



# Nature Relatedness, Mindfulness And Well-Being Among University Students: Understanding The Connections

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<sup>2</sup>Research Project IIApril 25, 2024

**Citation:** Sumisha M, et al (2024), Nature Relatedness, Mindfulness And Well-Being Among University Students: Understanding TheConnections, *Educational Administration: Theory and Practice*, 30(4), 9086-9093  
DOI: 10.53555/kuey.v30i4.3030

## ARTICLE INFO

## ABSTRACT

Many empirical studies have provided the relationship between connection with nature, mindfulness, and well-being. According to research, mindfulness and nature have a mutually beneficial impact on well-being. In this study, 135 participants consisting of 91 females (67.4%) and 44 males (32.6%), with a standard deviation of .470 were chosen. This study investigates the relationship between dispositional mindfulness, nature-relatedness, and psychological well-being. The results showed that; there is a significant moderate strong positive correlation ( $r = 0.444$ ) between mindfulness and well-being with  $p < 0.01$ , there is a significant moderate positive correlation ( $r = 0.376$ ) between nature-relatedness and well-being with  $p < 0.01$ , and there is a weak positive correlation ( $r = 0.137$ ) between mindfulness and nature-relatedness with  $p < 0.112$ . These findings suggest that individuals with higher levels of mindfulness may experience greater well-being, partly through their stronger connection to nature.

**Keywords:** mindfulness, nature-relatedness, connection with nature, well-being, dispositional well-being

## Introduction

According to Ibrahim et al. (2013), many emerging adults in university settings experience high levels of anxiety and despair. It is of paramount importance to better understand the psychological elements that impact the mental health and well-being of university students during their developmental phase (Sadowski et al., 2020). Ryff conceptualized psychological well-being as a multidimensional construct that measures autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance, which enable human development and positive psychological functioning (Ryff, 1989; Ryff & Keyes, 1995:720). Research has found a positive relationship between nature-relatedness, mindfulness, and well-being. For instance, Wolsko & Lindberg found that connectedness to nature (CN), which is an individual's emotional connection to nature and a sense of oneness with the natural world, was positively associated with mindfulness and psychological well-being across many measures (Mayer & Frantz, 2004; Wolsko & Lindberg, 2013).

## Nature-relatedness and Well-being

Nature-relatedness (NR), also known as connectedness to nature, refers to an individual's affective, cognitive, and experiential link with the natural world, and has the potential to increase well-being (Moussa et al., 2024; Iyer et al., 2024; Jaafari et al., 2023; Gilani et al., 2023; Tantry & Singh, 2016). Connecting with nature, for instance, is believed to have a significant influence on well-being (Wilson, 1984). Zelenski and Nisbet (2012) suggested that connection with nature (nature-relatedness) provides benefits even when the interaction is limited. The relationship between nature-relatedness and well-being is better understood through the biophilia hypothesis and attention restoration theory. The first is Wilson's biophilia hypothesis, which asserts that humans have an inbuilt need to connect with nature and other forms of life. According to biophilia, nature may have a significant role in shaping our emotional and cognitive systems (Wilson, 1984). Similarly, according to attention restoration theory, natural environments can help to restore a person's diminished ability for focused attention after they've been exposed to a large amount of demanding information and competitive stimuli (Kaplan and Kaplan, 1989). Adapting to life circumstances can influence an individual's well-being (Diener, 2000). According to attention restoration theory, humans can effectively heal and recuperate when exposed to surroundings that promote interest rather than directed attention, which is demanding. It has been stated that a soft fascination with nature encourages people to become more aware of their surroundings, which promotes relaxation, quiet, and reflection (Van Gordon et al., 2018). This is a pleasant experience that serves as an antidote to the demanding direction that many tasks in our lives require. Kaplan and Kaplan propose that nature encounters have the ability to refocus attention after exerting mental energy. As a result, our capacity to focus and concentrate has significantly increased. There is a lot of research being conducted on nature's connection and its positive effect on human well-being. Based on these theories, according to Orians (1980), natural surroundings are vital for human flourishing. Nature has been found to elicit strong positive responses in individuals across the globe in both rural and urban areas (Kaplan and Kaplan, 1989; McMahan and Estes, 2015).

### **Nature-relatedness, Mindfulness, and Well-being**

One of the other potential psychological factors associated with well-being is mindfulness. Research consistently links mindfulness to overall well-being throughout life (Brown and Ryan, 2003; Hanley et al., 2015; Keng et al., 2011). Mindfulness is an intentional practice of relaxed, open-minded, and nonjudgmental awareness of one's present experience, with several psychological and emotional benefits (Kabat-Zinn, 2003; Shapiro et al., 2006). Mindfulness can be a state, reflecting moment-to-moment experiences of mindfulness, or a disposition, a general tendency to be mindful (Gernal et al., 2024; Khan et al., 2023; Tantry & Ali, 2020; Greenberg, 2019; Majeed, 2018a, 2018b; Tantry & Singh, 2017). Various research studies have been conducted on the relationship between mindfulness and well-being. An extensive number of studies on this topic have linked both dispositional (trait) and state mindfulness with improved mental health outcomes (Creswell, 2015; Khoury et al., 2013). Research suggests that mindfulness-based therapies can lead to higher levels of positive affect, life satisfaction, empathy, and lower negative affect for up to a year (Shapiro et al., 2011). Studies suggest that higher levels of dispositional mindfulness can lead to better subjective well-being, reduced anxiety and depression symptoms, and an improved ability to regulate stress responses (Brown et al., 2007; Cash and Whittingham, 2010; Kadziolka et al., 2016; Keng et al., 2011; Schutte and Malouff, 2011; Soysa and Wilcomb, 2015). Moreover, research indicates that nature exposure may not improve well-being through nature-relatedness without mindful awareness (Mantler and Logan, 2015). Scholars have found that mindful meditation in nature strengthens nature-relatedness (Sorour et al., 2024; Al Jaghoub et al., 2024; Mainali & Tantry, 2022; Nivetha & Majeed, 2022; Tantry & Singh, 2018).

Given the substantial ties between nature-relatedness, mindfulness, and well-being, there is a need to continue exploring the relationship between these psychological factors. From the previous research, it is understood that there is a correlation between dispositional mindfulness, nature-relatedness, and subjective well-being. This study investigates the relationship between dispositional mindfulness, nature-relatedness, and psychological well-being to verify the quality of the associations between these factors in adult university students (Gilani et al., 2024; Farooq & Majeed, 2024; Achumi & Majeed, 2024; Hussein & Tantry, 2022).

### **Hypotheses**

- **H1:** There is a significant relationship between mindfulness and well-being.
- **H2:** There is a significant relationship between nature-relatedness and well-being.
- **H3:** There is a significant positive relationship between nature-relatedness and mindfulness.

### **Method**

#### **Procedure**

University students in India were chosen for this study through simple random sampling. Google forms surveys were sent to students. The survey was filled by the participants with informed consent. Students from different disciplines and batches were included in the study. After collecting the responses, the total scores of all participants for all the scales included in the Google Form were calculated with the help of an Excel sheet. After completing the scoring, analyses were performed, and the results were interpreted.

#### **Participants**

A total of 142 students between the ages of 18 and 25 participated in the study. After data cleaning procedures, the final sample included 135 students, including 91 females (67.4%) and 44 males (32.6%), with a standard deviation of .470. The majority of participants were female.

#### **Measures**

Three scales were used for the study. The Mindfulness Attention Awareness Scale (MAAS) was used for measuring dispositional mindfulness. The nature-relatedness scale was used to assess the connection with nature. A psychological well-being scale was used to assess psychological well-being.

#### **Mindful Attention Awareness Scale**

The trait MAAS is a 15-item scale, developed by Brown and Ryan (2003), meant to test a basic quality of mindfulness, namely, a receptive state of mind in which attention, informed by a sensitive awareness of what is occurring in the moment, simply observes what is taking place. It is a 6-point Likert scale consisting of: almost always = 1, very frequently = 2, somewhat frequently = 3, somewhat infrequently = 4, very infrequently = 5, and almost never = 6. The Cronbach's alpha for this scale is 0.81, which means the scale has good reliability.

#### **Nature-Relatedness Scale**

The Nature Relatedness (NR) Scale developed by Nisbet et al. (2009) is a 21-item scale. It is a 5-point Likert scale with 3 dimensions, namely; NR-self items, NR-perspective items, and NR-experience items consisting of disagree strongly = 1, disagree a little = 2, neither agree nor disagree = 3, agree a little = 4, agree strongly = 5. 8 items on this scale are reverse scored (Vibin & Majeed, 2024; Monika et al., 2023a, 2023b; Kendler & Prescott, 2021; Tantry et al., 2019; Gilani, 2014).

#### **Psychological Well-Being**

Psychological well-being is an 18-item scale developed by Ryff and Keyes (1995). It is a 7-point Likert scale consisting of strongly agree = 1, somewhat agree = 2, a little agree = 3, neither agree or disagree = 4, a little disagree = 5, somewhat disagree = 6, strongly disagree = 7. This scale has 6 dimensions namely; autonomy, environmental mastery, personal growth, positive relation with others, purpose in life, and self-acceptance. 9 items are reverse scored in this scale (Gambiza et al., 2023; Yachna & Majeed, 2023; Sulthan et al., 2022; King & Hopwood, 2021; Tantry et al., 2018).

#### **Data Analysis**

After collecting the responses, scores were calculated using Microsoft Excel. All the analyses were done using IBM SPSS VERSION 26. Pearson's correlation analysis, to find the association between the variables, and descriptive analyses were performed.

#### **Results and Interpretation**

The correlation table 1 presents the relationships between three variables: Mindfulness Total Score, Nature Relatedness (NR) total Scores, and Well-being (WB) Total score. Let us unpack each element and delve into the implications of their correlations.

**Correlation Analysis:****Mindfulness and Well-being (WB):**

- The correlation coefficient between MAAS and WB is 0.444. It suggests a moderately strong positive correlation.
- This indicates that there's a meaningful relationship between mindfulness and well-being. Individuals who exhibit higher levels of mindfulness tend to report higher levels of well-being. Additionally, this correlation is statistically significant ( $p < 0.01$ ).

- Since it is a positive correlation, H1 is accepted.

**Nature Relatedness (NR) and Well-being (WB):**

- The correlation coefficient between NR and WB is 0.376. It signifies a moderate positive correlation.
- This indicates that there's a meaningful relationship between nature-relatedness and well-being. Individuals who feel more connected to nature tend to report higher levels of well-being. Moreover, this correlation is statistically significant ( $p < 0.01$ ).

- Since there is a positive correlation, the H2 is accepted.

**Mindfulness and Nature Relatedness (NR):**

- The Pearson correlation coefficient between Mindfulness and NR is 0.137. It suggests a weak positive correlation.
- This indicates that there's a slight tendency for individuals who score higher on mindfulness to also score slightly higher on nature-relatedness. However, the correlation is not statistically significant ( $p = 0.112$ ).
- Since there is no significant correlation, the H3 is rejected. Yet, there is a positive correlation.

**Interpretation:****Mindfulness and Nature Relatedness:**

- While there's a weak positive correlation between mindfulness and nature-relatedness, it's not statistically significant. This suggests that although there may be a tendency for individuals high in mindfulness to also be slightly more connected to nature, this relationship is not strong enough to be reliably observed within this sample.

**Nature Relatedness and Well-being:**

- The moderate positive correlation between nature-relatedness and well-being indicates that feeling connected to nature is associated with higher levels of well-being. This finding aligns with existing research highlighting the therapeutic benefits of nature exposure and engagement (Bhardwaj et al., 2023; Sabu et al., 2022; Brown & Barlow, 2022; Tantry & Ahmad, 2019; Majeed, 2019a, 2019b, 2019c; Cacioppo & Patrick, 2018).

**Mindfulness and Well-being:**

- The moderately strong positive correlation between mindfulness and well-being suggests that individuals who exhibit greater mindfulness tend to experience higher levels of well-being. This underscores the importance of mindfulness practices in promoting psychological well-being and resilience.

**Implications of Correlations:****Integrating Nature into Well-being Practices:**

Given the significant correlation between nature-relatedness and well-being, incorporating nature-based activities and experiences into interventions aimed at enhancing well-being could be beneficial. Strategies like ecotherapy or nature-based mindfulness practices may offer promising avenues for improving mental health outcomes.

**Promoting Mindfulness for Enhanced Well-being:**

The robust correlation between mindfulness and well-being underscores the value of mindfulness-based interventions in fostering psychological health. Cultivating mindfulness skills through practices like meditation and mindful awareness training could be effective in promoting overall well-being.

**Exploring Interconnectedness:**

Further research could explore the mechanisms underlying the relationships observed in this study. Understanding how mindfulness, nature-relatedness, and well-being intersect may provide insights into holistic approaches to mental health promotion.

In conclusion, while the correlation analysis reveals nuanced relationships among mindfulness, nature-relatedness, and well-being, it underscores the interconnectedness between these constructs and highlights avenues for promoting mental health and well-being through mindfulness practices and engagement with nature.

**Descriptive Statistics**

The descriptive statistics table 2 shows the distribution of scores for three variables: Mindfulness total score, Nature Relatedness (NR) total scores, and Well-being (WB) total score. Let's delve into the interpretation of these statistics and what they reveal about the characteristics of the sample population.

**Understanding Descriptive Statistics:**

**Sample Size:** The 'N' indicates the total number of observations or participants in the sample. In this case, there are 135 individuals included in the analysis.

**Minimum and Maximum:** The minimum and maximum values represent the lowest and highest scores observed in the dataset for each variable, respectively. For example, in the Mindfulness total Score column, the lowest score recorded is 15, while the highest is 88.

**Mean (Average):** The mean is the arithmetic average of all the scores in the dataset for each variable. It provides a measure of central tendency, indicating the typical or average value within the sample. For instance, the mean mindfulness total score is 58.29, implying that, on average, participants scored around 58.29 on the mindfulness scale.

**Std. Deviation (Standard Deviation):** The standard deviation is a measure of the dispersion or variability of scores around the mean. It indicates how much individual scores deviate from the average score. A higher standard deviation suggests greater variability in the data, while a lower standard deviation indicates more consistency. In this context, a higher standard deviation means that the scores are more spread out from the mean, while a lower standard deviation implies that the scores are more tightly clustered around the mean.

**Interpretation of Descriptive Statistics**

**Mindfulness total score:** The average score on the mindfulness scale (MAAS) is 58.29, with a standard deviation of 14.997. This indicates that, on average, participants in the sample exhibit a moderate level of mindfulness, with individual

scores ranging from 15 to 88. The standard deviation of approximately 15 suggests that there's some variability in mindfulness scores among participants, with some individuals scoring significantly higher or lower than the average.

**Nature Relatedness (NR) total score:** The average score on the nature-relatedness scale (NR) is 75.41, with a standard deviation of 10.660. This suggests that, on average, participants report a relatively high level of connection to nature, with scores ranging from 41 to 101. The standard deviation of approximately 10.660 indicates less variability in nature-relatedness scores compared to mindfulness scores, implying that participants' responses are more closely clustered around the mean.

**Well-being (WB) total score:** The average score on the well-being scale is 82.52, with a standard deviation of 13.714. This indicates that, on average, participants report a relatively high level of well-being, with scores ranging from 58 to 116. Similar to nature-relatedness, the standard deviation of approximately 13.714 suggests less variability in well-being scores compared to mindfulness scores, implying a relatively consistent level of well-being among participants.

#### **Implications of Descriptive Statistics:**

##### **Levels of Mindfulness, Nature Relatedness, and Well-being:**

The descriptive statistics provide insight into the levels of mindfulness, nature-relatedness, and well-being within the sample population. Participants, on average, exhibit moderate levels of mindfulness, high levels of nature-relatedness, and relatively high levels of well-being.

##### **Variability in Scores:**

The standard deviations indicate the degree of variability or dispersion in scores for each variable. Higher standard deviations for mindfulness and well-being suggest greater variability among participants, while the lower standard deviation for nature-relatedness implies more consistency in responses.

##### **Comparative Analysis:**

By comparing the means and standard deviations across the three variables, researchers can identify which constructs exhibit greater variability or consistency within the sample population. Understanding these patterns can inform further analyses and interpretations of the data, guiding researchers in identifying potential relationships or trends among variables.

In summary, the descriptive statistics provide valuable insights into the distribution and characteristics of scores for mindfulness, nature-relatedness, and well-being within the sample population. These statistics serve as a foundation for further analysis and interpretation of the data, facilitating a deeper understanding of the relationships between these constructs.

#### **Major Findings**

Based on the correlation analysis and descriptive statistics provided, several major findings emerge regarding the relationships between mindfulness, nature-relatedness, and well-being within the sample population:

##### **Moderate Positive Correlation Between Mindfulness and Well-being:**

- The correlation coefficient of 0.444 indicates a moderately strong positive correlation between mindfulness total score and well-being (WB) total score.
- This finding suggests that individuals who exhibit higher levels of mindfulness tend to report higher levels of well-being.
- The average mindfulness score of 58.29, coupled with a relatively high well-being score (82.52), supports the notion that mindfulness practices may contribute to enhanced psychological well-being.

##### **Moderate Positive Correlation Between Nature Relatedness and Well-being:**

- The correlation coefficient of 0.376 indicates a moderate positive correlation between nature-relatedness (NR) total scores and well-being (WB) total score.
- This suggests that individuals who feel more connected to nature tend to report higher levels of well-being.
- The average nature-relatedness score of 75.41, coupled with a relatively high well-being score (82.52), supports the idea that a strong connection to nature is associated with greater psychological well-being.

##### **Weak Positive Correlation Between Mindfulness and Nature Relatedness:**

- Although the correlation coefficient between mindfulness total score and nature-relatedness (NR) total scores is 0.137, indicating a weak positive correlation, it is not statistically significant.
- This suggests that while there may be a tendency for individuals high in mindfulness to be also slightly more connected to nature, this relationship is not reliably observed within this sample.
- The average mindfulness score of 58.29, coupled with a moderately high nature-relatedness score (75.41), hints at a potential association between mindfulness and nature-relatedness, albeit not statistically significant.

##### **Levels of Mindfulness, Nature Relatedness, and Well-being Within the Sample:**

- On average, participants exhibit moderate levels of mindfulness total score (58.29), high levels of nature-relatedness (NR) total score (75.41), and relatively high levels of well-being (WB) total score (82.52).
- The variability in scores, as indicated by standard deviations, suggests that while there is consistency in nature-relatedness scores, there is greater variability in mindfulness and well-being scores.

#### **Key Insights**

##### **Mindfulness and Well-being:**

The findings highlight the importance of mindfulness practices in promoting psychological well-being, as individuals scoring higher on mindfulness also report higher levels of well-being.

##### **Nature Relatedness and Well-being:**

The results underscore the therapeutic benefits of nature-related experiences and a sense of connectedness to nature in fostering well-being.

##### **Potential Associations:**

While the correlation between mindfulness and nature-relatedness was weak and not statistically significant, there is a suggestion of a potential association between the two constructs, warranting further investigation.



### Sample Characteristics:

The sample exhibits moderate to high levels of mindfulness, nature-relatedness, and well-being, suggesting a population potentially receptive to interventions targeting these constructs.

These major findings provide valuable insights into the interplay between mindfulness, nature-relatedness, and well-being, underscoring the potential benefits of incorporating nature-based and mindfulness interventions in promoting holistic well-being.

**The major findings regarding the relationships between mindfulness, nature-relatedness, and well-being have several important implications for research, practice, and policy:**

### Implications

#### Integrating Nature-Based Interventions:

Given the moderate positive correlation between nature-relatedness and well-being, there is a strong rationale for integrating nature-based interventions into mental health promotion efforts. Activities such as nature walks, ecotherapy, or outdoor mindfulness practices could be incorporated into psychological interventions to enhance well-being.

#### Promoting Mindfulness Practices:

The moderately strong positive correlation between mindfulness and well-being underscores the importance of promoting mindfulness practices for psychological well-being. Mindfulness-based interventions (MBIs), such as mindfulness-based stress reduction (MBSR) or mindfulness-based cognitive therapy (MBCT), could be widely disseminated to help individuals cultivate mindfulness skills and improve their overall well-being.

#### Holistic Approaches to Mental Health:

The potential association between mindfulness and nature-relatedness suggests the value of adopting holistic approaches to mental health that consider both internal (mindfulness) and external (nature-relatedness) factors. Interventions that combine mindfulness training with nature-based activities may offer synergistic benefits for mental health and well-being.

#### Environmental Conservation and Public Health Policy:

Recognizing the positive relationship between nature-relatedness and well-being, policymakers could prioritize environmental conservation efforts as a means of promoting public health and well-being. Policies that protect natural spaces and increase access to green spaces in urban areas could contribute to population-level improvements in mental health.

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## Tables

### Correlations

**Table1:** Correlation table

Mindfulness Total Score			Nature Relatedness Total Scores	Well-being Total score
Mindfulness Total Score	Pearson Correlation	1	.137	.444**
	Sig. (2-tailed)		.112	.000
	N	135	135	135
Nature-Relatedness Total Scores	Pearson Correlation	.137	1	.376**
	Sig. (2-tailed)	.112		.000
	N	135	135	135
Well-being Total score	Pearson Correlation	.444**	.376**	1
	Sig. (2-tailed)	.000	.000	
	N	135	135	135

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

**Table2:** Descriptive Statistics

### Descriptive Statistics

N		Minimum	Maximum	Mean	Std.Deviation
MindfulnessTotalScore	135	15	88	58.29	14.997
Nature-RelatednessTotalScores	135	41	101	75.41	10.660
Well-BeingTotalscore	135	58	116	82.52	13.714
ValidN(listwise)	135				