Abstract

This paper examined the associations among: (1) the perceived freedom to initiate and end interpersonal relationships (*relational mobility*), (2) relationship quality, and (3) well-being. Across 38 nations, people in nations with higher relational mobility reported greater well-being, which was explained by higher-quality relationships with close others (Study 1A). This effect was replicated at the individual level, after controlling for extraversion and socio-economic status (Study 1B). Finally, first-year college students with higher relational mobility reported receiving more social support from new friends during the COVID-19 pandemic, which explained those students' higher well-being during the pandemic (Study 2). Together, this work demonstrates that relational mobility can explain enhanced well-being across nations, individuals, and life circumstances, and indicates potential avenues for interventions that increase the well-being of individuals and societies.

Keywords: Relational mobility, Well-being, Interpersonal relationships, COVID-19

The role of relational mobility in relationship quality and well-being

Let's suppose that there are two towns. In one town, it is easy to make new friends, acquaintances, and romantic partners. Its residents always have the opportunity to meet new people, and can easily end relationships that they do not want to maintain. In contrast, in the other town, social interactions are limited to one's pre-existing friends and family members. It is difficult to meet new people, and it is hard to terminate any pre-established relationships; relationships in this town are fixed and stable.

Which town's residents would, on average, enjoy higher quality relationships, and higher well-being? Would the answer remain the same under crisis circumstances, when it is crucial for people to secure social and emotional support from their relationship partners? In the present research, we investigated these questions, focusing on the concept of *relational mobility*—the perceived freedom of initiating and terminating relationships (Kito et al., 2017; Yuki et al., 2007; Yuki & Schug, 2012)—and its role in relationship quality and well-being. Prior research has reported that relationship quality predicts well-being, and that relational mobility is associated with relationship quality. However, the direct associations among relational mobility, quality of relationships, *and* well-being are understudied, and the effect of crisis circumstances on these associations has not been examined. Below, we will first discuss the pre-established associations between relationship quality and well-being, then discuss previous studies on relational mobility.

Relationship quality is associated with well-being

A large body of prior work has revealed that relationship quality is one of the strongest predictors, if not *the* strongest predictor, of well-being (Argyle, 1987; Demir, 2008; Ilardi et al., 1993; Kasser & Ryan, 1999; Myers, 1999; Patrick et al., 2007). Higher quality relationships are associated with higher levels of resilience across the lifespan (Mikulincer & Florian, 1998), feelings of security (Collins & Miller, 1994; Patrick et al., 2007), health and

adjustment (Baumeister & Leary, 1995; Holt-Lunstad et al., 2010), and overall well-being (Briditt & Antonucci, 2007; Nezlek, 2000; see Ryan & Deci, 2001 for a review).

Relationship quality also matters for well-being under crisis circumstances (Cobb, 1976), because relationship partners are important sources of social and emotional support in times of need (Lakey & Orehek, 2011; Ognibene & Collins, 1998). The amount of social support that people receive, or expect to receive, from others is associated with decreased psychological and somatic symptoms both on and after stressful days (Delongis et al., 1988), less emotional distress and better work adjustment after hospitalization (Porritt, 1979), fewer psychological and behavioral symptoms of stress after a nuclear accident (Fleming et al., 1982), and decreased anxiety and depressive symptoms during the COVID-19 pandemic (Grey et al., 2020; Lee & Waters, 2021; Özmete & Park, 2020; Skalski et al., 2021).

It is still an open question, however, whether there is an environmental antecedent to this positive association between relationship quality and well-being—specifically, whether an environment where one perceives many opportunities to change one's relationships (vs. fewer opportunities) better supports the emergence of high relationship quality and high well-being. Previous research has found that relational mobility critically shapes relationship quality, providing initial insight into this question.

Relational mobility is associated with relationship quality

Relational mobility captures variation in the amount of flexibility in interpersonal relationships and networks (Kito et al., 2017; Yuki et al., 2007; Yuki & Schug, 2012). As described above, in certain societies, people perceive greater freedom to choose their relationship partners (high relational mobility). In other societies, relationships with friends, romantic partners, and family members are largely fixed, and opportunities to change these relationships are limited (low relational mobility). A variety of psychological features are

influenced by relational mobility (Li et al., 2018; San Martin et al., 2019), including, critically, relationship quality.

People who perceive higher relational mobility around them are more likely to provide social support to friends (Chen et al., 2012; Kito et al., 2017), self-disclose (i.e., reveal private information) to close others (Schug et al., 2010), express divergent opinions with others (Li et al., 2016), and are less anxious about social rejection (Li et al., 2015; Lou & Li, 2017; Sato et al., 2014). People higher on relational mobility also report higher intimacy with romantic partners (Yamada et al., 2017). On the national level, people from nations characterized by high relational mobility (vs. low relational mobility) report having higher quality relationships with friends and partners (Thomson et al., 2018), and having friends who share similar personalities, hobbies, and behaviors to them (Schug et al., 2009).

How does relational mobility influence relationship quality? Past work has found that relational mobility is associated with more frequent gift-giving between couples (Komiya et al., 2019) and greater passion toward one's romantic partners (Yamada et al., 2017). The presumed freedom of social partners to look for alternatives may motivate people to prevent their partners from leaving, which may manifest as greater investment in relationships and higher relationship quality (Thomson et al., 2018). Relatedly, the freedom to choose relationships may facilitate the termination of low-quality relationships, and the formation of new, higher-quality relationships that are better suited to one's current needs.

The links between relational mobility, relationship quality, and well-being merit further examination

The strong prior evidence about the links between relationship quality and well-being, and between relational mobility and relationship quality, promotes another question: is relational mobility also associated with well-being, and does relationship quality explain this association? Although partially supported by some previous works (Lee et al., 2019; Zhang &

Zhao, 2021), the evidence so far is mixed. One study manipulated relational mobility in the laboratory by using a priming task, asking participants to recall an extended interaction with a stranger (high relational mobility) or with a family member (low relational mobility). Priming high (vs. low) relational mobility did not lead participants to report higher levels of happiness (Yuki et al., 2013, Study 3), potentially because of the confounding effect of familiarity in the low relational mobility condition which might boost happiness (Zhang & Zhao, 2021). Another group of researchers (Lee et al., 2019) reported a positive association between perceived relational mobility and well-being, but this association was qualified by participants' social motivation: whether they were focused on increasing positive experiences (e.g., deepening relationships), or decreasing negative experiences (e.g., avoiding disagreements), with their relationship partners. High relational mobility was associated with higher well-being only in conjunction with a motivation to increase positive experiences; when accompanied by a motivation to decrease negative experiences, high relational mobility was associated with lower well-being and higher depressive symptoms instead. Importantly, this study did not assess relationship quality, which is enhanced by a focus on positive experiences in relationships (Impett et al., 2010; Kuster et al., 2017), and thus might mediate this qualification effect.

Thus, the link between relational mobility and well-being, and the potential mediating role of relationship quality, merit further examination. In addition, to our knowledge, there is little prior work that investigates the association between relational mobility and the amount of social support received during a crisis. We aimed to address these gaps in the literature by investigating the associations among relational mobility, relationship quality, and well-being, both in a general context and in the crisis context of the COVID-19 pandemic.

Relational mobility, relationship quality, and well-being: Two alternatives

We suggest two opposing hypotheses regarding the association between relational mobility and well-being. One possibility is that high relational mobility contributes to higher well-being via higher relationship quality. These associations may emerge not only under general circumstances, but also under crisis circumstances. For instance, people with high relational mobility may have more opportunities to build new relationships with others who are physically and psychologically close to them—such as those who are having a similar crisis experience. In crisis circumstances, close relationships can foster empathy and enhance one's ability to cope (Carkhuff, 1969; Porritt, 1979; Snyder & Pearse, 2010), being an important source of social support (Brown et al., 1986; Lakey & Orehek, 2011; Ognibene & Collins, 1998). Our specific hypotheses for crisis circumstances are as follows: (1) people with higher relational mobility (vs. those with lower relational mobility) will experience greater well-being during the crisis, and (2) this association will be mediated by greater support from new relationships.

An alternative possibility should be considered, however, given potentially increased investment in relationships in high-relational mobility contexts. Relationships are often costly, in that they involve investments of time and effort that ultimately benefit one's partner at a cost to oneself (Brown & Brown, 2006). Such costs may be magnified in people who perceive higher relational mobility, as they may invest extra effort in their relationships to prevent their partners from leaving (Komiya et al., 2019; Thomson et al., 2018). These increased costs may sour one's experiences in the relationship and contribute to lower well-being in people with higher relational mobility, compared to those with lower relational mobility.

The tendency to overinvest in relationships may be especially taxing under crisis circumstances, when people have limited resources. Moreover, the fear and anxiety that people experience under crisis may lead them to stick to familiar partners (Greenberg &

Kosloff, 2008) and increase their commitment to pre-existing relationships (Florian et al., 2002; McManus et al., 2020, 2021). Thus, in crisis contexts, the amount of social support that people receive from newer social partners may decrease, as those partners focus on their own pre-existing relationships. People with high relational mobility would be more vulnerable to this since they are more likely to initiate short-term relationships (Thomson et al., 2018, Table S6). Specifically, the alternative hypotheses for crisis circumstances are as follows: (1) people with lower relational mobility will experience greater well-being under crisis, and (2) this association will be mediated by greater support from old relationships.

The current study

In the present research, we examined: (1) whether there is an association between perceived relational mobility and reported well-being, and (2) whether this association can be accounted for by the quality of interpersonal relationships. Study 1A investigates this model at the national level, by analyzing data from 38 countries; Study 1B investigates this model at the individual level, by analyzing data from participants within the same country. We hypothesized that higher relational mobility would be associated with higher well-being (Hypothesis 1A), and that relationship quality would mediate this association (Hypothesis 1B), i.e., there would be a significant indirect effect of relational mobility on well-being via relationship quality.

Furthermore, Study 2 investigates: (3) whether these associations persist in the context of the COVID-19 pandemic, and (4) whether they persist across different relationship lengths (long-standing relationships vs. recently formed relationships). Study 2 honed in on a specific facet of relationship quality—the amount of social support received—as social support has been found to critically enhance well-being in crisis contexts (Leavy, 1983; Sammarco et al., 2001; Söllner et al., 1999), and is highly associated with overall relationship quality (Cutrona et al., 2005; Gurung et al., 1997). We recruited a sample of first-year college

students, and measured their relational mobility (pre-pandemic), the degree of support they received from pre-college friends and from college friends during the pandemic, and their well-being during the pandemic. Study 2 assesses two competing hypotheses. On the one hand, as in ordinary times, high-relational-mobility students may report higher well-being during the pandemic, due to higher levels of support from new friends (Hypothesis 2A). On the other hand, unlike in ordinary times, low-relational-mobility students may report higher well-being during the pandemic, due to higher levels of support from old friends (Hypothesis 2B).

Study 1A

In Study 1A, we examined whether people in societies (defined as nations in this study) characterized by high relational mobility tend to report higher levels of well-being, and whether this association is mediated by relationship quality (Hypotheses 1A, 1B). We investigated associations at the national level for two reasons. First, the concept of relational mobility was initially developed to explain societal differences (Yuki & Schug, 2012), so we sought to test our hypotheses regarding relational mobility at the same level of analysis. Second, we sought to build on extensive prior work linking national levels of relational mobility and interpersonal interactions. Thomson and colleagues (2018) have found that higher national levels of relational mobility predict higher national levels of proactive social behaviors, such as greater self-disclosure to and greater intimacy with close others. The relationship between national levels of relational mobility and national levels of *well-being*, however, has yet to be examined. To address this gap in the literature, we leveraged national-level data retrieved from the World Relationships Survey (relationalmobility.org; Thomson et al., 2018) and from the Gallup World Poll (Gallup, 2019). Data and code for all studies are

available on the Open Science Framework at [https://osf.io/ducbf/?view_only=dfa7f1be817b4beaa394250af93f4413].

Methods

Nations

We focused on nations for which we could retrieve all of the following data: a relational mobility score, a set of four relationship quality scores, and a well-being score. As a result, we were able to include a total of 38 nations[1] in our final dataset.

Materials

We retrieved national-level relational mobility scores and national-level relationship quality scores from the World Relationships Survey dataset (collected 2013-2016; Thomson et al., 2018). Relational mobility scores (M = 4.23, S.D. = .20) were averages of 12 items, e.g., *"They (the people around you) have many chances to get to know other people"* (6-point scale from 1 = *strongly disagree* to 6 = *strongly agree*; Thomson et al., 2018; Yuki et al., 2007).

To assess national levels of relationship quality, we aggregated scores on four relationship quality indices (intimacy with romantic partner, intimacy with closest friend, self-disclosure to romantic partner, and self-disclosure to closest friend) into a composite score. Intimacy with one's romantic partner (M = 5.65, S.D. = .32) was measured by averaging 10 items, e.g., *"I am able to count on <Name of partner> in times of need"* (7-point scale from 1 = *strongly disagree* to 7 = *strongly agree*; Kanesama & Daibo, 2003; Sternberg, 1986). Intimacy with one's closest friend was measured the same way (M = 6.08, S.D. = .19). Self-disclosure toward one's romantic partner (M = 3.75, S.D. = .38) was measured by averaging five items, e.g., "*Regarding your secrets, to what degree have you*

[1] Australia, Brazil, Canada, Chile, Colombia, Egypt, Estonia, Hong Kong, France, Germany, Hungary, Israel, Japan, Jordan, Lebanon, Libya, Malaysia, Mauritius, Mexico, Morocco, Netherlands, New Zealand, Philippines, Poland, Portugal, Singapore, South Korea, Spain, Sweden, Tunisia, Turkey, Ukraine, United Kingdom, United States, Venezuela, Taiwan, Puerto Rico, Palestinian Ter.

revealed yourself to <Name of partner>?" (5-point scale from 1 = *I have not revealed any information at all* to 5 = *I have revealed even the most serious information*; Schug et al., 2010). Self-disclosure toward one's closest friend was measured the same way (M = 3.96, S.D. = .22).

To assess national levels of well-being, we retrieved scores on the Global Well-Being Index from the Gallup World Poll dataset (collected 2014-2015; Gallup, 2019). A nation's score on the Global Well-Being Index is the proportion of respondents who reported that they were thriving in at least three out of five elements of well-being: *purpose*, *social*, *financial*, *community*, and *physical* (M = .22, S.D. = .09). In addition, we considered two potential confounds: prior work has found positive correlations between well-being and individualism, and between well-being and national levels of material wealth (Bulmahn, 2000; Cummins, 1998; Diener & Fujita, 1995; Diener et al., 1995; Schyns, 1998). We thus ran a separate version of our main analysis (described below), where we controlled for nations' individualism scores (Hofstede et al., 2010) and GDP per capita (International Monetary Fund, 2019). We found the same results as our main analysis when we controlled for these variables (Supplementary Section 1A).

Analyses and Results

We created a composite score for relationship quality by averaging four scores: intimacy with romantic partner, intimacy with closest friend, self-disclosure to romantic partner, and self-disclosure to closest friend[2] (Cronbach's alpha = .84). Correlational analyses revealed that there was a significant positive correlation between national levels of relational mobility and relationship quality ($r = .63$, $p < .001$), replicating previous findings (Thomson et al., 2018). In addition, there were significant positive correlations between national levels

[2] Ahead of calculating the composite score for relationship quality, we rescaled intimacy with romantic partner and intimacy with closest friend by multiplying these scores by 5/7, to match the range of the self-disclosure scale.

of relational mobility and well-being (r = .63, p < .001; Hypothesis 1A), and between national levels of relationship quality and well-being (r = .61, p < .001).

Next, we used the "INDIRECT" macro (bootstrapped n = 1,000; Preacher & Hayes, 2008) to examine the indirect effect of relational mobility on well-being via relationship quality. The INDIRECT macro estimates the indirect effect of the causal variable (i.e., relational mobility) on the outcome (well-being), through a proposed mediator (relationship quality), as well as the total and direct effects of the causal variable on the outcome. Due to the nature of our dataset, which combined data from different sources (the World Relationships Survey and the Gallup World Poll), we were only able to test for correlational relationships among the variables. We found that relational mobility was significantly associated with relationship quality (B = .65, S.E. = .13, β = .63, t = 4.81, p < .001), which in turn was significantly associated with well-being (B = .16, S.E. = .07, β = .36, t = 2.29, p = .028). In support of Hypothesis 1B, the direct effect of relational mobility on well-being (B = .29, S.E. = .06, β = .63, t = 4.81, p < .001) was reduced when relationship quality was added to the model (B = .18, S.E. = .07, β = .40, t = 2.54, p = .016); Standardized indirect effect = .23, S.E. = .12, 95% CI = [.06, .57] (see Figure 1A).

Study 1A Discussion

In Study 1A, we found that higher national levels of relational mobility were associated with higher national levels of well-being, and that national levels of relationship quality partially accounted for this association. These results suggest that, at the societal level, the perceived freedom to start and end relationships may promote self-disclosure toward close others and intimacy with close others, ultimately promoting well-being. Importantly, these associations persist after controlling for two features that can covary with well-being: GDP per capita and endorsement of individualistic values (Supplementary Section 1A). These findings suggest that the perceived freedom to change relationships may

complement existing measures of national well-being, above and beyond measures of economic productivity (Bergheim, 2006; Ivković, 2016) and individualism (Spector et al., 2001).

A limitation of Study 1A is that, although the national-level data provided initial evidence that relational mobility is associated with relationship quality and well-being, there could be diverse political and economic confounding factors varying between the nations that we were unable to control for. Moreover, due to the nature of the national-level datasets, we were unable to control for, or only partly controlled for, some features that can facilitate the initiation and termination of relationships. For one, extraverts tend to engage in social interactions and comprise social networks more often than introverts (Feiler & Kleinbaum, 2015; McCrae & Costa, 1990); additionally, people with higher socio-economic status (SES) have greater freedom to choose their relationships than people with lower SES (Carey & Markus, 2017; Carey & Zhang-Bencharit, 2018; Palisi & Ransford, 1987). Thus, in Study 1B, we recruited participants from the same nation (the United States) to see if our findings would replicate at the individual level within the same societal context. We also assessed these participants' extraversion and SES to control for these variables in analyses.

Study 1B

Method

Participants

One hundred and sixty U.S. participants were recruited via Amazon Mechanical Turk to complete a large online survey battery. Participants who failed attention checks were excluded from analyses, resulting in a final sample of 110 (44.5% identified as women, 55.5% identified as men; 72.7% were White/Caucasian/European American, 3.6% Hispanic/Latin American, 15.5% Black/African American, 4.5% East Asian/East Asian

American, 0.9% South Asian/South Asian American, 0.9% Native American, 1.8% Other; age M = 34.67, S.D. = 9.77, Median = 30.00, Range = 20–65). The sample size was chosen to power analyses of a separate task that was included in the survey battery, but was not analyzed for the current study ([Blinded for peer review]; see Supplementary Section 2A for attention check questions, instructions, and measures). A post-hoc power analysis for the indirect effect model (Schoemann et al., 2017; https://schoemanna.shinyapps.io/mc_power_med/) revealed that we acquired strong statistical power (power = .89) with this sample size.

Materials

All of the following measures were collected as part of a large online survey battery. Participants' perceptions of relational mobility were measured as in Study 1A (M = 4.17, S.D. = .78, Cronbach's alpha = .87; Thomson et al., 2018; Yuki et al., 2007). To assess participants' well-being, we aggregated scores on two well-being measures (*Satisfaction With Life* and *Positive Relations With Others*) into a composite score. Scores on the Satisfaction With Life Scale (M = 4.42, S.D. = 1.76, Cronbach's alpha = .95) were averages of 5 items, e.g., *"I am satisfied with life"* (7-point scale from 1 = *strongly disagree* to 7 = *strongly agree*; Diener et al., 1985). Scores on the Positive Relations With Others Subscale of the Psychological Well-Being Scale (M = 4.84, S.D. = 1.25, Cronbach's alpha = .89) were averages of 9 items, e.g., *"I have not experienced many warm and trusting relationships with others (R)"* (7-point scale from 1 = *strongly disagree* to 7 = *strongly agree*; Ryff, 1989; Ryff et al., 2010).

To assess relationship quality, we aggregated scores on four relationship quality indices (self-disclosure to best friend, self-disclosure to closest family member, subjective closeness to best friend, and subjective closeness to closest family member) into a composite score. Self-disclosure scores were averages of five items, e.g., *"How likely would you tell*

your <best friend/closest family member> about your biggest secret?" (5-point scale from 1 = *not at all likely* to 5 = *extremely likely*; best friend: M = 3.90, S.D. = 1.01, Cronbach's alpha = .89; closest family member: M = 3.27, S.D. = 1.16, Cronbach's alpha = .92; adapted from Thomson et al., 2018; Yuki & Schug, 2012). Subjective closeness scores were averages of two items, e.g., *"Relative to all your other relationships, how would you characterize your relationship with your <best friend/closest family member>?"* (10-point scale from 1 = *not at all close* to 10 = *extremely close*; best friend: M = 8.23, S.D. = 1.55, Cronbach's alpha = .84; closest family member: M = 7.70, S.D. = 2.08, Cronbach's alpha = .93; adapted from Thomson et al., 2018). We found consistent results when we replaced the composite scores (well-being, relationship quality) with separate variables (Satisfaction With Life Scale, Positive Relations with Others scale, self-disclosure, and subjective closeness variables) and re-ran the same indirect effect models as our main analyses (Supplementary Section 3A).

Two control variables, extraversion and SES—which were previously reported to facilitate the initiation and termination of relationships (Carey & Markus, 2017; Carey & Zhang-Bencharit, 2018; Feiler & Kleinbaum, 2015; McCrae & Costa, 1990; Palisi & Ransford, 1987)—were also measured. Participants' extraversion was assessed using part of the Ten-Item Personality Inventory. Extraversion scores (M = 3.41, S.D. = 1.83, Cronbach's alpha = .83) were averages of two items, e.g., *"I see myself as extraverted, enthusiastic"* (7-point scale from 1 = *strongly disagree* to 7 = *strongly agree*; Gosling et al., 2003). Participants' familial SES was measured using a 5-point scale ("*What is your family's socioeconomic level: Lower income, lower middle income, middle income, upper middle income, upper income"*; M = 2.57, S.D. = .77). All procedures were approved by the Institutional Review Board at [Blinded for peer review].

Analyses and Results

We created well-being composite scores by averaging participants' scores on the Satisfaction With Life Scale and the Positive Relations with Others Subscale (Cronbach's alpha = .61). An exploratory factor analysis showed that these two variables load on the same factor (Supplementary Section 3B). We also created relationship quality composite scores by averaging the four collected measures: self-disclosure to best friend and to closest family member, and subjective closeness to best friend and to closest family member[3] (Cronbach's alpha = .66). An exploratory factor analysis showed that these four variables load on the same factor (Supplementary Section 3B).

Next, we applied the same correlational analyses from Study 1A to this dataset, to test whether our previous findings would replicate at the individual level. As predicted, relational mobility was positively correlated with the relationship quality composite score ($r = .42$, $p < .001$) and with the well-being composite score ($r = .37$, $p < .001$; Hypothesis 1A). In addition, relationship quality was positively correlated with well-being ($r = .56$, $p < .001$). The indirect effect analysis, controlling for extraversion and SES, revealed that relational mobility was significantly associated with relationship quality (B = .35, S.E. = .08, $\beta = .36$, $t = 4.21$, $p < .001$), which in turn was significantly associated with well-being (B = .56, S.E. = .14, $\beta = .33$, $t = 4.15$, $p < .001$). In support of Hypothesis 1B, the significant direct effect of relational mobility on well-being (B = .42, S.E. = .12, $\beta = .25$, $t = 3.40$, $p = .001$) became marginal when relationship quality was added to the model (B = .23, S.E. = .13, $\beta = .14$, $t = 1.80$, $p = .075$); Standardized indirect effect = .12, S.E. = .04, 95% CI = [.05, .22] (see Figure 1B).

Study 1B Discussion

In Study 1B, in a sample of U.S. participants, higher relational mobility was associated with higher relationship quality and higher well-being, above and beyond the

[3] Ahead of calculating the composite score for relationship quality, we rescaled subjective closeness to friend and subjective closeness to family member by multiplying these scores by 1/2, to match the range of the self-disclosure scale.

influence of extraversion and familial SES. Importantly, relationship quality partially accounted for the association between relational mobility and well-being. These results replicate those of Study 1A, at the individual level. These findings suggest that individuals in environments that facilitate relationship choice may enjoy higher-quality relationships, which may in turn lead to enhanced well-being.

The above studies provide us with insight into the associations among relational mobility, relationship quality, and well-being, in a general context. An important open question from this study is the impact of contextual factors on these associations. For one, do these associations persist across different life events—for instance, a global crisis that directly threatens individuals' physical and mental health? Second, do these associations persist across different relationship lengths—for example, recently-formed relationships that are less than a year old, versus relatively long-standing relationships that are more than a year old?

We aimed to address these questions in Study 2, which took place in the context of the COVID-19 pandemic. In order to assess a specific facet of relationship quality that may have practical implications for well-being during the pandemic, we replaced the relationship quality measure from Study 1 with a measure of social and emotional support received from others in Study 2. We chose to measure the amount of social support that people perceived receiving from others, because of its critical association with well-being under crisis circumstances (Leavy, 1983; Sammarco et al., 2001; Söllner et al., 1999) and with overall relationship quality (Cutrona et al., 2005; Gurung et al., 1997).

Given that building new relationships that fit one's new environment and situation is critical for individuals' well-being (Buote et al., 2007), one hypothesis is that, in times of crisis, individuals with higher relational mobility will report higher well-being, perhaps because they can quickly develop and receive support from new friendships (Hypothesis 2A).

A different line of work suggests an alternative hypothesis. When people are in a position to provide help, they feel more obligated to support family members in need, compared to strangers in need (McManus et al., 2020, 2021); in this vein, people may provide more social support to those whom they have long-standing relationships with. Consequently, a second hypothesis is that, in times of crisis, individuals with lower relational mobility will report higher well-being, perhaps because they can receive more social support from long-standing friendships (Hypothesis 2B).

Study 2

In Study 2, we investigated whether associations among relational mobility, relationship quality, and well-being persist in the context of the COVID-19 pandemic. We honed in on a specific part of relationship quality: the amount of social support people received from others. We administered two waves of surveys to first-year college students in the U.S., to explore whether students' relational mobility (measured pre-pandemic) can predict different types of social support that students reported receiving during the pandemic, and students' reported well-being during the pandemic. Two types of social support were measured: support from old friends (made before coming to college), and support from new friends (made since coming to college). Importantly, we tested whether social support from old friends and from new friends can explain associations between relational mobility and well-being. We focused on first-year college students, as they are undergoing a major life transition, and the distinction between old and new friends is therefore more salient for them (Buote et al., 2007).

Method

Participants

For the first online survey (wave 1), we recruited one hundred and fifty-five first-year students enrolled at two private universities in the Greater Boston Area. Participants who did

not return for the second online survey (wave 2) were excluded from analyses, resulting in a final sample of 110 (68.2% identified as women, 31.8% identified as men; 42.7% were White/Caucasian/European American, 12.7% Hispanic/Latin American, 5.5% Black/African American, 17.3% East Asian/East Asian American, 6.4% South Asian/South Asian American, 1.8% Middle Eastern/Arab American, 12.7% Mixed, 0.9% Other; age M = 18.83, S.D. = .59, Median = 19.00, Range = 18–21). The sample size was chosen to power analyses of a separate task that was included in the survey battery, but was not analyzed for the current study ([Blinded for peer review]). A post-hoc analysis for the indirect effect model (Schoemann et al., 2017; https://schoemanna.shinyapps.io/mc_power_med/) revealed that we acquired moderate statistical power (power = .68) with this sample size.

Materials

The first survey battery (see Supplementary Section 2B) was administered to participants in October 2019, around the beginning of their first semester in college. Participants' perceptions of relational mobility were measured as in Study 1B (M = 4.38, S.D. = .70, Cronbach's alpha = .84; Thomson et al., 2018; Yuki et al., 2007). We also measured participants' extraversion (M = 4.38, S.D. = 1.57, Cronbach's alpha = .80; Gosling et al., 2003) and familial SES (M = 3.19, S.D. = 1.15) as in Study 1B.

The second survey battery (see Supplementary Section 2B) was administered to participants between May 2020 and July 2020, around the end of their second semester in college, and following the start of the COVID-19 pandemic in March 2020. Participants' perceptions of relational mobility were measured in the same way (M = 4.17, S.D. = .61, Cronbach's alpha = .78). To assess participants' well-being, we administered the Satisfaction With Life Scale (M = 4.76, S.D. = 1.22, Cronbach's alpha = .85; Diener et al., 1985) and the Positive Relations with Others Subscale (M = 5.11, S.D. = 1.09, Cronbach's alpha =. 86; Ryff, 1989; Ryff et al., 2010). As in Study 1B, we aggregated these scores into a composite

well-being score (Cronbach's alpha = .68; see Supplementary Section 3C for an exploratory factor analysis). We found consistent results when we replaced the composite well-being score with separate variables (Satisfaction With Life Scale and Positive Relations with Others scale) and re-ran the same indirect effect models as our main analyses (Supplementary Section 3D).

In addition, we measured the degree of social support that participants received during the pandemic from old friends and from new friends (*"Over the past 2 months, how much emotional and social support have you received from your friends whom you met <before / since> coming to college?"*). Participants responded using a slider scale ranging from 0 (*no social and emotional support*) to 100 (*enormous social and emotional support)*. The amount of support received from old friends (M = 67.53, S.E. = 2.48) and the amount of support received from new friends (M = 68.94, S.E. = 2.35) did not significantly differ ($t(109) = -.53$, $p = .598$).

We also measured participants' extraversion (M = 4.21, S.D. = 1.59, Cronbach's alpha = .75; Gosling et al., 2003) and familial SES (M = 3.24, S.D. = 1.19) as in Study 1B. All procedures were approved by the Institutional Review Board at [Blinded for peer review].

Analyses and Results

We first examined whether participants' relational mobility (measured pre-pandemic; wave 1) can predict how much social support they received from their old friends and from their new friends during the pandemic (wave 2). We ran two separate multiple regressions where we entered relational mobility at wave 1 as the independent variable, and support from either old friends or new friends at wave 2 as the dependent variable.

We found that participants' wave 1 relational mobility did not significantly predict social support from *old* friends at wave 2 (B = 2.31, S.E. = 3.58, $\beta = .06$, $t = .65$, $p = .520$). In contrast, wave 1 relational mobility significantly predicted social support from *new* friends at

wave 2 (B = 8.67, S.E. = 3.30, β = .25, t = 2.63, p = .010). That is, students who reported higher relational mobility at wave 1 reported receiving more social and emotional support from new friends during the pandemic, compared to lower-relational-mobility students. Moreover, wave 1 relational mobility was positively correlated with wave 2 well-being (r = .26, p = .007). Finally, support from old friends at wave 2 and support from new friends at wave 2 were both positively correlated with wave 2 well-being (old friends: r = .22, p = .020; new friends: r = .36, p < .001).

As in Studies 1A and 1B, we conducted an indirect effect analysis, for two reasons. First, the primary purpose of Study 2 was to examine whether the associations among relational mobility, relationship quality (specifically, the amount of social support received), and well-being persist under new circumstances, which requires using the same analytic approach as the previous studies. Second, although we used a correlational approach in Study 2, the temporal order of assessments—relational mobility was measured *before* the pandemic, while well-being was measured *during* the pandemic—is consistent with a directional hypothesis where relational mobility at an earlier timepoint influences well-being at a later timepoint (we note that this ordering does not rule out the possibility of a third variable that influences both; see General Discussion). We examined whether the social support participants received from their new friends at wave 2 can account for the influence of wave 1 relational mobility on wave 2 well-being. We found that wave 1 relational mobility was significantly associated with the amount of social support participants received from their new friends at wave 2 (B = 8.67, S.E. = 3.30, β = .24, t = 2.62, p = .010), which in turn was significantly associated with wave 2 well-being (B = .01, S.E. = .004, β = .31, t = 3.44, p = .001). In line with Hypothesis 2A, the significant direct effect of wave 1 relational mobility on wave 2 well-being (B = .37, S.E. = .13, β = .26, t = 2.77, p = .007) became marginal when support from new friends at wave 2 was added to the model (B = .26, S.E. = .13, β = .18, t =

1.97, p = .051); Standardized indirect effect = .08, S.E. = .04, 95% CI = [.02, .18] (see Figure 2). These effects remained the same after log-transforming the measure of social support from new friends, and after controlling for wave 2 relational mobility, wave 1 well-being, and extraversion and SES at both waves (Supplementary Section 1B). When support from new friends and support from old friends were entered in the same model, only the indirect effect of support from new friends was significant (new friends: Standardized Indirect Effect = .07, S.E. = .04, 95% CI = [.02, .18]; old friends: Standardized Indirect Effect = .01, S.E. = .01, 95% CI = [-.01, .06]).

Study 2 Discussion

In Study 2, we explored whether the amount of social support that first-year college students received from old friends and new friends can explain their well-being during a worldwide pandemic. We found that students who reported higher relational mobility before the pandemic reported receiving more social support from new friends during the pandemic, which in turn was associated with higher reported well-being during the pandemic. Support from new friends partially accounted for the association between relational mobility and well-being. These results extend our findings from Studies 1A and 1B, conceptually replicating the associations among relational mobility, relationship quality, and well-being under new life circumstances. Furthermore, these findings suggest that more recently developed relationships—which may be better-suited to one's immediate situation—may serve as a particularly important source of social support, and perhaps well-being, during times of crisis.

General Discussion

Does the freedom to seek alternative relationships contribute to personal well-being through enhanced relationship quality? If so, how do these associations vary as a function of life circumstances, and as a function of relationship length? The present research investigated

these questions. We show that perceiving higher relational mobility in one's social environment is associated with reporting higher relationship quality, which is in turn associated with reporting higher well-being. These associations persist under crisis circumstances, and seem to be driven by social support from newer relationship partners.

In Studies 1A and 1B, we found that higher relational mobility is associated with higher relationship quality, and that this link partially accounts for the association between higher relational mobility and higher well-being. These findings emerged both at the national level and at the individual level. Importantly, at both levels of analysis, the association between relational mobility and well-being persisted after controlling for other variables that may impact relational mobility and well-being: financial circumstances (GDP at the national level; familial SES at the individual level) and cultural and personality factors (individualism at the national level; extraversion at the individual level). These results suggest that the perceived freedom to choose relationships may complement existing measures of well-being, above and beyond measures of economic productivity (Bergheim, 2006; Ivković, 2016) and individualism (Spector et al., 2001). In line with this, previous research has found that a nation's well-being is better predicted by perceived locus of control, rather than individualism-collectivism (Spector et al., 2001). Our findings are consistent with this pattern, suggesting that the feeling of control over one's own relationships may be critical for well-being.

In Study 2, we replicated the links between relational mobility, relationship quality, and well-being during the COVID-19 pandemic, a context that directly threatens people's well-being. First-year college students who perceived higher relational mobility before the pandemic reported receiving more social support from new friends during the pandemic, which in turn was associated with higher reported well-being during the pandemic. This study adds to an emerging body of work on how social support relates to well-being during

the COVID-19 pandemic. Perceived social support is associated with decreased anxiety during the pandemic (Özmete & Park, 2020), decreased dysfunctional grief over COVID-19 related death (Skalski et al., 2021), decreased depression related to pandemic-era racial discrimination (Lee & Waters, 2021), and decreased depression, anxiety, and loneliness during quarantine (Grey et al., 2020). Expanding on this work, the current study suggests that the perceived freedom to choose relationships may modulate such effects: people higher in relational mobility received more social support from new friends during the pandemic, compared to people lower in relational mobility, and this was linked to higher well-being.

In establishing these effects, the current work makes important contributions to multiple areas of psychology. First, expanding on prior research (Yuki & Schug, 2012), the current findings address an important gap in the relationship literature regarding how larger social contexts shape the functioning of relationships within a society (Clark, 2018). For example, people feel the need to convince others that they would be a good friend or romantic partner (Clark et al., 2019), but this need may vary as a function of their society's level of relational mobility. People in societies characterized by low relational mobility may experience a lesser need, perhaps leading to decreased investment in relationships, and lower-quality relationships. Second, our findings demonstrate that the associations among relational mobility, relationship quality (specifically, the amount of social support received), and well-being can persist across different circumstances, including a crisis such as the COVID-19 pandemic. While the social support that people received from both long-standing and new friends during the pandemic correlated with higher well-being, only support from new friends explained the link between relational mobility and well-being. This result suggests that, during a crisis, people with higher relational mobility effectively recruit another source of social support (i.e., new friends) on top of their existing relationships, which may enhance their well-being. In line with this, previous studies have found that East Germans who

migrated to West Germany were better adjusted as a result of making new friends and partners (Schwarzer et al., 1994), and immigrants with home cultures that are high in relational mobility experience less loneliness after migration (Heu et al., 2020). This body of research suggests that the resilience needed for navigating challenging situations may be rooted in the ability to obtain new sources of social support, as shaped by relational mobility. Third, these findings inform our understanding of the possible mechanisms that drive individual and national differences in well-being, highlighting potential avenues for interventions aimed at enhancing personal and societal well-being.

We note that relational mobility is distinct from residential mobility, which is often measured as the frequency with which people have moved to a different residential area. Importantly, previous research has shown that people who moved around more while growing up report *decreased* well-being (Oishi, 2010; Oishi & Talhelm, 2012), especially when they are more of an introvert than an extravert (Oishi & Schimmack, 2010). While relational mobility and residential mobility often go hand in hand, we found in the current study that higher relational mobility was associated with *higher* levels of well-being. These findings suggest that, above and beyond physical residential movement, which is accompanied by potentially forced changes in relationships, the perceived *freedom* of choosing relationships based on one's own needs and preferences has an independent influence on well-being. Supporting this notion, in an alternative analysis of Study 1B, we controlled for the number of new friends and acquaintances that participants made in the last few months, and found that the association between relational mobility and well-being still remained significant (Supplementary Section 4). These findings indicate that one's subjective interpretation of the flexibility of their social surroundings, above and beyond their actual social opportunities, relates to one's subjective sense of relationship quality and well-being.

A few key questions remain to be addressed in future work. First, what is the specific mechanism through which relational mobility influences relationship quality? One potential mechanism, as suggested in prior work, is that the threat of one's close others looking for other options can motivate people to invest more in their relationships, which may ultimately enhance relationship quality (Thomson et al., 2018). Another potential mechanism, which may coexist with the first, is that people in high-relational-mobility societies may be more selective in their relationship choices, and more likely to choose or be chosen by others who can provide more social and emotional support (Schug et al., 2009). Potentially supporting this notion, in Study 2, we found that relational mobility was associated with social support from new friends, rather than old friends. It is possible that people with high relational mobility can readily initiate new relationships with people who are more suitable for their current situation—e.g., people who are having a similar crisis experience and can thus provide appropriate empathy and support. Further investigation is needed to test these possibilities.

Second, related to the above point, our findings do not address whether relational mobility changes the way people seek and leverage social support from others. Previous research has found that people who perceive relationships as "given", such as Asians, are less likely to seek social support, less successful in resolving stressors with social support, and more vigilant to relational constraints when seeking social support, than those who engage in relationships more voluntarily, such as Americans (Sherman et al., 2009; Taylor et al., 2004). These cultural differences may be accounted for by differences in relational mobility. For example, people in a society characterized by low relational mobility may only seek support from people that they have known for a sufficient amount of time. They also may feel that social support from new acquaintances or friends is less helpful in resolving stressors compared to support from long-standing relationship partners. Similarly, people may have

different expectations for old versus new relationship partners—they may expect to receive more support from old partners than from new ones. These differences in expectations may shape subjective perceptions of the support that people end up receiving (i.e., they may be disappointed when old friends provide less support than expected, and pleased when new friends provide more support than expected).

Third, the specific causal directions of the relationships among relational mobility, relationship quality, and well-being will be important to examine. Although enhanced relationship quality in high-relational-mobility societies may cause an increase in well-being, it is also possible that enhanced individual well-being in high-relational-mobility societies causes increases in relationship quality, i.e., happy people make good partners. Alternatively, there may be a third factor that simultaneously affects both relational mobility and well-being, such as endorsement of individualism (Diener et al., 1995; Thomson et al., 2018; we note, however, that we still observed an association between relational mobility and well-being after controlling for individualism). A cross-cultural longitudinal study that tracks individuals' perceptions of relationship flexibility, relationship quality, and well-being over the lifespan would help address this question.

Forth, as relational mobility was originally conceived as a socioecological factor, caution should be paid when interpreting relational mobility data acquired at the level of individuals. While we did find a consistent pattern of results between national- and individual-level studies, it will be helpful for future studies to replicate the findings from Study 1B and Study 2 cross-culturally, by examining multiple societies characterized by different levels of relational mobility.

Last, we did not collect the following demographic variables from participants: sexual identity, sexual orientation, employment or occupational status, student status (in Study 1B),

and disability status, which may be informative in explaining individual differences if collected in future research.

Having high-quality relationships with close others is critical for well-being. The present work extends our understanding of this common notion, by taking into consideration another factor: whether or not one's environment gives people the freedom to start and end relationships at will. We found that people who perceive higher relational mobility enjoyed higher quality relationships, which explained their higher well-being. Furthermore, people with higher relational mobility received more social support from new friends during a time of crisis, which explained their enhanced well-being. Investigating the underlying causal mechanisms of this effect will allow us to better understand the consequences of social support provided by freely-chosen relationships, and perhaps uncover avenues for increasing personal and societal levels of well-being.

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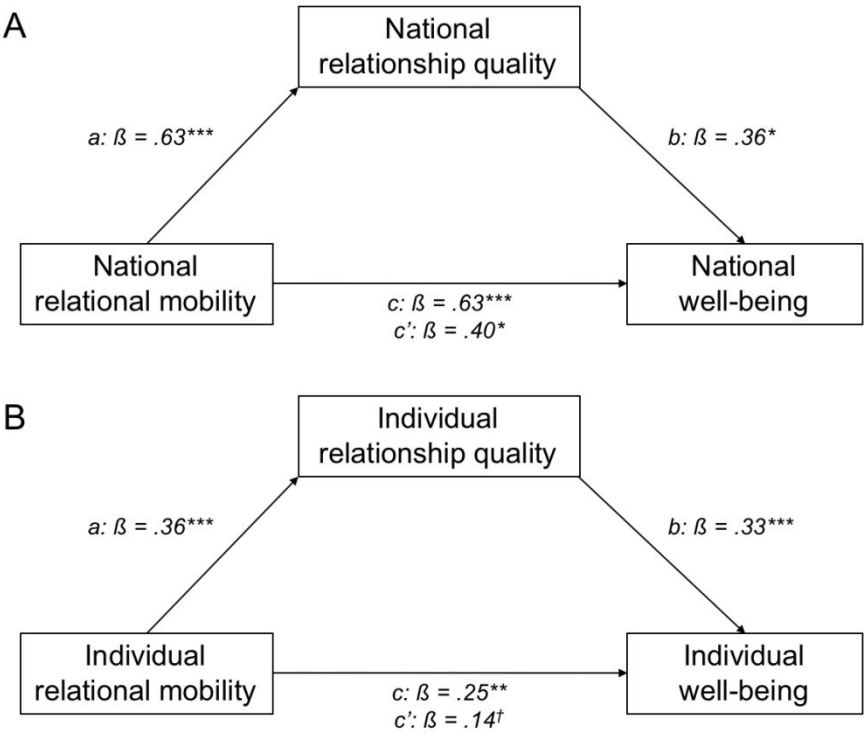
Figure 1

(a) At the national level, higher relational mobility was associated with higher well-being, and this association was partially accounted for by the quality of people's relationships with their romantic partner and with their closest friend. Associations remained after controlling for endorsement of individualism and GDP per capita in a separate analysis.

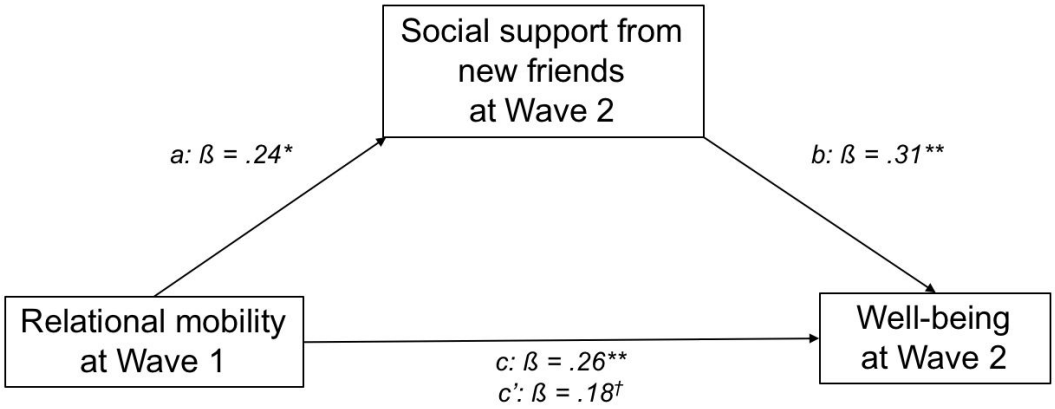
(B) At the individual level, higher perceived relational mobility was associated with higher well-being, and this association was partially accounted for by the quality of people's relationships with their best friend and with their closest family member. Trait extraversion and socio-economic status were controlled for in the model.



Note. $^{\dagger}p < .01$, $*p < .05$, $**p < .01$, $***p < .001$.

Figure 2

Among first-year college students, higher relational mobility, measured before the pandemic (Wave 1), was associated with receiving more social support from new college friends during the pandemic (Wave 2), which in turn was associated with higher well-being during the pandemic. Social support from new friends partially accounted for the association between pre-pandemic relational mobility and mid-pandemic well-being.



Note. $^{\dagger}p < .10$, $*p < .05$, $**p < .01$.