

## Comparing the effectiveness of Interventions of Dweck's MindSet on health-oriented academic lifestyle and academic well-being among high school students

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### Abstract

**Introduction:** Choosing the best intervention method can play an important role in the process of academic counseling, so that it will save time for specialists as well as reducing treatment costs for clients. This research aims to compare the effectiveness of intervention based on changing mentality. Dweck was conducted on academic health-oriented lifestyle and academic well-being at school in secondary school students.

**Research method:** This research was a semi-experimental study with a pre-test-post-test-follow-up design and a control group. The statistical population of the research included all female students of second secondary level in Mahabad city in the academic year of 1400-1401. The statistical sample consisted of 45 students who were randomly selected in two experimental groups and one control group using the cluster sampling method. Research information was collected through the questionnaire of lifestyle behaviors promoting and inhibiting academic health and academic well-being questionnaire. For the experimental groups, Dweck's mindset change program was implemented in 8 50-minute sessions, and the control group did not receive any intervention. To analyze the data, the method of analysis of variance with repeated measurements was used in SPSS version 26.

**Findings:** The data analysis showed that the intervention based on the change of Dewey's mindset in the post-test phase was effective in improving health-promoting behaviors and reducing health-inhibiting behaviors. The intervention based on Dweck's mindset change was effective on academic well-being at school, however, this effect of the intervention for well-being was not stable in the follow-up phase.

**Conclusion:** According to the findings, it can be suggested that the intervention to change the dual mindset is an effective intervention to improve the health-oriented lifestyle and academic well-being of students in school.

**Keywords:** academic well-being, Dweck's mindset, health-oriented academic lifestyle

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## Introduction:

For some students, academic life is seen as opportunities to achieve their ideas and desires. For other students, academic life is a more realistic experience consisting of academic and social demands and responsibilities. Despite much research on students' changes in thinking, reasoning, and identity, little is known about the concept of academic health-oriented lifestyles. Lifestyle can be interpreted as a set of behaviors that a person uses to not only meet his current needs, but also to embody the specific narrative that he has chosen for his personal identity in front of others. In fact, lifestyle is a relatively fixed way in which a person pursues his goals (1). The health-oriented lifestyle as a multi-causal, multi-dimensional and multi-significant phenomenon is related to the collective patterns of behavior that can be an obstacle in health-related problems and guarantee health for the individual. This style consists of various dimensions such as exercise, proper and improper nutrition, self-control and preventive behaviors. The essence of defining a healthy lifestyle is the coherence in performing a set of behaviors related to health and health (2). The meaning of academic lifestyle behaviors is the preferred patterns of behavior that students choose and express in the study area of motivation for progress. Each of these behaviors, depending on its nature and function, improves the academic health of learners or endangers it (3). Academic health-oriented lifestyle behaviors are a set of the most conventional academic health-promoting behaviors such as academic resilience, mastery vs. performance goal orientation, optimism, academic engagement and academic vitality, and the most frequent health-inhibiting behaviors such as learned helplessness, cheating, avoidance Effort is maladaptive perfectionism, procrastination, self-handicapping, avoidance of seeking help, and passive aggression (3). Health-oriented behaviors are associated with the motivation, progress, and especially the academic well-being of adolescents, and the adoption of undesirable styles in academic activities may affect the cognitive and emotional functions of adolescents and, in turn, reduce the probability of success in school (4). . Good academic performance is related to behaviors such as good sleep, healthy diet and physical activity in school age (5).

Belfi, Goos, Frain and Dami (6) consider academic well-being as students' attitude towards education. This attitude includes four dimensions of general attitude to academic life, attitude to the teacher, attitude to peers and attitude to the school building. According to Tomini-Sweeney, Salem-Aru and Nimiyotra (7), academic well-being has four dimensions of school value (the amount of respect and holiness that a student attaches to school, as well as the purpose and meaning he seeks in school), school burnout ( Tired of responding to school expectations, pessimistic and broken attitude towards school and feeling inadequate to learn), academic satisfaction (feeling of personal satisfaction from choosing the path and educational option to achieve personal goals) and mixing with homework (positive focus and Focusing the mind on doing school affairs and not just academic matters is defined and has characteristics such as energizing, continuity and attracting participation and receiving results (8). Low academic well-being is associated with low academic achievement, unfavorable motivational tendencies, learning problems, low academic aspirations, educational delays and dropping out of school (9). According to Good and Braffy, students' participation in school and related decisions and the supportive relationship between teachers and students are characteristics of academic well-being. Godino has also emphasized the effect of a sense of belonging to the

class, a positive relationship with classmates, and teacher support on students' expectations of success, internal valuing of academic subjects, and efforts to improve academically (10).

The mindset changes and development program is a psychologically based educational method based on Dweck's belief that people's mental capacities are not fixed, but can be developed over time (11). Various interventions have been used to improve the lifestyle of health, education and well-being in school, one of the important interventions that have been used in some researches to improve and promote the psychological performance of students is the intervention based on changing the mindset of Dweck. The incremental theory of intelligence or growth mindset deals with the effective ideas and beliefs of a person in response to challenges and failures. These beliefs refer to students' theories about the nature of intelligence. Students may believe that intelligence cannot be changed and can be shown as a limited and stable entity (intrinsic theory). On the other hand, they may believe that it can be developed (incremental theory) and improved (12). Dewey's motivational program for changing mentality is a psychologically based program that tries to change the mentality and interpretation of events and is based on the fact that intelligence and personality can be changed (13). Implicit theory modeling of intelligence has shown that students tend to view intelligence as a stable trait (ie, move toward a stronger fixed mindset and a weaker growth mindset) and that this is due to educational experiences. , peer observation, logical inference, social cues and formal learning express (14). Therefore, careful consideration of such a presumption justifies the necessity of timely intervention and will have beneficial effects. In other words, trying to improve the mentality of students through effective interventions can have significant effects on their individual and psychological functions. These interventions focus on fostering the belief that students' general intellectual ability can be developed. The extent to which students perceive their intelligence as immutable affects their thoughts, behaviors, and ultimately academic success. Therefore, understanding the evolution of students' mentality is of interest to many education scholars who are trying to understand and improve students' success (15).

Research has shown that students' implicit theories about intelligence have positive effects on their academic results (16). In this regard, Arami, Sharifi, Ghazanfari and Abedi (17) showed that the dual mindset change program training has a significant effect on improving the self-efficacy, resilience and optimism of the psychological capital variable, and this effectiveness continued in the 6-month follow-up period. . Zeng, Huo and Peng (18) also pointed out that growth mindset has a positive and significant relationship with resilience and psychological well-being. Costa and Faria (2018) showed that incremental theorists were more likely to score higher in specific subjects (verbal and quantitative) and in overall achievement. In another study, Falahieh, Fatehizadeh, Abedi and Diarian (19) pointed out in their research that the intervention based on changing the dual mindset is an effective program to reduce stress caused by academic expectations. In a research, Ajaghi, Abedi and Malekpour (20) showed that the motivational program of change of dual mentality had an effect on the component of goal orientation, i.e. tendency mastery, avoidance mastery, tendency performance and avoidance performance, and analytical, practical and creative intelligence of students.

Zeng et al. (18) showed in a research that growth mindset has a positive and significant relationship with resilience and psychological well-being. Also, the results of the structural equation model show that the development of high levels of growth mindset in students predicts higher resilience and psychological well-being. Arami, Sharifi, Ghazanfari, Abedi and Ghasemi Pir Baluti (17) showed in a study that Fredrickson's positive thinking training has no significant effect on students' test anxiety. However, there is a significant difference in the level of exam anxiety between the two groups of Dweck's mindset change program, Fredrickson's positive thinking and the control group. So that the Dweck mindset change group had less anxiety. Westka (21) showed in a study that the participants of the experimental group who received the intervention of changing the mindset showed a significant improvement in academic achievement, attention level, attitude towards learning and intelligence beliefs. In a research, Carvalho and Skipper (22) showed that the intervention of Dweck mindset increased students' endorsement of growth mindset, and also provided evidence for increasing academic self-concept, academic resilience and positive attitude towards disability.

Studying the effectiveness of relevant interventions and trying to select the most effective educational intervention to improve the lifestyle, well-being and quality of life of students can have beneficial effects. Choosing the best intervention method can play an important role in the process of educational consultations, so that it will save time for professionals and reduce treatment costs for clients, and clients will be able to take a step towards health-oriented behaviors, education and improving the quality of their lives.

### **Research method:**

According to the objectives, this study was applied research type and according to the data collection method, it was a semi-experimental study with a pre-test-post-test-follow-up design and a control group. The statistical population of this research included all female students of second secondary level in Mahabad city in the academic year of 1400-1401. The statistical sample consisted of 45 students who were selected by cluster sampling method. In this way, 4 schools were randomly selected from among 16 secondary school girls' schools, and then 3 classes of different grades were selected from each school after matching the students based on age, field and GPA, 45 students were selected and divided into two experimental groups. and a control group were randomly replaced. Entry criteria included parents' consent and the student's desire to participate in the study, studying in the second secondary level (11th grade), female gender, and exit criteria included the student's unwillingness to continue cooperation, participation in concurrent psychological programs. The tools used are:

**Questionnaire of lifestyle behaviors that promote and hinder academic health:** This questionnaire was used to measure academic health-oriented lifestyle, which was developed as a self-report questionnaire with the ability to be implemented individually and in groups by Salehzadeh, Shukri and Fathabadi (3). This questionnaire consists of 124 items and 13 components, of which 48 items are related to behaviors that promote academic health and 76 items are related to behaviors that inhibit academic health. Respondents should answer each item on a 5-point Likert scale from strongly agree (5) to strongly disagree (1). In this way, the completely agree option gets a score of 5, somewhat agree with a score of 4, I have no opinion with a score of 3, somewhat disagree with a score of 2, and completely disagree with a score

of 1. The underlying structures and the number of each item in the dimension of academic health facilitating behaviors are academic optimism (10), academic engagement (8), mastery goal orientation (10), academic vitality (10), academic resilience (10). And in the dimension of academic health inhibition, it includes learned helplessness (10), avoidance of seeking help (9), passive aggression (10), academic procrastination (9), self-impairment (7), effort avoidance (11), academic cheating. (10), and non-conformist perfectionism (10) are (3). Salehzadeh et al. (3) examined the construct validity of the scale through exploratory factor analysis and confirmatory factor analysis and confirmed its multi-factor structure. Also, the internal similarity coefficients of multiple dimensions of academic health facilitators include academic optimism 0.89, academic engagement 0.85, mastery goal orientation 0.93, academic vitality 0.93, academic resilience 0.93 and in each of the structures The underlying factors of the inhibiting dimension of academic health include learned helplessness 0.92, avoidance of seeking help 0.94, passive aggression 0.94, academic procrastination 0.93, self-handicapping 0.90, effort avoidance 0.95, academic cheating. 0.96, and non-adaptive perfectionism was calculated as 0.95.

**Academic Well-Being Questionnaire (AWBQ):** This questionnaire was developed by Tuominen-Sweeney et al. This questionnaire is a self-assessment type that asks the respondent's level of agreement or disagreement with 31 items about his opinions in a Likert scale. The said questionnaire includes dimensions of school value (9 items, including questions 6, 8, 5, 9, 4, 7, 3 and 2), burnout towards school (9 items, questions 14, 13, 11, 15, 18, 10, 12, 23, 1 and 16), academic satisfaction (4 items, questions 19, 23, 20 and 21) and mixing with school work (9 items, questions 31, 30, 26, 27, 29, 24, 28, 17 and 25). The way of scoring the scale is in the form of a 7-point Likert scale from 1=completely disagree to 7=completely agree. The burnout component items are scored inversely with respect to the school. Tuominen-Sweeney et al. (2012) assessed the validity of the scale as favorable. These researchers calculated the value of Cronbach's alpha for the four dimensions of school value, school burnout, academic satisfaction, and involvement with school work, respectively, 0.64, 0.77, 0.91, and 0.94. In Moradi et al.'s research (23), the Cronbach's alpha coefficients of school value components, burnout towards school, academic satisfaction, mixing with school work and the whole scale were 0.89, 0.87, 0.92, 0.90 respectively. 0.92 was obtained. The content and structure validity of the mentioned questionnaire is also reported to be favorable (23).

**Intervention based on changing Dweck's mindset:** Dweck's educational program is a psychologically based program developed by Dweck (24). This educational program tries to change the mentality and interpretation of events and is based on the fact that intelligence and personality can be changed and in a wide range of fields success in school, work, sports, art and almost any field of human endeavor that can be done in a way It can be significantly affected by our talents and abilities. Dweck's mindset change program (24) was presented as a group in the form of 8 50-minute sessions. The summary of the content of the training sessions was as follows:

First session: pre-test implementation, explanation of Dweck's theory for students, understanding the difference between innate and incremental mentality



The second session: Where do mindsets come from, what examples do you see in our culture that reinforce incremental or fixed mindsets, determine students' mental beliefs, determine whether their mindsets are more incremental or fixed, what self-talk about have their own mentality, do a challenging activity to experience their own mentality.

The third session: the effect of praise and feedback from teachers and parents on children's intelligence, explanation of brain structure, especially brain flexibility system, explanation of brain flexibility, which shows that we become smarter by challenging our brain.

Session 4: Explanation of the 1000 hours rule and the concept of deliberate practice, what do you do when you want to learn something, what do you do when you can't solve something or face a difficult problem, purposeful technique training,

Session 5: Who do you know who succeeded in doing something after failing, what did these people have in common, what mindset they might have that led to their success.

Sixth session: Examining students' goals and explaining about goal orientation

Seventh session: How to succeed in life by applying the three aspects of analytical, creative and practical intelligence, emphasis on perseverance and consistency in exercises, discussion about the effect of changing mentality and attitude in response to failure.

Eighth session: review of the previous sessions and summary of topics, post-exam implementation.

Data analysis was done using SPSS program. Descriptive findings related to the mean and standard deviation of the variables and the skewness and elongation indices and the normality of the data distribution were checked with the Shapiro-Wilk test. Finally, the hypotheses and questions of the research were investigated using repeated measure analysis of variance (RM-ANOVA).

### **Findings:**

Central indices, dispersion and the results of the Shapiro-Wilk ( $z$ ) test were performed to check the normality of data distribution as one of the assumptions of covariance analysis for academic health-oriented lifestyle and academic well-being. The results showed that in both components of academic health-oriented lifestyle (health-promoting behaviors and health-inhibiting behaviors) and academic well-being, the average scores of the post-test and follow-up stages of the participants of the Dweck mindset change program have changed compared to the pre-test, but in the control group, there are no noticeable changes. The results of the Shapiro-Wilk test indicated the normality of data distribution for health promoting behaviors and health inhibiting behaviors as well as academic well-being in the pre-test, post-test and follow-up stages.

In order to investigate the hypothesis that "the intervention based on the change of Dewey's mindset is effective on the academic health-oriented lifestyle in the second high school students", the analysis of variance test with repeated measurements was used in compliance with the necessary assumptions. First, Lunn's test to check the homogeneity of variances and M-box test to check the homogeneity of the variance-covariance matrix were checked as the

presumptions of variance analysis. The results of the test indicated the establishment of the default homogeneity of variances and the homogeneity of the variance-covariance matrix for academic health-oriented lifestyle (behavior that promotes and inhibits academic health).

**Table (1)** results of multivariate tests for two groups in health-oriented lifestyle

Variable	title of exam	Value	F	Significance	Eta coefficient
<b>Health promoting style group</b>	Pillai effect	0.825	63.78	0.0001	0.825
	Wilks Lambda	0.175	63.78	0.0001	0.825
<b>Group* health inhibitory style</b>	Pillai effect	0.807	56.5	0.0001	0.807
	Wilks Lambda	0.193	56.5	0.0001	0.807

According to the results of Table (1), Wilks's Lambda test for the interactive effect of group and time in the health-promoting style ( $0.825=2$ ,  $\square 0.0001$ ,  $P=63.7$ ) and the health-inhibiting style ( $0.807 = 2$ ,  $\square 0.0001$ ,  $P= 56.5$  F) is significant and indicates that there is a significant difference in at least one of the stages of the pre-test, post-test and follow-up of health-enhancing and health-inhibiting behaviors in the two experimental and control groups. and that 82% of the observed difference between the groups in the average stages of health-promoting behaviors and also 81% of the observed difference between the groups in the average stages of the academic health-inhibiting style are due to the effect of the intervention based on Dweck's mindset change. Therefore, the intervention based on the change of Dweck's mindset on the health-oriented academic lifestyle of the subjects of the experimental group is more effective than the control group in the post-test and follow-up stages.

**Table (2)** Results of main and interactive effects for academic health-oriented styles

Variables	Source	sum of squares	Degrees of freedom	mean square	F	significance	Effect size
<b>Health promoting style group</b>	Time	457.0	2	228.5	43/5	0.0001	0.609
	error	293.5	56	5.24			
	group	26.6	1	26.6	0.141	0.710	0.005
	error	5286.4	28	188.8			
	time*group	617.3	2	308.6	58.8	0.0001	0.678
	time	264.6	2	132.3	23.74	0.0001	0.459

<b>Group* health inhibitory style</b>	error	312.2	56	5.57			
	group	18.6	1	18.6	0.066	0.798	0.002
	error	7872.9	28	281.17			
	time*group	667.7	2	333.8	59.8	0.0001	0.681

As can be seen in Table (2), the effect of time (pre-test, post-test and follow-up stages) is significant for health promoting and health inhibiting styles ( $p \leq 0.01$ ). Therefore, regardless of the group, there is a significant difference between the average scores of the health-enhancing and health-inhibiting styles in the pre-test, post-test and follow-up stages. The effect of the group on the health promoting and health inhibiting style scores was not significant ( $p > 0.05$ ). Therefore, it can be concluded that regardless of the measurement stage, there is no significant difference between the average scores of the health-promoting and health-inhibiting styles of the experimental and control groups. However, the interaction effect of group and time was also significant for health promoting style ( $p = 0.0001$ ) and health inhibiting style ( $p = 0.0001$ ). Therefore, it can be stated that the difference in the mean scores of the health promoting and health inhibiting style in the pre-test, post-test and follow-up stages is significant according to the variable levels of the group. Considering that the interaction effect between the group and intra-group time was significant, Bonferroni's pairwise comparison test was used to examine the inter-group effects with regard to the levels of intra-group time in the two variables of health-enhancing and health-inhibiting styles, the results of which are shown in Table (3) Provided.

**Table (3)** Bonferroni's post hoc test results for education-oriented health lifestyle

Variable	steps (within group)	mean difference	significance	group (intergroup)	Post test			Fallowe up		
					mean difference	significance	Effect size	mean difference	significance	Effect size
Health promoting style group	Pre-post test	-11.5	0.0001	the experiment - Control	-7.00*	0.024	0.169	2.00*	49.0	0.017
	pre-follow-up	-8.13*	0.0001							
	So - follow up	-3.40*	0.0001							
Group* health inhibitory style	Pre-post test	10.8*	0.0001	the experiment - Control	-7.73*	0.029	0.159	-0.600*	3.42	0.001
	pre-follow-up	5.26*	0.0001							
	So - follow up	-5.60	0.0001							



According to table (3), there is a statistically significant difference between pre-test and post-test, as well as between pre-test and follow-up, as well as between post-test and follow-up ( $p \leq 0.01$ ) in the health promoting style variable. This finding shows that the intervention based on changing the Dweck mindset had a significant effect on increasing the health promoting style in the post-test and follow-up stages compared to the pre-test. Also, there is a statistically significant difference between the pre-test and post-test stages, and between the pre-test and follow-up, as well as between the post-test and follow-up in the variable of health inhibitory style ( $p \leq 0.01$ ). This finding also shows that the intervention based on changing the Dweck mindset had a significant effect on the reduction of behaviors that inhibit academic health in the post-test and follow-up stages compared to the pre-test. Also, according to the results of table (3), there is a significant difference ( $p \leq 0.05$ ) between the two experimental and control groups in the post-test stage of health-enhancing and health-inhibiting behaviors, and this indicates the effectiveness of the intervention training based on mindset change. Dweck is on the increase of health-promoting behaviors and the decrease of health-inhibiting behaviors in the experimental group in the post-test phase compared to the control group. The impact rate in the post-test of health-promoting behaviors was equal to 0.169 and also in the post-test and follow-up of health-inhibiting behaviors was equal to 0.159. However, in the follow-up phase, there was no significant difference between the two experimental and control groups in health-enhancing and health-inhibiting behaviors, and this finding shows that the effectiveness of the intervention training based on the change in Dewey's mentality was not stable compared to the control group.

In order to investigate the hypothesis that "intervention based on change of deic mentality is effective on academic well-being in second high school students", the analysis of variance test with repeated measurements was used, observing the necessary assumptions. First, Lunn's test to check the homogeneity of variances and M-box test to check the homogeneity of the variance-covariance matrix were checked as the presumptions of variance analysis. The results of the test indicated the establishment of the presumption of homogeneity of variances and homogeneity of the variance-covariance matrix for academic well-being.

**Table (4)** results of multivariate tests for two groups in academic well-being

Variable	title of exam	Value	F	Significance	Eta coefficient
Academic welfare group	Pillai effect	0.856	80.34	0.0001	0.856
	Wilks	0.144	80.34	0.0001	0.856
	Lambda				

According to the results of table (4), Wilks's lambda test is significant for the interactive effect of group and time in academic well-being ( $0.856=2$ ,  $\square 0.0001$ ,  $P=80.34$ ). This result indicates that there is a significant difference in at least one of the pre-test, post-test and follow-up stages of academic well-being in the two experimental and control groups, and it indicates that 86%

of the observed difference between the groups is in the average stages. Academic well-being is caused by the effect of the intervention based on changing Dweck's mentality. This finding shows that the intervention based on changing the mindset of Dewey is effective on the academic well-being of the subjects of the experimental group compared to the control group in the post-test and follow-up stages.

**Table (5)** results of main and interactive effects for academic well-being

Variables	Source	sum of squares	Degrees of freedom	mean square	F	significance	Effect size
Academic welfare	Time	46.08	2	230.4	64.75	0.0001	0.698
	error	199.24	56	3.55			
	group	154.7	1	154.7	0.465	0.501	1.016
	Error	9314.3	28	322.65			
	time*group	763.28	2	381.64	107.26	0.0001	0.793

As can be seen in table (5), the effect of time (pre-test, post-test and follow-up stages) is significant for academic well-being ( $p \leq 0.01$ ). Therefore, regardless of the group, there is a significant difference between the average grades of academic well-being in the pre-test, post-test and follow-up stages. The effect of the group on academic well-being scores was not significant ( $p > 0.05$ ). It can be concluded that regardless of the measurement stage, there is no significant difference between the average academic well-being scores of the experimental and control groups. However, the interaction effect of group and time was also significant for academic well-being ( $p = 0.0001$ ). Therefore, the difference in the average scores of academic well-being in the pre-test, post-test and follow-up stages is significant according to the variable levels of the group. Therefore, considering that the interaction effect between the group and intra-group time was significant, Bonferroni's pairwise comparison test was used to examine the inter-group effects regarding the levels of intra-group time in academic well-being, the results of which are presented in Table (6).

**Table (6)** Bonferroni post hoc test results for academic well-being

Variable	steps (within group)	mean difference	significance	group (intergroup)	Post test			Fallowe up		
					mean difference	significance	Effect size	mean difference	significance	Effect size
Academic welfare	Pre-post test	-11.6*	0.0001	the experiment - Control	10.66*	0.009	0.218	0.133*	3.81	0.002

pre-follow-up	-6.33*	0.0001							
So -									
Post follow-up	5.26*	0.0001							

According to table (6), there is a statistically significant difference in the academic well-being variable between pre-test and post-test, between pre-test and follow-up, as well as post-test and follow-up ( $p \leq 0.01$ ), this finding shows It shows that the intervention based on changing the mindset of Dewey had a significant effect on increasing academic well-being in the post-test and follow-up stages compared to the pre-test. Also, according to the results of table (6), there is a significant difference between the two experimental and control groups in the post-test stages of academic well-being ( $p \leq 0.05$ ) and this indicates the effectiveness of the intervention based on changing the deic mindset on increasing academic well-being in The experimental group is in the post-test stages compared to the control group. The degree of impact in the post-test stage of academic well-being was equal to 0.22. However, in the follow-up phase, there was no significant difference in academic well-being between the two experimental and control groups, and this finding shows that the effectiveness of the intervention based on changing the mindset of Dewey was not stable compared to the control group.

### Discussion and conclusion:

Research findings related to the hypothesis that "intervention based on Dewey's mindset change is effective on academic health-oriented lifestyle in second high school students." It showed that the intervention based on Dewey's mindset change on the health-oriented academic lifestyle of the subjects of the experimental group compared to the control group was effective in the post-test and follow-up stages in the health-promoting behaviors and also in the academic health-inhibiting style. Examining the results of the follow-up test for intra-group effects showed that the intervention based on changing the dual mindset had a significant effect on increasing the health-promoting style and reducing academic health-inhibiting behaviors in the post-test and follow-up stages compared to the pre-test. Also, the examination of inter-group effects showed that intervention training based on Dewey mindset change was effective in increasing health-promoting behaviors and decreasing health-inhibiting behaviors in the experimental group compared to the control group only in the post-test phase, however, in the follow-up phase between There was no significant difference between the two experimental and control groups in health-promoting and health-inhibiting behaviors. Therefore, the results indicate that the intervention based on changing Dweik's mindset was effective on the students' academic health-oriented lifestyle, but this effect was not stable in the follow-up phase. This finding is in line with the findings of Fallahieh et al. (19), Carvalho and Skipper (22), Ajaghi et al. (20), Arami et al. (17) and Osuz et al. (25). In this regard, Carvalho and Skipper (22) pointed out in a study that the dual mindset intervention is an effective intervention for

improving academic self-concept, academic resilience and positive attitude towards disability, the findings of the present study are consistent with the results of the follow-up phase, which is 7 weeks after The intervention was not sustainable. Ajaghi et al. (20) showed that the motivational program of Dewey mentality change had an effect on the components of goal orientation, i.e. tendency mastery, avoidance mastery, tendency performance and avoidance performance, and analytical, practical and creative intelligence of students.

In explaining this finding, it can be suggested that growth mindsets, which are also known as implicit theories, are conceptualized as the main assumptions about the flexibility of personal characteristics (26). The mentality of students makes them understand their academic world differently. A growth mindset promotes resilience while a fixed mindset does not (24). A growth mindset can lead to school improvement. There are many intervention experiments that show that changing students' theories of intelligence from a fixed mindset to a growth mindset affects their academic behaviors in the long term (27). Yeager and Dweck (26) believe that the underlying mechanism of a growth mindset that leads to the promotion of a health-oriented lifestyle appears to rely on students' goals, their beliefs about effort and their attributions about their failures, and coping learning strategies. with academic problems. Therefore, Dweck's mindset change training can increase students' growth mindset by making them interpret academic challenges as an opportunity to improve their ability and strengthen learning skills, which helps them to be flexible in academic fields and can increase promotion behaviors. To be effective in providing health and reducing behaviors that hinder academic health.

The research findings related to the hypothesis that "the intervention based on changing the dual mentality is effective on the academic well-being of second secondary students" showed that the intervention based on changing the dual mentality on the academic well-being of the subjects of the experimental group compared to the control group in the later stages The test and follow-up was effective. Examining the results of the post-test for intra-group effects showed that the intervention based on changing the dual mindset had a significant effect on increasing academic well-being in the post-test and follow-up stages compared to the pre-test. Also, the examination of intergroup effects showed that the intervention based on changing the mindset of the experimental group was effective in increasing the academic well-being of the experimental group compared to the control group only in the post-test phase, however, in the follow-up phase, there was a difference between the two experimental and control groups in terms of academic well-being. There was no significant difference. This finding shows that the intervention based on changing Dweik's mentality was effective on students' academic well-being, but its effect was not stable in the follow-up phase. This finding is in line with the findings of Arami et al. (17), Zeng et al. (18), Sisk et al. (28), Burnette et al. (16). In this regard, Zeng et al. (18) showed that growth mindset has a positive and significant relationship with resilience, psychological well-being and school involvement. Also, the results of the structural equation model show that the development of high levels of growth mindset in students through increasing resilience predicts higher psychological well-being and involvement in school. Burnette et al. (16) showed that this intervention did not have a significant overall effect on academic performance, however it improved grades indirectly through value.

In explaining this finding, it can be mentioned that students who have a growth mindset are more likely to withdraw from failure in academic and learning tasks and, in turn, are more involved in school assignments. When students believe that their intelligence and ability can be changed, they are more flexible, this acts as a protective factor that enables students to adapt to their highly competitive and stressful learning environment and effectively deal with difficulties and overcome academic barriers in everyday life. Therefore, students who have a growth mindset have better well-being and are more engaged in school work than students who think their intelligence is fixed and unchangeable (18). Although they recognize the differences between people's knowledge and abilities, they believe that with effort and guidance they can increase their intellectual abilities, and they also clearly understand that successful people work hard to achieve it, so this way of thinking seems It turns out that it can be effective in improving the academic well-being of students. Considering well-being as a balance between two sides (positive and negative), it is believed that mindset affects well-being.

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