



## Better family relationships—higher well-being: The connection between relationship quality and health related resources



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### ABSTRACT

Family relationships form very important social relationships. They provide the social context enabling the development for a healthy personality and fostering social competencies and the capacity for social adjustment. Several constructs constitute a complex sample of health beneficial attributes, such as resilience, sense of coherence, self-compassion and others, that haven't been investigated in connection with perceived quality of family relationships and collective family efficacy. In three studies we investigated, if perceived quality of family relationships – assessed with a relatively new measure: the Evaluation of Social Systems Scale – was associated with these advantageous health-related qualities, additionally confirming EVOS' construct validity. In study 1 ( $N = 207$ ) and 2 ( $N = 305$ ) university students filled out several paper-pencil-questionnaire whereas in study 3 ( $N = 528$ ) a heterogeneous sample took part in an online-survey. Controlling for participants' age and sex, better family relationships were associated with reduced psychological distress ( $r = -.30$  to  $-.37$ ), more satisfaction with life ( $r = 0.40$ ), stronger resilience ( $r = 0.37$ ), sense of coherence ( $r = 0.37$ ), self-compassion ( $r = 0.33$ ), optimism ( $r = 0.32$ ), general self-efficacy ( $r = 0.27$ ), and self-esteem ( $r = 0.34$ ). Results highlight the importance of the family environment not only for psychological health and quality of life, but also for individual adaptation and well-being. In future research, this should be especially addressed in designing and providing preventative interventions for families.

### 1. Introduction

Social relationships are an important predictor of health and well-being. Supportive social relationships assist people to cope with stress and stay well (Berkman, 2000; Landstedt, Hammarström, & Winefield, 2015; Uchino, 2006). In longitudinal studies, good social relationships predicted mental health, interpersonal functioning (Paradis et al., 2011), and even longevity (Kern, Della Porta, & Friedman, 2014). Strong social relationships, indicated by good social integration, increase the likelihood for survival by 50% (Holt-Lunstad, Smith, & Layton, 2010). Loneliness and social isolation can be understood as risk factors for poor health outcomes leading to a reduction of longevity, especially for those under 65 years of age (Holt-Lunstad & Smith, 2012; Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015).

#### 1.1. Family and its connection to health

Among the most important social ties are family ties (Beavers, 1981;

Beavers & Hampson, 2000; Cohen, 2004; Epstein, Bishop, & Levin, 1978, Epstein, Bishop, Ryan, Miller, & Keitner, 1993; Miller, Ryan, Keitner, Bishop, & Epstein, 2000; Ryan & Willits, 2007; Umberson & Karas Montez, 2010). Social bonds between children and their parents can be regarded as social capital – including norms and values – which may be as important as financial and human capital for health and well-being (Parcel & Bixby, 2016). Consequently, family-related aspects such as maternal support or good family functioning have been associated with better psychological health and individual flourishing (Barber & Harmon, 2002; Dunn, McLaughlin, Slopen, Rosand, & Smoller, 2013; Fincham & Beach, 2010). A need to belong to and to be related to other people forms a basic motive in human development. Self-determination theory posits that relatedness to others is a basic psychological need (Ryan & Deci, 2000). Complementing, rather than opposing relatedness, a need for autonomy is considered to be a desire to be a causal agent of one's life and a preference to choose for oneself. In the best possible way, these basic needs can be met in a flourishing and high-quality relationship context (Deci & Ryan, 2000; Lavigne,

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Vallerand, & Crevier-Braud, 2011; Ryan & Deci, 2000).

Family is a social system and at the same time provides a context for development (Henry, Sheffield Morris, & Harrist, 2015). It is often thought to shape an individual's life experience through socialization and gene-environment interaction (Harris, 1995; Kim-Cohen & Turkewitz, 2012). Family systems, their members and their relational ties, are reciprocal in nature and are characterized as dynamic and interdependent (Henry et al., 2015; Masten & Monn, 2015). Not only health and adaptation, but personality itself is thought to develop under the influence of family members from early childhood on (Bornstein, 2006; Pomerantz & Thompson, 2008). Personality development takes place in a relational environment, forming an individual's identity on the one hand and building relatedness as well as nourishing relationships on the other hand (Diehl, Elnick, Bourbeau, & Labouvie-Vief, 1998). Family members offer regulative functions. In healthy contexts, parents co-regulate their children by being sensitive, responsive and caring. They structure, validate and stabilize emotion-recognition and expression, and synchronize while interacting.

The developmental-contextual framework emphasizes the influence of experiences within the family during childhood and adolescence on relationships to significant others in later life (Donnellan, Larsen-Rife, & Conger, 2005). Based on a cohesive child-parent relationship, feelings of support and closeness foster greater social competencies and social adjustment (Allen, Moore, Kuperminc, & Bell, 1998; Smetana, Campione-Barr, & Metzger, 2006), and are associated with higher well-being in adolescence (Jose, Ryan, & Pryor, 2012). Frequent and positive family involvement, emotional self-disclosure, and a loving expression of affection create a positive family atmosphere, which has been related to reduced symptom development (O'Brien et al., 2006). Although family life is characterized by highly fluctuating challenges and tasks – as the developing child has ever-changing needs – social support, collective decision making, and frequent communication and interactions buffer against stress and the development of psychopathology (Ackard, Neumark-Sztainer, Story, & Perry, 2006; Laursen & Collins, 2004; Phillips-Salimi, Robb, Monahan, Dossey, & Haase, 2014). Taken together, high family relationship quality and good family functioning have shown numerous health benefits in the past. Family resilience is fostered by a process of flexible, collective adaptation. As a system, families contribute to development of health and may constitute both a protective factor as well as a potential vulnerability (Cicchetti, 2013; Masten & Monn, 2015). Still, the connection between a resilient family with flourishing family relations and a well-adapted individual needs further clarification.

## 1.2. Resilience and individual adaptation

Individual characteristics that promote health and well-being are generally described as inner strength and resilience (Patterson, 2002). There is no definite consensus about what exactly contributes to a resilient disposition, yet a number of psychological constructs drawn from diverse theoretical perspectives have been proposed over the years. These are supposed to reflect how some individuals seem to be spared the effects of hardships and critical life events on health. Among the most prominent are resilience itself (Wagnild & Young, 1993), sense of coherence (Antonovsky, 1987), dispositional optimism (Carver, 2014; Carver & Scheier, 2014), general self-efficacy (Schwarzer, 2014), self-esteem (Rosenberg, 1965), and self-compassion (Neff, 2003a, 2003b).

### 1.2.1. Resilience

Resilience was conceived as a disposition moderating the negative effects of stress. It promotes adaptation to stressful situations (Wagnild & Young, 1993; Windle, 2011). Family and individual child resilience are interconnected, and lead to an overall capacity to maintain functionality in the light of adverse life experiences. A number of scales aim to measure resilience. Windle and colleagues reviewed nineteen different scales and concluded that “the conceptual and theoretical

adequacy of a number of the scales was questionable” (Windle, Bennett, & Noyes, 2011). One of the most widely used measures is the Resilience Scale by Wagnild and Young (1993). This conception of resilience encompasses five characteristics: Equanimity, a balanced perspective of one's life and experiences; perseverance, the act of persistence despite adversity or discouragement; self-reliance, the trust in oneself and one's capabilities; and meaningfulness, the view that life has purpose and the valuation of one's contributions; and existential aloneness, the realization that each person's life path is unique. Contrasting many other health beneficial constructs, resilience is often thought to stem from successful coping with negative experience (Windle, 2011). Resilience is therefore often connected to the concept of post-traumatic growth (Jayawickreme & Blackie, 2014). Nonetheless, some individuals possess the ability to cope with stress without having endured significant negative experiences. The idea of the “invulnerable children” reflects that some people appear to be able to cope with any stressful event. Fonagy and colleagues argued that resilience is established by early childhood experiences and interactions (Fonagy, Steele, Steele, Higgitt, & Target, 1994). Thus, regardless of traumatizing experiences in later life, the foundation for resilience may already be established for any adult person.

### 1.2.2. Sense of coherence

Sense of coherence, coming from Antonovsky's (1987) salutogenic theory, constitutes a multifaceted construct that is understood as an internal resistance resource. Sense of coherence promotes health when people are faced with stressful life events. It encompasses three major facets: Comprehensibility denotes a person's tendency to perceive situations and events as clear and structured. Manageability represents the belief to possess the necessary skills to deal with life challenges. Meaningfulness describes an individual's conviction that the demands and challenges of life are worthy of investment and engagement. Based on Antonovsky's background as a medical sociologist, sense of coherence is thought to stem from a multitude of causes, including an individual's social environment, social support, but also wealth, education, or even intelligence (Antonovsky, 1987). Antonovsky described these as “generalized resistance resources” and sense of coherence denotes a person's ability to use them (Lindström, 2001). In the past, sense of coherence has been found to outperform other health-beneficial constructs when predicting psychological symptoms or substance use (Grevenstein, Aguilar-Raab, & Bluemke, 2019; Grevenstein, Aguilar-Raab, Schweitzer, & Bluemke, 2016; Grevenstein, Bluemke, & Kroeninger-Jungaberle, 2016).

### 1.2.3. Dispositional optimism

Dispositional optimism represents a generalized positive attitude towards life and its challenges (Scheier & Carver, 1985). Optimists tend to expect positive outcomes and often cope better with failure. As a self-regulatory resource, optimism promotes persistence in the face of challenges and more adaptive and active coping with stress. It is related to motivational processes in engaging in health-promoting behaviors. Current research suggests that dispositional optimism also leads to stronger commitment in social relationship for example in terms of more constructive problem solving (Carver & Scheier, 2014).

### 1.2.4. Self-compassion

Self-compassion is a relatively recent concept based on originally Buddhist teachings. Based on mindfulness, self-compassion includes a non-judgmental and receptive state of mind, which fosters a clear perception of challenging situations and one's own thoughts and emotions, ultimately leading to a better mental state (Keng, Smoski, & Robins, 2011). Beyond that however, self-compassion describes the tendency not only to be open and moved by one's own suffering, but also to confront life challenges positively (Neff, 2003b). Self-compassion should prevent negative self-evaluation and lead to feelings of caring and kindness towards oneself. Additionally, an individual should

perceive her own experience in the context of common human experience.

### 1.2.5. Self-efficacy

Self-efficacy describes a person's belief to exhibit control and to succeed in a given situation (Schwarzer, 2014). General self-efficacy is a person's generalized self-efficacy across a broad range of challenging situations that require effort and perseverance and thus goes beyond specific situations (Schwarzer & Jerusalem, 1995). It is an important concept for health development in youth. For example, Di Giunta et al. (2018) showed that lower self-efficacy in adolescents was associated with greater internalizing and externalizing problems. Furthermore, current research indicates that the development of self-efficacy is domain-sensitive and that girls more often than boys rely on social sources in this regard (Butz & Usher, 2015).

### 1.2.6. Self-esteem

Self-esteem describes the overall subjective emotional evaluation of one's own worth. Global self-esteem describes a general judgment of oneself and includes positive and negative evaluations of one's competencies, abilities, and other aspects connected to the self (Rosenberg, 1965).

The presented constructs constitute a complex sample of health beneficial attributes. Coming from different theoretical backgrounds, some constructs are broader and some are more narrowly defined. Some are thought to be rather stable and trait-like, whereas others are considered to be improvable by training or intervention. Still, higher standing on each of these characteristics has been found to be associated with better psychological health and well-being. For instance, sense of coherence has been consistently associated with various health outcomes, such as good mental health and health-related behavior (Eriksson & Lindström, 2006), general psychological well-being (Grevenstein & Bluemke, 2015; Nilsson, Leppert, Simonsson, & Starrin, 2010), depression (Haukkala et al., 2013), and anxiety (Moksnes, Espnes, & Haugan, 2013). Likewise, general self-efficacy has been related to health and performance outcomes (Andersson, Moore, Hensing, Krantz, & Staland-Nyman, 2014; Luszczynska, Gutiérrez-Doña, & Schwarzer, 2005). Similar to sense of coherence, general self-efficacy covers aspects of self-regulation (Geyer, 1997). Low self-esteem has been found to be a vulnerability factor for the development of depression (Orth, Robins, & Roberts, 2008; Rieger, Göllner, Trautwein, & Roberts, 2016). Furthermore, resilience has shown negative associations with depression and anxiety, and positive correlations with life satisfaction as well (Ahern, Kiehl, Lou Sole, & Byers, 2006). Also, optimism plays an important role in self-regulation. Optimists not only cope better with failure, but are more persistent in the face of challenges and engage in more adaptive and active coping with stress. Unsurprisingly, dispositional optimism was found to be related to various positive mental as well as physical health outcomes (Carver & Scheier, 2014). Finally, much like the other constructs, self-compassion displayed negative associations with depression and anxiety, and positive correlations with life satisfaction (Neff, Rude, & Kirkpatrick, 2007). High levels of self-compassion were also related to a more supportive and positive interaction style in close relationships (Neff & Beretvas, 2013).

### 1.3. The present research

The present research explores the bi-directional relationships between quality of family relations, health beneficial individual differences, psychological distress, and general well-being. We applied a relatively new, short, and psychometrically sound measure to assess most relevant aspects of social functioning: *Quality of relationship* and *collective efficacy*. These two aspects represent affective and cognitive facets of social functioning, which are important targets of change processes initiated by interventions focusing on multiple persons. In EVOS,

the following dimensions characterize the two aspects: Communication, cohesion, atmosphere, giving and taking as well as collective aims, resources, decisions, solutions findings and adaptability. All of them have been advanced in theories describing and explaining social functioning (Bandura, Caprara, Barbaranelli, Regalia, & Scabini, 2011; Beavers, 1981; Epstein et al., 1978; Olson, 1986) – those of which are especially important in family relationships. The domain of collective efficacy encompasses important aspects of how a system works together in order to pursue goals, handle resources, make decisions, find solutions to problems and adapt to new challenges. Bandura (2000) aptly described his conception of collective efficacy: “People's shared beliefs in their collective efficacy influence the types of futures they seek to achieve through collective action, how well they use their resources, how much effort they put into their group endeavor, their staying power when collective efforts fail to produce quick results or meet forcible opposition, and their vulnerability to the discouragement that can beset people taking on tough social problems” (p.76). Going beyond a simple, context specific idea of self-efficacy, collective efficacy captures a key element of systemic thinking, as it describe a system's ability to create unique solutions.

We assumed that satisfying and positive social relationships help to promote high adaptation in individuals, and possibly vice-versa. Our study will shed more light onto the association between quality of family relationships and collective self-efficacy as well as a variety of characteristics promoting health and well-being, which have not yet been investigated together.

## 2. Methods

### 2.1. Participants and study design

The present research includes three separate studies conducted in Germany. All three focused on the quality of family relationships in connection with sense of coherence and psychological distress. We did not want to overstrain the study participants with regard to the duration of the survey, but nevertheless we aimed to shed light on different health-relevant aspects, therefore: Study 1 measured family relationship quality, sense of coherence, resilience, and psychological distress; Study 2 assessed family relationship quality, sense of coherence, optimism, self-compassion, and psychological distress. In study 3 we measured family relationship quality, sense of coherence, general self-efficacy, self-esteem, satisfaction with life and psychological distress.

Study 1 included  $N = 207$  (54.1% female) participants with a mean age of 22.56 years ( $SD = 4.25$ ; range = 18–50). Most participants (91.8%) were German students of Psychology and Medicine. About 7.2% were employed persons and 1.0% were trainees. Participants in study 2 were  $N = 305$  (71.5% female) individuals ( $M_{age} = 24.40$ ;  $SD = 9.50$ ; range = 15–64). The majority were university students (84.9%). The others were volunteering employees (10.5%), high school students (1.0%), unemployed persons (1.0%), trainees (0.3%), or individuals reporting “other” occupations (2.3%).  $N = 528$  (72% female) took part in study 3 ( $M_{age} = 31.24$ ;  $SD = 13.30$ ; range = 14–76). Even though university students (46.8%) again constituted the largest subgroup, the sample was much more diverse. Employed persons (33.5%), unemployed persons (2.5%), trainees (3.8%), high school students (2.3%), or individuals reporting “other” occupations (11.2%) summed up to more than half of the sample.

Studies 1 and 2 were conducted locally, with participants filling out paper questionnaires. Participants were predominantly volunteers (students at the local university) who participated out of curiosity and for the sake of science without compensation. Potential participants were invited and briefed by a researcher or student assistant about what the study procedures included, stressing that participation was entirely voluntary. Motivated participants were invited to anonymously return completed questionnaires to the research team, which included formal consent to study participation. To broaden the sample characteristics,

Study 3 was conducted online ([www.socsisurvey.de](http://www.socsisurvey.de)). Participants were recruited via social media sites (i.e., Facebook) and local email lists. As a token of appreciation, they could participate in a lottery of Amazon vouchers, each amounting to 25 Euros. Participants were assured of their anonymity. No identifying information was collected. They were informed that answering the questionnaires automatically entails voluntary consent to study participation. The underlying research project was approved by the ethics committee of the university's medical faculty (S-508/2012).

## 2.2. Measures

### 2.2.1. Evaluation of social systems—EVOS: family relationships

Family relationship quality was assessed in all three studies using EVOS (Aguilar-Raab et al., 2018; Aguilar-Raab, Grevenstein, & Schweitzer, 2015). Prior research has demonstrated that EVOS – originally constructed in German language – is a psychometrically sound, reliable, and valid self-report measure in its German and translated English versions (Aguilar-Raab et al., 2015). Factorial validity and construct validity were supported with regard to convergent and discriminant validity with overlapping and theoretically distant other self-report measures. In adult samples EVOS has shown positive correlations with measures of life satisfaction, relationship functioning (Aguilar-Raab et al., 2015), as well as negative correlations with psychological distress and functioning (Aguilar-Raab et al., 2018). EVOS has also been validated in youth populations and has comparably shown positive correlations with family functioning and negative associations with psychological distress (Grevenstein, Schweitzer, & Aguilar-Raab, 2019). It is based on systems theory and models of functionality and relationships in families and other contexts (Epstein et al., 1978) as well as Bandura's concept of collective efficacy (Bandura et al., 2011). Four items assess the quality of a social system – quality of the relationship focusing the emotional or affective level (e.g., “For me, the way we talk with each other, is ...”). Five items are applied for the rather cognitive evaluation of family functioning or collective efficacy of the system (e.g., “For me, how we adapt to change, is ...”). Answers on 4-point rating scales range from 0 = *very poor* to 3 = *very good*. Cronbach's Alpha was 0.92 in study 1, 0.93 in study 2, and 0.93 in study 3.

### 2.2.2. SOC-13: sense of coherence

We used the 13-item adaptation of Antonovsky's original Orientation to Life scale in all three studies (Schumacher, Wilz, Gunzelmann, & Brähler, 2000). The German sense of coherence scale was validated and standardized in a representative sample (Schumacher et al., 2000; Schumacher, Gunzelmann, & Brähler, 2000). In a systematic review, Eriksson and Lindström (2005) concluded that the sense of coherence scale is a reliable and valid measure. It includes five comprehensibility items (e.g., “Has it happened in the past that you were surprised by the behavior of people whom you thought you knew well?”), four manageability items (e.g., “Has it happened that people whom you counted on disappointed you?”), and four meaningfulness items (e.g., “Do you have the feeling that you don't really care about what goes on around you?”). Answers were given on 7-point rating scales marked from 1 = *very often* to 7 = *very seldom or never*. Cronbach's Alpha was 0.83 in study 1, 0.85 in study 2, and 0.81 in study 3.

### 2.2.3. RS-13: resilience

In study 1 we used the 13-item German version (Leppert, Koch, Brähler, & Strauß, 2008) of the Wagnild and Young Resilience Scale (Wagnild & Young, 1993). The German version has been validated in terms of factorial validity and standardized in a representative sample by Leppert et al. (2008). The reliability and concurrent validity of the original scale were supported by the study of Wagnild and Young (1993). Nine items assess personal competence (e.g., “When I make plans I follow through with them.”) and four items reflect acceptance of self and life (e.g., “It's okay if there are people who don't

like me.”). Answers were given on 7-point rating scales marked from 1 = *no, do not agree at all* to 7 = *yes, totally agree*. Cronbach's Alpha was 0.82.

### 2.2.4. LOT-R: dispositional optimism

We used a German adaption of the revised life-orientation-test with ten items in study 2 (Glaesmer, Hoyer, Klotsche, & Herzberg, 2008). The original scale was constructed by Scheier, Carver, and Bridges (1994). It is reported that it possess adequate predictive and discriminant validity. The scale includes three positively worded and three negatively framed items. The remaining four are filler items. Following Carver and Scheier's (2014) view of optimism as a uni-dimensional construct, negative items were recoded and a mean score was computed. Answers were given on 5-point Likert scales marked from 1 = *completely true* to 5 = *completely not true* (Alpha = 0.82).

### 2.2.5. SCS-D: self-compassion

We used a German adaptation (Hupfeld & Ruffieux, 2011) of Neff's original self-compassion scale in study 2, which was shown to be valid in terms of positive correlations with mental health outcomes such as higher life satisfaction and negative correlations with for example neurotic perfectionism (Neff, 2003a). The scale includes 26 items measuring the six dimensions self-kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification. A global self-compassion score is calculated by first computing mean scores for each subscale. Negatively scored subscales are recoded before aggregating across subscales. Answers were given on 5-point scales marked from 1 = *very rarely* to 5 = *very often*. Alpha across all items of the total scale amounted to 0.89.

### 2.2.6. GSE: general self-efficacy

We used the general self-efficacy scale by Schwarzer & Jerusalem in study 3 (Schwarzer & Jerusalem, 1995, 1999). Being a uni-dimensional and universal construct based on data from 25 countries, the scale has shown sound psychometric properties including a variety of validity aspects (Scholz, Doña, Sud, & Schwarzer, 2002). It includes ten items such as “If there are challenges, I can find a way to succeed.” Answers were given on 4-point scales marked from 1 = *not true* to 4 = *completely true*. Cronbach's Alpha was 0.88.

### 2.2.7. Self-esteem

A revised German version of the Rosenberg self-esteem scale was used in study 3 (von Collani & Herzberg, 2003). Its criterion and convergent validity is reported to be satisfactory (Ferring & Filipp, 1996). It comprises ten items such as “On the whole, I am satisfied with myself.” Answers were given on 4-point scales marked from 1 = *strongly disagree* to 4 = *strongly agree*. Cronbach's Alpha was = 0.89.

### 2.2.8. SCL-90-R: psychopathology

In studies 1 and 2 psychological distress was measured using a German adaptation of the Symptom Checklist-90-R (SCL-90-R; Derogatis & Fitzpatrick, 2004; Franke, 2002). Several original studies positively evaluated its predictive, convergent, and construct validity (Derogatis & Unger, 2010). The SCL-90-R is a general measure of psychopathology and includes ninety items in nine different subscales. The Global Severity Index (GSI) can be computed as a mean score over all items representing a measure of overall psychological distress. Participants provided answers on how much they suffered from various symptoms on 5-point scales marked 0 = *not at all*, 1 = *a bit*, 2 = *considerably*, 3 = *much*, 4 = *very much*. Cronbach's Alpha for the total scale was 0.96 in study 1 and 0.97 in study 2.

### 2.2.9. SCL-K-9

In study 3, we used the Symptom Checklist-K-9 to measure psychological distress (Klaghofer & Brähler, 2001). It is a brief 9-item version of the original SCL-90-R using the same 5-point scale. In its

developmental phase, from each of the nine subscales of the SCL-90-R, one item with the highest item-to-total correlation was selected. The SCL-K-9 has been presented as a convergent valid measure with a correlation of  $r = 0.93$  between the short SCL-K-9 and the full SCL-90-R global severity index in a representative survey (Klaghofer & Brähler, 2001) Cronbach's Alpha was 0.85 in our sample.

2.2.10. SWLS: satisfaction with life

In study 3 we used a German adaption of the Satisfaction With Life Scale (SWLS). The scale has shown adequate construct validity in the original and German version as well (Diener, Emmons, Larsen, & Griffin, 1985; Glaesmer, Grande, Braehler, & Roth, 2011). It is a short 5-item measure of a global judgment of satisfaction with one's own life including items such as "I am satisfied with my life". Answers were given on 7-point scales marked from 1 = *strongly disagree* to 7 = *strongly agree*. Mean scores were computed (Alpha = 0.87).

3. Results

We initially explored if men and woman differed on any of the study variables. Woman reported more psychological distress in study 1 ( $t = 2.05$ ,  $df = 203.11$ ,  $p = .04$ ,  $Ms = 0.47$  vs.  $0.37$ ,  $SDs = 0.37$  vs.  $0.28$ ) and more satisfaction with life in study 3 ( $t = 2.25$ ,  $df = 526$ ,  $p = .03$ ,  $Ms = 5.04$  vs.  $4.78$ ,  $SDs = 1.19$  vs.  $1.22$ ). There were no differences on other variables. Descriptive statistics are displayed in Table 1. These results indicated that our participants mostly represented a non-clinical general population sample. Nonetheless, our participants used the whole range of most scales and some individuals reported high psychological distress and low family relationship quality.

We computed partial correlations controlling for participants' age and sex between family relationship quality and the other variables. As hypothesized, the quality of family relations was significantly correlated with all criteria. Then, we compared the strength of the various associations. Differences emerged only in study 3. Family relationship quality was less strongly related to general self-efficacy than to any other variable, all  $Zs > 2.03$ , all  $ps < 0.05$ . In light of the number of comparisons, this may be a spurious finding. Nonetheless, even after applying Bonferroni correction (adjusting the significance level to  $p = .005$ ), two comparisons still remained significant. Family relations were more strongly associated with life satisfaction than with general self-efficacy ( $Z = 3.27$ ,  $p = .001$ ) and more strongly related to sense of coherence than to general self-efficacy ( $Z = 2.82$ ,  $p < .005$ ).

The general pattern suggests that family relationship quality was

consistently, and about equally, associated with all criteria, sharing 7% to 16% of the variance between the predictor and each criterion. General self-efficacy appeared slightly less connected to the quality of family relationships.

4. Discussion

The present research investigated the association between family relationship quality and health beneficial individual differences, as well as psychological distress and satisfaction with life. Our results confirmed the association between family relations and psychological health. People with better family relations reported less psychological distress and more life satisfaction. Thus, social interactions indeed appear as an important predictor for health and well-being (Miller, Chen, & Cole, 2009; Rusbult & Van Lange, 2003). The need to belong or relatedness as one of the three basic needs defined within the framework of the Self-Determination Theory (Ryan & Deci, 2000) is an important factor for a healthy development in a social context of a family: For example, an adolescent child can become independent in its striving for autonomy only on the basis of a secure bond or attachment (Mattanah, Lopez, & Govern, 2011; Moretti & Peled, 2004). While distancing itself from parental caregivers its feeling to be autonomous only makes it possible to experience itself as (self-)effective and competent. Thus, it becomes clear how relatedness, autonomy, and competence are mutually dependent. Self-regulatory mechanisms and health-related traits are proposed to be mediating factors or health-related outcomes, constructs upon which the present studies are focused.

Beyond that, correlations between family relationship quality and aspects of positive adaptation have emerged. As hypothesized better family relations indicated higher sense of coherence, resilience, optimism, self-compassion, general self-efficacy, and self-esteem. These associations are far from trivial. For example, family relations in adolescence have been identified as a major contributor in the ontogenetic development of sense of coherence, because the family context provides meaningful experiences for the general increase in sense of coherence through puberty and adolescence (Grevenstein & Bluemke, 2017) as well as an individual's development of normatively high sense of coherence scores in adolescence (García-Moya, Moreno, & Jiménez-Iglesias, 2013; García-Moya, Rivera, Moreno, Lindström, & Jiménez-Iglesias, 2012). More generally, social relationships aid the development of self-regulation skills in adolescence (Farley & Kim-Spoon, 2014). Complementary factors, such as a lack of positive interactions and low parental involvement, have been identified as a risk factor for severe personality dysfunction (Fruzzetti, Shenk, & Hoffman,

Table 1  
Descriptives and partial correlations with family relationship quality for study measures.

	M	SD	Range	Partial correlation with family relations (EVOS)
<i>Study 1</i>				
Family relationship quality (EVOS)	2.29	0.59	0.23–3.00	–
Sense of Coherence (SOC-13)	5.15	0.88	2.67–6.77	.37***
Resilience (RS-13)	5.50	0.75	1.92–7.00	.37***
Psychological distress (SCL90-R GSI)	0.42	0.33	0.03–1.89	–.37***
<i>Study 2</i>				
Family relationship quality (EVOS)	2.23	0.64	0.00–3.00	–
Sense of Coherence (SOC-13)	4.83	0.91	2.00–6.69	.37***
Optimism (LOT-R)	3.75	0.72	1.50–5.00	.32***
Self-compassion (SCS-D)	3.13	0.59	1.28–4.74	.33***
Psychological distress (SCL90-R GSI)	0.49	0.40	0.02–2.41	–.30***
<i>Study 3</i>				
Family relationship quality (EVOS)	2.11	0.65	0.00–3.00	–
Sense of Coherence (SOC-13)	4.65	0.84	2.23–6.46	.37***
General self-efficacy (GSE)	2.89	0.45	1.10–4.00	.27***
Self-esteem	3.25	0.58	1.20–4.00	.34***
Psychological distress (SCL-K-9)	1.10	0.76	0.00–3.89	–.37***
Satisfaction with life (SWLS)	4.97	1.20	1.00–7.00	.40***

Note: Partial correlations are significant at \*\*\* $p < .001$  (two-tailed), controlling for age and sex.

2005).

EVOS is a relatively new measure capturing important dimensions relevant for family relationships. It was created to assess *quality of relationship* and *collective efficacy*, both of which are related to individual health (Aguilar-Raab et al., 2018). The new evidence presented here supports the construct validity of EVOS (Cronbach & Meehl, 1955). Specifically, good family relations are clearly related to individual adaptation and resilience. Thus, nurturing a positive family environment may be a substantial contribution to fostering individual resources and enabling people to cope with adverse life events.

In this set of studies, any connection to resilience or positive adaptation appeared to be rather unspecific, because family relations were correlated with all individual differences and health variables to a similar extent. The similarity of these associations indicates that future studies will need to look at more specific outcomes and the detailed mechanisms of the effects of family relations.

The results presented here have implications for prevention strategies in the family context: In the sense of behavioral preventive aspects, it seems worthwhile to strengthen families, especially parents, in gaining and maintaining a nurturing, benevolent togetherness, in which belonging, cohesion, and trust are addressed in a special way. The creation of closeness that also allows for an individual striving for autonomy is particularly important from a developmental psychological point of view. Affective co-regulative mechanisms, in which the sense of coherence, individual but also collective/familial resilience, self-compassion, and other personality traits are strengthened, seem to be meaningful strategies here. Currently, mindfulness- and compassion-based interventions for parents, caregivers and families can be considered in this regard pointing towards a promising direction (Duncan, Coatsworth, & Greenberg, 2009; Gehart & McCollum, 2007; Kirby, 2016).

#### 4.1. Limitations

Two obvious limitations for establishing causality are the cross-sectional and correlational design of the set of studies. Hence, we can neither declare that family relationship quality has a direct effect on positive adaptation or health, nor that resilience of family members determines the quality of family interactions. In addition to the potential for bidirectional causality, there is the potential of a third factor being causal. Relationships between family relationship quality, health, and personality might be reciprocal, at least in the long run (Alferi, Carver, Antoni, Weiss, & Durán, 2001). Therefore, as much as family nurtures an individual's characteristics, some people with certain characteristics may also engage more skillfully in positive social relationships. Only longitudinal data and complex research designs (cross-lagged panel designs; Kenny, 1975, 2014) can estimate the relative size of the influence of both causal paths. In fact, family systems theory proposes that families are constituted by highly interdependent relationships between family members with unique characteristics (Bowen, 1986).

#### 4.2. Conclusions

Better family relationship quality was linked to better health and well-being, higher life satisfaction, and individual salutogenic characteristics. This finding empirically highlights the importance of the family constituting the social environment for the maturation and actualization of an individual's dispositions. It underlines the potential benefits of preventative strategies and family therapy not only enhancing the quality of relationships but initiating positive change on the individual level, too.

#### Conflict of interest

The authors state, that they have none to declare.

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#### Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.mph.2019.200160](https://doi.org/10.1016/j.mph.2019.200160).

#### References

- Ackard, D. M., Neumark-Sztainer, D., Story, M., & Perry, C. (2006). Parent-child connectedness and behavioral and emotional health among adolescents. *American Journal of Preventive Medicine*, 30(1), 59–66. <https://doi.org/10.1016/j.amepre.2005.09.013>.
- Aguilar-Raab, C., Grevenstein, D., Gotthardt, L., Jarczok, M. N., Hunger, C., Ditzgen, B., & Schweitzer, J. (2018). Changing me, changing us: Relationship quality and collective efficacy as major outcomes in systemic couple therapy. *Family Process*, 57, 342–358. <https://doi.org/10.1111/famp.12302>.
- Aguilar-Raab, C., Grevenstein, D., & Schweitzer, J. (2015). Measuring social relationships in different social systems: The construction and validation of the Evaluation of Social Systems (EVOS) Scale. *PLoS One*, 10(7) doi:e0133442.
- Ahern, N. R., Kiehl, E. M., Lou Sole, M., & Byers, J. (2006). A review of instruments measuring resilience. *Issues in Comprehensive Pediatric Nursing*, 29(2), 103–125. <https://doi.org/10.1080/01460860600677643>.
- Alferi, S. M., Carver, C. S., Antoni, M. H., Weiss, S., & Durán, R. E. (2001). An exploratory study of social support, distress, and life disruption among low-income hispanic women under treatment for early stage breast cancer. *Health Psychology*, 20(1), 41–46. <https://doi.org/10.1037/0278-6133.20.1.41>.
- Allen, J. P., Moore, C., Kuperminc, G., & Bell, K. (1998). Attachment and adolescent psychosocial functioning. *Child Development*, 69(5), 1406–1419. <https://doi.org/10.1111/j.1467-8624.1998.tb06220.x>.
- Andersson, L. M. C., Moore, C. D., Hensing, G., Krantz, G., & Staland-Nyman, C. (2014). General self-efficacy and its relationship to self-reported mental illness and barriers to care: A general population study. *Community Mental Health Journal*, 50(6), 721–728. <https://doi.org/10.1007/s10597-014-9722-y>.
- Antonovsky, A. (1987). *Unraveling the mystery of health: How people manage stress and stay well*. San Francisco, CA: Jossey-Bass.
- Bandura, A. (2000). Exercise of human agency through collective efficacy. *Current Directions in Psychological Science*, 9(3), 75–78. <https://doi.org/10.1111/1467-8721.00064>.
- Bandura, A., Caprara, G. V., Barbaranelli, C., Regalia, C., & Scabini, E. (2011). Impact of family efficacy beliefs on quality of family functioning and satisfaction with family life. *Applied Psychology*, 60(3), 421–448. <https://doi.org/10.1111/j.1464-0597.2010.00442.x>.
- Barber, B. K., & Harmon, E. L. (2002). Violating the self: Parental psychological control of children and adolescents. In B. K. Barber (Ed.), *Intrusive parenting: How psychological control affects children and adolescents* (pp. 15–52). Washington, DC: American Psychological Association.
- Beavers, W. R. (1981). A systems model of family for family therapists. *Journal of Marital and Family Therapy*, 7, 299–307. <https://doi.org/10.1111/j.1752-0606.1981.tb01382.x>.
- Beavers, W. R., & Hampson, R. B. (2000). The beavers systems model of family functioning. *Journal of Family Therapy*, 22, 128–143. <https://doi.org/10.1111/1467-6427.00143>.
- Berkman, L. F. (2000). Social support, social networks, social cohesion and health. *Social Work in Health Care*, 31(2), 3–14. [https://doi.org/10.1300/J010v31n02\\_02](https://doi.org/10.1300/J010v31n02_02).
- Bornstein, M. H. (2006). Parenting science and practice. In K. A. Renninger, & I. E. Sigel (Eds.), *Handbook of child psychology: Vol 4. Child psychology in practice* (pp. 893–949). (6th ed.). Hoboken, NJ: Wiley.
- Bowen, M. (1986). *Family therapy in clinical practice*. Northvale, NJ: Jason Aronson Inc.
- Butz, A. R., & Usher, E. L. (2015). Salient sources of early adolescents' self-efficacy in two domains. *Contemporary Educational Psychology*, 42, 49–61. <https://doi.org/10.1016/j.cedpsych.2015.04.001>.
- Carver, C. S. (2014). Self-control and optimism are distinct and complementary strengths. *Personality and Individual Differences*, 66, 24–26. <https://doi.org/10.1016/j.paid.2014.02.041>.
- Carver, C. S., & Scheier, M. F. (2014). Dispositional optimism. *Trends in Cognitive Sciences*, 18(6), 293–299. <https://doi.org/10.1016/j.tics.2014.02.003>.
- Cicchetti, D. (2013). Annual Research Review: Resilient functioning in maltreated children—past, present, and future perspectives. *Journal of Child Psychology and Psychiatry*, 54(4), 402–422. <https://doi.org/10.1111/j.1469-7610.2012.02608.x>.
- Cohen, S. (2004). Social relationships and health. *American psychologist*, 59(8), 676–684. <https://doi.org/10.1037/0003-066X.59.8.676>.
- Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological Bulletin*, 52(4), 281–302. <https://doi.org/10.1037/h0040957>.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. [https://doi.org/10.1207/S15327965PLI1104\\_01](https://doi.org/10.1207/S15327965PLI1104_01).
- Derogatis, L. R., & Fitzpatrick, M. (2004). The SCL-90-R, the Brief Symptom Inventory

- (BSI), and the BSI-18. In M. E. Maruish (Vol. Ed.), (3 ed.). *The use of psychological testing for treatment planning and outcomes assessment: 3*, (pp. 1–41). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Derogatis, L. R., & Unger, R. (2010). Symptom Checklist-90 Checklist. In I. B. Weiner, & W. E. Craighead (Eds.). *The corsini encyclopedia of psychology*.
- Di Giunt, L., Iselin, A. M. R., Lansford, J. E., Eisenberg, N., Lunetti, C., Thartori, E., ..., & Gerbino, M. (2018). Parents' and early adolescents' self-efficacy about anger regulation and early adolescents' internalizing and externalizing problems: A longitudinal study in three countries. *Journal of Adolescence*, *64*, 124–135. <https://doi.org/10.1016/j.adolescence.2018.01.009>.
- Diehl, M., Elnick, A. B., Bourbeau, L. S., & Labouvie-Vief, G. (1998). Adult attachment styles: Their relations to family context and personality. *Journal of Personality and Social Psychology*, *74*(6), 1656–1669. <https://doi.org/10.1037/0022-3514.74.6.1656>.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, *49*(1), 71–75. [https://doi.org/10.1207/s15327752jpa4901\\_13](https://doi.org/10.1207/s15327752jpa4901_13).
- Donnellan, M. B., Larsen-Rife, D., & Conger, R. D. (2005). Personality, family history, and competence in early adult romantic relationships. *Journal of Personality and Social Psychology*, *88*(3), 562–576. <https://doi.org/10.1037/0022-3514.88.3.562>.
- Duncan, L. G., Coatsworth, J. D., & Greenberg, M. T. (2009). A model of mindful parenting: Implications for parent-child relationships and prevention research. *Clinical Child and Family Psychology Review*, *12*(3), 255–270. <https://doi.org/10.1007/s10567-009-0046-3>.
- Dunn, E. C., McLaughlin, K. A., Slopen, N., Rosand, J., & Smoller, J. W. (2013). Developmental timing of child maltreatment and symptoms of depression and suicidal ideation in young adulthood: Results from the National Longitudinal Study of Adolescent Health. *Depression and Anxiety*, *30*(10), 955–964. <https://doi.org/10.1002/da.22102>.
- Epstein, N. B., Bishop, D., Ryan, C., Miller, I., & Keitner, G. (1993). The McMaster Model view of healthy family functioning. In F. Walsh (Ed.). *Normal Family Processes* (pp. 138–160). New York/London: The Guilford Press.
- Epstein, N. B., Bishop, D. S., & Levin, S. (1978). The McMaster model of family functioning. *Journal of Marital and Family Therapy*, *4*(4), 19–31. <https://doi.org/10.1111/j.1752-0606.1978.tb00537.x>.
- Eriksson, M., & Lindström, B. (2005). Validity of Antonovsky's sense of coherence scale: A systematic review. *Journal of Epidemiology and Community Health*, *59*(6), 460–466. <https://doi.org/10.1136/jech.2003.018085>.
- Eriksson, M., & Lindström, B. (2006). Antonovsky's sense of coherence scale and the relation with health: A systematic review. *Journal of Epidemiology and Community Health*, *60*(5), 376–381. <https://doi.org/10.1136/jech.2005.041616>.
- Farley, J. P., & Kim-Spoon, J. (2014). The development of adolescent self-regulation: Reviewing the role of parent, peer, friend, and romantic relationships. *Journal of Adolescence*, *37*(4), 433–440. <https://doi.org/10.1016/j.adolescence.2014.03.009>.
- Ferring, D., & Filipp, S.-H. (1996). Messung des Selbstwertgefühls: Befunde zu Reliabilität, Validität und Stabilität der Rosenberg-Skala. *Diagnostica*, *42*, 284–292.
- Fincham, F., & Beach, S. (2010). Of memes and marriage: Toward a positive relationship science. *Journal of Family Theory & Review*, *2*, 4–24. <https://doi.org/10.1111/j.1756-2589.2010.00033.x>.
- Fonagy, P., Steele, M., Steele, H., Higgitt, A., & Target, M. (1994). The Emanuel Miller Memorial Lecture 1992: The theory and practice of resilience. *Child Psychology & Psychiatry & Allied Disciplines*, *35*(2), 231–257. <https://doi.org/10.1111/j.1469-7610.1994.tb01160.x>.
- Franke, A. (2002). *SCL-90-R - Die Symptom-Checkliste von Derogatis - Deutsche Version. Manual* (2nd ed.). Göttingen, Germany: Beltz.
- Fruzzetti, A. E., Shenk, C., & Hoffman, P. D. (2005). Family interaction and the development of borderline personality disorder: A transactional model. *Development and Psychopathology*, *17*(4), 1007–1030. <https://doi.org/10.1017/S0954579405050479>.
- García-Moya, I., Moreno, C., & Jiménez-Iglesias, A. (2013). Understanding the joint effects of family and other developmental contexts on the sense of coherence (SOC): A person-focused analysis using the classification tree. *Journal of Adolescence*, *36*(5), 913–923. <https://doi.org/10.1016/j.adolescence.2013.07.007>.
- García-Moya, I., Rivera, F., Moreno, C., Lindström, B., & Jiménez-Iglesias, A. (2012). Analysis of the importance of family in the development of sense of coherence during adolescence. *Scandinavian Journal of Public Health*, *40*(4), 333–339. <https://doi.org/10.1177/1403494812449924>.
- Gehart, D. R., & McCollum, E. E. (2007). Engaging suffering: Towards a mindful re-visioning of family therapy practice. *Journal of Marital and Family Therapy*, *33*(2), 214–226. <https://doi.org/10.1111/j.1752-0606.2007.00017.x>.
- Geyer, S. (1997). Some conceptual considerations on the sense of coherence. *Social Science & Medicine*, *44*(12), 1771–1779. [https://doi.org/10.1016/S0277-9536\(96\)00286-9](https://doi.org/10.1016/S0277-9536(96)00286-9).
- Glaesmer, H., Grande, G., Braehler, E., & Roth, M. (2011). The German version of the satisfaction with life scale (SWLS). *European Journal of Psychological Assessment*, *27*(2), 127–132. <https://doi.org/10.1027/1015-5759/a000058>.
- Glaesmer, H., Hoyer, J., Klotsche, J., & Herzberg, P. Y. (2008). Die deutsche version des life-orientation-Tests (LOT-R) zum dispositionellen Optimismus und Pessimismus. *Zeitschrift für Gesundheitspsychologie*, *16*(1), 26–31. <https://doi.org/10.1026/0943-8149.16.1.26>.
- Grevenstein, D., Aguilar-Raab, C., & Bluemke, M. (2019). Mindful and resilient? Incremental validity of sense of coherence over mindfulness and big five personality factors for quality of life outcomes. *Journal of Happiness Studies*, *19*, 1883–1902. <https://doi.org/10.1007/s10902-017-9901-y>.
- Grevenstein, D., Aguilar-Raab, C., Schweitzer, J., & Bluemke, M. (2016). Through the tunnel, to the light: Why sense of coherence covers and exceeds resilience, optimism, and self-compassion. *Personality and Individual Differences*, *98*, 208–217.
- Grevenstein, D., & Bluemke, M. (2015). Can the Big Five explain the criterion validity of sense of coherence for mental health, life satisfaction, and personal distress? *Personality and Individual Differences*, *77*, 106–111. <https://doi.org/10.1016/j.paid.2014.12.053>.
- Grevenstein, D., & Bluemke, M. (2017). Longitudinal factor analysis and measurement invariance of sense of coherence and general self-efficacy in adolescence. *European Journal of Psychological Assessment*, *33*, 377–387. <https://doi.org/10.1027/1015-5759/a000294>.
- Grevenstein, D., Bluemke, M., & Kroeninger-Jungaberle, H. (2016). Incremental validity of sense of coherence, neuroticism, extraversion, and general self-efficacy: Longitudinal prediction of substance use frequency and mental health. *Health and Quality of Life Outcomes*, *14*(9). <https://doi.org/10.1186/s12955-016-0412-z>.
- Grevenstein, D., Schweitzer, J., & Aguilar-Raab, C. (2019). How children and adolescents evaluate their families: Psychometric properties and factor structure of the evaluation of social systems (EVOS) scale. *Journal of Child and Family Studies*, *28*(17), 17–29. <https://doi.org/10.1007/s10826-018-1254-6>.
- Harris, J. R. (1995). Where is the child's environment? A group socialization theory of development. *Psychological Review*, *102*(3), 458–489. <https://doi.org/10.1037/0033-295X.102.3.458>.
- Haukkala, A., Konttinen, H., Lehto, E., Uutela, A., Kawachi, I., & Laatikainen, T. (2013). Sense of coherence, depressive symptoms, cardiovascular diseases, and all-cause mortality. *Psychosomatic Medicine*, *75*(4), 429–435. <https://doi.org/10.1097/PSY.0b013e31828c3fa4>.
- Henry, C. S., Sheffield Morris, A., & Harrist, A. W. (2015). Family resilience: Moving into the third wave. *Family Relations*, *64*(1), 22–43. <https://doi.org/10.1111/fare.12106>.
- Holt-Lunstad, J., & Smith, T. B. (2012). Social relationships and mortality. *Social and Personality Psychology Compass*, *6*(1), 41–53. <https://doi.org/10.1111/j.1751-9004.2011.00406.x>.
- Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. *Perspectives on Psychological Science*, *10*(2), 227–237. <https://doi.org/10.1177/1745691614568352>.
- Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social relationships and mortality risk: A meta-analytic review. *PLOS Medicine*, *7*(7), e1000316. <https://doi.org/10.1371/journal.pmed.1000316>.
- Hupfeld, J., & Ruffieux, N. (2011). Validierung einer deutschen version der self-compassion scale (SCS-D). *Zeitschrift für Klinische Psychologie und Psychotherapie*, *40*(2), 115–123. <https://doi.org/10.1026/1616-3443/a000088>.
- Jayawickreme, E., & Blackie, L. E. R. (2014). Post-traumatic growth as positive personality change: Evidence, controversies and future directions. *European Journal of Personality*, *28*(4), 312–331. <https://doi.org/10.1002/per.1963>.
- Jose, P. E., Ryan, N., & Pryor, J. (2012). Does social connectedness promote a greater sense of well-being in adolescence over time. *Journal of Research on Adolescence*, *22*(2), 235–251. <https://doi.org/10.1111/j.1532-7795.2012.00783.x>.
- Keng, S.-L., Smoski, M. J., & Robins, C. J. (2011). Effects of mindfulness on psychological health: A review of empirical studies. *Clinical Psychology Review*, *31*(6), 1041–1056. <https://doi.org/10.1016/j.cpr.2011.04.006>.
- Kenny, D. A. (1975). Cross-lagged panel correlation: A test for spuriousness. *Psychological Bulletin*, *82*(6), 887–903. <https://doi.org/10.1037/0033-2909.82.6.887>.
- Kenny, D. A. (2014). Cross-lagged panel design. In N. Balakrishnan, T. Colton, B. Everitt, W. Piegorisch, F. Ruggeri, & J. L. Teugels (Eds.). *Wiley StatsRef: Statistics reference online*.
- Kern, M. L., Della Porta, S. S., & Friedman, H. S. (2014). Lifelong pathways to longevity: Personality, relationships, flourishing, and health. *Journal of Personality*, *82*(6), 472–484. <https://doi.org/10.1111/jopy.12062>.
- Kim-Cohen, J., & Turkewitz, R. (2012). Resilience and measured gene-environment interactions. *Development and Psychopathology*, *24*(4), 1297–1306. <https://doi.org/10.1017/S0954579412000715>.
- Kirby, J. N. (2016). The role of mindfulness and compassion in enhancing nurturing family environments. *Clinical Psychology: Science and Practice*, *23*(2), 142–157. <https://doi.org/10.1111/cpsp.12149>.
- Klaghofer, R., & Brähler, E. (2001). Konstruktion und teststatistische Prüfung einer Kurzform der SCL-90-R. *Zeitschrift für Klinische Psychologie, Psychiatrie und Psychotherapie*, *49*, 115–124.
- Landstedt, E., Hammarström, A., & Winefield, H. (2015). How well do parental and peer relationships in adolescence predict health in adulthood. *Scandinavian Journal of Public Health*, *43*(5), 460–468. <https://doi.org/10.1177/1403494815576360>.
- Laursen, B., & Collins, W. A. (2004). Parent-child communication during adolescence. In A. L. Vangelisti (Ed.). *The Routledge Handbook of Family Communication* (pp. 333–348). Mahwah, New Jersey, London: Lawrence Erlbaum Associates Publishers.
- Lavigne, G. L., Vallerand, R. J., & Crevier-Braud, L. (2011). The fundamental need to belong: On the distinction between growth and deficit-reduction orientations. *Personality and Social Psychology Bulletin*, *37*(9), 1185–1201. <https://doi.org/10.1177/0146167211405995>.
- Leppert, K., Koch, B., Brähler, E., & Strauß, B. (2008). Die Resilienzskala (RS) - Überprüfung der Langform RS-25 und einer Kurzform RS-13. [Resilience Scale - Evaluation of a long (RS-25) and a short version (RS-13)]. *Klinische Diagnostik und Evaluation*, *1*(2), 226–243.
- Lindström, B. (2001). The meaning of resilience. *International Journal of Adolescent Medicine and Health*, *13*(1), 7–12. <https://doi.org/10.1515/IJAMH.2001.13.1.7>.
- Luszczynska, A., Gutiérrez-Doña, B., & Schwarzer, R. (2005). General self-efficacy in various domains of human functioning: Evidence from five countries. *International Journal of Psychology*, *40*(2), 80–89. <https://doi.org/10.1080/0020759044000041>.
- Masten, A. S., & Monn, A. R. (2015). Child and family resilience: A call for integrated science, practice, and professional training. *Family Relations*, *64*(1), 5–21. <https://doi.org/10.1111/fare.12103>.
- Mattanah, J. F., Lopez, F. G., & Govern, J. M. (2011). The contributions of parental

- attachment bonds to college student development and adjustment: A meta-analytic review. *Journal of Counseling Psychology*, 58(4), 565–596. <https://doi.org/10.1037/a0024635>.
- Miller, G., Chen, E., & Cole, S. W. (2009). Health psychology: Developing biologically plausible models linking the social world and physical health. *Annual Review of Psychology*, 60, 501–524. <https://doi.org/10.1146/annurev.psych.60.110707.163551>.
- Miller, I., Ryan, C., Keitner, G. I., Bishop, D. S., & Epstein, N. B. (2000). The McMaster approach to families: Theory, assessment, treatment and research. *Journal of Family Therapy*, 22, 168–189. <https://doi.org/10.1111/1467-6427.00145>.
- Moksnes, U. K., Espnes, G. A., & Haugan, G. (2013). Stress, sense of coherence and emotional symptoms in adolescents. *Psychology & Health*, 29(1), 32–49. <https://doi.org/10.1080/08870446.2013.822868>.
- Moretti, M. M., & Peled, M. (2004). Adolescent-parent attachment: Bonds that support healthy development. *Paediatrics & Child Health*, 9(8), 551–555. <https://doi.org/10.1093/pch/9.8.551>.
- Neff, K. D. (2003a). The development and validation of a scale to measure self-compassion. *Self and Identity*, 2(3), 223–250. <https://doi.org/10.1080/15298860390209035>.
- Neff, K. D. (2003b). Self-Compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity*, 2(2), 85–101. <https://doi.org/10.1080/152988603909032>.
- Neff, K. D., & Beretvas, S. N. (2013). The role of self-compassion in romantic relationships. *Self and Identity*, 12(1), 78–98. <https://doi.org/10.1080/15298868.2011.639548>.
- Neff, K. D., Rude, S. S., & Kirkpatrick, K. L. (2007). An examination of self-compassion in relation to positive psychological functioning and personality traits. *Journal of Research in Personality*, 41(4), 908–916. <https://doi.org/10.1016/j.jrp.2006.08.002>.
- Nilsson, K. W., Leppert, J., Simonsson, B., & Starrin, B. (2010). Sense of coherence and psychological well-being: Improvement with age. *Journal of Epidemiology and Community Health*, 64(4), 347–352. <https://doi.org/10.1136/jech.2008.081174>.
- O'Brien, M. P., Gordon, J. L., Bearden, C. E., Lopez, S. R., Kopelowicz, A., & Cannon, T. D. (2006). Positive family environment predicts improvement in symptoms and social functioning among adolescents at imminent risk for onset of psychosis. *Schizophrenia Research*, 81(2–3), 269–275. <https://doi.org/10.1016/j.schres.2005.10.005>.
- Olson, D. H. (1986). Circumplex model VII: Validation studies and FACES III. *Family Process*, 26, 337–351. <https://doi.org/10.1111/j.1545-5300.1986.00337.x>.
- Orth, U., Robins, R. W., & Roberts, B. W. (2008). Low self-esteem prospectively predicts depression in adolescence and young adulthood. *Journal of Personality and Social Psychology*, 95(3), 695–708. <https://doi.org/10.1037/0022-3514.95.3.695>.
- Paradis, A. D., Giaconia, R. M., Reinherz, H. Z., Beardslee, W. R., Ward, K. E., & Fitzmaurice, G. M. (2011). Adolescent family factors promoting healthy adult functioning: A longitudinal community study. *Child and Adolescent Mental Health*, 16(1), 30–37. <https://doi.org/10.1111/j.1475-3588.2010.00577.x>.
- Parcel, T. L., & Bixby, M. S. (2016). The ties that bind: Social capital, families, and children's well-being. *Child Development Perspectives*, 10(2), 87–92. <https://doi.org/10.1111/cdep.12165>.
- Patterson, J. M. (2002). Integrating family resilience and family stress theory. *Journal of Marriage and Family*, 64(2), 349–360. <https://doi.org/10.1111/j.1741-3737.2002.00349.x>.
- Phillips-Salimi, C. R., Robb, S. L., Monahan, P. O., Dossey, A., & Haase, J. E. (2014). Perceptions of communication, family adaptability, and cohesion: A comparison of adolescents newly diagnosed with cancer and their parents. *International Journal of Adolescent Medicine and Health*, 26(1), 19–26. <https://doi.org/10.1515/ijamh-2012-0105>.
- Pomerantz, E. M., & Thompson, R. A. (2008). Parents role in children's personality development. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.). *Handbook of Personality: Theory and Research* (pp. 351–374). (3rd ed.). New York, NY: Guilford Press.
- Rieger, S., Göllner, R., Trautwein, U., & Roberts, B. W. (2016). Low self-esteem prospectively predicts depression in the transition to young adulthood: A replication of Orth, Robins, and Roberts (2008). *Journal of Personality and Social Psychology*, 110(1), e16–e22. <https://doi.org/10.1037/pspp0000037>.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Rusbult, C. E., & Van Lange, P. A. M. (2003). Interdependence, interaction and relationships. *Annual Review of Psychology*, 54, 351–375. <https://doi.org/10.1146/annurev.psych.54.101601.145059>.
- Ryan, A. K., & Willits, F. K. (2007). Family ties, physical health, and psychological well-being. *Journal of Aging and Health*, 19(6), 907–920. <https://doi.org/10.1177/0898264307308340>.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68. doi:10.1037/110003-066X.55.1.68.
- Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology*, 4(3), 219. <https://doi.org/10.1037/0278-6133.4.3.219>.
- Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A re-evaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, 67, 1063–1078. <https://doi.org/10.1037/0022-3514.67.6.1063>.
- Scholz, U., Doña, B. G., Sud, S., & Schwarzer, R. (2002). Is general self-efficacy a universal construct? *European Journal of Psychological Assessment*, 18(3), 242–251. <https://doi.org/10.1027//1015-5759.18.3.242>.
- Schumacher, J., Gunzelmann, T., & Brähler, E. (2000). Deutsche normierung der sense of coherence scale von antonovsky. *Diagnostica*, 46(4), 208–213. <https://doi.org/10.1026//0012-1924.46.4.208>.
- Schumacher, J., Wilz, G., Gunzelmann, T., & Brähler, E. (2000). Die Sense of Coherence Scale von Antonovsky—Teststatistische Überprüfung in einer repräsentativen Bevölkerungstichprobe und Konstruktion einer Kurzskaala. *Psychotherapie Psychosomatik Medizinische Psychologie*, 50(12), 472–482. <https://doi.org/10.1055/s-2000-9207>.
- Schwarzer, R. (2014). *Self-efficacy: Thought control of action*. New York, NY: Routledge.
- Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy scale. In J. Weinman, S. Wright, & M. Johnston (Eds.). *Measures in health psychology: A user's portfolio. Causal and control beliefs* (pp. 35–37). Windsor, United Kingdom: NFER-Nelson.
- Schwarzer, R., & Jerusalem, M. (1999). *Skalen zur Erfassung von Lehrer- und Schülermerkmalen. Dokumentation der psychometrischen Verfahren im Rahmen des Wissenschaftlichen Begleitungs des Modellversuchs Selbstwirksame Schulen [Scales for the assessment of teacher and student characteristics]*. Berlin, Germany: Freie Universität Berlin.
- Smetana, G., Campione-Barr, N., & Metzger, A. (2006). Adolescent development in interpersonal and societal contexts. *Annual Review of Psychology*, 57, 255–284. <https://doi.org/10.1146/annurev.psych.57.102904.190124>.
- Uchino, B. N. (2006). Social support and health: A review of physiological processes potentially underlying links to disease outcomes. *Journal of Behavioral Medicine*, 29(4), 377–387. <https://doi.org/10.1007/s10865-006-9056-5>.
- Umberson, D., & Karas Montez, J. (2010). Social relationships and health: A flashpoint for health policy. *Journal of Health and Social Behavior*, 51(1 suppl), 54–66. <https://doi.org/10.1177/0022146510383501>.
- von Collani, G., & Herzberg, P. Y. (2003). Eine revidierte Fassung der deutschsprachigen Skala zum Selbstwertgefühl von Rosenberg [A revised version of the German adaptation of Rosenberg's Self-Esteem Scale]. *Zeitschrift für Differentielle und Diagnostische Psychologie*, 24(1), 3–7. <https://doi.org/10.1024//0170-1789.24.1.3>.
- Wagnild, G., & Young, H. (1993). Development and psychometric evaluation of the Resilience Scale. *Journal of Nursing Measurement*, 1(2), 165–178.
- Windle, G. (2011). What is resilience? A systematic review and concept analysis. *Reviews in Clinical Gerontology*, 21, 152–169. <https://doi.org/10.1017/S0959259810000420>.
- Windle, G., Bennett, K. M., & Noyes, J. (2011). A methodological review of resilience measurement scales. *Health and Quality of Life Outcomes*, 9(1), 1–18. <https://doi.org/10.1186/1477-7525-9-8>.