How to become more grateful? The mediating role of resilience between empathy and gratitude

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Abstract

The current study examined the relationship between empathy, resilience, and gratitude. Specifically, the study investigated the potential mediating role of resilience between empathy and gratitude. The study involved 214 participants who completed the Gratitude Resentment and Appreciation Test-Revised (GRAT-R), the Questionnaire of Cognitive and Affective Empathy (QCAE), and the Resilience Measurement Scale (SPP-25). The results showed significant positive correlations among resilience, empathy, and gratitude. Multiple regression analysis confirmed that resilience, gender, and affective empathy were direct predictors of the level of gratitude. Structural equation modeling (SEM) analysis supported the hypothesis that resilience played a mediating role between empathy and gratitude. Implications for research and the promotion of positive psychology programs for adults are discussed.

Keywords Gratitude · Empathy · Resilience · Mediation effect

Introduction

The experience of positive emotions may change people's attitudes and behavior (Fredrickson & Branigan, 2005) and may influence our perception of daily life events. Similar to how positive thinking and actions can trigger pleasant emotions, pleasant emotions can also trigger positive thinking and positive actions (Fredrickson & Joiner, 2002). Thus, studies show the existence of relations between positive affect and prosocial behavior (Fredrickson & Losada, 2005; Snippe et al., 2017). For example, gratitude and affective empathy that resembles abovementioned positive emotions, promote actions that benefit others even at a cost to the self (Lishner, Steinert, & Stocks, 2016). In addition, gratitude is often described as a protective factor that fosters positive functioning (e.g., proactive coping, life satisfaction, well-being, positive beliefs, creativity and altruistic behaviors), and minimizes the

risk of psychopathology (e.g., reactive and proactive aggression, suicidal ideation and behaviors, depression and anxiety, traumatic symptoms) (Vernon, Dillon, & Steiner, 2009; Israel-Cohen, Florina, Kashy-Rosenbaum, & Kaplan, 2015; Van Dusen, Tiamiyu, Kashdan, & Elhai, 2015; Arnout & Almoied, 2020; García-Vázquez, Valdés-Cuervo, & Parra-Pérez, 2020).

Gratitude is also associated with a higher level of learned focused resilience and lower risk of school stress experiences (Wilson, 2016). Past studies on gratitude confirm significant benefits to a person's overall functioning in psychological, spiritual, and physical areas in life. Therefore, this study contributes to prior research as we explore the associations between three key variables: affective and cognitive empathy (defined as the ability to understand or feel what another person is experiencing), gratitude (treated as a personality disposition), and resilience (defined as a relatively stable individual disposition to cope effectively with adversity). We also examined resilience as a mediator between empathy and gratitude. All three tested psychological constructs are defined by some researchers as human strengths that play an important role in the promotion of mental health (Kim, Wang, & Hill, 2018). However, so far only a few studies have examined the association between these variables, and to our knowledge, no studies explored them all together. In addition, we decided to look for factors that contribute to the level of gratitude,

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which may shed the light on the mechanism that leads to positive functioning. To provide a foundation for the present study, in the sections below we will outline current studies on gratitude, empathy, and resilience.

Gratitude

Gratitude is often defined as a key or basic human virtue that one needs to live a 'good life' (Tudge, Freitas, & O'Brien, 2015), moral virtue/sentiment (Morgan, Gulliford, & Kristjánsson, 2017), or personality disposition (Watkins, Woodward, Stone, & Kolts, 2003). It is also defined as an important aspect of well-being and life satisfaction (McCullough, Emmons, & Tsang, 2002; Watkins et al. 2003). In particular, McCullough et al. (2002) focus on gratitude as an affective trait. They also believe that grateful disposition is the tendency to experience positive affect towards the other person, and it is also associated with attributions (McCullough et al. 2002). For example, grateful people, besides their efforts, also appreciate the beneficent contribution of other people in their successes. Thus, they broaden their internal attributions by including the meaning of others who contribute to the improvement of their well-being.

Gratitude has also been found to correlate with other human strengths that promote well-being, namely compassion, humility, and empathy (Kim et al. 2018). This tendency to feel gratitude has also been found to play an important role in an individual's moral reasoning ability, especially within the empathic process (McCullough, Kilpatrick, Emmons, & Larson, 2001). Studies show positive links between gratitude and empathy (cognitive and affective), and negative links with aggressive or harmful behavior (DeWall, Lambert, Pond, Kashdan, & Fincham, 2012). McCullough et al. (2002) also found a positive relationship between gratitude and cognitive empathy (perspective taking) and affective (empathic concern), and negative links with feelings of jealousy.

Gratitude can be considered as a prosocial and moral emotion because it serves as a response to the behavior of others and can help to promote prosocial behaviors (McCullough et al. 2001). Overall, the prosocial character of gratitude suggests that a grateful disposition is rooted in the basic trait of empathy that directs people to the sensitivity and concern for others. Additionally, gratitude correlated with several variables that are crucial for close social relationships in small local environments such as small work communities: improving the organizational climate (Emmons & McCullough, 2003), teamwork, and feeling of belonging and safety (Di Fabio, Palazzeschi, & Bucci, 2017). It is consistent with Bronfenbrenner's definition of a microsystem defined as the most proximal setting, in which a person may interact in a face-to-face way with others and learn how to be grateful for others (Rosa & Tudge, 2013).

Empathy

Multiple definitions of empathy can be found across many disciplines such as cognitive, developmental, social and moral psychology, and neuroscience. Building on Titchener's (1909) description of empathy as a process in which people enter the experience of another to gain a deeper understanding of others and themselves, contemporary definitions of empathy have increased in complexity.

Within the literature, there appears to exist great diversity and inconsistency regarding the definition and measurement of empathy. That is, some researchers treat empathy as a trait that remains fairly stable throughout the lifespan (Davis, 1983), whereas others define empathy as an ability that can be latent (Decety & Jackson, 2004), or as a complex, interpersonal process (Riess, Kelley, Bailey, Dunn, & Phillips, 2012). Shamay-Tsoory and colleagues believe that empathy is a learned emotional reaction to the experience of another person (Shamay-Tsoory, Tomer, Berger, & Aharon-Peretz, 2003). Hall and Schwartz's meta-analysis (2018) reflects the existing diversity surrounding the conceptualization, operationalization, and measurement of empathy within approximately 500 articles from the past 20 years. Their meta-analysis confirms that a large inconsistency remains and discusses ways to improve describing, defining and explaining the construct of empathy. They suggest departing from the term empathy in favor of narrower concepts that accurately describe the feature or instructions that are currently being measured.

In our research, we will focus on two dimensions, which the majority of researchers support: cognitive empathy and affective empathy. Past studies that use self-report methods confirm the existence of these two types of empathy (Reniers et al., 2011), and recent neuroscience evidence supports a multidimensional approach to empathy, based on the assertion that separate areas in the brain may be responsible for cognitive and emotional empathy (Decety & Jackson, 2004; McCreary, Marchant, & Davis, 2018). More specifically, cognitive empathy is defined as the ability to understand the emotional states and perspectives of others. In contrast, affective empathy is defined as the ability to be sensitive to, and vicariously experience the feelings of others (Reniers et al. 2011).

Taking a closer look at the virtues of gratitude and empathy it is worth noticing that empathy is believed as an essential part of experiencing gratitude and that people with lowered capacities for empathy have problems in experiencing the benefits from feeling gratitude (Worthen & Isakson, 2007). Also from evolutionary perspective the above mentioned positive emotions seem to share similar adaptive mechanisms that benefit others in some way at a cost to the self (Lishner et al., 2016). Kim et al. (2018) state that cultivating empathy may heighten the ability to recognize benevolent actions given by

other people. The authors explained the relations between difficulties in empathizing with others and lack of ability to recognize the sacrifice and effort of others. In addition, when people are non-empathetic they are unable – or able to, but do not have the propensity to perceive the motivations behind grateful actions, they interpret it as self-serving ones. On the other hand, the described ability seems to be a key to a cognitive predisposition to "go beyond one's own perspective."

Resilience

The majority of researchers define resilience as an individual's flexible adaptation to life's requirements, persistence in pursuing goals, increased tolerance of negative experience, competence to deal with difficult situations, openness to new experience, and an optimistic attitude towards life (Ogińska-Bulik & Juczyński, 2008). Some researchers (Block & Kremen, 1996; Letzring, Block, & Funder, 2005) define resilience as a relatively permanent disposition that determines the process of flexible adaptation to the ever-changing demands of life. Resilience has also been defined as a psychosocial process. Luthar, Cicchetti, and Becker (2000) assume that resilience refers to the process of dynamic and positive adaptation in the face of emerging adversities. Resilience can also be understood as a set of adaptive units or a psychological toolkit that can be used to help someone to cope with adversity in and out of a difficult situation (Iacoviello & Charney, 2014).

Past studies show a positive correlation with personality constructs such as emotional stability, openness to experience, optimism, sense of self-coherence (especially meaningfulness), and self-control (Ogińska-Bulik & Juczyński, 2008). People with high levels of resilience have also been found to be optimistic, to possess an energetic, curious, and open approach to new life experiences, and to be characterized by high positive emotionality (Tugade & Fredrickson, 2007) and well-being (Vinayak & Judge, 2018).

Resilience also has been found to relate to a lower level of stress symptoms and adaptive and prosocial coping strategies (Wood, Joseph, & Linley, 2007; Van Dusen et al. 2015). Although Wood et al. (2007) found that coping strategies may be an important mechanism explaining why gratitude is negatively related to stress, they do not appear to be the main mechanism by which positive emotions are related to well-being. Thus the relations between resilience, gratitude and empathy may also be mediated by other stress-related constructs (e.g., resilience), as some authors claim that this construct is a sole predictor of well-being and a healthy psychological state (Akbari & Khormaiee, 2015; Vinayak & Judge, 2018). Akbari and Khormaiee (2015) found that resilience is a partial mediator between emotional indicators such as emotional intelligence and psychological well-being.

The Present Study – Gratitude, Empathy, and Resilience

Given that past studies suggest that the association among gratitude, empathy and resilience is complex and ambiguous, the present study aims to unpack these relations. For example, research has shown that empathy is a significant predictor of resilience and may represent an emotional skill that is necessary to support resilience (Mathad, Pradhan, & Rajesh, 2017; Morice-Ramat, Goronflot, & Guihard, 2018). In contrast, some researchers have found no significant correlations between empathy and resilience (Olson, Kemper, & Mahan, 2015). Theoretical and empirical works suggest there is a significant and positive connection between resilience and gratitude (Gomez, Vincent, & Toussaint, 2013), but fail to test the correlation between dimensions of gratitude and resilience.

Thus, there remains a lacuna in the literature, and a lack of consensus among researchers about which variable is a predictor and which is an explained variable. For example, past studies suggest that gratitude, defined as character strength and disposition, is a predictor of resilience (Gupta & Kumar, 2015). But Dwiwardani et al. (2014) have found an inverse relation between gratitude and resilience in that higher levels of gratitude may not necessarily lead to higher levels of resilience and vice versa. In our study, we decided to consider this problem. Similar to Ogińska-Bulik and Juczyński (2008), we defined resilience as a personality trait that could also be partly learned and one that reflects the ability to cope effectively with difficult or adverse situations. Previous studies on gratitude confirm significant differences in its level depending on gender or age. To the best of our knowledge, to date there appears to have been no studies that directly consider the relationship between gratitude and sociodemographic variables such as place of residence or professional activity. Therefore, in our research, we decide to control for these socio-cultural variables.

Overall, the present study aimed to test: (1) the relations among resilience, empathy, and gratitude, (2) the predictive ability of empathy and resilience for the levels of gratitude, and (3) the mediating effect of resilience on the association between empathy and gratitude. In particular, the present study tested three hypotheses: (1) Gratitude would be positively associated with empathy and resilience. (2) Cognitive and affective empathy and resilience would predict the level of gratitude. (3) Cognitive and affective empathy would predict the level of gratitude directly and indirectly through resilience.

Method

Participants and Procedure

The present study sample consisted of 214 (104 women, 110 men) participants in early and middle adulthood (M = 28.6,

SD = 11.9). All participants were Polish, Caucasian – middle SES. The research was carried out in 2019 via the Internet. The participation was anonymous and voluntary. The data was collected on the web server of the first author of the study. The invitation to participate in the study was disseminated on social networks and among postgraduate students of the Pedagogical University. All procedures performed in the study were in accordance with the ethical standards of the Committee for Ethics in Scientific Research of the Institute of Psychology, Pedagogical University of Krakow.

Participants indicated their age, gender, education, professional activity, and place of residence. Most of the participants were young emerging adults ($N = 139$, 65%) between 18 and 25 years old. The majority of respondents had secondary education (58%), 34% had higher education, 5% declared vocational, and 3% basic education. 42% of participants lived in a major city, 33% in a small town, and 25% were rural residents. The place of residence was coded: 1 – countryside, 2 – small town, 3 – big city. Participants' professions included: 45.5% students, 42.5% employed, 8% unemployed and 3% retired. Three participants did not answer the question about professional activity.

Instruments

For measuring gratitude disposition, we used *The Gratitude, Resentment and Appreciation Test-Revised (GRAT-R)* (Thomas & Watkins, 2003, in Polish adaptation Tomaszek & Lasota, 2018). It consists of 44 questions, which are answered using the Likert scale, from 1 (strongly disagree) to 9 (strongly agree). The tool allows for an assessment of the Gratitude Total Score and three dimensions of gratitude: Sense of abundance (AB), Appreciation for simple pleasures (SA) and Social appreciation (SAO). The reliability analysis indicated a high internal consistency ($\alpha = 0.88$). For the three factors, Cronbach's alphas range from 0.82 to 0.93.

Resilience Measurement Scale SPP-25 (Ogińska-Bulik & Juczyński, 2008) assessed the participant's resilience. Twenty-five items were included in five subscales: (1) Optimistic attitude to life and the ability to mobilize in difficult situations; (2) Tolerance for failures and treatment of life as challenges; (3) Openness to new experience and sense of humor; (4) Perseverance and determination in action; (5) Personal competence to cope with and tolerance of negative emotions. Mean scores were obtained for each subscale. Reliability of the total scale was indicated by a Cronbach's alpha of 0.89.

Empathy was measured using the *QCAE - Questionnaire of Cognitive and Affective Empathy* (Reniers et al. 2011, in Polish translation of authors). The QCAE consists of 31 items included in five facets: Perspective taking, Online simulation, Emotional contagion, Proximal responsivity and Peripheral responsivity. The PT and OS are facets of Cognitive Empathy (Cog) while EC, PrR, and PeR measure affective empathy (Aff). Scale scores were calculated by summing respective items. In this study, the reliability analysis indicated a high internal consistency for cognitive empathy ($\alpha = .91$) and slightly lower for affective empathy ($\alpha = 0.74$).

Data Analysis

To verify the study hypotheses, the statistical analyses included several multivariate procedures. Firstly, we conducted the Pearson correlation coefficients with Bonferroni correction to identify any correlational relationships among studied variables (H1). In the next step, path analysis was performed to assess the direct and indirect effects between tested variables within the phenomenon (H2). All the statistical analysis in the research was computed with SPSS version 21 and SPSS Amos Graphics.

Results

The correlation coefficients between QCAE scale, SPP-25 and GRAT are presented in Table 1. In the light of results, higher cognitive empathy and resilience were related to higher levels of gratitude (GRAT) (Cog: $r = .21$, $p = .002$, RES: $r = .39$, $p < .0001$). No correlations were found between affective empathy and gratitude total score. Sense of abundance (AB), appreciation for simple pleasures (SA) and social appreciation (SAO) were positively correlated with resilience (RES) ($r = .27$ to $.31$, $p < .0001$). The correlations between the sense of abundance and cognitive or affective empathy were not significant. The appreciation for simple pleasures and social appreciation were significantly associated with cognitive empathy (Cog) ($r = .26$ to $.31$, $p < .0001$) and with affective empathy (Aff) ($r = .26$, $p < .0001$ for both indicators of gratitude).

Table 1 The correlation coefficients r-Pearson

	RES	Cog	Aff	AB	SAO	SA	GRAT
RES	–						
Cog	.21**	–					
Aff	−.12	.38***	–				
AB	.31***	−.03	−.09	–			
SAO	.27***	.26***	.26***	.34***	–		
SA	.30***	.31***	.26***	.26***	.60***	–	
GRAT	.39***	.21**	.16	.74***	.78***	.80***	–

RES Resilience, *Cog* Cognitive empathy, *Aff* Affective empathy, *SA* Appreciation for Simple Pleasures, *AB* Sense of Abundance, *SAO* Social Appreciation, *GRAT* Gratitude Total Score

** $p < .003$; *** $p < .0001$ Bonferroni corrected p value

Table 2 Predictors of gratitude - linear regressions with stepwise method effects

Predictors	B	β	t	p	R^2	ΔR^2	F	p
Resilience	1.448	.386	6.094	.0001	.149	.145	37.137	.0001
Resilience	1.575	.420	6.779	.0001	.207	.199	27.480	.0001
Gender	−23.652	−.242	−3.913	.0001				
Resilience	1.614	.430	6.998	.0001	.226	.215	20.418	.0001
Gender	−19.035	−.195	−3.013	.003				
Affective empathy	1.352	.147	2.280	.024				

Multiple Regression Analysis

In line with hypothesis 2, resilience as well as affective and cognitive empathy predict gratitude level. The regression test examined the extent to which resilience, affective and cognitive empathy, and sociodemographic characteristics such as gender, age, place of residence, education, and professional activity influenced the gratitude level. Three significant predictors emerged: resilience ($\beta = .43$, $t = 6.998$, $p = .0001$), gender ($\beta = -.20$, $t = -3.013$, $p = .003$), and affective empathy ($\beta = .15$, $t = 2.280$, $p = .024$). Adjusted coefficient of determination $\Delta R^2 = .22$, statistics for model F = 20.418, $p = .0001$ (see Table 2).

The Mediation Effect of Resilience

We hypothesized that empathy, directly and indirectly (through resilience), would predict the level of gratitude (H3). To test this hypothesis, we conducted a Structural Equation Modeling (SEM).

In regard to Path Analysis, Maximum Likelihood was used for parameter estimation. Models were built to analyze a mediation model to explore how an individual's level of resilience and sociodemographic characteristics may impact the relationship between empathy and gratitude. The goodness-of-fit of all of the estimated models was evaluated (see Table 3). As alternative models of resilience mediating effect had been tested, the fit assessment was addressed to the question of which model should be retained that better fits the observed data. Models 1 and 2 confirmed a direct impact of empathy and resilience on gratitude. The last model confirmed the existence of a direct and indirect relationship between empathy, resilience and gratitude (Table 4).

First, we examined the direct impact of entered variables (e.g., resilience, affective empathy, age, and place of residence without mediation effect) (Model 1, Fig. 1). Insignificant chi-square statistic $\chi2 = 6.160$, $df = 6$, $p = .405$ indicated that the model is not different from the structure of the data. The only insignificant path was found between gratitude and place of residence. As expected, resilience had the strongest positive direct impact (.40), next was affective empathy (.20), and age had the weakest impact (.12). Estimates of squared multiple correlations output for gratitude was .234 (The total variance explained by all models was 23%).

Next, we examined the direct effect of cognitive empathy on gratitude total score. The results of Model 2 are shown in Fig. 2. The chi-square value was significant, ($\chi2 = 28.953$, $df = 9$, $p = .001$) indicating that the model deviates from the structure of the data. The other goodness-of-fit indices for the model also confirmed that the model fitted the data poorly: CFI = .801; RMSEA = .102. The direct effect of cognitive empathy and place of residence on gratitude was insignificant.

In Model 3, the mediating role of resilience in the relationship between cognitive empathy and gratitude was investigated. In the first step, we tested the direct and indirect impact of cognitive empathy on gratitude. The main indices of the model represented an adequate fit to the data ($\chi2 = 16.350$, $df = 8$, $p = .038$; GFI = .975; RMSEA = .070) (See MacCallum, Browne, & Sugawara, 1996). In the second step, we built the model that examined the indirect effect of cognitive empathy on gratitude mediated through resilience, without the direct effect of this variable (see Fig. 3).

The goodness-of-fit indices for this model were a little better: $\chi2 = 17.122$, $df = 9$, $p = .047$; CFI = .919; RMSEA = .065. The Standardized Total Effects in Model 3 showed that resilience was the most important positive

Table 3 Fit indices of the models

	χ^2	p	χ^2/df	TLI	CFI	GFI	AGFI	HOELTER .05	RMSEA	SRMR
Model 1	6.160	.405	1.027	.995	.997	.988	.970	436	.011	.048
Model 2	28.953	.001	3.217	.668	.801	.959	.904	125	.102	.113
Model 3	17.122	.047	1.902	.865	.919	.974	.939	211	.065	.062

Table 4 Summary of structural equation modelling tested mediation effect (Model 3)

	Path	Estimate	ß	S.E.	p
Direct effects	Resilience → Gratitude	1.52	.40	.23	≤.0001
	Affective Empathy → Gratitude	2.06	.22	.56	≤.0001
	Age → Gratitude	13.89	.12	7.01	≤.05
	Place → Gratitude	−6.15	−.10	3.70	n.s.
	Cognitive Empathy – Affective Empathy	18.29	.38	3.52	≤.0001
Indirect effect	Cognitive Empathy →Resilience → Gratitude		.10		

predictor of gratitude (the direct impact of RES on GRAT was = .40). Other important factors influencing gratitude were affective empathy and age (Aff β = .22, Age β = .12). The positive signs of all effects indicated that those elderly high on resilience and affective empathy were more grateful than younger people. Standardized Indirect Effect of cognitive empathy on gratitude was = .10. Cognitive empathy directly impacted resilience (β = .24). Estimates of squared multiple correlations output for resilience was .06 and for gratitude .25 (Fig. 3 and Table 4).

Discussion

This study investigated the associations among resilience, empathy, and gratitude. Our first hypothesis was supported by the results as we found a positive relationship between gratitude and empathy (cognitive and affective). The present results support recent research by Witvliet's et al. (2018) who found that mentalizing skills such as empathic concern and perspective-taking play crucial roles in one's ability to experience gratitude. In our study, both the appreciation of others and the appreciation of small pleasures were positively associated with an empathic attitude. Such results support past studies that suggest that gratitude is the disposition responsible for the life satisfaction people often feel when they are faced with adversities (Fredrickson, Tugade, Waugh, &

Larkin, 2003). An adaptive role of resilience represents the ability of biological, personal, and social resources to help in dealing with and coping with obstacles and sustain well-being (Panter-Brick & Leckamn, 2013).

In the second hypothesis, it was assumed that the predictors of the level of gratitude would be resilience as well as cognitive and affective empathy. It was found that resilience, affective empathy, and gender were all significant predictors of gratitude. This result is consistent with previous research (Dwiwardani et al. 2014; McCullough et al. 2004), and suggests that women might possess a social and emotional advantage over men in that they are more likely to experience and express gratitude (Jans-Beken, Lataster, Peels, Lechner, & Jacobs, 2017). The present results also support the hypothesis that gratitude serves as a virtuous behavior in that it is expressed in relationships, and may stem from the ability to stay emotionally strong amidst adversity or to cope effectively with stressors and difficult circumstances (Dwiwardani et al. 2014).

The third hypothesis assumed that cognitive and affective empathy, directly and indirectly through resilience, would predict the level of gratitude. The findings from the path analysis partially supported our predictions. Affective empathy directly influenced gratitude, whereas no direct effect of cognitive empathy was found. The results indicate that participants who
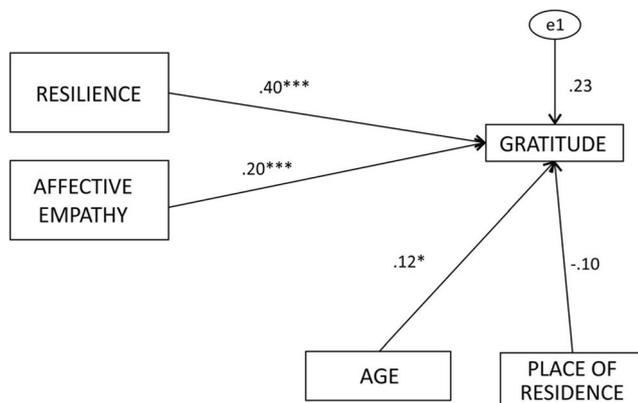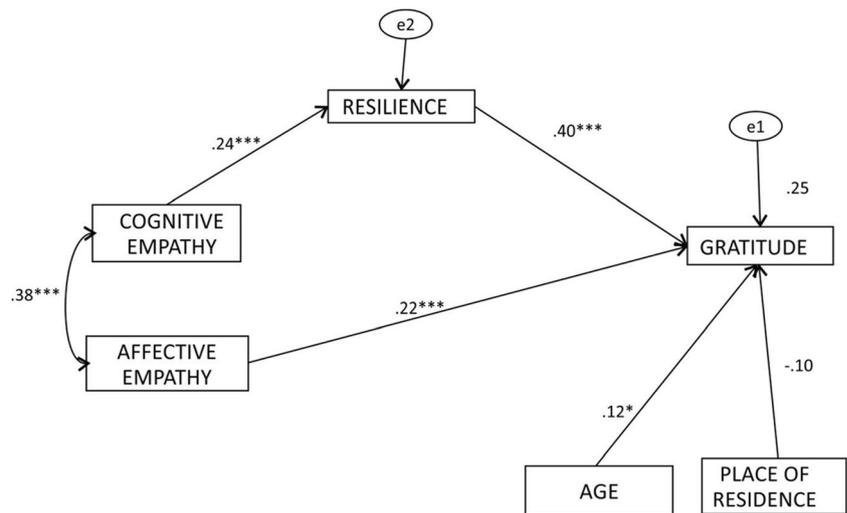
Fig. 1 The direct impact of affective empathy and resilience on gratitude. *p < .05, ***p < .001
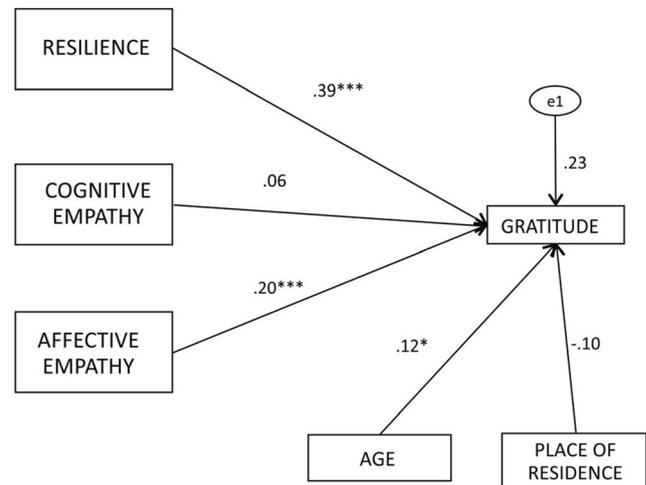
Fig. 2 The direct impact of cognitive empathy, affective empathy, and resilience on gratitude. *p < .05, ***p < .001

Fig. 3 The indirect effect of cognitive empathy through resilience on gratitude. *$p < .05$, ***$p < .001$

reported higher resilience also reported higher levels of gratitude and that cognitive empathy strengthened this relationship indirectly. Furthermore, it turned out that age is a demographic characteristic that directly impacts gratitude level. More specifically, the older person becomes, the more grateful they are. This effect was also found in other studies (Jans-Beken et al. 2017).

Although there is a growing body of research in positive psychology, focusing on strengths such as gratitude and empathy, little has been done to identify the relationship between them and to look into a mechanism that links these two virtues. Overall, our findings are unique in that they extend the literature that suggests that resilience and affective empathy are keys to increasing the level of gratitude. In our studies, resilience appeared as a personal resource linking gratitude and empathy, suggesting that this construct has great potential to strengthen mental health and psychological flourishing. Moreover, we empirically proved that empathy may be the antecedent of gratitude, what was only theoretically suggested by few authors before (e.g., Kim et al. 2018).

Summary, Limitations, and Future Directions

Despite the significant findings of the present study, there were some limitations to the study which may have influenced the results. First, the current study was limited to a sample of young adults, and the relatively smaller number of older participants (middle and elderly age) may have increased the likelihood of error. In addition, given the complexity of the multidimensionality of concepts such as gratitude, empathy, and resilience, other personality characteristics (e.g., grit or one's ability to be passionate and persevere towards long-term goals) may have influenced the results (Duckworth, Peterson, Matthews, & Kelly, 2007).

This study may also have underestimated the influences of demographic characteristics such as socioeconomic status and ethnicity. Our studies were conducted within Poland, with mainly Polish-speaking participants. Thus, future studies are necessary on more culturally and economically diverse samples to generalize to the larger, global population. Given that our measures were all based on self-reporting future studies should include alternative methods such as in-depth interviews and reports from family members and peers to control for possible shared variance.

Future research also needs to further investigate the influence of age and gender. This is especially true concerning empathy, as in the present study females were found to report higher levels of empathy as compared to males. More recent studies show that emotional empathy continues to show a female bias (Jami, Mansouri, Thoma, & Han, 2018) and also increases in older people, whereas cognitive empathy has been found to decrease with age. Such developments may also influence levels of resilience and gratitude (Khanjani et al. 2015). Given the complex definitions of gender identification, orientation, and fluidity, future research should consider ways to measure participants' perceptions of their gender identity and gender-role orientation.

The present results hold significant implications for theory and practice. Theoretically, these results extend the positive psychology literature by contributing to our understanding of the positive and complex connections among gratitude, empathy, and resilience. The results also provide additional support for the need to consider resilience as an important predictor of gratitude. The findings also suggest the need for future studies to include additional demographic characteristics and further examination of the social and cultural factors that may play a role in gratitude, empathy, and resilience.

Practically, our findings provide scientific support for psychologists and therapists to create preventive and therapeutic programs aimed at developing gratitude, empathy and resilience in both healthy people and clinical patients. Some prior results suggested that the positive influence of gratitude on well-being may be only temporal or even is a

placebo effect (Wood, Froh, & Geraghty, 2010; Davis et al., 2016). Gratitude intervention was found to be insufficient in reducing anxiety and depression (Cregg & Cheavens, 2020). In the light of our results, one of the possible reason for weak efficacy of gratitude positive interventions may be the concentration only on one emotional strength, without including other areas such as empathy or optimistic view and without taking into account mechanism underlying positive emotionality such as resilience. In accordance, such conclusion is consistent with a broader concept of positive health proposed by Huber et al. (2011), in which health is defined as the dynamic ability to adapt and self-manage one's own well-being. Resilience is an important characteristic to maintain adjustment despite the various socio-emotional challenges in life.

In conclusion, the study suggests that resilience and well-being should be developed among individuals. Educators and clinicians should consider gender-sensitive practical approaches (Lasota, Tomaszek, & Bosacki, 2020) to the promotion of empathy, gratitude, and resilience as important components of life skills training for mental health and well-being in adulthood.

Compliance with Ethical Standards

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