An Investigation of the Equivocal Relationship Between Daydreaming, Creativity and Well-Being

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ABSTRACT
An extensive number of studies have been conducted on the relationship between daydreaming, creativity and well-being, with mixed results, nonetheless. Particularly, research has demonstrated both positive and negative effects of daydreaming on creativity and well-being, as well as of creativity on well-being. In addition, most studies have been conducted on adults. Therefore, the purpose of this survey-based study conducted in, Delhi University in May 2023 was to further explore the relationship among the aforesaid constructs on a sample of late adolescents. To this aim, 622 Indian were asked to complete three psychometrically validated scales. The following research hypotheses were proposed: H1) Daydreaming would be a statistically significant predictor of creativity; H2) Daydreaming would be a statistically significant predictor of overall distress, stress, anxiety and depression; H3) There would be a statistically significant difference in daydreaming among severity levels of stress, anxiety and depression; H4) Creativity would be a statistically significant predictor of overall distress, stress, anxiety and depression; and H5) There would be a statistically significant difference in creativity among severity levels of stress, anxiety and depression. Results showed that daydreaming was not a statistically significant predictor of creativity, but greater daydreaming was related to higher distress, stress, anxiety and depression. Furthermore, participants with higher creativity experienced greater anxiety. Nevertheless, creativity was not a statistically significant predictor of stress and depression. Finally, participants with extremely severe depression displayed lower creativity than those with moderate depression. Further research is advised before practical implications are recommended.

Keywords: Daydreaming, stress, anxiety, late adolescents
daydreaming and creativity, it has been proposed that the impact of daydreaming on mood is dependent on the content of daydreaming, with positive constructive daydreaming being related to personal growth and positive affect and guilty-dysphoric daydreaming being associated to negative affect, lower well-being and depressive symptoms.¹⁵

Finally, the relationship between creativity and well-being is another topic that has sparked research interest. Specifically, it has been documented that creativity promotes psychological well-being¹⁶ and can act as a protective against psychopathology¹⁷ Also, a meta-analysis of 32 studies with a total sample of approximately 8,000 individuals concluded that creativity is positively related to well-being and that past links between creativity and psychopathology (the mad-genius hypothesis) are most likely applicable to clinical levels of psychopathology. Also, it was argued that the direction of the relationship differentiates between the type of psychopathology, the domain of creativity and the scales used to assess creativity.¹⁸

Considering the above, the purpose of the current study was to investigate the relationship between daydreaming, creativity and well-being and provide further evidence on the direction of this association. In addition, a late adolescent sample was used, as to the best of our knowledge, previous research on the subject matter has been primarily conducted on adults. Finally, a large sample size was collected (n = 622) and well-established scales with sound psychometric properties were used, so that reliable observations are made.

In total, five research hypotheses were proposed: H1) Daydreaming would be a statistically significant predictor of creativity; H2) Daydreaming would be a statistically significant predictor of overall distress (H2a), stress (H2b), anxiety (H2c) and depression (H2d); H3) There would be a statistically significant difference in daydreaming among severity levels of stress (H3a), anxiety (H3b) and depression (H3c); H4) Creativity would be a statistically significant predictor of overall distress (H4a), stress (H4b), anxiety (H4c) and depression (H4d); and H5) There would be a statistically significant difference in creativity among severity levels of stress (H5a), anxiety (H5b) and depression (H5c).

**MATERIALS AND METHODS**

**Permissions and Participants**

Prior to the distribution of the survey, approval was sought and received by a Scientific Review Committee (SRC). Data was collected online via Google Forms and a sample of 622 Indian late adolescents (60.3% women), currently studying at Delhi University, was recruited. Participants had an age range between 18 to 21 years, with a mean age of 18.57 years (SD = 0.67). First, respondents were informed about the purpose of the study. Also, it was stated that their participation was voluntary and they could withdraw at any point in the study. Afterwards, participants were asked to provide their consent. Finally, respondents who agreed to participate in the study were presented with the questionnaire battery.

**Survey Design and Testing**

All respondents completed an online survey that consisted of 69 questions. The first two questions collected data about the age and gender of participants. The rest of the questions assessed respondents’ daydreaming, creativity and well-being (Appendix A*).

**Methodology and Data Collection**

A questionnaire battery evaluating levels of daydreaming, creativity and distress was prepared. The scale examining distress comprised three subscales, stress, anxiety and depression. Sum scores were calculated for each scale and subscale, with higher scores indicating higher levels of the construct under investigation. Simple linear regression analyses were conducted for H1, H2 and H4, while one-way between-subjects ANOVAs were performed for H3 and H5.

In order to assess daydreaming in daily life, the Daydreaming Frequency Scale (DDFS) was used, which is one of the 28 scales included in the Imaginal Process Inventory.¹⁹ The DDFS contains 12 items (α = 0.90), with response options provided on a 5-point Likert scale. Sample items are “I daydream instead of paying attention when I attend a meeting or a show that is not very interesting” and “I daydream whenever I have free time”. Although response options differ among questions, in all items higher scores indicate a higher daydreaming frequency. Participants’ everyday creativity was measured using the Biographical Inventory of Creative Behaviors (BICB).²⁰ The BICB includes 34 items (α = 0.88) listing common creative activities and respondents indicate whether they engage in this activity (yes) or not (no). Sample items are “Organized an event, show, performance or activity” and “Invented and made a product that can be used”. Finally, the Depression, Anxiety and Stress Scale - 21 Items (DASS-21)²¹ were used to examine distress. The DASS-21 consists of 21 questions (α = 0.91) evaluating depression (7 items, α = 0.83), anxiety (7 items, α = 0.76) and stress (7 items, α = 0.78) severity over the past week. Sample items are “I felt that I had nothing to look forward to”, “I felt I...
was close to panic” and “I tended to over-react to situations”, respectively. Responses are provided on a 4-point Likert scale, ranging from 0 (did not apply to me at all) to 3 (applied to me very much or most of the time). Sum scores were computed for all scales and DASS-21 subscales, with higher scores indicating greater daydreaming, creativity, distress, depression, anxiety and depression. The data were analyzed using SPSS, version 25.0.

RESULTS

Results showed that greater daydreaming was related to lower well-being, but no association was identified with creativity. Also, higher creativity was related to higher anxiety and to lower depression severity. The rest of the findings were nonstatistically significant.

When H1 was analyzed, the results indicated a non-statistically significant model, F(1,620) = 0.58, p = 0.45, which accounted for less than 1% of the variance in creativity, (R² = 0.001; R²adj = −0.001) (Table 1).

Proceeding with H2, results showed a statistically significant model for H2a [F(1,620) = 101.38, p < 0.001] that accounted for 13.9% of the variance in distress [R² = 0.141; R²adj = 0.139], a statistically significant model for H2b [F(1,620) = 86.97, p < 0.001] that accounted for 12.2% of the variance in stress [R² = 0.123; R²adj = 0.122] and a statistically significant model for H2c [F(1,620) = 68.28, p < 0.001] that accounted for 9.8% of the variance in anxiety [R² = 0.099; R²adj = 0.098]. Also, a statistically significant model was identified for H2d [F(1,620) = 87.04, p < 0.001] that accounted for 12.2% of the variance in depression [R² = 0.123; R²adj = 0.122]. Daydreaming was a statistically significant positive predictor of overall distress, stress, anxiety and depression, indicating that individuals who daydreamed more frequently were more likely to experience greater feelings of distress, stress, anxiety and depression (Table 2).

As to H3, the analysis suggested a statistically significant difference for H3a [F(4,617) = 15.47, p < 0.001, ηp² = 0.091], H3b [F(4,617) = 12.80, p < 0.001, ηp² = 0.077], and H3c [F(4,617) = 19.99, p < 0.001, ηp² = 0.12]. Bonferroni’s post-hoc comparisons showed a significant difference in daydreaming between normal and mild stress (p < 0.001), normal and moderate stress (p < 0.001), normal and severe stress (p < 0.001), normal and extremely severe stress (p < 0.001) and mild and extremely severe stress (p < 0.001). Daydreaming showed a significant difference in daydreaming between normal and mild anxiety (p = 0.043), normal and severe anxiety (p = 0.003), normal and extremely severe anxiety (p < 0.001), mild and extremely severe anxiety (p < 0.001), and moderate and extremely severe anxiety (p < 0.001). These differences were also present for the severity of depression, with significant differences identified between normal and mild depression (p = 0.004), normal and moderate depression (p = 0.001), normal and severe depression (p < 0.001), normal and extremely severe depression (p < 0.001), mild and extremely severe depression (p < 0.001), and moderate and extremely severe depression (p < 0.001). In all cases, individuals with higher stress, anxiety and depression severity displayed greater daydreaming (Table 3 and Figs. 1-3).

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<th>Variable</th>
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<td>Overall distress</td>
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Concerning H4, the analysis indicated a nonstatistically significant model for H4a \( F(1,620) = 1.65, p = 0.20 \) that accounted for less than 1% of the variance in distress \( R^2 = 0.003; R^2_{\text{adj}} = 0.001 \), as well as a nonstatistically significant model for H4b \( F(1,620) = 2.85, p = 0.092 \) that accounted for less than 1% of the variance in stress \( R^2 = 0.005; R^2_{\text{adj}} = 0.003 \).

However, a statistically significant model was identified for H4c \( F(1,620) = 6.92, p = 0.009 \) that accounted for 0.9% of the variance in anxiety \( R^2 = 0.011; R^2_{\text{adj}} = 0.009 \). Creativity was a statistically significant positive predictor of anxiety, suggesting that respondents with greater creativity were more likely to experience higher anxiety.

Finally, a nonstatistically significant model was identified for H4d \( F(1,620) = 0.31, p = 0.58 \) that accounted for less than 1% of the variance in depression \( R^2 = 0.000; R^2_{\text{adj}} = -0.001 \) (Table 4).

Regarding H5, the analysis suggested a nonstatistically significant difference for H5a \( F(4,617) = 1.03, p = 0.39, \eta^2_p = 0.007 \). However, a statistically significant difference was identified for H5b \( F(4,617) = 3.31, p = 0.011, \eta^2_p = 0.021 \) and H5c \( F(4,617) = 3.12, p = 0.015, \eta^2_p = 0.020 \).

Bonferroni’s post-hoc comparisons showed a significant difference in creativity between normal and severe anxiety \( p = 0.018 \) and between normal and extremely severe anxiety \( p = 0.025 \).

Also, a significant difference in creativity between moderate and extremely severe depression was identified.
Results showed that daydreaming was not a statistically significant predictor of creativity (H1). However, it was suggested that late adolescents who daydreamed more frequently were more likely to experience greater feelings of distress (H2a), stress (H2b), anxiety (H2c) and depression (H2d). Also, individuals with more severe stress (H3a), anxiety (H3b) and depression (H3c) engaged more frequently in daydreaming. Furthermore, late adolescents with higher creativity experienced greater anxiety (H4c). Nevertheless, creativity was not identified as a statistically significant predictor of distress (H4a), stress (H4b) and depression (H4d).

In addition, respondents with more severe anxiety reported higher levels of creativity (H5b), while a non-statistically significant difference among levels of stress severity was indicated (H5a).

Finally, it was interesting to observe that although depression did not predict creativity, participants with extremely severe depression displayed lower creativity than those with moderate depression (H5c).
The current study adopted a series of methodological steps to enhance the reliability of conclusions and contribute to the current body of knowledge. First, a large sample size was collected to increase the representativeness of observations. Also, scales with sound psychometric properties were used to accurately assess the constructs of interest. In addition, the analyses conducted allowed us to determine the predictive power of one variable on another, instead of solely evaluating the relationship among variables. Finally, the classification of distress subscales into severity levels revealed differences that would otherwise be shadowed if only sum scores were used.

However, certain limitations were also present. First, the sample comprised only Indian participants and the majority of them were female (60.3%). Hence, the lack of ethnicity and gender diversity might have influenced the results. Also, although well-established scales were used, these scales did not differentiate between types of daydreaming and creativity; a limitation that could have had an impact on the direction of the relationship among daydreaming, creativity and well-being. In addition, the analyses employed in this study do not allow causal inferences to be made. Finally, respondents may have been reluctant to provide honest responses in the items assessing distress and therefore, the possibility of social desirability bias cannot be excluded.

It is important that future research adopts advanced statistical techniques like Structural Equation Modeling (SEM) or experimental designs that would allow to determine if daydreaming and creativity lead to lower well-being or if individuals use daydreaming and creativity as a means to improve an already impaired well-being. In addition, scales that distinguish between types of daydreaming and creativity could be used and/or developed to identify potential differences. Moreover, qualitative research could provide in-depth insights on the experience of individuals and their perception of daydreaming and creativity benefits and drawbacks.

CONCLUSION

The objective of the current research was to explore the relationship among daydreaming, creativity, and well-being in late adolescents and a large sample of approximately 600 Indian individuals was recruited. Results showed that greater daydreaming was related to lower well-being, but no association was identified with creativity. Also, higher creativity was related to higher anxiety and to lower depression severity. Although these findings indicate a negative impact of daydreaming and creativity on well-being, further research is required before practical implications are proposed. Therefore, it is aspired that this study will act as a source inspiration for scholars to advance knowledge in the subject matter and amend past and present methodological pitfalls.

REFERENCES

Role of High-Quality Sleep in Tackling Chronic Stress, Depression and Anxiety

A recent study has highlighted the significance of high-quality sleep and effective coping strategies in preventing adverse mental health outcomes when faced with unpleasant or stressful experiences. The research, conducted during the protracted stressful period of the COVID-19 pandemic 2020, aimed to examine the impact of coping mechanisms on mental well-being and how sleep quality could enhance these effects. The study analyzed data from over 600 individuals participating in the Boston College Daily Sleep and Well-being Survey throughout the pandemic. In addition to sleep and mental well-being assessments, the surveys included baseline demographic information such as age, gender and ethnicity. The survey also gathered data on other factors, including alcohol consumption, quarantine status and physical activity levels. Dr Scott Cairney, the project’s PhD Supervisor from the Department of Psychology at the University of York, explained the motivation behind the study and stated that while there is a positive association between high-quality sleep and overall health and well-being, they wanted to investigate whether this relationship would hold even in the face of intense and prolonged stress, as experienced by many during the pandemic. The study’s findings showed the vital role of sleep in managing chronic stress and promoting well-being over an extended period. Quality sleep was found to be instrumental in reducing symptoms of depression and anxiety, thereby sustaining mental health. (Source: https://www.midday.com/lifestyle/health-and-fitness/article/high-quality-sleep-key-to-manage-chronic-stress-reduce-symptoms-of-depression-and-anxiety-study-23297831)

Government Launches Drive for 100% Coverage Under Ayushman Bharat PMJAY

The government of India has announced plans to initiate a large-scale enrollment drive for the Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana (PMJAY) and has urged all states and Union Territories to register 100% of eligible individuals under the scheme. The announcement was made during the Swasthya Chintan Shivir, a 2-day conference organized by the Central Council of Health and Family Welfare. During the conference, Union Health Minister Mr Mansukh Mandaviya called upon the states and union territories to aim for universal coverage by involving health care workers at the grassroots level. The discussions at the conclave primarily focused on implementing the Ayushman Bharat PMJAY and the Ayushman Bharat Digital Mission. They addressed the gaps in coverage due to diverse local conditions and the level of digital health literacy across the country. Launched in 2018, Ayushman Bharat PMJAY aims to provide universal health coverage and free or affordable health care services to people residing in even the most remote areas. The scheme offers cashless medical services of up to Rs. 5 lakh per family per year, benefiting over 10.74 crore poor and vulnerable families, which accounts for more than 53 crore beneficiaries. According to government data, the Ayushman Bharat PMJAY has facilitated more than 4.34 crore hospital admissions, amounting to over Rs. 51,749.40 crore in authorized expenses. (Source: https://health.economictimes.indiatimes.com/news/policy/govt-announces-drive-for-100-coverage-under-ayushman-bharat-pmjay/101770542)
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