Original Research

The challenge of change: Resilience traits in Women's Dermatological Society Forum participants by generation

Catherine M. Ludwig BA [a,1], Amaris N. Geisler BS [b,1], Jennifer M. Fernandez BS, RD [c,1], Grace Battaglia BS [d], Cathy Andorfer PhD [e], Molly A. Hinshaw MD [f,*]

[a] University of Illinois Chicago, College of Medicine, Chicago, IL, USA
[b] City University of New York School of Medicine, New York, NY, USA
[c] University of Arizona, College of Medicine, Tucson, AZ, USA
[d] Endo Aesthetics, Malvern, PA, USA
[e] Dermira, Inc, Menlo Park, CA, USA
[f] University of Wisconsin School of Medicine and Public Health, Madison, WI, USA

A B S T R A C T

Background: Physician burnout is a common problem that can have negative ramifications for both physicians and patients. Lack of effective coping mechanisms decreases resilience, which can lead to burnout, and women may be particularly vulnerable.
Objective: We aimed to evaluate resilience by generation among professionals in dermatology. We hope to gain a better understanding of the plasticity of resilience traits to identify modifiable resilience components.
Methods: Attendees of the 2020 Women's Dermatological Society Forum were asked to complete an 80-item questionnaire evaluating eight characteristics of resilience. Each participant received scores electronically, and attendees were invited to anonymously submit scores, job category (physician or industry), and birth year and/or generation category. Participants who provided scores and were part of the millennial generation (born 1980–1994; ages 26–40 years at the time of survey completion), Generation X (born 1965–1979; ages 41–55 years), or baby boomer generation (born 1944–1964; ages 56–76 years) were included.
Results: Of the 67 participants meeting the inclusion criteria, 96.7% were women and 3.3% were men, 69.4% were physicians and 30.6% were industry representatives. Millennials accounted for 43.3%, Generation X for 35.8%, and baby boomers for 20.9% of the study participants. There was a significant difference among the three generations for mean scores on rumination ($p = .0071$) and flexibility ($p = .0005$), with scores becoming more ideal for older generations. There was no significant difference among generations for other resilience or burnout indicators, including emotional inhibition, toxic achieving, avoidance coping, perfect control, detached coping, and sensitivity.
Conclusion: Resilience traits such as rumination and flexibility differed by generation, with the most favorable scores occurring in the oldest cohort, suggesting that some resilience traits may be malleable and improve with age or be inherently affected by environment during development. Health care professionals may benefit from engaging in activities that enhance malleable resilience traits and improve the ability to manage work-related stressors.

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Introduction

Burnout is defined as "a special type of work-related stress — a state of physical or emotional exhaustion that also involves a sense of reduced accomplishment and loss of personal identity" (Mayo Clinic, 2018). Physician burnout is an increasingly recognized issue in health care because it presents a threat to both patient care and provider well-being (Stewart and Serwint, 2019). Physician burnout is associated with decreased mindfulness and coping abilities (Chaukos et al., 2017). The phenomenon of burnout is not univer-

sal, with different rates reported among specialties and female physicians showing increased susceptibility to burnout compared with male peers (Berg, 2020; Spataro et al., 2016). In women specifically, burnout is associated with an increased tendency to self-blame as a maladaptive coping mechanism (Spataro et al., 2016).

Health care worker burnout has also been shown to vary among generations, with millennial nurses showing more burnout than those in Generation X and the baby boomer generation showing the lowest rate of burnout (Kelly et al., 2015). Millennials make up the youngest generation (born 1980–1994), followed by Generation X (born 1965–1979), with baby boomers as the oldest generation (born 1944–1964; Kasasa, 2019). Societal changes over time have contributed to varied childhood experiences for each generation. Different environments have resulted in differing values associated with work, which may affect burnout and resilience (Wey Smola and Sutton, 2002).

Resilience is the capacity to recover quickly from challenges and adapt to change without catastrophizing (Roger, 2020b). Of traits that contribute to resilience (including rumination, emotional inhibition, toxic achieving, avoidance coping, perfect control, detached coping, sensitivity, and flexibility), rumination is considered the most important (Roger, 2020a; Work Skills Centre Ltd, 2018). Rumination, the tendency to dwell on emotionally upsetting events, can prolong recovery from stressful circumstances; however, while rumination can negatively affect mental and physical well-being, this behavior appears to be modifiable (Modini and Abbott, 2018).

We aimed to investigate burnout and resilience among professionals working in dermatology across multiple generations by anonymously collecting results from a questionnaire on resilience traits from participants at the 2020 Women's Dermatologic Society Forum. The goal of this study was to identify adaptable characteristics that contribute to resilience.

Methods

Attendees of the Women's Dermatologic Society Forum, hosted in Scottsdale, Arizona, from January 31 to February 2, 2020, were asked to complete a presession online questionnaire, entitled "The Challenge of Change Profile," in preparation for an interactive session on building resilience (Roger, 2020c,d; Work Skills Centre Ltd, 2018). This 80-item questionnaire is composed of true/false questions that evaluate an individual's habitual use of eight coping strategies: rumination, emotional inhibition, toxic achievement, avoidance coping, perfect control, detached coping, sensitivity, and flexibility (Roger, 2020c). These questionnaire components have been developed and validated with multiple studies (Greco and Roger, 2001; Roger and Hudson, 1995; Roger and Najarian, 1989; Roger and Nesshoever, 1987; Roger et al., 1993, 2011). Scores for each character trait ranged from 0 to 10, with 0 to 2 considered a low score and 8 to 10 considered a high score. Descriptions for each trait are provided in Table 1.

Each participant completed the questionnaire and received his or her scores electronically prior to attending an interactive workshop. All session participants were invited to submit their scores anonymously for group analysis. Those interested in participating were asked to transcribe scores for each category and provide year of birth or generation along with job category (industry representative or physician including medical students). Responses met the inclusion criteria if scores and generation or year of birth were provided and if birth year was between 1944 and 1994 (age 26–76 years at the time of survey completion). Generations were categorized by birth year with millennials born between 1980 and 1994 (age 26–40 years), Generation X between 1965 and 1979

(age 41–55 years), and baby boomers between 1944 and 1964 (age 56–76 years) (Kasasa, 2019). Of the 71 responses, 67 were included for analysis. Four participants were excluded, including one born before 1944, two born after 1994, and one who did not provide a birth year or generation.

Responses were entered into REDCap, an electronic data capture tool (Harris et al., 2009; 2019). Survey results were summarized descriptively using averages and standard deviations. Statistical differences in mean scores for each characteristic were evaluated with RStudio, version 1.2.5019 (RStudio, Inc., Boston, MA; http://www.rstudio.com/), using one-way analysis of variance with a Tukey contrast for pairwise comparison of significant results between generations. The significance level was set at $p < .05$.

Results

The demographic information of the 67 participants who met the inclusion criteria are summarized in Table 2; millennials accounted for 43.3%, Generation X for 35.8%, and baby boomers for 20.9%. Of the participants who reported gender, 59 of 61 participants (96.7%) were women, and 43 of 62 participants (69.4%) were physicians or medical students.

Rumination, avoidance coping, perfect control, emotional inhibition, and toxic achieving (lower score is preferable)

There was a statistically significant relationship between generation and mean rumination score ($p = .0071$), with scores becoming more ideal for older generations (6.3 for millennials, 4.9 for Generation X, and 3.3 for baby boomers; Table 1). A pairwise comparison revealed a significant difference between millennials and baby boomers ($p = .0057$).

Mean scores also improved with age for avoidance coping (2.9 for millennials, 2.7 for Generation X, and 2.0 for baby boomers) and perfect control (5.6 for millennials, 4.9 for Generation X, and 4.2 for baby boomers), although these differences were not statistically significant ($p = .4120$ and $p = .1580$, respectively).

Similar mean scores across generations were seen for several characteristics, including emotional inhibition (3.5 for millennials, 3.0 for Generation X, and 3.1 for baby boomers) and toxic achieving (4.3 for millennials, 4.7 for Generation X, and 4.0 for baby boomers), with no significant relationship between generation and mean scores for motional inhibition ($p = .7730$) and toxic achieving ($p = .3530$).

Flexibility, sensitivity, and detached coping (higher score is preferable)

Mean flexibility scores approached higher, more ideal scores with aging generations (4.6 for millennials, 6.8 for Generation X, and 6.6 for baby boomers), and there was a statistically significant relationship between generation and mean flexibility scores ($p = .0005$; Table 1). A pairwise comparison revealed a significant difference in mean flexibility scores between millennials and Generation X ($p < .001$) and between millennials and baby boomers ($p = .0152$).

Mean detached coping scores also improved for older generations (5.2 for millennials, 5.8 for Generation X, and 6.9 for baby boomers), but the difference was shy of statistical significance ($p = .1030$). Mean sensitivity scores were very similar for each generation (7.9 for millennials, 8.4 for Generation X, and 8.3 for baby boomers), and the differences in these scores were not significant ($p = .2940$).

Table 1
Characteristics evaluated and participant scores by generation.

			All participants n = 67		Millennials n = 29 1980–1994		Generation X n = 24 1965–1979		Baby boomers n = 14 1944–1964		
	Birth year										
	Characteristic	Characteristic description	Mean	SD	Mean	SD	Mean	SD	Mean	SD	ANOVA p-value
Low score is preferable	Rumination	Tendency to ruminate about upsetting past events or events that might occur in the future	5.2	3	6.3	3.0	4.9	2.9	3.3	2.3	**.0071**[a]
	Emotional inhibition	Tendency to bottle up emotion	3.2	2.5	3.5	2.6	3.0	2.5	3.1	2.2	.7730
	Toxic achieving	An extreme drive to achieve with a tendency to be angry, hostile, impatient, and demanding	4.3	2.1	4.7	2.1	3.9	2.1	4.0	2.1	.3530
	Avoidance coping	Tendency to ignore issues, hoping they will go away	2.7	2.1	2.9	2.5	2.7	1.7	2.0	2.1	.4120
	Perfect control	Desire for control and perfectionism	5	2.2	5.6	2.4	4.9	1.9	4.2	2.1	.1580
High score is preferable	Detached coping	Ability to intentionally disengage to allow yourself to see things in perspective	5.8	2.4	5.2	2.5	5.8	2.4	6.9	2.0	.1030
	Sensitivity	Sensitivity to the feelings of others	8.2	1.3	7.9	1.3	8.4	1.1	8.3	1.6	.2940
	Flexibility	Ability to be flexible and accept change; inversely related to rigid behavior	5.8	2.3	4.6	2.3	6.8	2.0	6.6	1.7	**.0005**[b]

SD, standard deviation; ANOVA, analysis of variance.
Characteristic descriptions adapted from the challenge of change profile. Scores are calculated on a scale of 0 to 10. Low scores range from 0 to 2. High scores range from 8 to 10.
Significant p-values of <.05 are bolded.
p-values were generated using one-way ANOVA with a Tukey contrast for a pairwise comparison.
[a] The pairwise comparison revealed a significant difference in mean rumination scores between millennials and baby boomers (6.3 vs. 3.3, respectively; p = .0057), but not between millennials and Generation X (6.3 vs. 4.9, respectively; p = .2004) or between Generation X and baby boomers (4.9 vs. 3.3, respectively; p = .2102).
[b] A pairwise comparison revealed a significant difference in mean flexibility scores between millennials and Generation X (4.6 vs. 6.8, respectively; p < .001) and between millennials and baby boomers (4.6 vs. 6.6, respectively; p = .0152), but not between Generation X and baby boomers (6.8 vs. 6.6, respectively; p = .9260).

Table 2
Participant demographics.

Total participants (n = 67)	n (%)
Sex (n = 61)[a]	
Female	59 (96.7)
Male	2 (3.3)
Job category (n = 62)[b]	
Physician (or medical student)	43 (69.4)
Industry representative	19 (30.6)
Generation (n = 67) (birth year)	
Millennial (1980–1994)	29 (43.3)
Generation X (1965–1979)	24 (35.8)
Baby boomer (1944–1964)	14 (20.9)

[a] Missing data: 6.
[b] Missing data: 5.

Discussion

Of the eight resilience traits evaluated, we found a significant difference after one generation (millennials to Generation X) for flexibility but two generations (millennials to baby boomers) for rumination, indicating that flexibility may improve more quickly or at an earlier age than rumination tendencies. Avoidance coping, perfect control, and detached coping also improved with age, although the differences did not reach statistical significance. Emotional inhibition, toxic achieving, and sensitivity had relatively similar mean ratings across generations.

Flexibility is strongly associated with resilience (Galatzer-Levy et al., 2012), and our cohort demonstrated significant improvement in mean flexibility scores with age. Older adults were found to be more flexible and adaptive when managing their emotions compared with younger adults (Gaffey et al., 2016). Older generations also demonstrated more ideal scores for avoidance coping, perfectionist tendencies, and detached coping; although these did not reach statistical significance, trends in our data show that these characteristics may improve with age. These observations may have been statistically significant with a larger sample size. Avoidance coping can contribute to anxiety and depression (Tan-Kristanto and Kiropoulos, 2015), and perfectionist tendencies are associated with high levels of psychological distress (Sheppard and Hicks, 2017). On the other hand, a detached coping style positively correlates with optimism and resilience (Gupta et al., 2019).

Scores were relatively stable across generations for emotional inhibition, sensitivity, and toxic achieving. Similarities in emotional inhibition and sensitivity may indicate that these qualities make people well suited for a career in health care. The drive to achieve, even at toxic levels, may represent a characteristic that leads people to succeed in the medical field given the arduous requirements to become a health care professional.

Our results suggest that resilience is greater in older generations. These differences may be attributed to generationally divergent upbringings and the differing work values they beget. Baby boomers are considered to be dedicated to the workplace and focus on reward through pension and retirement benefits (Wieck et al., 2009). Generation Xers and millennials are more likely to strive for independence in the workplace and are more satisfied through promotion and sense of control and responsibility (Wilson et al., 2008). However, longitudinal studies show that work values also change over time and that more similarities exist between workers of different ages in the same time period than between workers of the same age evaluated 25 years apart (Wey Smola and Sutton, 2002). Age-related hormonal changes in response to stress may also promote resilience in older generations. With age, cortisol release in response to stressors is not as robust (Gupta and Morley, 2014). Rumination is associated with increased cortisol release (Sladek et al., 2020); the decreased cortisol release in older individuals as a result of age and decreased rumination tendencies may contribute to greater resilience.

Consistent with our observations, existing evidence also suggests that resilience can be learned and enhanced, thus improving over time and with age (Denkova et al. 2020). Individual-directed interventions to increase resilience, including mindfulness, stress-management training, small group discussion, narrative medicine, and cognitive behavioral techniques, have been identified as effective ways to boost resilience (Awa et al., 2010; Epstein and Krasner, 2013; Gogo et al., 2019; Mahmoud and Rothenberger, 2019; Panagioti et al., 2017; Shanafelt et al., 2017; West et al., 2016). Mindfulness is the process of enhancing self-regulation by directing focus to the present and maintaining low emotional reactivity (Tang et al., 2015). Mindfulness techniques can be implemented to improve both rumination and flexibility (Beshai et al., 2018; Modini and Abbott, 2018). Even the simple act of defining rumination and reviewing its disadvantages can decrease the distress it causes (Modini and Abbott, 2018). Limiting rumination and improving emotional control can significantly improve job satisfaction (Karabati et al., 2019; Roger and Hudson, 1995). Building self-compassion (implementing kindness rather than harsh criticism toward one's personal failures and inadequacy) is shown to increase flexibility and can lead to greater resilience and job satisfaction (Durkin et al., 2016; Neff, 2003).

Resilience can also be fortified by changes at the organizational level. Dedicating time to mentoring students and residents or serving on a medical school admission committee has been shown to increase physician wellness and resilience (Rothenberger, 2017). Organizations should encourage mentorship roles within institutions; older individuals may even be able to teach resilience traits to younger individuals (Mahmoud and Rothenberger, 2019; Panagioti et al., 2017). Other organization-directed interventions to enhance resilience include giving physicians leadership roles to heighten their sense of competence, providing flexibility in scheduling and workload, and incorporating discussion meetings that encourage teamwork (Panagioti et al., 2017).

The Mayo Clinic saw a 7% reduction in burnout scores from 2011 to 2013, while national burnout scores increased by 11%, after implementing organizational changes to improve efficiency, cultivate community, optimize use of incentives, promote flexibility and work-life balance, and provide resources to promote resilience (Shanafelt and Noseworthy, 2017). Overall, organizational interventions appear to be more effective in reducing burnout and improving resilience than individually targeted interventions; however, implementing resilience interventions at the individual level is both important and empowering (Mahmoud and Rothenberger, 2019).

Self-selection bias is a limitation of our study. Our cohort consisted primarily of participants who have earned or are pursuing a graduate degree, likely introducing bias toward inherently resilient individuals (Eley et al., 2017; Zwack and Schweitzer, 2013). Additionally, attendees of a professional development and networking event may place a high value on social connectivity, which may increase resilience. Although this group may be considered highly resilient, statistically significant improvements across generations were still observed. This study was also limited by a small sample size and a small percentage of male participants.

Conclusion

Capacity for resilience does not appear to be fixed, and at least some traits that characterize resilience appear to improve with age. Rumination and flexibility may have the greatest capacity to change, and flexibility may improve more quickly than rumination

tendencies. Increasing resilience lays the foundation for wellness and is critical for sustaining the health care workforce. Interventions to build resilience may be implemented at both the individual and organizational level. Self-directed interventions to bolster resilience include acknowledging the futility of rumination and fostering self-compassion. Health care organizations should also implement evidence-based solutions to mitigate burnout and enhance resilience.

Conflict of Interest

None.

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Study Approval

The author(s) confirm that any aspect of the work covered in this manuscript that has involved human patients has been conducted with the ethical approval of all relevant bodies.

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