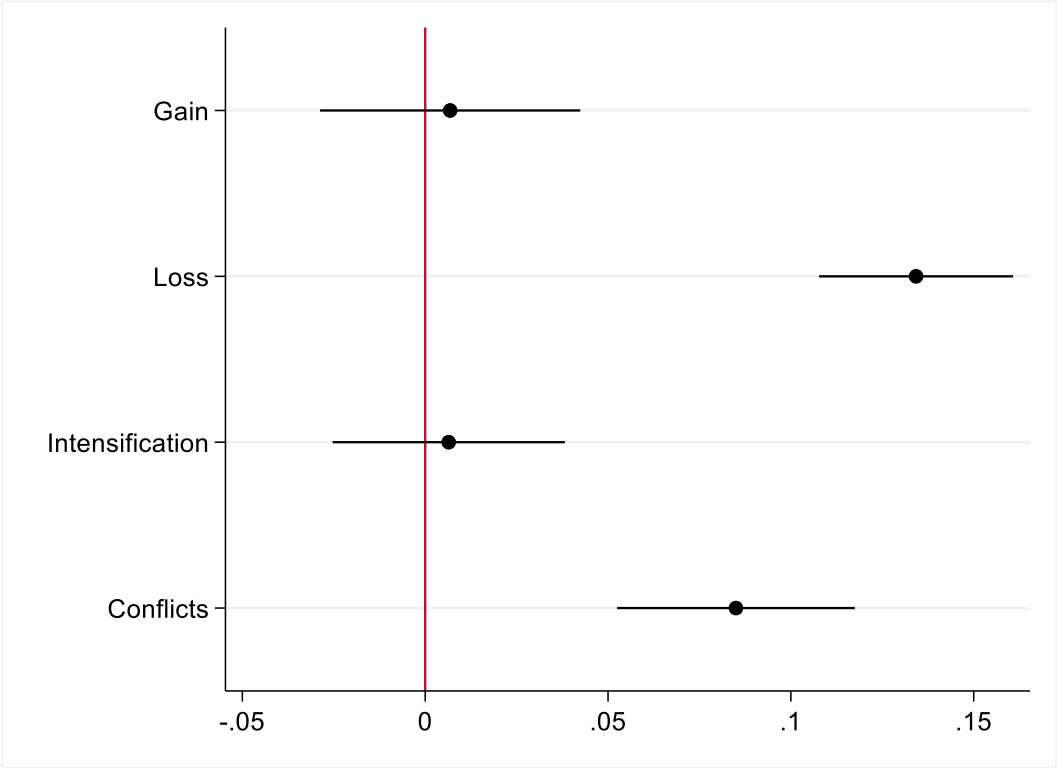
Note: Reference categories: employed, 18-34 years, male, only compulsory education.

Network changes and psychological strain

Finally, we examine how changes in network ties relate to psychological strain. For that purpose, we regress a dichotomous variable, which indicates the self-reported increase in psychological strain (1=yes) due to the lockdown measures, on the four change items presented above. We estimated the changes of each of the network changes first separately (while adjusting for health risks, pre-pandemic networks, socio-demographic characteristics and life course events), and thereafter simultaneously. Figure 3 presents the effects of network changes on self-reported psychological strain estimated simultaneously. Table A2 in the Appendix comprises the full set of coefficients for all separate models, too.

We find that conflicts and loss of ties are associated with an increase in psychological strain. The strongest effect was found for loosing ties: Respondents who reported a loss of ties had a 13% higher likelihood of reporting psychological strain than those who did not experience a loss of ties. Reporting conflicts with network ties because of the COVID-19 pandemic is also associated with an 8 per cent higher likelihood of reporting psychological strain as compared to those who did not experience such conflicts. Positive changes are - when adjusting for all other types of change and the control variables – not significantly associated with psychological strain.

Figure 3: Changes and Psychological Strain



Source: Covid-19 and Inequality, Respondi Survey, wave 3 (May 2021). Sample: German adult population, 18-98 years. n= 3,903 respondents, Own calculations, applying population weights. Full model in Appendix, Table A.2.

5. Discussion

The networks of many people have changed considerably during the COVID-19 pandemic, and – as expected – the contact restrictions have taken their toll: Within only one year, almost one in two has experienced a change in their networks. More than one in three has experienced a shrinkage of their networks, and about one in six has experienced conflict. Yet, we also observe an intensification of ties, and – to a lesser degree – the formation of new ties. Compared to evidence on network shrinkage in non-pandemic times, the documented changes for the documented time-span of 14 months are considerable (Wrzus et al. 2013). Negative changes, such as loss of ties and conflicts, are associated with psychological strain.

Given the warnings against a second, mental health, pandemic (Gersons et al. 2020), understanding the roots and the long-term consequences of various types of network changes due to the COVID-19 crisis is a pivotal task for future research. Our findings suggest that the dissolution of ties and conflicts may be problematic in the longer run because changes in networks act as a mediating mechanism for well-being during the COVID-19 crisis. Social networks are an important buffer against the adverse consequences of crises, and a crucial source of social resilience (Hurlbert, Beggs, and Haines 2017; Carlsen et al. 2020). Thus, the chances for recovering from the pandemic ultimately depend on a society's social capital, which the pandemic threatens to undermine. The long-term psychological, social and economic consequences of broken ties remain to be addressed by future research.

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Appendix

Table A1. Full Models: Average Marginal Effects (Basis for Figure 2)

	(1) Intensify	(2) Conflicts	(3) Gain	(4) Loss
Health	0.017*	-0.025***	0.008	-0.041***
Risk group	0.043**	0.006	0.015	0.009
Has been infected (self)	0.016	0.028	0.061**	0.064
Knows someone who has been infected	0.064***	0.058***	0.032**	0.075***
Strong ties (index)	0.047***	0.005	0.016*	0.003
Weak ties (index)	0.029***	0.039***	0.045***	0.042***
Is partnered	-0.021	-0.020	-0.046***	-0.034
No children (ref.)				
Children in household	0.030	0.013	0.000	-0.003
Children outside of household	-0.019	0.013	-0.022	0.036
Employed (ref.)				
Retired	0.030	0.039	0.044	-0.008
Economically inactive	0.023	0.044*	0.042*	0.076***
Age: 18-34 years (ref.)				
35-49 years	-0.121***	-0.056*	-0.118***	-0.162***
50-64 years	-0.136***	-0.117***	-0.178***	-0.258***
65 years or older	-0.127***	-0.158***	-0.218***	-0.292***
Female	0.052***	0.033**	0.031**	0.031*
Education: Low (ref.)				
Intermediate	0.036	0.009	0.002	0.028
High	0.094***	0.027	0.032	0.085**
N	3903	3903	3903	3903

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A2. Average Marginal Effects of Change in Psychological Strain - Separate and Simultaneous. (Basis for Figure 3)

Scale level of dependent variable. Network Change as Predictor	Dichotomous Intensify	Dichotomous Conflict	Dichotomous Gain	Dichotomous Loss	Dichotomous All, simultaneous	5-Point Scale All, simultaneous
	AME	AME	AME	AME	AME	AME
Intensify	0.023				0.006	0.115*
Conflicts		0.136***			0.085***	0.372***
Gain			0.029		0.007	0.050
Loss				0.156***	0.134***	0.532***
Health	-0.061***	-0.056***	-0.061***	-0.053***	-0.052***	-0.208***
Risk group	0.027	0.026	0.027	0.025	0.025	0.017
Has been infected (self)	-0.005	-0.012	-0.007	-0.017	-0.021	0.046
Knows someone who has been infected	0.017	0.010	0.017	0.006	0.002	-0.014
Strong ties (index)	0.006*	0.007*	0.007*	0.006*	0.006*	0.011
Weak ties (index)	0.001	-0.000	0.001	-0.000	-0.001	0.007
Is partnered	-0.031	-0.028	-0.030	-0.026	-0.024	-0.044
No children (ref.)	0.000	0.000	0.000	0.000	0.000	0.000
Children in household	0.024	0.023	0.025	0.025	0.024	0.139*
Children outside of household	0.020	0.018	0.020	0.014	0.013	0.083
Employed (ref.)						
Retired	-0.018	-0.022	-0.018	-0.015	-0.019	-0.063
Economically inactive	0.031	0.025	0.030	0.017	0.014	0.013
Age: 18-34 years (ref.)						
35-49 years	-0.121***	-0.115***	-0.120***	-0.092***	-0.087**	-0.329***
50-64 years	-0.202***	-0.185***	-0.199***	-0.155***	-0.145***	-0.502***
65 years or older	-0.293***	-0.273***	-0.289***	-0.245***	-0.232***	-0.739***
Female	0.085***	0.080***	0.085***	0.080***	0.076***	0.328***
Education: Low (ref.)						
Intermediate	0.017	0.016	0.018	0.011	0.011	0.012
High	0.043	0.040	0.044	0.027	0.026	0.000
N	3900	3900	3900	3900	3900	3900

Source: Covid-19 and Inequality, Respondi Survey, wave 3 (May 2021). n=3900 respondents. Multivariate linear and logistic regression models. Average Marginal Effects. Own calculations.