

Analyzing the Impact of Reflective Writing on Students' Self Efficacy, Perceived Stress, and Psychological Wellbeing

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Keywords: Perceived stress, Psychological wellbeing, Reflective writing, Self-efficacy	<p style="text-align: center;">ABSTRACT</p> <p><i>Students grapple with stress during university life, especially in the last semester, the transitioning period towards the practical phase of life. Self-help skills like reflective writing facilitate students by enhancing their understanding of capabilities and using their resources to deal with the challenges. Therefore, the present study focused on empirically the effects of reflective writing on the perceived stress, self-efficacy, and, well-being of students using a randomized control group pretest-posttest-follow-up research design. Following an experimental approach, a sample of 39 undergraduate female students categorized into experimental (n=19) and control (n=20) groups provided data on three measures of self-efficacy, perceived stress, and psychological well-being at pre, post, and follow-up testing. Participants in the experimental group were engaged in reflective writing intervention for two weeks while the control group was not. Data analysis through Mixed Between-Within ANOVA, indicated that the participants of the experimental group reported significantly decreased perceived stress; and an increased self-efficacy and psychological well-being at post and follow-up testing than the control group. These findings have several implications for students, teachers, parents, and psychologists who can utilize the reflective writing intervention as a potentially effective strategy for promoting self-efficacy and psychological well-being that will surely decrease stress among adolescents.</i></p>
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1 Introduction

Higher education students frequently deal with a variety of stressors such as financial hardship, social expectations, and academic pressure. The rigors of classroom, clinical training, and research duties are just a few of the extra pressures that psychology students may face while they pursue their chosen field of study (Myers et al., 2012). It is concerning because all of the students are stressed out about their academic subjects in addition to their personal lives (Barbayannis et al., 2022). It is, therefore, necessary to practice techniques and treatments that can improve students' performance and well-being while managing stress.

Self-efficacy can be described as an evaluation of one's ability; the ability that an individual uses to work on planning and to perform activities to attain the desired outcomes (Bandura, 1986). According to the literature, an individual's self-efficacy is considered as a strong cognition, motivation, and emotion associated with university students' behaviors which lead to success by facilitating performance and learning (Blanco Blanco, 2010). Learners having a high level of self-efficacy tend to be persistent and eager to try new things (Ahmad & Safaria, 2013). Due to their cognitive capacities, students reporting a strong feeling of self-efficacy become capable of focusing on, organizing, and explaining information successfully (Heslin & Klehe, 2006). Such students continuously put in the effort, and if they find it difficult to keep up with the material, they come up with effective alternative solutions. Due to these significant characteristics, self-efficacy is a fundamental determinant in dealing with stress (Lannin et al., 2019), and it also serves as a buffer against the influences of routine stressors at school (Freire et al., 2020; Schönfeld et al., 2019).

According to Wang et al. (2019), perceived stress refers to a person's subjective assessment of how stressful their life experiences are. It has been proven to have a major influence on psychological, emotional, and physical health; such as weak immunity (McGregor et al., 2008), intense subjective fatigue particularly during their thesis work (Van Laethem et al., 2017), anxiety, headache (Lemay et al., 2019), depression (Celik et al., 2019; Li et al., 2020) and their capacity to manage it. Graduate students in general experience these effects (Wu et al., 2020). In addition to these, Stress has an impact on people's daily behaviors like memory and learning (Eskin et al., 2013). Stressful experiences have a negative influence on memory and recall of learned knowledge (Shors, 2006).

Hedonic (having pleasant feelings about one's life) and eudaimonic (living a fulfilling life as an individual) well-being are the two categories often used to describe subjective well-being (Ryan & Deci, 2001). While the eudaimonic perspective is more concerned with psychological and social well-being, the hedonic viewpoint places greater emphasis on emotional well-being. Emotional, psychological, and social well-being are the three basic components of well-being (Keyes, 2002). Positive emotions and life satisfaction are related to emotional well-being. According to Ryff (1989), psychological well-being is related to how people perceive their functioning in life (eudaimonic view). Examples include self-acceptance, a sense of autonomy, a sense of mastery and competence, pleasant social relationships, and a sense of purposefulness in life.

Academic stress is prevalent among college students in Asian nations, which may also have an impact on their psychological well-being (Tan & Yates, 2011). High workloads and an unsupportive university environment lead to stress that contributes to disturbed psychological well-being among them. Studies have shown that the absence of psychological issues (psychological well-being) and self-efficacy are positively correlated (Klainin-Yobas et al., 2016; Priesack & Alcock, 2015; Taylor & Reyes, 2012).

Extensive literature identifies various ways to enhance well-being and self-efficacy and manage stress. The current body of research focuses on developing positive aspects of one's mental health rather than merely eradicating problematic symptoms. So, boosting wellbeing is the main goal of healthcare services these days.

Fledderus et al. (2010) did a randomized controlled trial of an intervention "living to the full" based on acceptance and commitment therapy combined with mindfulness to enhance psychological flexibility and mental health among adults having mild to moderate psychological distress. They further concluded that psychological flexibility mediates the causal effect of psychological distress on mental health during the intervention phase.

Merry et al. (2004) assessed the effectiveness of a randomized placebo-controlled trial, based on cognitive behavioral therapy, targeting the prevention of depression in school children. They found significant results of the intervention in preventing depression in students and maintaining mental health. These results persisted after 18m months of follow-up as well.

Kennes et al. (2023) determined the efficacy of mindfulness and using character strength-based intervention, during a school mental health program, among adolescents. Farrer et al. (2013) reported in the systematic review of existing studies that technology-based therapies (based on cognitive behavioral therapy) are effective in reducing anxiety and depression with a median effect ranging from 0.54-0.84 among students in university-level education.

Ferrari et al. (2022) systematically reviewed and meta-analyzed 13 studies and described that acceptance and commitment therapy-based digital interventions are promising in producing a small significant upswing in the psychological well-being of college students. Hewett et al. (2018) conducted a randomized controlled trial for a Bikram yoga intervention and found it to be an effective remedy that reduced perceived stress, and improved general self-efficacy and health-related quality of life among agitated and sluggish adults.

Expressive writing has been shown to help with multiple aspects of one's well-being (Pennebaker, 1997, 2004). Toepfer and Walker (2009) found that through expressive writing two aspects of well-being, happiness, and gratitude flourished. Adair et al. (2020) empirically concluded that writing about 3 good things, a gratitude letter, and reflecting forward improves well-being and reduces healthcare workers' burnout levels significantly.

Katajavuori et al. (2023) analyzed students' reflective journals to explore their experiences qualitatively during an ACT-based online intervention. Quantitative data was obtained using a general psychological well-being questionnaire, a perceived stress scale, an organized studying scale, and a questionnaire for psychological flexibility. Throughout the course, the students' stress levels fell and their ratings on the psychological flexibility, well-being, and time and effort management scales all improved.

1.1 Reflective Writing

According to Dewey and Boydston (1988), reflection involves reconstruction and rearrangement of a specific experience to redefine the experience. Gibbs (1988) believed that learning requires more than merely having an experience. Without reflecting on it, the event can be quickly forgotten or its prospective learning might be lost. During the reflection, feelings, and thoughts come to mind that lead to generalizations or concepts. Moreover, generalizations facilitate successful adaptation to novel situations. Higgins (2009) highlighted that reflection is necessary for experiential learning to incorporate experience into future action.

Reflective diary writing has been empirically proven to enhance learning (Salehuddin et al., 2012), attitudes and professional performance of cricketers (Fletcher & Wilson, 2013), medical

students (Nevalainen et al., 2010), Nurses (Timizar-Le Pen et al., 2020) and pre-service teachers (Velásquez et al., 2023). Electronic mode for reflective diary has the disadvantage of high dropout, reluctance to express, etc. (Metsäranta et al., 2019).

Keeping the significance of the literature review on reflective writing fostering valuable life skills such as self-awareness, critical thinking, and problem-solving, the current study aimed to analyze the effects of engaging in reflective writing practices on perceived stress, general self-efficacy, and psychological well-being of female university students. It was reducing perceived stress and improving self-efficacy beliefs and well-being that can directly enhance students' success in academic as well as personal life spheres.

This study addresses a major concern in higher education by exploring how reflective writing can have beneficial consequences on students' self-efficacy, perceived stress, and psychological well-being. The follow-up component of the study evaluates the long-term influence of the intervention on variables under consideration.

2 Method

2.1 Participants

The study participants were female undergraduate university students (N=39) with an age range between 21-25 years (M=22.74, SD=0.94). They were more or less similar in socio-cultural background.

2.2 Instruments

The following scales were used to collect the data on the study variables from the participants:

2.2.1 General Self-Efficacy Scale (GSES)

The General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995) was used to measure the participants' belief and their capacity to handle a range of demanding situations in life. It is a 10-item self-reported scale responding on 4 points ranging from 1 to 4; 1 for a "not at all true" response and 4 for an "absolutely true" response. A composite score is obtained by summing up the responses on all the items. Total score ranges from 10 to 40. The higher score shows the higher self-efficacy of the respondent. Cronbach's alpha coefficient for the scale ranges from 0.76 to 0.90.

2.2.2 Perceived Stress Scale (PSS)

Perceived Stress Scale (Cohen et al., 1983) was used to assess the degree of how stressful one perceives particular situations in one's life. It is a 10-item self-reported scale responding on a 5-point Likert scale indicating 4=very often, 3=fairly often, 2=sometimes, 1=almost never, and never. Following four items; 4, 5, 7, and 8 are positively worded statements so are reverse-scored. To obtain a total score, scores on all items are summed up. A higher score on the scale indicates higher levels of perceived stress. The alpha reliability coefficient for this scale is from 0.71 to 0.91.

2.2.3 Psychological Wellbeing Scale (PWBS)

Psychological Wellbeing Scale (Ryff & Keyes, 1995) was used to measure the psychological well-being (based on the eudemonic model of well-being) of the participants. It is an 18-item self-reported scale that responded on a 7-point Likert scale ranging from 1 for strongly agree to 7 for strongly disagree. The following items; 1, 2, 3, 8, 9, 11, 12, 13, 17, and 18 are reverse coded. The scale has six subscales naming purpose in life, environmental mastery, autonomy, personal growth, self-acceptance, and positive relations with others. Scores on subscales and a composite score can be computed by adding all the scores on subscales separately and a total of

all scales respectively. The alpha reliability coefficients for the scale and its subscales are from 0.82 to 0.87.

3 Procedure

This study was completed with 39 undergraduate female students engaging them in three times data collection. Before collecting the data at Time 1 (pretesting), consents were obtained from all the participants. They were then briefed about the purpose of the study and were instructed on how to fill out the questionnaires. Employing an empirical approach, the sample (N=39) was randomly divided into two groups; experimental (n=19) and control (n=20). The experimental group underwent the reflective writing intervention for two weeks (1-3 days orientation about reflective writing based on Gibbs' Reflective Model (Gibbs, 1988), and 15 days of daily practice prompted by cues about reflective writing related to daily experiences. The control group didn't receive any intervention or guidance about managing their hassles. After two weeks, data were collected at Time 2 (post-testing) on the study variable following data collection at Time 3 (Follow-up) after two weeks of post-testing. To see the impact of reflective writing intervention on self-efficacy, stress, and well-being, in the comparison with the control group, data were analyzed through a mixed between-within ANOVA computed on SPSS-25.

4 Results

Statistical package for social Sciences v.25 was used for the analyses of the data, exerting appropriate statistical technique to calculate results which is Mixed between-within ANOVA. The resulting output gave all the required data for concluding the effects of reflective writing on participants' self-efficacy, perceived stress, and psychological well-being. All findings are tabulated and explained in the table descriptions below.

Table 1

Descriptive Statistics for the Scores on Self-efficacy, Perceived Stress and Psychological Wellbeing of Students (N=39)

Variables	Experimental Group		Control Group	
	M	SD	M	SD
Self-efficacy				
T1 (Pretest)	28.90	3.86	29.79	3.98
T2 (Posttest)	29.70	3.39	32.79	3.91
T3 (Follow-up)	30.00	3.24	34.11	3.19
Perceived Stress				
T1 (Pretest)	19.50	3.395	21.32	5.110
T2 (Posttest)	19.65	3.10	18.68	4.498
T3 (Follow-up)	20.10	3.655	19.95	3.851
Psychological Wellbeing				
T1 (Pretest)	86.05	10.34	82.421	6.9547
T2 (Posttest)	87.75	6.584	98.105	6.145
T3 (Follow-up)	91.15	8.041	102.58	6.345

Table 2
Mixed Between-Within Subjects Analysis of Variance for the Effects of Reflective Writing Intervention on Study Variables

Source	Measure	df	Mean Square	F	Sig.	Partial η^2
Time	Self-efficacy	2	75.32	74.8	.000*	.669
	Perceived Stress	2	15.73	7.14	.001*	.162
	PWB	2	1627.45	82.8	.000*	.691
Time * Groups	Self-efficacy	2	26.33	26.2	.000*	.414
	Perceived Stress	2	19.93	9.05	.000*	.197
	PWB	2	687.66	35.02	.000*	.486
Error(Time)	Self-efficacy	74	1.01			
	Perceived Stress	74	2.20			
	PWB	74	19.64			
Group	Self-efficacy	1	212.26	5.72	.022*	.134
	Perceived Stress	1	1.58	.037	.849	.001
	PWB	1	1070.54	8.07	.007*	.179
Error	Self-efficacy	37	37.07			
	Perceived Stress	37	43.07			
	PWB	37	132.67			

Note. PWB= Psychological Wellbeing, $p < 0.001^*$

Figure 1
Changes in Self-Efficacy levels of control and experimental groups across time

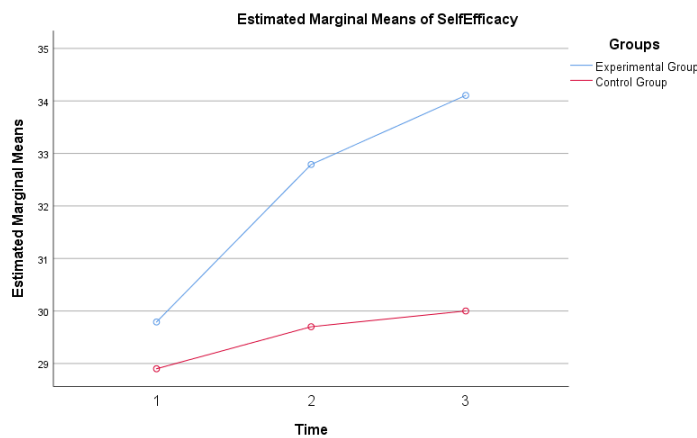


Figure 2
Perceived Stress levels of control and experimental groups at the pretest, posttest, and follow-up

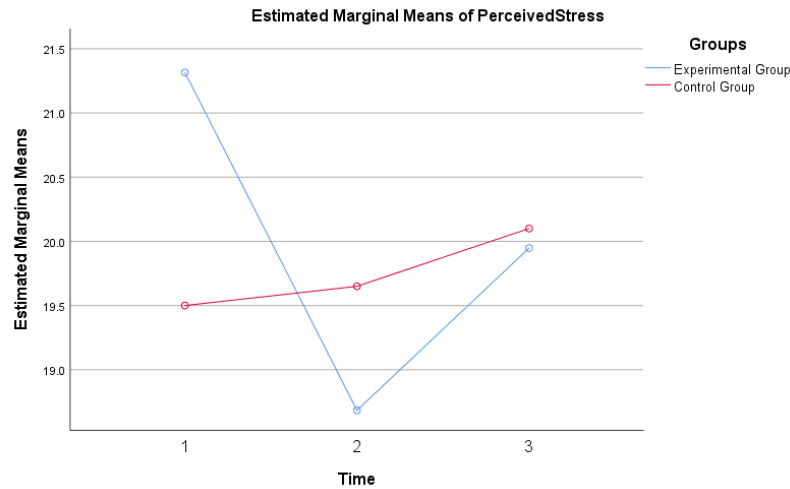
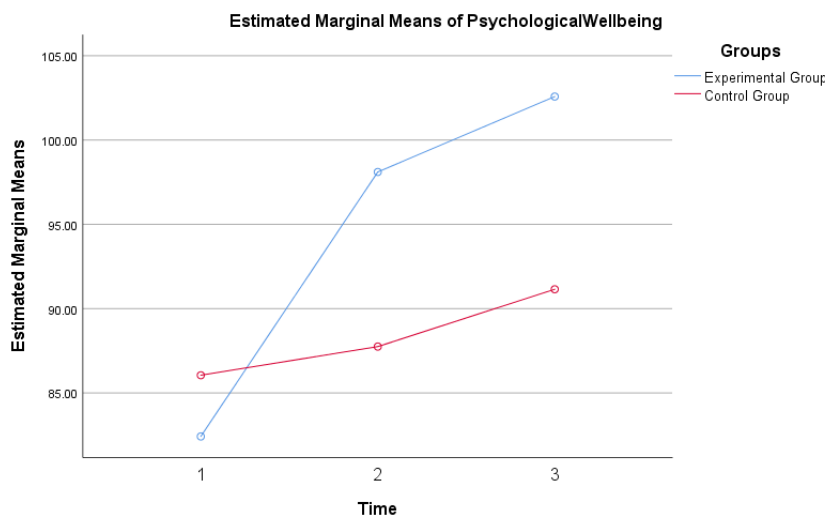


Figure 3
Perceived Stress levels of control and experimental groups at pretest, posttest, and follow-up



4.1 Discussion

The current study aimed to investigate the effects of reflective writing intervention on higher education students’ self-efficacy, perceived stress levels, and psychological well-being. Perceived stress levels dropped significantly in experimental group after reflective writing intervention (T1;n=19, $M=21.32$, $SD=5.11$, T2;n=19, $M=18.68$, $SD=4.49$) while self-efficacy perception (T1;n=19, $M=29.79$, $SD=3.98$, T2; n=19, $M=32.79$, $SD=3.91$) enhanced, same findings are for psychological well-being (T1; n=19, $M=82.42$, $SD=6.95$, T2; n=19, $M=98.10$, $SD=6.14$). These effects prolonged till follow-up significantly for self-efficacy (T3; n=19, $M=34.11$, $SD=3.19$) and psychological well-being (T3; n=19, $M=102.58$, $SD=6.34$). Perceived stress at follow-up (n=19, $M=19.95$, $SD=3.85$) is not significantly different from control group participants’ perceived stress levels (n=20, $M=20.10$, $SD=3.65$). The reason, in my opinion, is forthcoming final-term exams and thesis submission deadlines. The students, however, show a relatively stable perceived self-efficacy at follow-up which is why psychological well-being increased significantly (Klainin-Yobas et al., 2016; Priesack & Alcock, 2015; Taylor & Reyes, 2012). The results for the

control group represent that a slight increase in self-efficacy and well-being happened in them as well but not significant enough to deny the effectiveness of reflective writing practice influence in the experimental group. Results from the present experimental study reveal consistent patterns as reported by earlier researchers like Esposito et al. (2020) and Katajavuori et al. (2023).

5 Conclusion and Recommendations

This experimental research has provided evidence for the effectiveness of engaging students in reflective writing practices daily. Based on the study findings it is concluded that reflecting writing practice is excellent in enhancing the self-efficacy of students. Further, it diminishes stress levels and improves psychological well-being concurrently. Practicing reflective writing is a good choice as a self-help strategy to manage stress and learn through experience.

The study was carried out with female students; therefore, findings can be generalized only to the female sample: which becomes a major limitation of this study. Therefore, it is recommended to research a representative sample including both genders from diverse cultures. The intervention used in the current study was implied without cultural adaptation, so it will be appropriate if the intervention is culturally adapted before being used on the sample. There is a chance of self-report biases in the data collection, therefore a careful objective measurement of variables should be carried out to obtain a valid data collection.

The findings of current research have valuable implications for educationists, counselors, parents, and clinicians, suggesting including reflective writing exercises in academic curricula, at home, and during management plans. This technique is helpful because of its self-administrative nature and the low resource required to practice it. Individuals from young adults to old age who can write and reflect on their challenging experiences can benefit from this. It provides insight into the experiences and situations so that one can improve one's dealing and engagement with stressful tasks, eliminating avoidance patterns of behavior, and eventually resulting in better performances and growth.

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