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Back to Nature: The Relationship Between Nature Relatedness on Empathy and Narcissism in the Millennial Generation

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Abstract

Researchers suggest that the current generation of college students, who fall within the broader generational group known as “Millennials,” demonstrate lower levels of empathy, higher levels of narcissism, increased use of technology, and decreased time spent outdoors, which may impact the overall functioning of these individuals. This correlational design study of 140 undergraduates explores the relationship between the constructs of empathy, narcissism, and nature relatedness among the Millennial generation. Data analysis suggests that there is a statistically significant relationship between nature relatedness and empathy, which offers an empirical rationale for the use of community-based and nature-oriented approaches among clinical mental health counselors who work with Millennials.

Keywords: Millennials, narcissism, empathy, nature relatedness, young adults

Data suggest that this generation of undergraduates, known as Millennials, is different from previous cohorts of young people. In particular, researchers have suggested that college-aged Millennials vary from prior cohorts in their levels of anxiety, narcissism, empathy, sexual behavior, technology usage, and concern for others and the environment (Odell, Korgen, Schumacher, & Delucchi, 2000; P. Taylor & Keeter, 2010; Twenge, 2000; Twenge, 2009; Twenge, Campbell, & Freeman, 2012; Twenge, Konrath, Foster, Keith Campbell, & Bushman, 2008a; Twenge, Konrath, Foster, Campbell, & Bushman, 2008b; Wells & Twenge, 2005). Dispositional shifts, such as increased narcissism, decreased empathy, and reduced time in nature, seem to suggest that Millennials might be relating differently to themselves, others, and the environment (Louv, 2008). These shifts may appear particularly distressing for counselors who adhere to wellness models (Bronfenbrenner, 1999; Myers & Sweeney, 2004). Wellness models conceptualize optimal functioning as “a way of life . . . in which body, mind, and spirit are integrated by the individual to live life more fully within the human and natural community” (Myers, Sweeney, & Witmer, 2000, p. 252).

To quantify the difference in how Millennials relate to themselves, others, and the environment, this study explores the relationship between three generationally variant constructs: narcissism, empathy, and nature relatedness. These particular constructs were selected because they provide insights into how Millennials relate to themselves (narcissism), to others (empathy), and to the environment (nature relatedness). Establishing a relationship between these constructs will offer a clearer picture of how these changing attitudes influence one another and what impact they may hold for Millennial functioning. Providing empirical evidence of a relationship between narcissism, empathy, and nature relatedness will help clinicians who work with Millennials make informed decisions regarding appropriate interventions in treatment.

Literature Review

The Millennial Generation

Known as the Millennials or Generation Me, this label refers to the 95 million Americans born between 1982 and 2001 (Howe & Strauss, 2000). To understand how larger social, cultural, and political forces influence the Millennial personality, it is necessary to separate age from generation. Generational research attempts to isolate traits that are found in youth generally from those that are unique to people born during a particular era. These distinctions between age and generation are most readily accomplished through time-lag or cohort studies, which are a useful proxy for the sociocultural environment of different time periods (Stewart & Healy, 1989; Twenge, 2000). By using the method of cross-temporal meta-analysis, researchers correlate the mean scores on a measure with the year of data collection. After weighing for sample size, it is possible to assess changes over time on particular measures (Konrath, 2011).

Researchers studying the Millennials used cross-temporal meta-analysis to find differences in the social and cultural self-conceptions of this generation. The literature points to variations in levels of narcissism, empathy, and concern for others and the environment among Millennials as compared to prior cohorts of college students (Twenge, 2000; Twenge et al., 2012; Twenge et al., 2008a; Wells & Twenge, 2005). These changes are striking because they suggest that Millennials may be connecting differently to themselves, to others, and to the environment. If they are connecting differently, these dispositional changes may influence the reciprocal relationships that wellness models identify as constitutive of optimal functioning (Bronfenbrenner, 1999; Reese & Myers, 2012). In other words, the less one can connect, the worse one functions.

Narcissism

The traits that define narcissism include, first, a positive and inflated view of the self with a focus on qualities such as power, physical attractiveness, and importance (Twenge et al., 2008a). Second, individuals with high levels of narcissistic characteristics possess a type of social extraversion that is marked by low interest in forming emotional intimacies with others (Twenge et al., 2008a). Third, those with narcissistic qualities exhibit a range of “self-regulation efforts aimed at enhancing the self,” (Twenge et al., 2008a, p. 876), which can include taking credit from others, attention-seeking, pursuing high-status romantic partners or public glory (Twenge et al., 2008a).

A review of the literature suggests that the average college student now exhibits higher measures of narcissistic characteristics than his or her predecessors did in the early 1980s. In a 2008 meta-analysis of 85 samples of Narcissistic Personality Inventory (NPI-40) scores taken from 16,475 college students between the years 1979 to 2006, Twenge et al. (2008a) concluded that mean narcissism scores were significantly correlated with year of data collection when weighted by sample size ($\beta = .53, p < .001$). The mean NPI-40 score also appeared to increase by 0.33 standard deviation since 1982. In the same peer-reviewed meta-analysis, the researchers found that nearly two thirds of recent students had higher means scores on the NPI-16 as compared to student samples taken between the years of 1979–1985 (Twenge et al., 2008a), a 30% increase in narcissistic traits between Generation X, born 1965–1981 (Howe & Strauss, 2000), and the Millennials, born 1982–2001 (Twenge et al., 2008a).

However, if narcissistic qualities are on the increase with the current generation of college students, is that necessarily a bad thing? Narcissism is, after all, associated with some prosocial values such as extraversion (Campbell, Rudich, & Sedikides, 2002). On an individual level, narcissistic qualities might offer some benefits for the person. But how might increasing narcissism impact the reciprocal relationship between people, communities, and the natural world? Campbell, Bush, Brunell, and Shelton (2005) argued that narcissism positively relates to acquisitive goals, which provide some benefit to the self, but at the cost to other individuals and the common good. Twenge et al. (2012) also suggested that the decline in wanting to protect the environment was especially steep in Millennials as compared to other generations.

Empathy

Empathy as a construct comes to us from the German word *einfulung* or “feeling into” (May, 1989). Previous research on empathy suggests some difficulty in defining this construct. Early theory suggested that empathy was a cognitive capacity for imagining the emotional states of others (Borke, 1971; Konrath, 2011). Other social scientists defined empathy as an affective mechanism (Batson & Shaw, 1991; Miller, 1989). Feshbach and Roe (1968) suggested that empathy is the direct experience of another person’s emotions. In addition to the cognitive and affective dimensions of empathy, recent discoveries in neuroscience suggest that empathy might be the product of the brain’s mirror neuron system. Mirror neurons “are a class of neurons, originally discovered in the premotor cortex of monkeys, that discharge both when individuals perform a given motor act and when they observe others perform that same motor act” (Rizzolatti & Craighero, 2004, p. 169). The mirror neurons allow us to make sense of the actions, emotions or sensations in the world we see by activating our own internal representations of these states (Freedberg & Gallese, 2007).

While the literature suggests that empathy can be defined in many ways, the one essential feature common to all definitions is the idea that one can experience a connection with those whose lives are not necessarily linked to one’s own (Decety & Lamm, 2006; Lamm, Batson, & Decety, 2007). Alfred Adler suggested that “empathy is a necessary element in connecting to others, including a sense of other that extends beyond the human” (as cited in Ansbacher, 1991, p. 31).

A cross-temporal meta-analysis of 72 samples of American college students who took at least one of the subscales of the Interpersonal Reactivity Index (IRI) between

1979 and 2009 (total N 13,737) found that current college students scored significantly lower on empathy scales than their predecessors 20 to 30 years ago (Konrath, 2011). This peer-reviewed meta-analysis concluded that Millennials exhibited a 48% decrease in empathy over the generations studied over the past 20 years. This data suggests that college students today are less likely to agree with statements such as, “I often have tender, concerned feelings for people less fortunate than me” (EC) or, “I sometimes try to understand my friends better by imagining how things look from their perspective” when compared to college students in the late 1970s and 1980s (Konrath, 2011).

Nature Relatedness

Evolutionary biologist E. O. Wilson suggested in his *biophilia hypothesis* that human beings possess “the innate tendency to affiliate with life and lifelike processes” (1984, p. 1). The human connection to nature also emerges in counseling literature. Reese and Myers (2012) proposed adding an additional factor to the Indivisible Self Model (Myers & Sweeney, 2004) called EcoWellness, which emphasizes the connections between “people and nature and the impact of those connections” (Reese & Myers, 2012, p. 401). Because EcoWellness is at this point conceptual rather than actual, a review of the literature suggests many researchers prefer the construct of nature relatedness (Nisbet, Zelenski, & Murphy, 2011; Nisbet, Zelenski, & Murphy, 2009; Weinstein, Przybylski, & Ryan, 2009). The concept of nature relatedness captures people’s individual levels of connection with the natural world (Nisbet, Zelenski, & Murphy, 2009). Nature relatedness is a trait-like quality that speaks to “an understanding of the importance of all aspects of nature, even those that are not aesthetically appealing to humans” (Nisbet et al., 2009, p. 718).

At present, there is no research suggesting that nature relatedness has declined with the Millennial generation. However, researchers have noticed that Millennials spend less time outdoors than previous generations (Bratman et al., 2012). The second feature indicative of nature relatedness decline is that Millennials also seem to care less for the environment than previous generations. Comparing samples from *Monitoring the Future* and the *American Freshman Survey* against established measures of life goals, Twenge et al. (2012) reported that Millennials rated extrinsic goals, such as being financially well off, as much more important than intrinsic goals, such as finding purpose and becoming involved in programs to clean up the environment. This shift in attitudes aligns with previous research linking exposure and concern (Aberson, Shoemaker, & Tomolillo, 2004; Rudman, 2004).

Dispositional Changes Among the Millennial generation

As these studies demonstrate, Millennials with higher narcissism, lower empathy, and greater disconnection from nature may find it difficult to connect with the experience of others and with the broader world. At this point, causal explanations are largely speculative. The two most prominent explanations for these changes tend to focus on the rise of technology and the decreasing amount of time spent in the natural world. These explanations hinge on the insight that there is a reciprocal relationship between personality and the environment (Gentile, Twenge, & Campbell, 2010; Twenge & Nolen-Hoeksema, 2002; Twenge et al., 2012).

While researchers and popular writers disagree about many trends within the Millennials, they do agree that this cohort is the most technologically-connected generation to date. College students in the United States engage in some type of media accessing-technology an estimated 9.5 hours per day (Odell et al., 2000). More than eight in 10 Millennials say they sleep with a cell phone next to the bed (P. Taylor & Keeter, 2010). Combining Internet, telephone, text messaging, and television usage, there has been a 350% increase in exposure to information in the past 30 years (Bohn & Short, 2009). Furthermore, this particular generation has grown up at a time when people generally experience less contact with nature than any previous generation, with nearly 90% of Millennials' lives spent inside buildings (Bratman et al., 2012).

Current theory supports the notion that optimal health is reciprocally related to a person's engagement with the self, others, and the environment (Myers & Sweeney, 2004). Technology use and the move indoors appear to have changed how Millennials relate to all three of these dimensions (Selhub & Logan, 2012). As previously mentioned, generational researchers have identified several specific changes among this current cohort of young people such as increased narcissism, decreased empathy, and less time in nature. As counselors interested in promoting wellness among individuals and communities, there is a compelling argument for understanding the connection between these changes so that we might mitigate their impact on the functioning of clients. The purpose of this study is to identify the relationship between narcissism, empathy, and nature relatedness in the Millennial generation so that clinicians might select interventions that could ameliorate these changes. Armed with a more accurate understanding of the distinctive characteristics of this cohort, clinicians can more appropriately address and mitigate these alarming trends.

Because causality is nearly impossible to isolate, correlation between phenomena can be a valuable way to make sense of broader changes. Prior studies indicate that narcissism and empathy are negatively related (Watson, Biderman, & Sawrie, 1994; Watson, Grisham, Trotter, & Biderman, 1984). Previous research also indicates that nature connectedness was consistently associated with prosocial qualities such as autonomy, personal growth, purpose in life, and positive affect (Cervinka, Röderer, & Hefler, 2012; Nisbet et al., 2011; Zelenski, & Nisbet, 2014).

This study examined whether the constructs of nature relatedness, empathy, and narcissism are related among the current cohort of college students. It was hypothesized that among the Millennial college student population, nature relatedness is correlated with empathy and with narcissism.

Methodology

Subjects

Subjects were 143 undergraduate students in the Southeastern United States who volunteered to participate in order to receive course credit for a departmental experiment requirement. The subjects were drawn from a convenience sample and included 113 women and 30 men who ranged in age from 18 to 31 years old, with the mode age range being 18–24 (97%). All participants would be classified as Millennials in that they were born between 1982 and 2001. Demographic information collected from the participants suggests that 87% identified as Caucasian/White, 8% as Black/African-American, 2% as

Latino/Hispanic, and 1% as Native American, Asian American, and bi-racial. All participants were classified as undergraduates with 48% freshman, 36% sophomores, 14% juniors, and 2% seniors.

Procedure

Demographic data were collected from all subjects through the online Qualtrics survey software. All subjects were then administered three personality assessments, the Narcissistic Personality Inventory-16 (NPI-16), the Interpersonal Reactivity Index (IRI), and the Nature Relatedness Scale (NRS). The data gathered did not include any identifying or confidential information, and the research protocols were approved by the Institutional Review Board. For the purposes of this study, the scale scores on the NPI-16, the IRI, and NRS were used for comparison. After the data was screened for normality, homoscedasticity, and linearity, three of the participants' scores were eliminated due to missing data, bringing the total number of participants included in the analysis of the data to 140. The results from these assessments were correlated in SPSS to determine if there was a relationship between the factors in each construct. A two-tailed Pearson correlation coefficient was calculated to determine the directional relationship between the corresponding constructs of narcissism, empathy, and nature relatedness.

Instruments

The Narcissistic Personality Inventory (NPI) is the most widely used instrument to measure narcissism in the general population (Twenge et al., 2008a). Narcissism as a construct refers to a combination of personality traits that involve a sense of grandiosity coupled with a fragile sense of self (Ames, Rose, & Anderson, 2006). The NPI is not a clinical instrument for diagnosing narcissistic personality disorder as there is not a cut-off score related to this instrument. The NPI-16 parallels the older, established measure, the NPI-40 (Raskin & Terry, 1988). Ames et al. (2006) reported strong psychometric properties. The NPI-16 demonstrated convergent and discriminate validity, predictive validity, and strong test-retest reliability (0.85). The NPI-16 is also protected from the social desirability bias because it utilizes forced-choice dyads (Twenge et al., 2008a).

The Interpersonal Reactivity Index (Davis, 1980) is an instrument designed to measure the multi-dimensional aspects of empathy. Davis designed the IRI to capture both the cognitive and emotional aspects of empathy in an instrument that could be easily administered and scored. In this study, researchers divided dispositional empathy into four separate categories: perspective taking (PT), empathic concern (EC), fantasy (FS), and personal distress (PD). Davis (1980) reported that the IRI has strong psychometric properties. Internal reliability, as demonstrated by the standardized alpha coefficients, was similar for both men and women on all of the subscales. The IRI yields strong test-retest reliability coefficients (FS: 0.79, 0.81; PT: 0.61, 0.62; EC: 0.72, 0.70; PD: 0.68, 0.76). Because the instrument was developed with items drawn from established scales, the IRI is likely valid with regard to content. Sex differences detected on each scale were also consistent with previous research (Mehrabian & Epstein, 1972). The consistency of IRI scores to previous research suggests external validity for the instrument.

The Nature Relatedness Scale (NRS) is an instrument designed to measure the affective, cognitive, and experiential aspects of a person's connection to nature (Nisbet, et al., 2009). Based on previous environmental measures, literature reviews, and the

construct of nature relatedness, the NRS measures three factors: NR-Self, NR-Perspective, and NR-Experiences. The NR-Self is thought of as the ecological self, or a measure of how strongly people identify with the natural world. The NR-Perspective refers to how a person’s attitude to nature is manifested through approach and behavior. The third factor, NR-Experience, reflects a person’s physical familiarity and attraction to nature (Nisbet et al., 2009). The instrument demonstrates good internal consistency; Cronbach’s alpha for the full scale was 0.87, and 0.84, 0.66, and 0.80 for three factors comprising nature relatedness. Test-retest correlations were also strong for the entire inventory (0.85) as well as the individual factors (0.81; 0.6; 0.85). The NRS also suggests reliability and validity when correlated with other environmental scales, behavior, and frequency of time in nature.

Results

Responses to the three assessments were calculated, averaged, and then screened for assumptions of normality, homoscedasticity, and linearity. With these conditions met, two-tailed Pearson’s correlation coefficients were calculated. Overall, NPI scores were normally distributed and ranged from 19 to 28 with a mean of 23.93. IRI scores were also normally distributed and ranged from 73 to 107, with a mean of 88.26. NR scores were normally distributed and ranged from 42 to 79, with a mean of 59.96 (see Table 1).

Table 1.

Descriptive statistics of data

	Minimum	Maximum	Mean	Mode	Std. Deviation
Narcissism	19	28	23.93	24	1.557
Empathy	73	107	88.26	89	7.498
Nature Relatedness	42	79	59.96	60	6.833

Table 2.

Correlations of total assessment scores

		Narcissism	Empathy	Nature Relatedness
Narcissism	Pearson Correlation	1.000	.030	.048
	Sig. (2-tailed)		.726	.571
Empathy	Pearson Correlation	.030	1.000	.308**
	Sig. (2-tailed)	.726		.000
Nature Relatedness	Pearson Correlation	.048	.308**	1.000
	Sig. (2-tailed)	.571	.000	

** . Correlation is significant at the 0.01 level (2-tailed).

As predicted, there was a positive relationship between empathy and nature relatedness (see Table 2). The data suggests there is a statistically significant relationship between the empathy and nature relatedness ($r = .308$, $p < 0.001$) with a medium effect size. In this study, the data indicated no relationship between empathy and narcissism or between narcissism and nature relatedness. Both of these results confirm the null hypothesis that empathy and narcissism and narcissism and nature relatedness would not be related. The null result of negation in the study seems particularly relevant to the overall interpretation of the results. To check whether the non-significant results were due to a lack of statistical power, post hoc power analysis was conducted using GPower with power ($1 - \beta$) set at 0.80 and $\alpha = .05$, two-tailed. Power analysis revealed that in order for an effect of this size to be detected (80% chance) as significant at the 5% level, a sample of 8,800 participants would be required for the narcissism/empathy correlation and 3,450 participants would be required for the narcissism/nature relatedness correlation. Thus, it is unlikely that the negative findings can be attributed to a limited sample size.

Table 3.

Correlations of NPI-16 Scores and IRI subscale scores

		Narcissism	Empathic Concern	Fantasy	Personal Distress	Perspective Taking
Narcissism	Pearson Correlation	1.000	-.102	-.022	.250**	-.060
	Sig.(2-tailed)		.230	.794	.003	.477
Empathic Concern	Pearson Correlation	-.102	1.000	.042	-.042	.472**
	Sig. (2-tailed)	.230		.618	.618	.000
Fantasy	Pearson Correlation	-.022	.042	1.000	.404**	-.029
	Sig. (2-tailed)	.794	.618		.000	.733
Personal Distress	Pearson Correlation	.250**	-.042	.404**	1.000	-.072
	Sig. (2-tailed)	.003	.618	.000		.398
Perspective Taking	Pearson Correlation	-.060	.472**	-.029	-.072	1.000
	Sig. (2-tailed)	.477	.000	.733	.398	

** . Correlation is significant at the 0.01 level (2-tailed).

When narcissism scores were correlated with subscales of the IRI, there was no relationship between narcissism and three of the four aspects of empathy (see Table 3). The only statistically significant relationship between narcissism and an empathy subscale was personal distress ($r = 0.250$, $p = 0.003$).

Correlations between nature relatedness and the individual subscales within the IRI suggest that there are relationships of varying strength within the construct of empathy. While all four aspects of dispositional empathy were positively correlated with nature relatedness (see Table 4), nature relatedness/empathic concern did not meet the

criteria for statistical significance. However, there was a small effect size for the NR/EC correlation ($r = 0.142$, $p = 0.09$). The positive correlations between nature relatedness and the other three subscales were found to be statistically significant (NR/F: $r = 0.207$, $p = 0.014$; NR/PD: $r = 0.402$, $p=0.0001$; NR/PT: $r = 0.222$, $p = 0.008$). The strongest, most statistically significant relationship was found between nature relatedness and personal distress ($r = 0.402$, $p = 0.0001$).

Table 4.

Correlations of Nature Relatedness scores and IRI subscale scores

		Nature Relatedness	Empathic Concern	Fantasy	Personal Distress	Perspective Taking
Nature Relatedness	Pearson Correlation	1.000	.142	.207*	.402**	.222**
	Sig. (2-tailed)		.093	.014	.000	.008
Empathic Concern	Pearson Correlation	.142	1.000	.042	-.042	.472**
	Sig. (2-tailed)	.093		.618	.618	.000
Fantasy	Pearson Correlation	.207*	.042	1.000	.404**	-.029
	Sig. (2-tailed)	.014	.618		.000	.733
Personal Distress	Pearson Correlation	.402**	-.042	.404**	1.000	-.072
	Sig. (2-tailed)	.000	.618	.000		.398
Perspective Taking	Pearson Correlation	.222**	.472**	-.029	-.072	1.000
	Sig. (2-tailed)	.008	.000	.733	.398	

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Discussion

The study's primary purpose was to measure and evaluate the link between the constructs of narcissism, empathy, and nature relatedness. These data suggest that the null hypothesis was confirmed for the relationship between narcissism and empathy, and between nature relatedness and narcissism. This finding contradicts previous research that suggested a strong inverse correlation between narcissism and empathy. Prior studies suggested that narcissism and empathy are negatively related (Watson et al., 1994; Watson et al., 1984). One plausible explanation for this contradictory finding is a social desirability on the part of participants. However, the null was rejected for the relationship between nature relatedness and empathy. Nature relatedness correlated with total scores of empathy, as well as the individual subscales measured by the IRI. This pattern supports the possibility that there is at least some link between a person's ability to connect with the experience of others and that person's overall sense of connection to the natural world. These findings match prior studies on nature relatedness, which found

evidence for other prosocial qualities such as happiness, personal growth, purpose in life, and positive affect (Cervinka et al., 2012; Nisbet et al., 2011).

These data suggest that connection to nature might account for roughly 10% of a person's total empathy package. In this sense, findings were in keeping with what would make sense intuitively. For instance, it would be strange to suggest that a person's connection to nature would be more important than other aspects of that person, such as their experiences with other people. Were the correlation stronger than 0.31, that might also have implications for individuals who have not had exposure to nature.

The strongest relationship between nature relatedness and dispositional empathy was found between nature relatedness and personal distress ($r = 0.402$, $p < 0.001$) with a medium-large effect size. This finding is supported by previous studies by Nisbet et al. (2009), which suggest that people higher in NR tended to report more environmental concern and endorsement of pro-environmental attitudes. This study also underscores prior research that found a relationship between nature relatedness and conscientiousness (Nisbet et al., 2009). While additional studies are needed to draw strong conclusions, these data suggest there may be reason to consider further exploration of nature relatedness and empathy. Although speculative, fostering a sense of connection to nature could be a possible way to address the decline of empathy. Inversely, fostering a sense of empathy could also be a possible way to address the decline in environmental concern.

Implications for Counseling

Modern paradigms of wellness in the counseling field acknowledge the value of a person's connection to the self, others, and the natural world. The results of this study may prompt some self-examination on the part of counseling clinicians with Millennials. In particular, clinicians should consider approaches that enhance the empathic capacities of clients. As mentioned previously, empathy is seen by some as the key to connecting with the world (Adler, 1927). What the field has discovered from advances in neuroscience is that empathy is a capacity that can be learned or developed through practice (Cozolino, 2010). The unique core conditions of counseling (Rogers, 1957) make therapy an ideal learning environment for increasing empathy. Clinicians may also find value in working from a more explicitly community-centered approach. Community-centered approaches "encourage meaningful engagement with others and the natural world by asserting that the therapy process can synergistically work with both the inner and outer worlds of the client" (Doherty, 1995, p. 109).

In addition to adopting a community-centered approach, this study may also support using nature in interventions as a way to foster empathy among Millennials. At this point it would be impossible to say which came first—the nature relatedness and the empathy or the empathy decline and the nature-deficit. However, the fact that there is a statistically significant connection with medium-large effect size may be reason to support existing outdoor or nature-based interventions. Nature-based interventions already have evidence to support their value for increased health benefits, increased focused, and reduced mental health symptoms (Barros, Silver, & Stein, 2009; Burdette & Whitaker, 2005; Hartig, Mang, & Evans, 1991; Kuo & Taylor, 2004; Pedretti-Burls, 2007; A. F. Taylor & Kuo, 2009; A. F. Taylor, Kuo, & Sullivan, 2001). This study provides additional empirical evidence supporting the use of nature-based approaches in

the counseling room. These interventions make use of a therapeutic dynamic Carl Jung identified in a dream seminar he gave in 1928. Jung said, “Matter in the wrong place is dirt. People got dirty through too much civilization. Whenever we touch nature, we get clean” (McGuire, 1984, p. 142). For Millennials who have experienced, as Jung called it, “too much civilization,” the renewing properties of the natural world offer some evidence-based solutions for reconnecting with their social and environmental systems.

Limitations and Future Directions

One significant limitation of this study was the fact that the data measuring empathy, narcissism, and nature connectedness were collected indirectly. Arguably, direct measures like observation would be an excellent qualitative addition to the study. Future studies in this vein could use a mixed-method rather than a purely quantitative approach. Another possible direction for research would be to conduct a cross-generational meta-analysis similar to the studies conducted by Konrath (2011) and Twenge et al. (2008a). Sample collection would require extensive time to complete given recent development of the NRS. This sort of study would benefit clinicians addressing the needs specific to each generation going forward from the present.

Limitations of this study are principally found in the fact that the sample size was largely homogenous. Most subjects were Caucasian and female, and for that reason, the participants might not accurately reflect the experience of a broader section of the Millennial generation. The convenience sample of college students also leaves out the 40 to 50% of Millennials who do not attend college.

Because the study was correlational, it was difficult to determine a causal link between any of the constructs. However, this study is a modest step in the direction of understanding the causes and perpetuating factors for the rise in narcissism and decrease in empathy among members of the Millennial generation. By demonstrating a relationship between nature relatedness and empathy, researchers and clinicians can better understand the sociocultural processes that are reinforcing these dispositional changes within the Millennial generation. By understanding the roots of the phenomenon, counselors can begin to think about interventions that might reverse these trends.

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