

The effect of psychological capital components training on grit among medical students suffering from burnout with emphasis on the indirect effect of flow: A multiple indicators, multiple causes model

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ABSTRACT

The main objective of this study was to investigate the effect of psychological capital components training on grit among medical students suffering from burnout using the multiple indicators, multiple causes (MIMIC) model. The method used in this study was a quasi-experimental method with a pretest-posttest design on control and follow-up groups. The statistical population in this study consisted of female students of the School of Medicine and Dentistry, Jundishapur University of Medical Sciences, Ahvaz in the academic year of 2019-2020 educating in General Medicine. 40 students were qualified to participate in the study. The sample individuals were selected using convenience sampling and were classified randomly and based on inclusion criteria in the psychological capital training and control groups. The experimental group received ten two-hour training sessions, and the control group received no intervention. The research instruments included Duckworth Grit Scale (2007), McGeown's Mental Toughness Scale for Adolescents (2016), Rheinberg's Flow-Short-Scale (FSS) (2003), and Academic Buoyancy Scale made by Dehghanizadeh and Hossein Chari (2016). For data analysis, the multi-indicator multi-causes (MIMIC) model was used in two steps based on the study and measurement type. The results obtained from this study include the direct effects of psychological capital training on grit ($p < 0.01$), and flow ($P < 0.01$). The indirect effect of psychological capital training on grit ($P < 0.01$) was also accepted. Finally, it could be mentioned that the therapists can pave the way to promote grit with a key role in the achievement of goals using psychological capital training.

Keywords: psychological capital, grit, flow, burnout, medical students

Introduction

Burnout symptoms are psychological states created as a result of long-term exposure to stressors (Magnavita and Chiorri, 2018). Various burnout models analyzed recently by Chirico (2016) emphasize the issue that burnout symptoms can be created as a result of an imbalance between the environmental desire and the available resources (Chirico, 2016). The scholars have made a consensus that individuals with burnout symptoms usually experience a high level of emotional fatigue and lack of active participation in many fields (Demerouti and Bakker, 2008). Compared to other academic fields, medical students are always exposed to psychological stressors during their academic and non-academic life. The stressors act as a potential factor to create burnout symptoms (Kelly, Soles, Garcia, and Kunda, 2020). Various exams during academic education time, facing different patients, various academic units needing hard study, and many other factors are the main stressors the medical students encounter (Costa, Costa, Santos, Santos, Melo, and Andrade, 2012). Each stressor can affect the mental health of students in some way (Greenberg, Docherty, Gnanapragasam, and Wessely, 2020). The review of the literature shows that some students use their abilities properly while facing stressful factors. These students overcome the challenges and problems and gain success in presence of the limitations they face. According to academic literature, these students have a trait called grit (Dam, Perera, Jones, Haughey, and Gaeta, 2018).

The background of grit theory belongs to the professors, who believed that today's students can't achieve the desired consequence, because they do not persist in work and do not have the required perseverance. These professors used to consider academic challenges as a kind of practice to encounter the next challenges of life. Hence, they believed that various educational programs should be considered for the students so that they can control different academic situations at the first, and the next challenges of life after that by their perseverance and passion. They imagined that

growing grit is some kind of learning, and every student has an internal motivation to change and grow the grit in addition to genetic (Zentner, Covit & Guevara, 2018).

Grit has been defined differently in various academic references. In this case, Martin (2016) believes that the structure has been defined in 47 different forms. For example, Duckworth (2006) has defined the structure as the perseverance and passion to achieve long-term goals (Duckworth, 2006). Elsewhere, Hoerr (2013) has defined grit as an essential skill, which should be trained for the learner to have a more successful life. In the present study, the definition presented by Duckworth has been applied. Duckworth believes that grit includes the preservation of passion and perseverance to achieve the projects, which may last one month or more (Duckworth, 2009). Concerning Duckworth, the structure includes two subscales including perseverance and passion. Perseverance refers to the effort to do things in presence of various problems and difficulties. Passion refers to the motivation for lack of changing the goals and showing interest repetitively. The two components are dually correlated and affect the attitude and behavior, and help individuals to achieve long-term goals (Duckworth et al., 2007).

The review of the literature shows that grit is correlated to happiness (Singh and Jha, 2008), life satisfaction and belonging (Bowman, Hill, Denson, and Bronkema, 2015), commitment to the purpose (Hill, Burrow, and Bronk, 2014), psychological wellbeing (Goodman, Disabato, Kashdan, and Kauffman, 2017), personality characteristics (Muenks, 2017), self-esteem (Weisskirch, 2016), engagement and life satisfaction (Vonculin, Tsukayama, and Duckworth, 2014), emotional stability during negative and stressful events (Blalock, Young, and Kleiman, 2015), and sense of meaning in life (Vonculin et al., 2014). Also, the structure is negatively correlated to perceived academic failure and stress (Lee, 2017). Therefore, it could be found that the promotion of grit structure comes with positive academic and non-academic consequences, which show the significance of grit.

Psychological capital training is a training program affecting different psychological variables, which can affect the promotion of grit in students (Luthans, Avey, Avolio, and Peterson, 2010). In this educational program, no matter who you are, but also the main focus is on this issue that who you want to be. In this field, Luthans (2002) believes that as the psychological capital is state type and measurable, the structure can be promoted by training. Luthans has introduced self-efficacy, hope, resilience, and optimism as the four main pillars of psychological capital (Luthans, Youssef, and Avolio, 2006).

In the theoretical domain, the effectiveness of four main pillars of psychological capital (self-efficacy, hope, resilience, and optimism) has been confirmed. In the field of self-efficacy, in the self-efficacy theory, Albert Bandura (1997) has provided various strategies to enhance self-efficacy, the effectiveness of which has been examined and confirmed (Bandura, 2000). Snyder (2000) has presented the hope theory and has emphasized the effectiveness of training the structure of hope, and its promotability (Snyder, 2000). Carver and Scheier (2005) have emphasized optimism in their theory, and Seligman (1998) has emphasized the role of hope in a variety of psychological variables by providing the learned helplessness concept (Seligman, 2000). Masten and reed (2002) have presented strategies to promote resilience and the effects of the concept on other structures. Also, some evidence showed that a combination of the four mentioned components can create a higher-level structure, which can be developed (Luthans, Avey, and Patera, 2008). In this field, Avey, Wernsing, and Luthans (2008) believe that the state-type nature of psychological capital has talented the structure for educational programs, in which the main purpose is the promotion of positive psychological variables (Avey, Wernsing, and Luthans, 2008).

Flow is one of the relevant variables of positive psychology. The results of relevant studies have shown that the concept can predict the successful academic performance (Putwain and Daly, 2013). In other words, the emotional health of the students can be significantly helpful (Miller, Connolly, and Maguire, 2013), and this can pave the way for the promotion of grit. Flow is a term for a psychological state, which can be specified with active participation in activities, perfect consideration of activities, and rapid time pass. In this field, Seligman (2011) has mentioned that active participation always needs entering to flow state (Mei Ju, Show, Ting, and Tang, 2016). Complete absorption in what we do (flow) can bring grit, because grit is nothing more than long-term goals follow up, and flow is a kind of fuel and energy to follow the goals in the long-term (Nakamura and Csikszentmihalyi, 2014). According to the importance of grit in the academic and non-academic life of students, and due to the vulnerability of medical students during education, the main purpose of this study is to investigate the effect of psychological capital component training on the flow and grit of medical students suffering from burnout using multi-indicator multi-causes (MIMIC) model. This study has emphasized the mediating role of flow.

Method

In this study, the multiple-indicator multiple-causes (MIMIC) model was used in an experimental investigation. In this method, educational intervention (psychological capital training) was applied to the experimental group, and its impact was analyzed on the variables including mental toughness, flow, academic buoyancy, and grit. The statistical population in this study consisted of all female students of the School of Medicine and Dentistry, Jundishapur University of Medical Sciences, Ahvaz during the academic year of 2019-2020 educating in General Medicine. Samples were selected using convenience sampling. To this end, the burnout scale was presented to students, and the results were then analyzed (screening). In the next step, 40 students, who had gained the higher scores on the burnout scale, were selected. Finally, the students were placed in two experimental and control groups randomly (with 20 students per group). The inclusion criteria of the study were: being a student in study time, consent to participate in the study, filling out the conscious consent letter, having no acute psychological disorder, and lack of receiving individual consultation out of training sessions. The exclusion criteria were: taking psychiatric drugs, history of psychiatric hospitals, history of attending other training sessions over the six months, being absent for more than two sessions, and taking any kind of sedative, alcohol, and addictive drugs. Table 1 shows the summary of content presented in sessions.

Table 1. Summary of the psychological capital interventions (source: Luthans et al., 2010; Trans. Jamshidian and Foruhar, 2013)

Session	Subscale	Headings
1	Hope	Presenting definitions for hope and despair, and characteristics of hopeful individuals
	Optimism	Presenting definitions for concepts such as optimism, pessimism, real and unreal optimism, and their difference
	Self-efficacy	Presenting definitions for concepts of self-efficacy, and discussing characteristics of self-efficient individuals
	Resilience	Presenting definitions for resilience, and discussing characteristics of resilient and resistant individuals
2	Hope	Analysis of the level of hope and life satisfaction of participants and motivating them
	Optimism	Familiarity with the concept of learned helplessness, and its function in optimism and pessimism
	Self-efficacy	Discussing the role of learned helplessness in reducing the self-efficacy
	Resilience	Presenting definitions of toughness and introducing its components (commitment, challenge, and control)
3	Hope	Informing the participants about the role of goals in creating and increasing the hope
	Optimism	Training the process of documents and the concept of locus of control
	Self-efficacy	Analysis of the relationship of motivation, will, and self-confidence with self-efficacy and using the feedback technique
	Resilience	Emphasizing the component of commitment, and using techniques to promote it
4	Hope	Training the ways to achieve explicit and accessible goals

	Optimism	Training the internal, external, total, special, stable, and unstable documents, and their roles in optimism
	Self-efficacy	Discussing the way of enhancing self-confidence and self-efficacy and using positive feedback technique
	Resilience	Emphasizing the component of the challenge, how to change the problems into challenges, and increasing the will of facing them
5	Hope	Training how to divide a big goal into smaller ones to enhance the probability of realization of goals
	Optimism	Training the role of documents in optimism
	Self-efficacy	Using mental imaging technique to create positive experiences and empowering them to enhance self-efficacy
	Resilience	Emphasizing the component of control and discussing how to enhance the sense of controlling life
6	Hope	Informing them about the formulation of explicit and objective goals
	Optimism	Training how to create and expand the internal positive documents
	Self-efficacy	Using substitution enhancement technique by providing international and regional samples of self-efficient individuals
	Resilience	Training the problem-oriented and emotion-oriented strategies, and their role in enhancing the resilience
7	Hope	Training the role of setting daily goals in the realization of long-term goals and how to do that
	Optimism	Using technique of analyzing unpleasant events to enhance optimism level
	Self-efficacy	Training the academic methods of problem-solving and their applied role in enhancing self-efficacy level
	Resilience	Training direct, or problem-oriented strategies and encouraging the members to use the strategies more than before
8	Hope	Training how to use various gates to achieve goals
	Optimism	Using technique of analyzing unpleasant events and determining the positive consequents of these events to enhance optimism level
	Self-efficacy	Inviting a successful person to use objective patterns to enhance self-efficacy
	Resilience	Introducing indirect or emotion-oriented strategies and using them if necessary and under stressful conditions
9	Hope	Training how to change the obstacles to challenges to achieve goals
	Optimism	Focusing on the individual and environmental talents and capabilities to enhance optimism level

	Self-efficacy	Using direct and substitution enhancement by discussing previous successes to enhance self-efficacy
	Resilience	Discussing the role of locus of control in toughness and using positive self-talk technique to enhance resilience level
10	Hope	Review of last sessions and practicing to enhance hope level
	Optimism	Review of last sessions and practicing to enhance optimism level
	Self-efficacy	Review of last sessions, and practicing to enhance self-efficacy level
	Resilience	Review of last sessions, and practices to enhance resilience level

Research instruments

Grit Scale: this scale contained 12 items, and was made by Duckworth et al., (2007). This scale includes two subscales of passion and perseverance. Items 2, 3, 5, 7, 8, and 11 were associated with the stability of passion, and items 1, 4, 6, 9, 10, and 12 were associated with perseverance. The responses were scored on a 5-point Likert scale from 5 (very similar) to 1 (not similar). The total score range of the scale is from 12 to 60. Those getting higher scores had higher grit levels. The reliability of the scale was obtained at 0.89. Also, Duckworth et al reported high construct validity for this scale (CFI=0.83, RMSEA=0.11). In Iranian samples, Cronbach's alpha was obtained equal to 0.85 for this scale (Mohagheghi and Ghasemi, 2016). Also, Sharifi et al., (2011) measured the validity and reliability of this scale using factor analysis and Cronbach's alpha. Before performing factor analysis, they reported the sampling qualification at 0.78 and the Bartlett test at 1.04. After rotation of factors, they achieved two components, which could determine 52% of the variance. They reported total internal consistency for this scale equal to 0.77 and obtained the coefficients for passion and perseverance equal to 0.67 and 0.80 (Sharifi, 2011). In this study, the internal consistency (Cronbach's alpha) was obtained at 0.64 and 0.85 respectively for pretest and posttest.

McGeown's Mental Toughness Scale: McGeown, Clair, and Putwain (2016) developed a scale called Mental Toughness Scale. Despite previous ones, this scale is specified to educational environments. The scale contains 18 items to measure components including commitment, challenge, self-belief, interpersonal confidence, control of life, and control of emotions. Each component contains 3 items, and some items are scored reversely. The responses in this scale are scored on a 4-point Likert scale from 4 (agree) to 1 (disagree). The total scoring range of this scale is from 18 to 72. On this scale, a higher score means a higher level of mental toughness. McGeown used exploratory and confirmatory factor analysis to confirm the construct validity of this scale. Also, they reported reliability of this scale equal to 0.70. In Iran, Tameh (2018) measured the validity and reliability of this scale using factor analysis. They confirmed the construct validity of the instrument and reported the internal consistency of the scale equal to 0.77 (Tameh, 2018). In this study, the internal consistency of this scale (Cronbach's alpha) was obtained at 0.79 and 0.88 respectively for pretest and posttest.

the Flow Scale: Rheinberg, Vollmeyer, and Engeser (2003) developed a scale called Flow-Short-Scale (FSS). The scale contains 10 items on two components including fluency of performance, and absorption by activity. The fluency of performance contains items 2, 4, 5, 7, 8, and 9, and absorption by activity contains items 1, 3, 6, and 10. The responses are scored based on a 7-point Likert scale from 7 (agree) to 1 (disagree). The total scoring range of this scale is from 10 to 70. Rheinberg et al reported the internal consistency of this scale at 0.94 and confirmed also its validity. In Iran, the scale was normalized by Hatefnia (2018). Hatefnia used factor analysis and confirmed the construct validity of the scale. Also, the internal consistency of this scale was reported as equal to 0.64. besides, internal consistency was obtained at 0.73 for fluency of performance and 0.58 for absorption by activity. In the present study, internal consistency of the scale (Cronbach's alpha) was obtained equal to 0.71 and 0.84 respectively in pretest and posttest.

Academic Buoyancy Scale: Dehghanizadeh and Hossein Chari (2016) provided a scale called the academic buoyancy scale. They used the Academic Buoyancy Scale made by Martin and marsh, which contained 4 items. To meet the defects of items, this scale was firstly tested on a group of high school students (30 males and 30 females) in Mehriz City. After this step, the final version was revised and included 9 items. Then, the said items were performed in another

study on a sample including 186 high school students, and the psychometric characteristics were measured. The results of the study reported Cronbach's alpha of 0.80 and retest coefficient of 0.73 for this scale. Also, the regression range of items was from 0.51 to 0.68. The results showed that the items have high internal consistency and stability. Besides, in addition to confirming the one-factor structure of the scale in the Iranian sample, the authors reported high construct validity of this scale (KMO=0.83, bartlett= 360.611, and $P<0.0001$). The responses were scored based on a 5-point Likert scale from 5 (agree) to 1 (disagree). The total scoring range of this scale was from 9 to 45. In the present study, the internal consistency (Cronbach's alpha) of this scale was obtained equal to 0.49 and 0.75 respectively in pretest and posttest.

Results

40 students participated in this study. The students were female and single, and the mean age range of the students was 22.4 years old. 17 students (42.5%) were educated in dentistry, and 23 students (57.5%) were studying General Medicine. Table 2 has presented the demographic information of participants.

Table 2. Demographic information

		Frequency	Percent			Frequency	Percent
Father's education	Below diploma	4	10.0	Mother's education	Below diploma	4	10.0
	Diploma	12	30.0		Diploma	21	52.5
	BA	17	42.5		BA	14	35.0
	MA and higher	7	17.5		MA and higher	1	2.5
Father's job	Employee	16	40.0	Mother's job	Employee	7	17.5
	Non-employee	16	40.0		Housewife	29	72.5
	Retired	8	20.0		Non-employee	4	10.0
Number of children	1-2	22	55.0	Order of birth of family members	1-2	32	80.0
	3-5	18	45.0		3-5	8	20.0

Table 3 presents the mean value and standard deviation of flow and grit among the students suffering from burnout separated for experimental and control groups, and in pretest and posttest steps.

Table 3. Mean and SD of mental toughness, flow, academic buoyancy, and grit in experimental and control groups in two measurement steps

Variable	Step	Group	Mean	SD	Variable	Step	Group	Mean	SD
Flow	Pretest	Control	35.75	5.91	Grit	Pretest	Control	29.42	4.56
		Experimental	35.85	8.70			Experimental	32.90	7.69
	Posttest	Control	36.94	6.93		Posttest	Control	27.82	5.39
		Experimental	55.40	7.73			Experimental	44.25	6.25

The results in Table 3 showed that the mean value of the experimental group in terms of flow and grit was improved in the posttest; although the mean value of the control group showed minor variances in both variables. Figure 1 illustrates the variance of mean values for the variables.

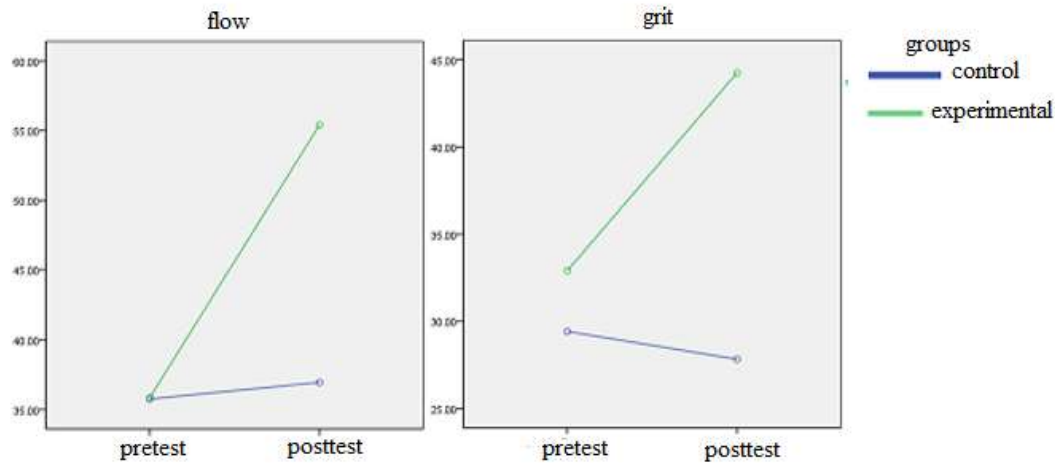


Figure 1. The variance of the mean value of flow and grit separated for experimental and control groups in two measurement steps

In the present study, the variables of flow and grit have been measured using an interval scale. Therefore, the presumption of variable measurement has been confirmed in form of an interval or relative scale. Also, the same subjects were placed in both groups, who were measured in two different conditions. The data obtained from the subjects were independent of each other, and all data were analyzed in terms of the presence of outliers. The results showed the presence of no outlier. This shows confirmation of other presumptions. Also, Levene's test was used to measure the homogeneity of variances of groups (control and experimental). To test the normality of distribution, the Kolmogorov-Smirnov test was used. Table 4 shows the results of these tests.

Table 4. The results of the K-S test and Levene's test

Variable	Step	Z value	Sig	F value	Sig
Flow	Pretest	0.56	0.90	2.62	0.11
	Posttest	0.53	0.93	0.001	0.97
Grit	Pretest	0.66	0.76	5.03	0.03
	Posttest	0.67	0.75	0.27	0.60

The results in Table 4 showed that the data distribution was normal, and homogeneity of variances was also confirmed in pretest and posttest. This is because; the results of the K-S test and Levene's test are insignificant in the majority of variables at the alpha level of 0.01. Also, the M-box test was used to test the homogeneity of covariances. The results ($F=2.40$, $M=12.27$) showed that the test is insignificant at the alpha level of 0.05. Therefore, it could be found that the homogeneity of covariances is provided.

In this study, the Multiple Indicators Multiple Causes (MIMIC) model was used in the frame of partial least squares (PLS) to answer the main research question: is the difference between flow and grit among medical students suffering from burnout because of training psychological capital components or not? This is because; MIMIC model enables using structural models in pilot projects, and the PLS method is not sensitive to sample size (Wong, 2010). Two models would be evaluated in the MIMIC model. The first model is called the measurement model, which measures the correlation between markers and latent variables. The structural model measures the correlation between latent

variables and observed variables. This characteristic of the MIMIC model to measure the effect of observed variables on latent variables enables using that in a pilot project (Schumacker & Lomax, 2016). In this study, flow and grit were considered as latent variables, and psychological capital training was considered as an observed variable. This is because; the subjects in both the experimental and control group are the same, and there is no error.

The measurement model test encompasses the validity and reliability analysis of latent variable markers of the research model. The logic of this study in the structural model is that the items should not be used in the rest of the analysis if the items are not reliable. Henseler, Hubona, and Ray (2018) believe that one of the factors confirming reliability in the PLS method can be the existence of factor loads (0.60), and the majority of latent variable markers. Also, Hair, Hult, Ringel, and Sarstedt (2017) believe that the average variance extracted (AVE) higher than 0.50, and the composite reliability of more than 0.70 shows the ideal reliability of latent variables. In this study, the subscales of every variable have been considered as markers of that structure. Table 5 shows the factor loads, composite reliability, and AVE of latent variables.

Table 5. Factor loadings, composite reliability, and AVE

Latent variable	Markers	Factor loading	Composite reliability	AVE	Cronbach's alpha
Flow	Fluency of performance	0.93	0.92	0.85	0.83
	Absorption by activity	0.90			
Grit	Fluency of performance	0.92	0.92	0.85	0.83
	Absorption by activity	0.92			

P<0.01**

Table 5 shows that composite reliability, AVE, Cronbach's alpha, and factor loadings of markers are in an acceptable range. This shows that the markers have been capable to measure latent variables reliably.

To measure the construct validity, convergent validity was used. The convergent validity shows that a structure is mostly correlated to its markers compared to other structures measuring the different concepts. To measure this index, Afari (2018) believes that by comparing the AVE of a structure with the correlation of that with other structures, convergent validity is realized in the case of high AVE. Table 6 shows the AVE and correlation of each structure with other ones (the values on the diameter of the correlation matrix are the AVE values).

Table 6. Correlation of structures and AVE

Structures	(1)	(2)
Flow (1)	0.92	
Grit (2)	0.78	0.92

The results in Table 6 showed that the convergent validity was realized. To measure the convergent validity, the criterion of Vinzi, Chin, Henseler, and Wang (2010) was used. They believed that if the difference between the min and max factor load of markers is limited, it is found that the convergent validity is realized. The convergent validity is confirmed based on the difference obtained at 0.03 for flow, and 0 for the grit.

Structural model test

After evaluation and validation of measurement model based on analysis of validity and reliability of latent variables, the structural model was tested, and the research question was answered. In this study, the Multiple Indicator Multiple Causes (MIMIC) model was tested in the frame of the PLS method. This approach emphasizes the variance explained, and the significance of path coefficients. Figure 2 shows direct path coefficients, their significance, and the variance explained value.

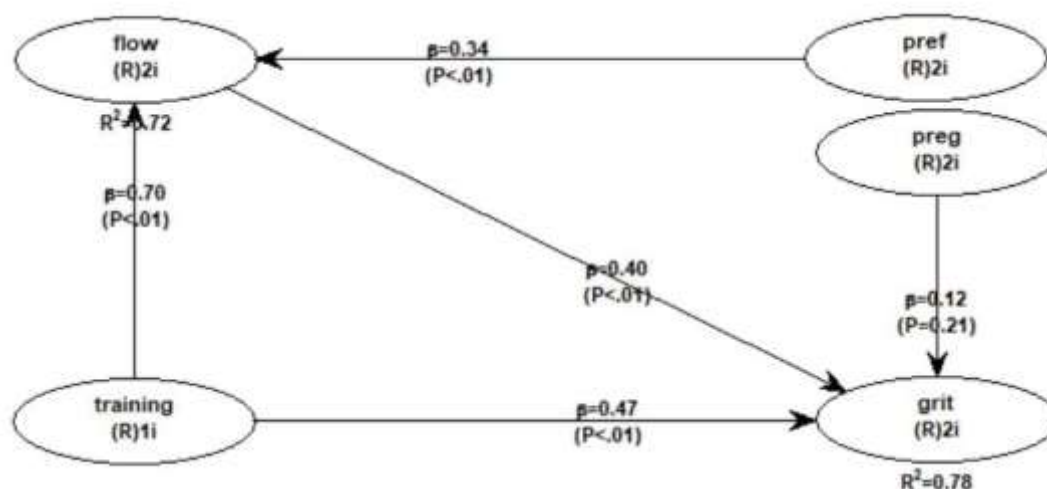


Figure 2. direct path coefficients, their significance, and the variance explained the value

As Figure 2 illustrates, the conceptual model could explain 0.78% of the variance of grit. In this model, psychological capital training has promoted flow significantly and has explained also 0.72% of its variance respectively. Table 7 shows the effect size, standard error, path coefficients, and significance level.

Table 7. Direct and indirect path coefficients, effect size, and significance level

Predicting variable	Criterion variable	Effect type	Path coefficient	Sig (p)	Std. E	Effect size
Psychological capital training	Flow	Direct	0.70	0.001	0.11	0.54
Psychological capital training	Grit	Direct	0.47	0.001	0.12	0.38
Psychological capital training	Grit	Indirect	0.27	0.004	0.13	0.33
Flow	Grit	Direct	0.40	0.002	0.12	0.52

According to the values in Table 7, all path coefficients are significant at the significance level of 0.01. The effect size shows that psychological capital training has had the most effect on flow, and could affect grit directly and indirectly.

The report of total goodness of fit indices in structural models using the PLS approach was not available for many years. However, the conditions have been provided for the scholars over the years, and some fit indices have been measured in WARP PLS software. In this study, nonlinear bivariate causality direction ratio (NLBCDR), R squared contribution ratio (PSCR), and Simpson's paradox ratio (SPR) were obtained equal to 1. In this field, Kock (2017) believes that the indices should be equal to 1 in the ideal model; although the values more than 0.7 are also acceptable. According to these indices, and significant path coefficients in Table 7 and Figure 2, it could be mentioned that the proposed model is fit based on experimental data.

Discussion and conclusion

Duckworth (2013) as the founder of the Theory of Grit believes that the structure can be trained to students. The students may have wrong beliefs and misunderstandings on the growth of abilities, which can affect their performance level. Duckworth believes that students may feel weakness and shortcomings in the field of problem-solving, and they leave the problem soon. He explains that they should learn skills to motivate them for problem-solving, and making them accept that people may be confused while learning things, skills, and new things, and this is natural in all people. Duckworth emphasizes that long-term perseverance should be regarded as a natural sign of learning, and it should not be considered a failure (Duckworth, Weir, Tsukayama, and Kwok, 2012).

According to the theory of grit, the present study was conducted to promote grit using psychological capital training with an emphasis on the mediating role of flow. The results showed that psychological capital training can promote grit directly ($\beta = 0.47$). this result is consistent with the findings of Luthans, Avey, Avolio, and Peterson (2010). In terms of this result, the findings of Luthans et al., (2004) showed that psychological capital is a combination of human resource capabilities, which refers to the growth of positive psychological states including self-efficacy, optimism, hope, and resilience (Luthans et al., 2004). In this definition, resilience refers to the ability to create positive consequences in presence of various problems (Windle, 2010). Self-efficacy refers to the beliefs of the individual in the abilities of self to create desirable consequences (Maddux, 2000). Hope refers to the perception of individuals of capabilities to set goals, using the approaches to achieve these goals, and preserving the motivation (Linley and Joseph, 2004). Finally, refers to the tendency to see the positive aspects of events and expecting positive consequences (Seligman, 1990). The definitions of the main elements of psychological capital show that training the structure can be widely applicable in the performance of students, and can bring grit. For example, the structure can promote innovation in the students, which is a requirement of grit (Maymand, Moghadam, and Farangi, 2016).

Also, this study showed that psychological capital training can promote the flow ($\beta = 0.70$). this result is consistent with the findings of Avey, Wernsing, and Luthans (2008). On this finding, it could be mentioned that psychological capital is a high-level positive psychological state in individuals, which can be mostly specified in the frame of self-efficacy, optimism, and self-monitoring, hope, resilience, and well-being. The structure has dynamic and situation-based nature and is not a constant feature in all situations (Cavus and Gokcen, 2015). As a result, the feature can promote the flow among students suffering from burnout, because the flow is just a mental state, in which individuals are sufficiently energetic and focused.

Also, the indirect effect of psychological capital training on grit by the mediation of flow was confirmed ($\beta = 0.27$). this result is consistent with the findings of Nakamura and Csikszentmihalyi (2014). On this result, it could be mentioned that psychological capital training is a positive psychological growth state, the main feature of which is self-efficacy to gain success in challenging tasks, optimism in present and future, hope to gain success under challenges and difficulties, resilience, and perseverance (Luthans, Youssef, and Avolio, 2006). Accordingly, it could be found that psychological capital training can promote flow first of all, and affect the grit indirectly in the next step. This was confirmed in the present study.

The findings of this study help the psychologists, consultants, and therapists in the field of burnout, so that they can find out the effectiveness of psychological capital training, and pave the way to promote the grit of students suffering from burnout. Also, this study can help scholars to analyze the effectiveness of this type of training on other variables. The limitations in this study are: the population consisted of all female students in the School of Medicine and Dentistry, Jundishapur University of Medical Sciences, Ahvaz in the academic year of 2019-2020. Hence, the generalization of results to other places should be taken carefully. Also, the data collection instrument in this study was a self-report scale, which can sometimes be affected by biases on behalf of the participants.

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