

Age and generational (X, Y, Z) differences in mental resilience

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Summary

Background: This study was conducted within the framework of Bronfenbrenner’s Ecological Systems theory and Erikson’s Psychosocial theory. The study of age and generational differences in mental resilience could reveal which age groups are more vulnerable to stress. Generational differences in mental resilience are expected because of maturation in human development and accumulation of social experience.

Methods: The participants were representatives of three generations – Generation Z, Generation Y, and Generation X. From 616 to 1053 participants were studied in Bulgaria with each of five scales measuring mental resilience.

Results: Generation Z had higher mental resilience as adaptability to changes, and recovery from illness or difficulties. Generation Y had higher mental resilience as perceived control, secure attachment and positive relationships, personal competence, optimism, tolerance of negative affects and overcoming them. Generation X had higher mental resilience as successfully coping with problems and difficult situations and quickly learning rules and norms.

Conclusions: These findings reveal the vulnerabilities and strengths of each generation related to the available resources for mental resilience, which are important for maintaining good health and optimal functioning.

Keywords: age, generation X; generation Y; generation Z; mental resilience

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INTRODUCTION

Well-being and satisfaction can be maintained during age-related cognitive and social changes because of human adaptation to changing life conditions (Westerhof et al., 2001) that could be facilitated by mental resilience. Mental resilience refers to the individual ability to cope efficiently with problems and adapt successfully to stress, trauma, adversities or new situations, to recover fast and function well after encountering difficulties, to maintain circadian rest-activity cycle in balance (Jakovljević, 2011; Elisei et al., 2013), to continue to improve, grow and develop in case of challenges in the environment (Selimbaši & Hasanovi, 2021), to maintain good mental health, positive emotions (Sedi et al., 2021), and high quality of life (Franjić et al., 2021). Mental resilience is a dynamic process (Green et al., 2014) and a multidimensional trait (Connor et al., 2003; Green et al., 2014) that is considered to vary, according to individual’s age, cultural background, and different life circumstances (Connor et al., 2003). The study of age and generational differences in mental resilience could reveal if there are some age groups that possess less resources to maintain their mental resilience and that are more vulnerable to stress, so

they could have some difficulties in maintaining and increasing their well-being.

Generational and age differences in mental resilience could be regarded within the framework of Bronfenbrenner’s Ecological Systems theory about the interacting factors influencing mental resilience and Erikson’s Psychosocial theory about some important periods in human life for developing mental resilience.

Throughout the life course, human development occurs through progressively more complex interactions between human beings and their environment – in microsystems or face-to-face interactions, in mesosystems of two interacting settings like home and school, in exosystems of two interacting settings among which at least one of them does not include this human being such as home and parents’ workplace, in macrosystems of the cultural milieu, and in chronosystems of the passage of time with chronological age and historical time changing the characteristics of personalities and their environments (Bronfenbrenner, 1994). Some differences in individual and community peculiarities (including mental resilience occur with age advance and wear and tear on the body) (e.g., more chronic illnesses, etc.), because one group is older than the other. Some other differences

could be due to the generational effect of common technical progress, historical development, educational practices, and environmental peculiarities. There are also some individual differences in mental resilience sharpened by genetic, perinatal and environmental factors. Age effects on mental resilience could be regarded within the framework of chronosystems, while generational differences in mental resilience could be regarded also within the framework of macrosystems described by Bronfenbrenner (1994).

The main generational groups currently in the workforce are:

- Baby Boomers (born 1950-1964) (Dzhonev, 2024; EUROGAS, EPSU and EMCEF toolkit: demographic change, age management and competencies in the gas sector in Europe, 2009; Schmidt et al., 2017);
- Generation X (born 1965-1979) (Dzhonev, 2024; EUROGAS, EPSU and EMCEF toolkit: demographic change, age management and competencies in the gas sector in Europe, 2009; Ferdinandov, 2023; Iberdrola, n.d.a; Schmidt et al., 2017; Srisathan et al., 2022; Williams, n.d.; Williams et al., 2017); Generation X is called also “digital immigrants” (Williams, n.d., p.1; Williams et al., 2017, p.1) that supposes stress related to the adaptation to new technologies that may be manifested in lower mental resilience.
- Generation Y (born 1980-1994) (Dzhonev, 2024; Editorial team of Meta4 Cegid Company, 2016; EUROGAS, EPSU and EMCEF toolkit: demographic change, age management and competencies in the gas sector in Europe, 2009; Ferdinandov, 2023; Iberdrola, n.d.a; Iberdrola, n.d.b; Schmidt et al., 2017; Srisathan et al., 2022; Stein, 2013; Williams, n.d.; Williams et al., 2017); Generation Y is called also “Millennials” (Editorial team of Meta4 Cegid Company, 2016, p.1; Iberdrola, n.d.a, p.1; McAllister & Lee Brien, 2019; Stein, 2013, p.1; Williams, n.d.; Williams et al., 2017), “digital natives” (Iberdrola, n.d.a, p.1; Williams, n.d., p.1; Williams et al., 2017, p.1), and “me-me-me generation” (Iberdrola, n.d.a, p.1; Stein, 2013, p.1). Generation Y includes young adulthood (Nesbitt et al., 2023).
- Generation Z (born 1995 – 2010) (Dzhonev, 2024; Editorial team of Meta4 Cegid Company, 2016, p.1; EUROGAS, EPSU and EMCEF toolkit: demographic change, age management and competencies in the gas sector in Europe, 2009; Ferdinandov, 2023; Iberdrola, n.d.a, p.1; Iberdrola, n.d.b, p.1; Srisathan et al., 2022). Generation Z is labelled also Centennial generation (Iberdrola, n.d.a, p.1; Iberdrola, n.d.b, p.1; Williams, n.d.; Williams et al., 2017) or digital intuitives (Williams, n.d.; Williams et al., 2017).

The development of mental resilience is a lifelong process for the individual (Wagnild & Young, 1993). There are some critical periods when one can acquire, maintain, preserve, or reduce mental resilience – childhood, youth, adolescence, and young adult stages (Anasuri, 2016).

People grow more resilient as they age, because of facing and overcoming the challenges of life, accumulating experience, and developing their resources (Eatough, 2022). Social competence (i.e., comfort in social settings) as an aspect of resilience increases with age (Alibrandi et al., 2024). Early childhood experiences such as cheerfulness, autonomy (self-reliance), close trusting and secure relationships, and effective family functioning contribute to development of mental resilience (Wagnild & Young, 1993). Mentally resilient children have such characteristics as independence (Benard, 1991), social competence (Garmezy et al., 1984), problem-solving skills (Benard, 1991; Garmezy et al., 1984), critical awareness (Garmezy et al., 1984), autonomy (Garmezy et al., 1984), social skills (Benard, 1991; Garmezy et al., 1984), positive relationships with adults and peers (Garmezy et al., 1984), engagement with own family, school, and community (Garmezy et al., 1984), and a sense of purpose in life (Benard, 1991; Garmezy et al., 1984).

Having a long-range goal guiding the behaviour could be an important psychological resource for people from different age groups that strengthens their mental resilience being a source of positivism, hope, energy, and vitality (White, 2020). A goal in life could give meaning and purpose of challenges and difficulties (White, 2020). C. Buhler proposed an age periodization regarding goal setting (Buhler, 1957; Buhler, 1966). A period of progressive accelerated growth is the age from birth to 25 years old when initially the person just reacts to life before self-determination to goals of life during childhood up to 15 years old, and then one expresses own wishes and plans about expected accomplishments as a form of preliminary, preparatory self-determination to goals of life during adolescence from 15 to 25 years old (Buhler, 1957; Buhler, 1966).

Youth are prone to underestimate their strengths in comparison with their parents (Wagner et al., 2007). Adolescence is the age when the ruminative style of thinking as an indicator of lack of mental resilience achieves its peak in frequency of use in Bulgaria (Dzhambov et al., 2019). The negative impacts of the first months of the COVID-19 pandemic period were more pronounced for young adults aged 16–25 years (Staneva et al., 2022). Before the pandemic, the youth in UK between 18 and 25 years old had more resilience related to social support (Gooding et al., 2011). Mentally resilient adolescents are motivated for goal achievement, and they have

proper time planning for completion of tasks (McMillan & Reed, 1994). A trend for an average degree of resilience has been established between 18-29-years old students (Özdoğan, 2023).

The resilient students have high academic achievements (Jowkar et al., 2014), self-efficacy (Develos-Sacalan & Bozkuş, 2018), self-control (Artuch-Garde et al., 2017), positive relationships with their teachers and fellow-students (Johnson, 2008), and effective school-family collaboration (Bryan, 2005). Classes that provide students with the opportunity to practice, to make their own decisions, to self-criticize, to set personal goals, and to enter into social relations between students promote mental resilience in students (Doll et al., 2014). Achieved identity, according to Erikson's age periodization (1968), should be an internal resource for higher mental resilience.

Then between 25 and 45/50 years old (early adulthood) growth becomes stationary, and this is a period of relative stability and definite self-determination to goals in life (Buhler, 1957; Buhler, 1966). Determination is an important aspect of adult mental resilience together with endurance, adaptability and recuperability (Taormina, 2015). It could be expected that mental resilience is stable during the period of stability in goal setting, i.e., between 25 and 45/50 years old. In some countries like Kenya, the individuals between the age of 35-55 years showed moderate resilience (Sambu & Mhongo, 2019).

According to Matilde Palfroy (2020), an employee shows resilience in the workplace when he or she analyzes own failures, being able to draw useful consequences for his or her future professional life, and reorienting to the tasks that are more appropriate to his/her skills. Another example of manifested resilience to workplace stress, according to her, is when an employee is in conflict with his/her supervisor or a co-worker and s/he does not let this conflict discourage him/her from pursuing his/her career path by trying to resolve the issue or simply willing to work with other people (Palfroy, 2020).

Robinet et al. (2019) believe that an unemployed person could have resilience to stress if this person relies on the help of external resources, such as asking for and accepting support from others or participating in collective activities. Other people may be friends or professionals who are competent in the unemployed person's occupational field, and collective activities may include participation in retraining courses or social activities. One should also rely on the acquisition of internal resources, seeking to strengthen one's sense of competence and self-confidence (Robinet et al., 2019).

It is likely that these individual differences and personality traits explain the discrepancy that has been found in various research studies as reported by Pradhan et al.

(2022) that in some samples there are no significant differences between mental resilience in the employed and unemployed, while other evidence suggests that the employed and unemployed have different mental resilience (Pradhan et al., 2022).

Mentally resilient people cope with unemployment by being optimistic, creative, decisive, emotionally intelligent, more flexible by engaging in a variety of job search behaviors, and perceive setbacks as challenges that can be overcome, correspondingly less depressed and happier despite being unemployed (Gómez-Hombrados & Extremera, 2023). Unemployed people who have higher mental resilience are less likely to become depressed when their job search lasts for a long time and are also more assertive in their job search, so it is important to look for opportunities to increase people's mental resilience (Moorhouse & Caltabiano, 2007).

Also in the scientific literature, evidence of differences in resilience between different categories of workers has been reported, with mental resilience during the Covid-19 pandemic being higher in Bulgaria among workers in the fields of economics, education, law and information technology, followed by mental resilience among health care workers, and the lowest mental resilience was found among athletes during the Covid-19 pandemic (Stoyanova et al., 2022).

The academic literature also reports evidence of differences in resilience between different categories of workers in terms of job retention, with transport and warehousing workers having the lowest resilience in Indonesia and construction workers having the highest resilience in terms of job retention in Indonesia (Kurniasari & Putri, 2022).

Later, a period of decline lasts from 45/50 to 60/65/70 years old (late adulthood) characterized with evaluation of past accomplishments related to achieved goals in life, and a period of further decline continues above 65/70 years old, i.e., old age characterized with a retrospective view of life regarding experiences of completeness of life, resignation with restrictions, or failure (Buhler, 1957; Buhler, 1966).

Psychological resilience does not reach a critical limit in advanced old age (Bennett, 2015). In Greece, the age group above 55 years old had lower levels of mental resilience as personal competences and persistence, but higher levels of mental resilience as social skills and peer support compared to younger age groups (Papazis et al., 2023). The older adults in the UK were more resilient with respect to emotional regulation ability and problem solving (Gooding et al., 2011).

There were not any statistically significant differences between the age groups of 50-54 and 55-59 years in

Singapore (Visaria & Chan, 2020), neither between the age groups of 75-, 80- and 85-years old Finnish people (Siltanen et al., 2021) in their mental resilience as adaptability, coping with changes, recovery after stress and self-efficacy. The differences between the age groups in their mental resilience may depend on the instruments that are used emphasizing different aspects of mental resilience.

It could be expected that resilience to stress increases with increasing age, as there are some research findings that following the 9/11 airstrikes in the US, older people over 65 were three times less likely to develop post-traumatic stress disorder compared to young people aged 18 to 24; and that 5 out of 6 older people adjust well over time following the death of a loved one (Southwick et al., 2014). However, a study in Spain found no direct linear correlation between mental resilience and age in 401 unemployed people from 21 to 62 years old (Gómez-Hombrados & Extremera, 2023). Some young people could be more resilient to stress than some older people. The reason is their confidence in their own abilities despite their lack of experience, their youthful optimism and their drive for change and development. People who are optimistic, even when unemployed, exhibit mental resilience by reducing their self-perceptions of not being healthy enough, while people with low optimism have more difficulty coping with difficult situations and their mental resilience is lower, so they describe themselves as featuring low well-being (Victor, 2016).

RESEARCH PURPOSE AND HYPOTHESES

This study aims to establish whether and how mental resilience varies with age, as well as if there are any generational differences in mental resilience. It may be expected that the age differences depend on the type of resilience that is measured. One hypothesis states that some aspects of mental resilience (such as coping with stress and difficulties) increase with age advance or at least remain more stable within succeeding generations, while other aspects of mental resilience (such as fast recovery, flexibility and adaptability) diminish with age advance. The reason for stating this hypothesis is distinguishing in the scientific literature of several types of resilience, for example, resilience as adaptivity; ecological resilience, i.e., remaining calm, stable, and self-confident; engineering resilience, i.e., recovering from adversities (Sękowski et al., 2023).

Another hypothesis states that mental resilience would differ between Generations X, Y, and Z.

The reasons for formulating such a hypothesis are based on literature review that mental resilience varies according to individual's age (Connor et al., 2003), and people grow more resilient as they age (Eatough, 2022) that suggests that higher mental resilience should be expected from the older Generation X. On the other hand, lower mental resilience among Generation X could be also expected because of worsened health status in more advanced age, and financial problems that may require change of workplace that would be more difficult in advanced age.

Besides, higher mental resilience is also expected among Generation Y, as Generations Y in different countries are more similar to each other than to the other generations in the same country (Stein, 2013), and the period between 25 and 45 years old is defined as a period of stability and definite self-determination to goals in life followed by a period of decline (Buhler, 1957; Buhler, 1966), and the finding that the most psychologically resilient people in some other countries are the individuals between the ages of 29-39 (Mizrak & Tutkun, 2020). Besides Generation Y is described as optimistic (Iberdrola, n.d.b), so as more resilient people score higher in optimism (Eatough, 2022), higher mental resilience could be expected for Generation Y.

Another reason for expecting generational differences in mental resilience is the finding that Generations Y in different countries are more similar to each other than to the other generations in the same country, because of globalization, social media, and the influence of Western culture (Stein, 2013). This suggests that Generation Y should differ from the other generations in more aspects of mental resilience.

SUBJECTS AND METHODS

A quantitative cross-sectional study was conducted in 2022-2024 both online and offline in Bulgaria applying the method of personality questionnaires. Striving for objectivity, several questionnaires measuring mental resilience were used. Participation was voluntarily and anonymously.

Instruments

Mental resilience was studied by means of three versions of Connor-Davidson Resilience Scale (25 items, 10 items, and 2 items) whose higher scores mean higher mental resilience (Connor & Davidson, 2003).

Connor-Davidson Resilience Scale with 2 items mental resilience as adaptability to changes and recovery from illness or difficulties (Connor & Davidson, 2003). Additionally, Connor-Davidson Resilience Scale with 10 items mental resilience as personal competence, optimism, tolerance of negative affect and overcoming it (Connor & Davidson, 2003), and self-efficacy (Green et al., 2014). Besides, Connor-Davidson Resilience Scale with 25 items additionally measures resilience as the individual ability to change and cope with adversities (Burns et al., 2011; Connor & Davidson, 2003), perceived control, secure attachment and positive relationships (Connor & Davidson, 2003; Green et al., 2014). Test – retest reliability of CD-RISC25 was .87 in USA (Connor & Davidson, 2003). Cronbach's alpha of CD-RISC 25 varied between .93 and .95 in Korea (You & Park, 2017), between .89 and .96 in USA (Burns et al., 2011; Connor & Davidson, 2003; Green et al., 2014), and it was .948 in Bulgaria (Stoyanova, in press). McDonald's ω of CD-RISC25 was .949 in Bulgaria (Stoyanova, in press) that was above its minimal threshold of .75 (McDonald, 1999). Guttman Split-Half Coefficient was .942 in Bulgaria for CD-RISC25 (Stoyanova, in press). In our study, Cronbach's alpha of CD-RISC 25 was .950. Cronbach's alpha of CD-RISC 10 was .92 (Brown et al., 2020). In our study, Cronbach's alpha of CD-RISC 10 was .895 and Cronbach's alpha of CD-RISC 2 was .749.

Mental resilience was also studied by Brief Resilience Scale as the ability for fast and easy recovery from stress (Smith et al., 2008). The scores are averaged, and higher scores mean higher resilience (Smith et al., 2008). Cronbach's alpha of Brief Resilience Scale (BRS) varies from .80 to .91 in different samples (Smith et al., 2008). Cronbach's Alpha of the Brief Resilience Scale in Bulgaria in different studies (Bakracheva, 2020; Dzhambov et al., 2019; Kareva, 2021) is above .82. In our study, it was .81.

Mental resilience (as keeping calm and successfully coping with problems and difficult situations, showing flexibility, learning rules and norms quickly) was also studied by another questionnaire created by Rusinova & Zhilyova (2007) in Bulgaria consisting of 21 items answered on a four-point scale whose Cronbach's alpha was .691 (Budeva, 2011). In our study, Cronbach's alpha was .796. Higher scores mean higher mental resilience (Nedeva & Stavrev, 2020).

Sample

The required sample size for a representative sample of the Bulgarian population of 6,437,360 individuals in 2024 (Republic of Bulgaria National Statistical Institute, 2025) was calculated as 385 participants for a 95% confidence level with a 5% margin of error, 601 participants for a 95% confidence level with a 4% margin of error, and 1,067 participants for a 95% confidence level with a 3% margin of error (Sample Size Calculator, n.d.). However, achieving a truly representative sample requires not only an appropriate sample size but also the inclusion of randomly selected participants from diverse socio-demographic backgrounds across all social strata. This ensures both generalizability of interpretation and generalizability of estimates (Rudolph et al., 2023).

Regarding generalizability of interpretation, it is reasonable to expect, based on the theoretical background presented, that general inferences drawn from the results would remain consistent. Generalizability of estimates, however, depends on an appropriate sampling and recruitment strategy (Rudolph et al., 2023). In this study, participants were recruited purposively: face-to-face through personal contacts at several universities and enterprises, as well as online via survey links posted on selected social networks.

Table 1. Frequency distribution of participants from different generations answering different questionnaires.

Scales	Generation Z (18-30)	Generation Y (31-45)	Generation X (46-60)	Generation Baby boomers (61-75)	Total number of participants
Connor-Davidson Resilience Scale 2 items score	396	440	209	8	1053
Connor-Davidson Resilience Scale 10 items score	134	314	168	0	616
Connor-Davidson Resilience Scale 25 items score	134	314	168	0	616
Brief Resilience Scale averaged score	754	224	35	0	1013
R & Zh Resilience Scale	207	270	259	48	784

The criterion for inclusion in the study was to be an adult Bulgarian at least 18 years old. The sample descriptions could be found in Table 1, Table 2, and Table 3, and because of the small number of participants from Generation Baby boomers, they were excluded from the statistical analysis of group comparisons of data. The female participants from each generation were more than male participants (see Table 2 and Table 3). The participants' age varied from 18 to 75 years old. Their mean age was 32.13 years old, and their standard deviation was 12.88 years.

Data processing

Data were processed statistically by means of SPSS 23 applying descriptive statistics, independent samples t-test for group comparisons and correlational analysis. The effect size is interpreted, according to Lenhard & Lenhard (2016).

RESULTS

The scores on mental resilience measured by all questionnaires and age were approximately normally distributed as the coefficients skewness and were both within the range from -2 to +2 considered acceptable to approximate normal distribution (George & Mallery, 2003; Muzaffar, 2016; Simon & Watson, 2018).

Correlational coefficients between age and different aspects of mental resilience indicate that mental resilience measured as the ability for fast and easy recovery from stress (Brief Resilience Scale averaged score) diminished with age advance, as well as mental resilience as adaptability to changes and recovery from illness or difficulties (Connor-Davidson Resilience Scale 2 items) diminished with age advance (see Table 4). Mental resilience as personal competence, tolerance of negative affect, secure attachment and positive relationships, perceived control (Connor-Davidson Resilience Scale 25 items and 10 items) did not correlate significantly with age (see Table 4) suggesting proneness to stability in spite of tendency for a slight decline. Mental resilience

Table 2. Frequency distribution of male participants from different generations answering different questionnaires.

Scales	Generation Z (18-30)	Generation Y (31-45)	Generation X (46-60)	Generation Baby boomers (61-75)	Total number of participants
Connor-Davidson Resilience Scale 2 items score	114	101	58	1	274
Connor-Davidson Resilience Scale 10 items score	44	70	46	0	160
Connor-Davidson Resilience Scale 25 items score	44	70	46	0	160
Brief Resilience Scale averaged score	352	66	18	0	436
R & Zh Resilience Scale	60	75	59	9	203

Table 3. Frequency distribution of female participants from different generations answering different questionnaires.

Scales	Generation Z (18-30)	Generation Y (31-45)	Generation X (46-60)	Generation Baby boomers (61-75)	Total number of participants
Connor-Davidson Resilience Scale 2 items score	279	333	151	7	770
Connor-Davidson Resilience Scale 10 items score	90	244	122	0	456
Connor-Davidson Resilience Scale 25 items score	90	244	122	0	456
Brief Resilience Scale averaged score	402	158	17	0	577
R & Zh Resilience Scale	115	193	196	39	543

as successfully coping with problems and difficult situations, learning quickly rules and norms (R & Zh Resilience Scale) slightly increased with age (see Table 4).

It was found that the participants from Generation Z had higher mental resilience as the ability for fast and easy recovery from stress (Brief Resilience Scale averaged score), as well as mental resilience as adaptability to changes and recovery from illness or difficulties (Connor-Davidson Resilience Scale 2 items) than the participants from Generation Y (see Table 5). It was found that the participants from Generation Y had higher mental resilience as the ability to change and cope with adversities, personal competence, tolerance of negative affect, secure attachment and positive relationships, perceived control (Connor-Davidson Resilience Scale 25 items and Connor-Davidson Resilience Scale 10 items) than the participants from Generation Z (see Table 5). Generations Z and Y did not differ statistically significantly in their mental resilience as successfully coping with problems and difficult situations, learning quickly rules and norms (R & Zh Resilience Scale) (see Table 5).

The participants from Generation Z and Generation X did not differ statistically significantly (see Table 6) in their mental resilience as the ability for fast and easy recovery from stress (Brief Resilience Scale averaged score), as well as mental resilience as the ability to

Table 4. Correlations between age and different scales measuring mental resilience.

Questionnaires	Statistical coefficients	Your age
Brief Resilience Scale averaged score	Pearson Correlation	-0.307**
	p	< .001
	N	1013
Connor-Davidson Resilience Scale 10 items score	Pearson Correlation	-0.030
	p	.464
	N	616
Connor-Davidson Resilience Scale 25 items score	Pearson Correlation	-0.028
	p	.493
	N	616
Connor-Davidson Resilience Scale 2 items score	Pearson Correlation	-0.232**
	p	< .001
	N	1053
R & Zh Resilience Scale	Pearson Correlation	0.091*
	p	.010
	N	784

Table 5. Comparisons between Generation Z and Generation Y in their mental resilience.

Scales	Generations	N	Mean	Std. Deviation	Levene's Test for Equality of Variances	Independent samples t-test	Effect size Cohen's d
Brief Resilience Scale averaged score	Generation Z (18-30)	754	3.23	0.75	$F = 8.035$, $p = .005$	$t = 15.964$ $df = 441.432$ $p < .001$	-1.083, i.e., large effect size
	Generation Y (31-45)	224	2.45	0.61			
Connor-Davidson Resilience Scale 10 items score	Generation Z (18-30)	134	21.81	4.61	$F = 24.537$, $p < .001$	$t = 2.738$ $df = 347.763$ $p = .006$	-1.422, i.e., large effect size
	Generation Y (31-45)	314	23.29	6.49			
Connor-Davidson Resilience Scale 25 items score	Generation Z (18-30)	134	54.49	10.73	$F = 28.790$, $p < .001$	$t = 3.089$ $df = 341.547$ $p = .002$	0.281, i.e., small effect size
	Generation Y (31-45)	314	58.35	14.83			
Connor-Davidson Resilience Scale 2 items score	Generation Z (18-30)	396	6.40	2.09	$F = 0.021$, $p = .885$	$t = 5.052$ $df = 834$ $p < .001$	-0.349, i.e., small effect size
	Generation Y (31-45)	440	5.66	2.15			
R & Zh Resilience Scale	Generation Z (18-30)	207	53.99	9.70	$F = 4.421$, $p = .040$	$t = 1.454$ $df = 399.552$ $p = .147$	-
	Generation Y (31-45)	270	55.21	8.15			

change and cope with adversities, personal competence, tolerance of negative affect, secure attachment and positive relationships, perceived control (Connor-Davidson Resilience Scale 25 items and Connor-Davidson Resilience Scale 10 items). The participants from Generation Z had higher mental resilience as adaptability to changes and recovery from illness or difficulties (Connor-Davidson Resilience Scale 2 items) than the participants from Generation X (see Table 6). The participants from Generation X had higher mental resilience as successfully coping with problems and difficult situations, learning quickly rules and norms (R & Zh Resilience Scale) than the participants from Generation Z (see Table 6).

The participants from Generation Y and Generation X did not differ statistically significantly (see Table 7) in their mental resilience as personal competence, optimism, tolerance of negative affect and overcoming it (Connor-Davidson Resilience Scale 10 items), neither in their mental resilience as adaptability to changes and recovery from illness or difficulties (Connor-Davidson Resilience Scale 2 items), nor in their mental resilience as successfully coping with problems and difficult situations, learning quickly rules and norms (R & Zh Resilience Scale). However, the participants from Generation X had higher mental resilience as the ability for fast and easy recovery

from stress (Brief Resilience Scale averaged score) than Generation Y. While the participants from Generation Y had higher mental resilience as the ability to change and cope with adversities, personal competence, tolerance of negative affect, perceived control, secure attachment and positive relationships (Connor-Davidson Resilience Scale 25 items) than the participants from Generation X (see Table 7).

DISCUSSION

The results indicated that mental resilience was differentiated by age as Connor et al. (2003) also stated. The findings supported the hypothesis that some aspects of mental resilience (such as coping with stress and difficulties) increased with age advance or at least remained more stable within succeeding generations, while other aspects of mental resilience (such as fast recovery, flexibility and adaptability) diminished with age. In line with the last finding, the participants from the youngest Generation Z had higher mental resilience as adaptability to changes and recovery from illness or difficulties (Connor-Davidson Resilience Scale 2 items) than the participants from Generation

Table 6. Comparisons between Generation Z and Generation X in their mental resilience.

Scales	Generations	N	Mean	Std. Deviation	Levene's Test for Equality of Variances	Independent samples t-test	Effect size Cohen's d
Brief Resilience Scale averaged score	Generation Z (18-30)	754	3.23	0.75	$F = 0.478$, $p = .490$	$t = 0.193$ $df = 787$	-
	Generation X (46-60)	35	3.26	0.72		$p = .847$	
Connor-Davidson Resilience Scale 10 items score	Generation Z (18-30)	134	21.81	4.61	$F = 7.432$, $p = .007$	$t = 0.591$ $df = 299.586$	-
	Generation X (46-60)	168	22.17	6.00		$p = .555$	
Connor-Davidson Resilience Scale 25 items score	Generation Z (18-30)	134	54.49	10.73	$F = 4.739$, $p = .030$	$t = 0.869$ $df = 298.345$	-
	Generation X (46-60)	168	55.65	12.50		$p = .386$	
Connor-Davidson Resilience Scale 2 items score	Generation Z (18-30)	396	6.40	2.09	$F = 4.994$, $p = .026$	$t = 5.370$ $df = 366.119$	-0.479, i.e., small effect size
	Generation X (46-60)	209	5.33	2.48		$p < .001$	
R & Zh Resilience Scale	Generation Z (18-30)	207	53.99	9.70	$F = 1.641$, $p = .201$	$t = 2.792$ $df = 464$	0.261, i.e., small effect size
	Generation X (46-60)	259	56.42	9.01		$p = .005$	

Table 7. Comparisons between Generation Y and Generation X in their mental resilience.

Scales	Generations	N	Mean	Std. Deviation	Levene's Test for Equality of Variances	Independent samples t-test	Effect size Cohen's d
Brief Resilience Scale averaged score	Generation Y (31-45)	224	2.45	0.61	$F = 0.333$, $p = .565$	$t = 7.094$ $df = 257$ $p < .001$	1.295, i.e., small effect size
	Generation X (46-60)	35	3.26	0.72			
Connor-Davidson Resilience Scale 10 items score	Generation Y (31-45)	314	23.29	6.49	$F = 3.795$, $p = .052$	$t = 1.853$ $df = 480$ $p = .065$	-
	Generation X (46-60)	168	22.17	6.00			
Connor-Davidson Resilience Scale 25 items score	Generation Y (31-45)	314	58.35	14.83	$F = 10.416$, $p = .001$	$t = 2.111$ $df = 393.915$ $p = .035$	-0.192, i.e., small effect size
	Generation X (46-60)	168	55.65	12.50			
Connor-Davidson Resilience Scale 2 items score	Generation Y (31-45)	440	5.66	2.15	$F = 4.993$, $p = .026$	$t = 1.683$ $df = 361.994$ $p = .093$	-
	Generation X (46-60)	209	5.33	2.48			
R & Zh Resilience Scale	Generation Y (31-45)	270	55.21	8.15	$F = 0.478$, $p = .490$	$t = 1.621$ $df = 527$ $p = .106$	-
	Generation X (46-60)	259	56.42	9.01			

Y and Generation X. The participants from the older generations Y and X did not differ statistically significantly in their mental resilience as adaptability to changes and recovery from illness or difficulties (Connor-Davidson Resilience Scale 2 items). Lower mental resilience among older generations could be also due to their worsening health status or financial problems, as financial crisis may have required more prolonged work time that would be more difficult in advanced age. The situations of unemployment, job loss and financial problems may be more challenging for older generations because of difficulties in changing the work sphere at a later age. The financial problems may result in a longer stay at work that may have a negative impact on mental health (Joye & Wilson, 2015).

Regarding recovery from stress as an aspect of mental resilience, the participants from Generation Z and Generation X did not differ statistically significantly in their mental resilience as the ability for fast and easy recovery from stress (Brief Resilience Scale averaged score) and the participants from Generation Z and Generation X had higher mental resilience as the ability for fast and easy recovery from stress (Brief Resilience Scale averaged score) than the participants from Generation Y. The oldest Generation X may rely on the accumulated social experience for fast and easy recovery from stress, enriched social contacts and networks and a philosophical

approach to life. The youngest Generation Z is more innovative and open to change (Editorial team of Meta4 Cegid Company, 2016) and new starts in worklife (Sriathan et al., 2022), which could help for fast and easy recovery from stress. More resilient people score higher in innovation (Eatough, 2022).

On the other hand, the participants from Generation Y had higher mental resilience as perceived control, secure attachment and positive relationships (Connor-Davidson Resilience Scale 25 items) than the participants from Generation Z and Generation X who did not differ statistically significantly in their mental resilience as perceived control, secure attachment and positive relationships (Connor-Davidson Resilience Scale 25 items). The period between 25 and 45 years old is defined as a period of stability and definite self-determination to goals in life (Buhler, 1957; Buhler, 1966) that may be a reason for higher mental resilience in Generation Y. The most psychologically resilient people in some countries like Turkey were the individuals between the ages of 29-39 (Mizrak & Tutkun, 2020).

The participants from Generation Y also had higher mental resilience as personal competence, optimism, tolerance of negative affect and overcoming it (Connor-Davidson Resilience Scale 10 items) than the participants from Generation Z. Neither the participants from Generation Z

and Generation X, nor the participants from Generation Y and Generation X differed statistically significantly in their mental resilience as personal competence, optimism, tolerance of negative affect and overcoming it (Connor-Davidson Resilience Scale 10 items). Some possible explanations for higher mental resilience of Generation Y could be such characteristics of this generation as expert concerning the use of technologies (Editorial team of Meta4 Cegid Company, 2016), self-confident (Stein, 2013), and optimistic (Iberdrola, n.d.b) that permits the unexpected events to be perceived as a challenge, not as stressors. It has been found that more resilient people score higher in optimism (Eatough, 2022). Besides, Generation Y is ambitious and narcissistic (Iberdrola, n.d.a; Iberdrola, n.d.b; Stein, 2013). It has been found that grandiose narcissism (being self-absorbed and desiring approval, and having the skills needed to obtain them, high self-esteem, assertiveness) is positively related to resilience (Sękowski et al., 2023), as well as grandiose narcissism is inversely related to distress that may be partly due of high self-confidence (Leniarska & Zajenkowski, 2022).

Stability of some aspects of mental resilience in a part of adulthood was also supported by the lack of statistically significant differences between the succeeding Generations Z and Y, nor Generations Y and X in their mental resilience as successfully coping with problems and difficult situations, learning quickly rules and norms (R & Zh Resilience Scale). However, the participants from Generation X had higher mental resilience as successfully coping with problems and difficult situations, learning quickly rules and norms (R & Zh Resilience Scale) than the participants from Generation Z. The larger experience from socialization practices permitted the older Generation X to faster acquire social norms. It has been found that older employees generally are more emotionally resilient at work (Aksoy & Marcus, 2025).

Because resilience is shaped by cultural, social, and spiritual factors, these findings could be culturally specific. Another study in 12 countries among 1451 adolescents from 14 sites revealed that there were some global, culturally, and contextually specific aspects that contributed to young people's resilience (Ungar, 2006). Both global factors like spirituality (Vis & Heather, 2025) or social support (Cénat et al., 2021; Hunter, 2001), and cultural-specific factors like traditions, rituals, and shared beliefs (Hammood et al., 2025) influence how individuals develop resilience. Regarding the cultural aspects that promote higher resilience, in Southeast Asia they are related to valuing interconnectedness with family, community, ancestors, future descendants, the land and to all living things and creations that reside on their lands (Chua et al., 2019), while among Afro-Americans they are related

to active coping, spirituality/religion and social support (Woods-Giscombe et al., 2023). A cross-sectional study of 529 adults from 18 to 89 years old from 11 nations found that higher levels of spirituality were significantly associated with greater resilience, even when accounting for age, gender, socioeconomic differences, and adversity history (Howard et al., 2023). Spiritual growth makes children more resilient (Allen, 2021; Crawford et al., 2006). Resilience was positively associated with spirituality among people below (Chen et al., 2023) and above 60 years old (Chen et al., 2023; Shabani et al., 2023).

LIMITATIONS

Some limitations of this study are related to the necessity of larger sub-sample sizes, uneven number of participants in the compared groups. The sample size may influence the conclusions based on the mean differences in resilience that are small. Uneven gender distribution among generations could also differentiate mental resilience if more female participants from one generation were studied than from another generation. The computation of effect sizes considers mean differences, sample sizes, and variability of answering (Lenhard & Lenhard, 2016).

Another limitation is related to the possible manifestations of social desirability during answering the questionnaires. Brief Resilience Scale (BRS) includes the same number of positively and negatively formulated items to diminish the effect of social desirability and the bias for positive answering (Smith et al., 2008). The questionnaire created by Rusinova & Zhilyova also includes positively and negatively formulated items that are scored to diminish the effect of social desirability.

The difference between generations in their mental resilience could be culturally specific, because of different state policies, socio-economic situations and traditions in the countries that may provoke cultural differences in the external resources for mental resilience. It has been established that cultural differences between aspirations and values often are more pronounced than their differences between the generations (Bresman & Rao, 2017), and generations Y in different countries are more similar to each other than to the other generations in the same country (Stein, 2013), so further studies should establish if cultural differences in mental resilience could be negligible, because of globalization, social media, and the influence of Western culture or COVID-19 pandemic (Filippou & Giannouli, 2023). People from different cultures could develop adaptive strategies (for example, religiousness and spiritual experience) to safeguard against

the adverse effects of COVID-19 pandemic, maintaining resilience (Filippou & Giannouli, 2023; Giannoulis & Giannouli, 2020).

Some further studies could apply several methods for diagnostics of mental resilience in different countries, establishing the existence of generational differences in different aspects of mental resilience and striving for cross-cultural comparisons of mental resilience of different generations. This study tried to control the effect of measurement instruments on the findings about age and generational differences in mental resilience by applying several methods for diagnostics of mental resilience.

Another limitation is related to the variable and arbitrary demarcations between generations in scientific literature, and the succeeding generations (at their tails) are very close which is problematic for comparison. For example, any significant differences between resilience of employed women were not found across age groups of 26-30 years old and 31-35 years old in India (Kirtana, 2021). That is why we studied not only generational differences, but also correlation between age and mental resilience.

CONCLUSIONS

The findings permit us to conclude that the differences between age and generational groups in their mental resilience may depend on the instruments that are used emphasizing different aspects of mental resilience. It cannot be stated that one generation is more mentally resilient than another, but they differ in the more pronounced aspects of mental resilience that are specific for a given generation.

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This study reveals that Generation Z had higher mental resilience as adaptability to changes, recovery from illness or difficulties, and the ability for fast and easy recovery from stress. Generation Y had higher mental resilience as perceived control, secure attachment and positive relationships, personal competence, optimism, tolerance of negative affects and overcoming them. Generation X had higher mental resilience as the ability for fast and easy recovery from stress, successfully coping with problems and difficult situations, and quickly learning rules and norms. These findings reveal the vulnerabilities and strengths of each generation related to the available resources for mental resilience, which are important for maintaining good health and optimal functioning. Each generation has some internal and external resources for building their own mental resilience.

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