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The Efficacy of Psychological Capital Intervention (PCI) on Mental Health and Subjective Well-being in Adolescent Girls

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Abstract

Aim: The purpose of this study is to explore whether training psychological capital is effective on mental health and subjective well-being in adolescence. **Method:** A quasi-experimental design was used with pre-test and post-test data evaluations, comparing an experimental group to a control group. In this study, the statistical population included adolescent girls with problematic mental health (age 13–15) referred to the Arian psychological clinic from April to June 2021 in Borujerd, Iran. The study included twenty-three adolescents selected through a purposive sampling method and randomly divided into two groups, experimental (n=12) and control (n=11). To collect data, mental health and subjective well-being questionnaires were administered. For the experimental group, Psychological capital intervention (Luthans, Youssef, &Avolio, 2007) was administered in ten sessions of 90-minute every two weeks while the control group received no treatment. MANOVA in SPSS software version 23 was used for data analysis. **Finding:** Results suggest that the Psychological Capital intervention had positive effects on mental health and subjective well-being in adolescent girls with problematic mental health. **Result:** This study reveals that Psychological Capital intervention is effective for improving mental health and subjective well-being. This study provides encouraging new evidence for the efficacy of a psychological capital intervention.

Keywords: Psychological Capital Intervention (PCI), Mental health, Subjective well-being, Adolescence .

Introduction

In the modern world, children and adolescents are affected by mental disorders at a rate of 10-20%, making them among the most prevalent and debilitating health conditions. A study of epidemiologic data indicates that approximately half of all mental health problems occur before the age of 14. (Finch, Farrell, & Waters, 2020).Their psychological development and mental health have been the focus of domestic researchers' attention. Several studies reported that these children experience psychological adjustment problems including loneliness (Hu, Lu, & Huang, 2014).), low self-esteem (Liang, Xiao, & Yang, 2018), depression, and anxiety symptoms (Wang et al., 2015), risk behaviors, and poor school performance and early dropout (Fu, Bo, Xue, and Yuan, 2017). An extensive survey of children and teens' mental health and educational outcomes found that students with mental disorders performed worse on national standardized assessments such as literacy and numeracy had lower school connectedness and engagement, and had higher rates of school absenteeism (Finch et al., 2020).

Positive psychologists suggest that examining well-being and flourishing are important in understanding adaptive behavior and potential growth in challenging circumstances (Seligman, 2011). In terms of psychosocial functioning, well-being is defined as being in a dynamic state of optimal functioning across multiple psychosocial realms" (Butler & Kern, 2016). Seligman (2011) explained the definition of well-being in terms of not only the absence of mental illness but also the presence of five pillars known as PERMA (Seligman, 2011). PERMA model research indicates that all five pillars of well-being have positive effects on students, including improved college life adjustment, achievement, and overall life satisfaction (Butler & Kern, 2016; Tansey et al., 2018). The subjective well-being (SWB) concept includes evaluating one's emotions in response to events and recognizing one's feelings of fulfillment and satisfaction. Research on individual subjective experiences has historically been based on hedonistic thinking, which has influenced well-being and thinking (Santisi, Lodi, Magnano, Zarbo, &Zammitti, 2020).

It continues to be a challenge for clinicians, researchers, educators, and policymakers to identify mechanisms that might buffer mental health problems and promote well-being in young people despite this directive. Among the psychological resources that have been found to significantly influence mental health, occupational performance, and well-being outcomes for adults is psychological capital (PsyCap) (Finch et al., 2020). Literature has documented Psychological Capital's relative impact on distinguishing positive outcomes. Psychological Capital (PsyCap) is a recognized and well-investigated set of psychological resources comprised of self-efficacy, optimism, hope, and resilience, and it has been empirically shown to be a good predictor of many important positive attitudes and behaviors, such as psychological well-being, job performance, and goal achievement (Salanova, & Ortega-Maldonado, 2019). Only a few empirical studies have demonstrated the effectiveness and benefits of psychological capital interventions at work (Alipour, SaramiForushani, Agha Alikhani, &Akhundi, 2013); Georgiou, Nikolaou, Turn, 2021), improve mental health outcomes in homeless female youth (Rew, Powell, Brown, Becker, &Slesnick, 2017).

Da, He, & Zhang (2020) indicate that the intervention improves psychological capital (PsyCap), increases job satisfaction, and reduces turnover intention. Georgiou et al. (2021). demonstrated that those who received the PsyCap training (treatment group) demonstrated higher levels of job search behavior and obtained employment at a higher rate, 3 months following the intervention, compared to the control group. The important role of PsyCap in pursuing employment as well as the practical implications of developing the positive psychological resource of PsyCap is discussed (Georgiou et al.,2021). As a result of a PsyCap intervention, PsyCap increased while cynicism and unsafe behavior decreased. (Stratman, & Youssef-Morgan, 2019).The above factors suggest that early-onset mental health problems and well-being issues are often indicators of the need for early detection and intervention. This study aims to demonstrate whether training psychological capital can have positive effects on mental health and subjective well-being during adolescence.

Methods

A quasi-experimental design was used with pre-test and post-test data evaluations, comparing an experimental group to a control group. In this study, the statistical population included 23 adolescent girls with problematic mental health (age 13–15) referred to the Arian psychological clinic from April to June 2021 in Borujerd, Iran. Samples were selected based on previous studies (Alipour et al., 2013). Researchers selected study participants using a purposive sampling method and divided them into two groups (experimental participants: 12 and control participants: 11). The study was open to all who met the following inclusion criteria: 13–15 years old; absence of comorbid health conditions, no substance use, and no behavioral problems. Those eligible to participate in this study are problematic mental health adolescents who were selected by (DASS-21), who have signed a written research consent, and who have both parents. The exclusion criteria include non-consent, incomplete questionnaires, and the absence of two intervention sessions. As a pre-test, the questionnaires (Depression Anxiety Stress Scales (DASS-21) and subjective well-being (SWB scale) were applied. To do this protocol, foremost, researchers referred to the Arian psychological clinic, then explained the aim of the study to the staff and the participants, and their parents. Of them, twenty-three adolescent girls with problematic mental health were selected based on criteria. The first author implemented Psychological Capital Intervention (PCI) for ten sessions of 60-minute each week. Its goal is to improve mental health, especially under stressful conditions, and, well-being (Luthans, Youssef, &Avolio, 2007, Table 1). After completing Psychological Capital Intervention (PCI) in the intervention group, questionnaires as a post-test were used again to both groups (intervention and control) and analyzed using SPSS23. To evaluate the effectiveness of Psychological Capital Intervention (PCI) on mental health and subjective well-being in adolescent girls, a multivariate analysis of covariance was used. The Kolmogorov–Smirnov test was used to assess the normality of the distribution of scores. Moreover, Levene's test was used to assess the homogeneity of variance.

Instrument

Depression Anxiety Stress Scales (DASS-21): Mental health outcomes of the study, namely depression, were assessed using the Depression subscale of the Depression, Anxiety, Stress Scale (Lovibond&Lovibond, 1995). Persian version of Depression Anxiety Stress Scales (DASS-21) was used. The items of the DASS-21 refer to the past week. Each item rated on a 4 point Likert scale from 0 which means "did not apply to me at all" to 3 "applied to me very much or most of the time". For each scale, the score can range from 0 to 21(Lovibond&Lovibond, 1995). The greater the score, the more severe the depression, anxiety, and stress. results also supported the reliability and validity (convergent validity and discriminant validity) of the three scales of the DASS21. Internal consistency of items was calculated, using Cronbach's alpha coefficient. For the total score of DASS21, the Cronbach alpha was 0.94. The Cronbach alpha for Depression, Anxiety, and Stress scales were 0.85, 0.85, and 0.87, respectively (Asghari, Saed, &Dibajnia, 2008).Internal consistency of Depression Anxiety Stress Scales in this study was calculated, using Cronbach's alpha coefficient 0.77.

Student Subjective Well-being Questionnaire (SSWQ): This questionnaire was developed by Renshaw et al. (2014). The questionnaire has 17 items that measure subjective well-being as four-dimensional instruments. These factors included communication with the school, enjoyment of learning, educational goals, and academic effectiveness. This instrument uses a four-point Likert scale (1 = almost never to 0 = almost always). Based on Cronbach's alpha method, the instrument's coefficient is 71.4 (Renshaw et al., 2410.) In the present study, the reliability of the questionnaire tested by using Cronbach's alpha was 61.5.

Sessions	Table 1 - Contents of PsyCap Protocol Sessions(Luthans, Youssef, &Avolio, 2007).
Session 1	Provide definitions of hope and despair and characteristics of hopeful people provide definitions of concepts such as optimism, pessimism, real optimism, and unrealistic optimism and distinguish between them. Provide definitions of the concept of self-efficacy and discuss the characteristics of self-employed people. Resilience and discussion about the characteristics of resilient and resilient people
Session 2	Assessing the level of hope and satisfaction with the lives of participants, and motivating familiarity with the concept of learned helplessness and its role in optimism and pessimism. Discuss the role of learned helplessness in reducing self-efficacy, providing definitions of the concept of stubbornness and introducing its components (commitment, challenge).
Session 3	Awareness of participants about the role of goals in creating and increasing hope. Familiarize participants with the process documents and the concept of a place of control. Examine the relationship between motivation, will, and self-confidence, self-efficacy and use feedback techniques to focus on the commitment component and use techniques to improve.
Session 4	Familiarity with participants with how to achieve clear and achievable goals Familiarity of members with internal, external, general, specific, stable, and unstable documents and the role of each in optimism. Review and discuss how to increase confidence and self-efficacy and use the technique. Positive Feedback Focusing on the challenge component, how to turn problems into challenges, and increasing the willingness to face them.

Session 5	Teaching how to divide a large goal into smaller goals to increase the likelihood of achieving them. Familiarization of members with the role of documents in optimism.
Session 6	Familiarize members about how to formulate clear and objective goals, and teach them how to create and expand positive internal documents.
Session 7	Familiarize members with the role of setting daily goals in achieving big goals and how to do it. Use the technique of analyzing unpleasant events to be more unpleasant ones to raise the level of optimism. Direct or problem-oriented and encourage members to use more of these strategies.
Session 8	Familiarize members with how to use multiple avenues to achieve the goal of using the technique of analyzing unpleasant events. Determine the positive consequences of these events to raise the level of optimism about inviting a succession.
Session 9	Familiarize members with how to turn barriers into challenges to achieve the goals of focusing on individual and environmental talents and abilities to increase the level of optimism. Using direct reinforcement and reinforcing succession by discussing past successes to increase role-playing self-efficacy. Controlling stubbornness and using positive self-talk techniques to increase endurance levels.
Session 10	Review lessons learned from previous sessions and practical training to increase the level of hope.

Results

Participants' ages ranged from 13 to 15 years in experimental and control groups(Mage = 12.14, SD = 1.20), (Mage= 12.37; SD = 1.17) showed respectively.

Table 2:Mean and standard deviation of mental health and subjective well-being of adolescent girls in experimental and control groups, separately in pre-test-post-test **stages**

Groups	**Variables**	**Pre-test**		**Post-test**	
		Mean	Std. Deviation	Mean	Std. Deviation
Experimental	**Mental health**	31.53	5.57	39.29	5.84
	Subjective well-being	20.13	5.33	28.46	2.92
Control	**Mental health**	32.46	3.04	33.46	5.23
	Subjective well-being	20.66	2.02	22.33	2.19

As shown in Table 2, the mean ± standard deviation of mental health scores showed for the experimental and control groups in the pre-test (31.53±5.57(, (32.46±5.33) and in the post-test, (39.29± 5.84), (46.33±5.23) respectively. Also, the mean ± standard deviation of subjective well-being scores was shown for the experimental and control groups in the pre-test (20.13±3.04), (20.66±2.02) and the post-test, (46.28 ± 2.92), (22.33±2.19) respectively.

A significant level of linearity between the pre-test and the post-test mental health of girls was r = 0.65 and subjective well-being was r = 0.74 both correlation coefficients were significant at the level of p <0.05. According to the obtained data, the assumption of linearity is established for both variables of girls' mental health and subject well-being.

Table 3: Results of Levene's test of homogeneity of variance

Dependent Variable	Df1	Df2	F	P-value
Mental health	1	21	1.43	0.777
Subjective well-being	1	21	0.05	0.566

As illustrated in Table 3, in both the mental health and the subjective well-beingvariables, Levene's test are insignificant (F1,21 = 1.43, P = 0.24), (F1,21 = 0.05, P = 0.82), respectively. Therefore, the assumption of homogeneity of variances is confirmed.

Table 4: Results of Kolmogorov–Smirnov 's test of normality of variables

Dependent Variable	Kolmogorov–Smirnov 's test	P-value
Mental health	0.10	0.21
Subjective well-being	0.07	0.29

As can be seen in Table 4, the significance level for Kolmogorov–Smirnov's test is greater than 0.05, which supports the assumption that the distribution of variables is normal.

Table 5: Results of multivariate analysis of covariance on variables

Test Statistic	Value	df	df error	P-value	Effect size	Eta
Pillai's Trace	0.852	2	25	0.001	0.85	1
Wilks' Lambda	0.148	2	25	0.001	0.85	1
Hotelling's Trace	5.74	2	25	0.001	0.85	1
Roy's Largest Root	5.74	2	25	0.001	0.85	1

In Table 5, it is shown that the experimental and control groups have significant differences based on the dependent variables at the level of P≤ 0.001. So, it is possible to conclude that at least one of the dependent variables (mental health and subjective well-being) differs significantly between the two groups.

***Table 6*:**Results of analysis of covariance in the MANCOVA context

Dependent Variable	Source	Type III Sum of Squares	df	Mean Square	F	P-value	Eta
Mental health	group	1927.09	1	1927.09	18.88	0.001	0.777
Subjective well-being	group	7771..12	1	7771..12	16.36	0.001	0.566

In Table 6, the F statistic is significant for mental health(P <0.001, F = 18.88) and subjective well-being(P<0.001, F= 16.36). These results indicate that there are significant differences between the groups. As a result of these findings, Psychological Capital Intervention (PCI) approach is effective and increasesmental healthand subjective well-beingin adolescents. Moreover, the largest effect size is determined by the mental health variable (0.777), which indicates that 78% of the variance between the experimental and control groups in the levels of mental health variability is the result of the independent variable (Psychological capital approach). So, the lowest effect is reported to be related to adolescent girls' subjective well-being (0.566), indicating that 57% of the total variance is attributed to an independent variable (psychological capital approach) in the subjective well-being variable of adolescent girls.

Discussion

The main aim of this study was to find whether training psychological capital can have positive effects on mental health and subjective well-being during adolescence. Overall, the results agreed with the main objective of the study and confirmed the proposed question. Participants demonstrated significant increases in mental health and subjective well-being after finishing the psychological capital intervention.

Regarding the aim of this study, in terms of the study's objective, many studies have demonstrated that psychological capital has a positive effect on mental health. As emphasized by Luthans, Youssef, Sweetman, & Harms (2013), psychological capital turns out to be a good predictor of satisfaction with important life domains such as work, relationships, and health (Finch et al., 2020; Salanova, & Ortega-Maldonado, 2019; Stratman, & Youssef-Morgan, 2019). Moreover, Clinical psychology researchers emphasize PsyCap-based interventions for coping strategies and enhanced functioning (Salanova and Ortega-Maldonado, 2019). Most researches have shown the higher levels of psychological capital correlate positively with better performance outcomes and more commitment and well-being, and negatively with cynicism, turnover intention, and stress

and anxiety. Furthermore, it seems that psychological capital can also have effects on some memory preservation and attention processes that have a long-term impact on well-being (Da, He, & Zhang, 2020).

Datu, & Valdez, (2019). showed that Psychological capital (PsyCap) has been associated with key organizational and well-being outcomes. A study conducted by Zhang, Li, Ma, Hu, & Jiang (2014) showed that PsyCap and job performance of the intervention group significantly increased after the program, whereas they remained unchanged in the control group. Analyses of follow-up retest scores taken 3 months after the program was conducted showed that overall PsyCap, hope, and job performance were significantly higher in the intervention group than in the pretest group. Furthermore, the program control group's PsyCap and job performance retest scores were significantly lower than their pretest scores. Selvaraj, P. R., & Bhat, C. S. (2018) demonstrated that based on the predictive nature of PsyCap, mental health professionals may engage more in creating programs incorporating PsyCap development intervention for college students.Xiong, JHai, Wang, Li, & Jiang. (2020) demonstrated that psychological capital has a compensatory effect on youth adjustment. Furthermore, a cost of resilience was observed in high-school students with high psychological capital, who showed compromised life satisfaction in conjunction with reduced anxiety/depression under circumstances of severe adversity. Psychological capital also buffered the impact of cumulative risk on anxiety/depressive symptoms in middle-school students.

According to the research literature, the intervention approach to psychological capital has not been measured so far. Therefore, it is possible to refer to studies that have demonstrated the relationship between psychological capital and mental health. According to Mbatha (2016), nurses in public health hospitals and clinics have a high level of psychological capital. Psychological capital was found to have a significant relationship with performance, as well as subjective well-being. Furthermore, results revealed that PsyCap significantly predicted subjective well-being and performance. Higher PsyCap levels are associated with higher levels of well-being, engagement, and organizational commitment (Sabot, & Hicks, 2020; Luthans and Youssef-Morgan, 2017). The psychological capital construct, which comprises hope, efficacy, resilience, and optimism (HERO), is associated with increased wellbeing and a reduction in mental health symptoms in adult populations. New studies on PsyCap have also shown a preliminary, positive correlation between PsyCap and student wellbeing (Finch et al., 2020). Multiple linear regression analyses indicated that PsyCap predicted well-being. The PsyCap dimensions of optimism, self-efficacy optimism, hope, and resiliency have been significant predictors of well-being (Prasath, Mather, Bhat, & James, 2021).

To explain these findings, PsyCap can trigger positive mental well-being through such mechanisms as generating positive cognitive and affective appraisals, facilitating retentions of positive memories, exerting a broadening effect when faced with setbacks, and reducing negativity bias. Of note is that PsyCap can be nurtured and enhanced through social mechanisms including social support, constructive relationships, and close

contact (Luthans& Youssef-Morgan, 2017; Huang, & Zhang, 2021). In a typical PCI, participants set clearly defined goals and sub-goals. The goals should be measurable, internalized, challenging, and framed as approach-oriented, rather than avoidance-oriented. Participants work through a process of identifying multiple pathways to accomplish their goals, addressing potential obstacles, listing available resources, and mentally rehearsing their journey of goal pursuit. These exercises build the participant's hope, self-efficacy, resilience, and optimism (Carter, & Youssef-Morgan, 2022).

PsyCap is positioned as an intermediate "state-like" position on the trait-state continuum by Luthans, Youssef, &Avolio(2007). A trait (e.g., personality, intelligence) is a stable and difficult construct to change, while a state (e.g., emotions) is a volatile and momentary construct. PsyCap, a state-like resource created through short interventions, has a moderately sustainable benefit (Luthans& Youssef, 2007; Luthans& Youssef-Morgan, 2017). The durability of PsyCap's development effects has been demonstrated repeatedly, including by Dello Russo and Stoykova (2015), which further supports its state-like nature. The notion was also supported by Corbu et al.'s (2021) recent study, which found that psychological capital increased significantly following a micro-coaching intervention, and was sustained for four months following.

Meanwhile, the following limitations in this study should be considered: Our study sample was small. Future research should attempt to enlarge the sample size and balance the gender distribution. Due to the exclusiveness of the Arian psychological clinic in Semnan, the intervention effect may have been contaminated, and the effect of the PsyCap intervention may have been less generalizable. Furthermore, our use of self-reporting methods to measure all variables may have led to common method bias. The lack of follow-up is another limitation for verifying the duration effect of the intervention. Therefore, future research on the PsyCap intervention should consider testing the duration effect through follow-ups, such as one month or three months.

Conclusion

This study reveals that PsyCap intervention is effective at improving mental health and subjective well-being. This study provides encouraging new evidence for the efficacy of psychological capital (PsyCap). Moreover, it tests this notion in the context of positive psychology and PsyCap, which adds to the body of knowledge in these emerging fields of study. Evidence is emerging for the efficacy of positive interventions in general.

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