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Research Paper

Effect of Digital-Supported Journaling on Stress, Resilience and Solution-Focused Thoughts in Medical Aspirants

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ABSTRACT

This study investigated the effects of a two-week intervention involving digital-supported journaling on stress levels, resilience, and solution-focused thoughts in a sample of 60 medical aspirants. The experimental group (n=30) engaged in daily journaling, while the control group (n=30) followed standard routines. Stress, Resilience, and Solution Focused Thoughts were measured using the Perceived Stress Scale, Brief Resilience Scale, and Solution Focused Inventory respectively. Results of paired sample t-tests revealed a significant reduction in stress levels ($p < .001$) and an increase in resilience ($p < .001$) and solution-focused thoughts ($p < .001$) among the intervention group. These findings suggest that digital-supported journaling may be a valuable tool for improving the psychological well-being and readiness of medical aspirants. However, further research with larger samples and longer intervention periods is recommended.

Keywords: *Digital-Supported Journaling, Stress, Resilience, Medical Education, Mental Well-Being*

In recent decades, there has been a notable increase in individuals aspiring to join the medical field, leading to intense competition for limited Government Seats. The rigorous training regime and sleepless nights endured by aspiring doctors have created a stressful environment for them, as widely acknowledged today (Mishra et al., 2020; Shen Lujun et al., 2018). The considerable stress experienced necessitates the ability to bounce back from adversities, highlighting the importance of resilience. Thus, resilience emerges as a crucial quality for medical aspirants, indicating its potential for detailed exploration and study (Dyrbye et al., 2005; Jackson et al., 2007; Nazar & Mamman Joseph C, 2019).

Medical aspirants rely on Solution-Focused Thoughts to overcome daily challenges (Weinberger et al., 2006). Hence, these thoughts are crucially examined within this population. Additionally, an intervention method, Digital-supported Journaling, is introduced for comparison. Students maintained the journal for at least two weeks, and the study explores its impact on individuals.

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Objectives

- To examine the effect of digital-supported journaling on stress levels in medical aspirants.
- To assess the impact of digital-supported journaling on resilience in medical aspirants.
- To determine the effect of digital-supported journaling on solution-focused thoughts in medical aspirants.

Hypotheses

- Digital-supported journaling will significantly reduce stress levels in medical aspirants.
- Digital-supported journaling will significantly increase resilience levels in medical aspirants.
- Digital-supported journaling will significantly enhance solution-focused thoughts in medical aspirants.

Scientific Tools

Perceived Stress Scale (PSS)

The Perceived Stress Scale (PSS) is a widely-used 14-item tool assessing recent events' perceived stress levels. Respondents rate stress from "never" to "very often" on a scale from 0 to 4. Negative items are summed while positive ones are reverse-scored. The PSS shows high reliability, with college students demonstrating a test-retest correlation of 0.85 and a coefficient alpha reliability of 0.84 (Augustine et al., 2011).

Brief Resilience Scale (BRS)

The Brief Resilience Scale (BRS), established by Smith et al. (2008), evaluates resilience as "the capacity to recover from adversity" (Smith, Tooley, Christopher, & Kay, 2010, p. 168). Consisting of six items rated on a 5-point scale, the BRS shows strong reliability, with Cronbach's alpha values consistently exceeding 0.80 across four samples (Smith et al., 2008; Smith et al., 2010). It correlates reliably with health, coping skills, interpersonal relationships, and personal traits (Salisu & Hashim, 2017).

Solution Focused Inventory (SFI)

The 12-item Solution-focused Inventory (SFI), with sub-scales measuring Resource Activation, Goal Orientation, and Issue Disengagement, demonstrates validity in assessing solution-focused thinking. It correlates positively with well-being, resilience, and perspective-taking, while negatively with psychopathology. Test-retest reliability over 16 weeks was 0.84, and Cronbach's alpha was 0.84. Participation in a leadership development coaching intervention resulted in notably higher SFI scores compared to the control group, indicating sensitivity to intentional change (Grant et al., 2012).

Digital-Supported Journal

The Digital-Supported Journal, used in the experimental group of the study, includes 14 prompts encouraging participants to reflect on strengths, past successes, and solutions to challenges. Over a 2-week period, participants spend 10 minutes daily journaling, focusing on positive aspects of their lives, past overcoming of challenges, and goal-setting. This aims to foster a solution-focused mindset and boost resilience amidst stress and adversity, accessible through a secure online platform.

Psychological Variables

Stress

Stress, within the medical aspirant context, refers to perceived pressure and strain from academic coursework, clinical training, and the competitive nature of the profession, exceeding an individual's coping resources (Lazarus & Folkman, 1984; Selye, 1956).

Resilience

Resilience, in this context, denotes the ability to maintain positive mental health and academic performance despite the challenges and stressors of pursuing a medical career, adapting to and recovering from adversity or significant stressors (Masten, 2018; Windle, Bennett, & Noyes, 2011)

Solution-Focused Thoughts

Solution-focused thoughts, for medical aspirants, involve prioritizing finding and implementing solutions over dwelling on negative aspects of situations, approaching challenges with a proactive and positive mindset (O'Connell, Martin, & Ryan, 2015; Snyder & Lopez, 2002).

METHODOLOGY

Sample

The sample consists of 60 medical aspirants, both male and female, ranging from ages 17 to 24, hailing from the state of Kerala in India. The experimental and control groups had 30 participants each. The sample was selected based on convenience sampling method.

Inclusion Criteria

Medical aspirants preparing for the NEET Examination, of the ages 17 to 24 and belonging to Indian nationality, were considered to be a part of the study.

Procedure

The screening process began with the Perceived Stress Scale (PSS-10), a 10-item survey developed by Cohen et al. (1983) to measure stress levels in adolescents and adults aged 12 and older. It assessed feelings of life unpredictability, lack of control, and being overwhelmed over the past month. The sample was then divided into experimental and control groups, each comprising 30 participants. The experimental group underwent a 2-week intervention of Digital Supported Journaling. Stress, resilience, and solution-focused thoughts were measured before and after the intervention, and comparisons were made between the experimental and control groups. Resilience was assessed using the Brief Resilience Scale (Smith et al., 2008), a 6-item scale evaluating a unitary construct of resilience. Solution-focused thoughts were analyzed using the Solution Focused Inventory (SFI). The collected data underwent appropriate statistical analysis.

RESULTS

Preliminary Data Analysis and Descriptives

The sample (N = 60) consisted of medical aspirants with an age range of 17 to 24 years. Descriptive statistics for the Perceived Stress Scale (PSS), Brief Resilience Scale (BRS), and Solution Focused Inventory (SFI) were calculated for both pre-intervention and post-intervention conditions.

Figure No.1. Sociodemographic details- Age

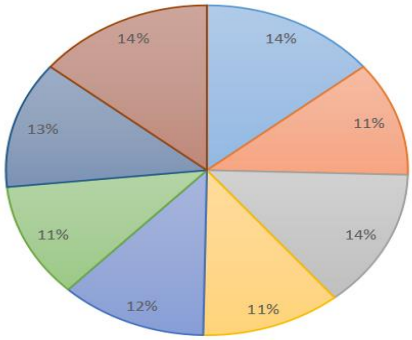

Figure 1 illustrates the age distribution of participants (ages 17 to 24). Among the 60 participants, 11% were 18 years old, 14% were 19, and 14% were 24. Additionally, 17% were 20 and 22 years old, 11% were 21 and 22, and 12% were 21. Finally, 13% were 23 years old

Table No.1 Reliability of Scales - Pre and Post Intervention

Scale	Cronbach's Alpha Value (α)
Perceived Stress Scale - Pre	0.941
Brief Resilience Scale- Pre	0.929
Solution Focused Inventory- Pre	0.988
Perceived Stress Scale- Post	0.979
Brief Resilience Scale- Post	0.736
Solution Focused Inventory- Post	0.995

Note. Pre and Post refers to Pre-intervention and Post-intervention conditions

Table 1 presents the reliability of the scales, showing high internal consistency for the Perceived Stress Scale (PSS) and Solution Focused Inventory (SFI) across both pre- and post-intervention (α = 0.941 to 0.995). The Brief Resilience Scale (BRS) demonstrated slightly reduced post-intervention reliability (α = 0.736), yet remained consistent.

Table No.2 Descriptive Statistics

	Groups	N	Mean	Median	SD	Shapiro Wilk (p)
PSS_pre	1	30	21.50	21	5.24	0.004
	2	30	36.83	38	5.05	<.001
PSS_post	1	30	10.30	10	2.07	0.115
	2	30	38.93	40	2.53	<.001
BRS_pre	1	30	18.50	19.50	3.51	0.270
	2	30	7.50	7	2	<.001
BRS_post	1	30	23.40	23	1.28	0.054
	2	30	14.43	14	1.19	<.001
SFI_pre	1	30	57.43	56	9.82	0.053
	2	30	17.20	18	2.41	0.074
SFI_post	1	30	75.03	74	2.75	0.153
	2	30	19.47	19	2.26	0.010

Note. PSS refers to Perceived Stress Scale Score, BRS refers to Brief Resilience Score and SFI refers to Solution Focused Inventory Score. Pre and Post refers to Pre-intervention and Post-intervention conditions.

Table 2 provides descriptive statistics. The experimental group showed significant reductions in stress (PSS mean scores: 21.50 to 10.30) and increases in resilience (BRS mean scores: 18.50 to 23.40) and solution-focused thinking (SFI mean scores: 57.43 to 75.03). The control group exhibited minimal changes.

Table No.3 Paired Sample T-test for Experimental Group

	Mean	***SD***	***t***	***p***	**Cohen's *d***
PSS_pre	21.5	21.0	10.84	***	1.98
PSS_post	10.3	10.0			
BRS_pre	18.5	19.5	-7.10	***	-1.30
BRS_post	23.4	23.0			
SFI_pre	57.4	56.0	-9.05	***	-1.65
SFI_post	75.0	74.0			

Note. PSS refers to Perceived Stress Scale Score, BRS refers to Brief Resilience Score and SFI refers to Solution Focused Inventory Score. Pre and Post refers to Pre-intervention and Post-intervention conditions, ****p*<.001.

Table 3 reports significant pre- to post-intervention differences in the experimental group ($p < .001$), with large effect sizes for stress (Cohen's $d = 1.98$) and solution-focused thinking (Cohen's $d = -1.65$), and a moderate effect for resilience (Cohen's $d = -1.30$).

Table No.4 Paired Sample T-test for Control Group

	Mean	***SD***	***t***	***p***	**Cohen's *d***
PSS_pre	36.83	38.0	-1.91	0.065	-0.350
PSS_post	38.93	40.0			
BRS_pre	7.50	7.0	-14.47	***	-1.30
BRS_post	14.43	14.0			
SFI_pre	17.20	18.0	-3.75	***	-1.65
SFI_post	19.47	19.0			

*Note. PSS refers to Perceived Stress Scale Score, BRS refers to Brief Resilience Score and SFI refers to Solution Focused Inventory Score. Pre and Post refers to Pre-intervention and Post-intervention conditions, ***p<.001.*

Table 4 shows non-significant changes in perceived stress for the control group ($p = 0.065$), but significant increases in resilience and solution-focused thinking ($p < .001$).

Overall, the findings confirm that digital-supported journaling significantly reduces stress and enhances resilience and solution-focused thinking in medical aspirants, demonstrating the intervention's effectiveness.

DISCUSSION

The study investigated the impact of digital-supported journaling on stress, resilience, and solution-focused thoughts among medical aspirants in Kerala, India. The results revealed a significant reduction in stress levels among journaling participants compared to the control group, supported by previous research on journaling's stress-reduction efficacy (Shen Lujun et al., 2018). Journaling facilitated introspection, offering clarity on stressors (Street et al., 2016), and encouraged a proactive mindset to tackle challenges, potentially alleviating their impact on well-being.

The study also noted a significant increase in resilience levels among intervention group participants. This suggests that digital-supported journaling serves as a promising tool for building resilience, crucial in medical education's demanding environment (Dyrbye et al., 2005). By fostering a solution-oriented mindset, journaling enhanced participants' capacity to navigate difficulties, ultimately bolstering resilience. The study underscores journaling's effectiveness in improving mental distress and promoting well-being (Smith et al., 2018).

CONCLUSION

The positive impact of digital-supported journaling on stress levels suggests its potential integration into medical education programs to enhance mental well-being among medical aspirants. Additionally, its role in building resilience could inform resilience training in high-stress educational environments. Improvement in solution-focused thoughts indicates its value in fostering a constructive approach to challenges, beneficial in academic and clinical settings. Addressing stress and mental health concerns among medical aspirants through interventions like digital-supported journaling is crucial for supporting future healthcare professionals' psychological well-being. Cultural context should be considered when designing interventions, as highlighted by the study's focus on medical aspirants in Kerala, India. Longer-term follow-up studies could assess sustained effects, and integrating well-being initiatives into medical curriculum may be beneficial. The study's findings may extend to other high-stress academic or professional contexts, warranting further research across diverse populations to validate results.

In conclusion, the study provides compelling evidence for the positive impact of digital-supported journaling on stress levels, resilience, and solution-focused thoughts among medical aspirants. The findings underscore the potential benefits of integrating such interventions into medical education programs, ultimately contributing to the well-being and preparedness of future healthcare professionals.

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Conflict of Interest

The author(s) declared no conflict of interest.

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