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A Comparison of the Effectiveness of Training Based on Choice Theory and Creativity Training on Psychological Well-being and Emotion of Thought in Healthcare Workers of Yasuj

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Abstract: This study aimed to compare the effectiveness of choice theory training and creativity training on the emotion of thought (EoT) and psychological well-being (PWB) in healthcare workers. It was a semi-experimental study with a pre-test-post-test control-group design. The study population consisted of all the healthcare workers of Yasuj City in 2019. Of this population, 45 workers were selected as the sample size using the convenience sampling method and were divided into three experimental and control groups (each with 15 members). Then, the Emotion of Thought and Psychological Well-being questionnaires were administered to the three groups. The experimental group received creativity training and choice theory training in 8 90-minute sessions for two months. In comparison, the control group received no training during this period. The follow-up phase was implemented after three months. The statistical data were analyzed by the repeated measures analysis of variance (ANOVA). The findings revealed that choice theory training was more effective for healthcare workers' PWB than the creativity training. Also, the creativity training method showed a greater effect on the healthcare workers' EoT than the choice theory training method. Overall, it can be concluded that the two training methods increase the healthcare workers' PWB and EoT.

Keywords: Creativity training, Choice theory training, Psychological well-being, Emotion of thought

Introduction

Healthcare centers play a significant role in ensuring the health and improvement of patients and improving the quality and quantity of healthcare in society. In this respect, the employees of these centers can provide more efficient services to patients and injured people by taking some measures to improve their health, physical, and mental conditions (Shonin et al., 2014). Health is a multidimensional concept involving not only sickness but also the feeling of happiness and well-being. Psychological well-being (PWB) is described as a basis of mental health. Mental health is a state in which people understand their own ability, can cope with the natural tensions of life, work effectively and efficiently, and contribute to creating a good society (Javanbakht, 2012). PWB refers to the development of personal strengths, the realization of true potential, and the long-term and stable happiness of the individual (Wubbolding, 2013). People with high PWB feel happy, capable, supported, satisfied with life, etc. (Bengtsson & Ohlsson, 2010). Ryff's PWB model (Ryff, 2013) is considered among the most important PWB-related models, which was used in this study. Ryff considers PWB "the striving for perfection that represents the realization of one's true potential". In his model, the components of psychological well-

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being include six factors: self-acceptance, purpose in life, personal growth, positive relationships with others, environmental mastery, and autonomy (Tang & Gao, 2012).

Healthcare workers endure a high level of work stress and mental pressure due to the high sensitivity of their work and the need to comply with quality improvement and cost minimization programs. Therefore, the existence of an active and curious state to solve work problems and increase job performance seems necessary (Hamidi et al., 2015). “Emotion of thought” is a concept that refers to “cognitive hardiness”, “emotional enthusiasm”, “dynamism”, and “impatience” in the face of any problems in life. Therefore, investigating this construct in healthcare workers seems to be useful. “Dynamism” in the definition of EoT refers to “a feeling of extreme strength along with enthusiasm for a curious and active experience for a great exciting discovery”. On the other hand, impatience refers to “fear, internal entrapment, and homesickness caused by the circulation of thought”, which is accompanied by physical manifestations so that the person feels that they are under pressure for activity (Marzluff & Angell, 2013).

Creativity training is a therapy recently proposed in the field of psychology for psychological health (Pirkhalefi & Borjali, 2012). Creativity is the ability to create novel and consistent ideas, and a creative person is looking for new and innovative solutions to deal with existing issues and problems. This attitude enables them to deal with challenges and to have more self-confidence and motivation. In education, human creativity is conscious, and attention is given not only to cognition (thoughts, beliefs, and attitudes) but also to verbal and communication patterns, motivational style, personality traits, and even the type of non-verbal movements and reactions that a person uses. Humans always need new goals and directions for more appropriate behavior and life. They need to discover things that give a transcendent dimension to their lives and interactions. Goals and paths must have a direction; a world without direction has no meaning. Therefore, creating motivation in behavior is a very important issue (Pirkhaefi, 2019).

Glasser’s reality therapy is another therapeutic approach with special attention to the dimension of behavior change and mental health (Glasser, 2014). The choice theory posits that we are not born blank slates waiting to be externally motivated by forces in the world around us. Rather, we are born with five genetically encoded: survival, love and belonging, power or progress, freedom or independence, and fun that motivate us in life (Kaveh et al., 2022).

Since healthcare workers deal with different health conditions and often face unexpected conditions in the work environment, they need to go beyond routine activities and use creative thinking skills to make useful decisions (Eragamreddy, 2013). In fact, creativity training can increase people’s resilience by activating creativity and self-efficacy, increasing cognitive functions (i.e., memory, attention,

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concentration) on the EoT, promoting one's internal ability to cope with stress and distress, and adapting to various life conditions, elevating mental and personality fluidity and flexibility. These objectives are realized through cognitive coherence, coordination, problem-solving, self-management, and self-control. Accordingly, the basic problem of the current study is whether there is a difference between the two methods of choice theory training and creativity training on the EoT and PWB levels in healthcare workers.

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Material and Methods

This research is an applied study with a semi-experimental control group design. The study population consisted of all the healthcare workers of Yasuj City in 2019. Of these workers, 45 were randomly selected using the purposive convenience sampling method and were divided into three experimental and control groups (each with 15 members). Afterward, the Emotion of Thought and Psychological Well-being questionnaires were administered to the three groups. The experimental group received creativity training and choice theory training in eight 90-minute sessions for 2 months. Meanwhile, the control group received no training during this period. The inclusion criteria were 1) being a healthcare worker at the healthcare center, 2) PWB and EoT determined using standard questionnaires, and 3) giving informed consent for the training method and the research process. On the other hand, the exclusion criteria were 1) dissatisfaction with the training method and 2) having obvious physical and mental disorders. The measurement tools were the Emotion of Thought questionnaire and Ryff's PWB scale. The data were analyzed using univariate and multivariate covariance analysis in SPSS-24 software.

Data measurement tools

The Emotion of Thought Questionnaire: The 12-factor "Emotion of Thought" test is composed of 69 questions and two scales, "dynamism" and "impatience", each measuring six factors. The correlation as a validity index was within the range of 0.39 to 0.74 for dynamism and the range of 0.40 and 0.75 for impatience. The correlation coefficient was 0.13 between the two scales, 0.76 between the impatience scale and the test, and 0.67 for the dynamism scale and test. These 12 factors cover 75% of the variance of the test. In Iran, Kazemi Haghighi (2009) measured the reliability of the Emotion of Thought scale using Cronbach's alpha as 0.72 for impatience, 0.76 for dynamism, and 0.74 for the whole scale.

Ryff's Psychological Well-being Scale

This scale was designed by Ryff (1989). Its original form consisted of 120 questions, but its shorter forms consisting of 84, 54, and 18 questions, were prepared in subsequent studies. An 18-question form was used in the present study. The subscales had appropriate internal consistency, and Cronbach's alpha

was between 0.77 and 0.90. In Iran, Bayani et al. (2008) investigated the validity and reliability of the 18-item version on a sample of 145 Islamic Azad University students. The reliability measurements showed that the coefficient for the overall score was 0.82.

Training sessions of group counseling based on choice theory

Session 1: Introducing the group members to each other, setting the rules and principles governing group counseling, explaining the concepts of choice theory, introducing the basic needs to the members, being accustomed to the intensity of the needs, and plotting the profile of the needs

Session 2: Determining the difference between the two the need profile of students and getting familiar with the behavior machine (i.e., thinking, acting, feeling, physiology) and increasing the self-awareness of each member

Session 3: Getting to know the concept of reality therapy and creating a sense of responsibility to satisfy basic needs

Session 4: Training reality therapy techniques and getting to know the concept of external control and its destructive role in intimate relationships and replacing choice theory (internal control) for external control

Session 5: Getting familiar with how to negotiate about the inconsistent needs and recognize the goals and values as well as the basic needs (i.e., need for survival, need for power, need for fun, need for freedom, and need for a sense of belonging) and identity

Session 6: Training the concept of the qualitative world and expressing the importance of sharing the healthcare workers' qualitative world and attracting their satisfaction and planning to solve the problem concerning the present time and current behavior

Session 7: Getting familiar with the concept of conflict and its relationship with the qualitative world and basic needs; training some techniques to increase happiness

Session 8: Receiving feedback from the previous sessions

Creativity training sessions

Session 1: Establishing communication

Session 2: Training the components of metacognitive creativity by training the metacognitive creativity components from the metacognitive component part to the first step of training (fluidity and flexibility). In this component, we want people to be able to benefit from the mental dynamics created to change the level of quantity, variety, and novelty of mental productions.

Session 3: Training the metacognitive components of creativity (training the second step, i.e., mental design, improving the thinking and perception process, and finding solutions)

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Session 4: Training the metacognitive components of creativity (training the metacognitive components of creativity from the metacognition component to the third step (decision-making)

Session 5: Applying the linguistic components of creativity (discussing the linguistic components of creativity, including (perceptual expansion of the word, semantic expansion, and verbal relations)

Session 6: Training the motivational components of creativity, including (motivational orientation and persistence)

Session 7: Training the personality components of creativity, including self-confidence, boldness, and risk-taking).

Session 8: Training the body language components of creativity, including movement behaviors and body language

The post-tests of the three groups of creativity training and choice theory and control were compared through pre-test control and multivariate analysis of covariance (MANCOVA). In the first analysis, the pre-test scores were calculated as covariate and control. Then, the changes between the scores of the three groups in the post-test one week after the intervention were compared.

Results

Descriptive indices of the experimental and control groups in the pre-test and post-test were provided in table 1.

Table 1. Central and dispersion indices of the total score of EoT in the experimental and control groups in the pre-test, post-test, and follow-up steps

Phases	Group	Number	Mean	Standard Deviation
Pre-test of EoT	Choice Theory	15	160.27	21.13
	Creativity Training	15	158.73	20.22
	Control	15	159.80	21.38
Post-test	Choice Theory	15	195.07	21.61
	Creativity Training	15	197.67	23.43
	Control	15	141.80	26.70
Follow-up	Choice Theory	15	176.47	36.94
	Creativity Training	15	187.73	22.50
	Control	15	140.53	24.52
Pre-test of PWB	Choice Theory	15	45.07	14.34
	Creativity Training	15	45.20	13.23
	Control	15	44.93	12.30
Post-test	Choice Theory	15	81.73	15.87
	Creativity Training	15	68.93	16.98
	Control	15	45.07	12.44
Follow-up	Choice Theory	15	80.00	15.03
	Creativity Training	15	65.87	16.50
	Control	15	44.01	11.75

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According to Table 1, the mean scores of the post-test of the EoT variable in the experimental groups of Choice Theory and Creativity Training are 195.07 and 197.67, respectively. These scores are higher than the mean scores of the pre-test in the two groups. Also, the mean scores of the follow-up test in these two groups are 176.47 and 187.73, respectively, indicating not much difference from the post-test score. Moreover, the mean scores of the post-test of PWB in the experimental groups of Choice Theory and Creativity Training are 81.73 and 68.93, respectively, which are higher than the mean scores of the pre-test in these two groups (i.e., 45.07 and 45.20, respectively). Furthermore, the mean scores of the follow-up test in these two intervention groups are 80.00 and 65.87, respectively.

One of the assumptions of MANCOVA is to check the normality of the data distribution. Table 2 shows the normality of the scores of the dependent variables of EoT and PWB separately in the pre-test and post-test based on the one-sample Kolmogorov-Smirnov test and the Shapiro-Wilk test. In these two tests, the null hypothesis is based on the normal distribution of the data, which is tested at the 0.05 level. Therefore, if the significance level of the test statistic is greater than or equal to 0.05, the data have a normal distribution.

Table 2. Central and dispersion indices of the dependent variables in the experimental and control groups in the pre-test, post-test, and follow-up phases

Dependent variable	Phases	Group	K-S Test	Significance	Sh-Wk Test	Significance
EoT	Pre-test	Choice Theory	0.531	0.941	0.960	0.691
		Creativity Training	0.485	0.973	0.961	0.704
		Control	0.536	0.937	0.969	0.842
	Post-test	Choice Theory	0.467	0.981	0.943	0.426
		Creativity Training	0.848	0.468	0.943	0.422
		Control	0.553	0.930	0.966	0.801
	Follow-up Test	Choice Theory	0.613	0.847	0.947	0.477
		Creativity Training	0.865	0.443	0.923	0.212
		Control	0.409	0.996	0.957	0.643
PWB	Pre-test	Choice Theory	0.580	0.889	0.938	0.363
		Creativity Training	0.574	0.898	0.956	0.630
		Control	0.674	0.753	0.935	0.324
	Post-test	Choice Theory	0.373	0.998	0.940	0.383
		Creativity Training	0.726	0.668	0.914	0.158
		Control	0.722	0.674	0.959	0.676
	Follow-up Test	Choice Theory	۰,٦١٥	0.844	0.936	0.331
		Creativity Training	0.625	0.829	0.907	0.120
		Control	0.391	0.996	0.976	0.939

As shown in Table 2, the significance level of the values calculated from the Kolmogorov-Smirnov and Shapiro-Wilk tests are all greater than 0.05, indicating that the null hypothesis on the normality of the data is confirmed. Therefore, the normality of data distribution is confirmed. In covariance analysis, first, the significance of interaction effect vectors of the auxiliary variable (pre-test) is examined with

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the coded vectors using regression. If these effects are not significant, the homogeneity of the regression coefficients can be accepted. Accordingly, using the covariance analysis model for the data is allowed.

Table 3. Homogeneity of the regression slope of post-test scores

Source	Choice Theory Group		Follow-up Group	
	F-value	Significance	F-value	Significance
EoT	1.952	0.174	1.782	0.194
PWB	1.618	0.235	1.504	0.288
Source of changes	Creativity Training Group		Follow-up Group	
	F-value	Significance	F-value	Significance
EoT	0.749	0.323	0.907	0.204
PWB	1.684	0.182	1.903	0.116

According to Table 2, the results of the homogeneity test of the regression slope of the post-test scores in the interaction of the Choice Theory and control groups are equal in the variables of EoT ($p = 0.174$) and PWB ($p = 0.235$). The regression slope for these two groups in the follow-up phase was also the same for the variables of EoT ($p = 0.194$) and PWB ($p = 0.288$). The results of the homogeneity test of the regression slope of the post-test scores for the interaction of Creativity Training and control were equal in the variables of EoT ($p = 0.323$) and PWB ($p = 0.182$). Moreover, the regression slope for these two groups in the follow-up phase was the same for the variables of EoT ($p = 0.204$) and PWB ($p = 0.116$). Accordingly, the assumption of homogeneity of the regression slope is confirmed.

Table 4. Bonferroni's post hoc test for pairwise comparison of the means in the EoT variable

I group	J Group	Mean difference	Standard Error	p
Choice Theory Training	Choice Theory	-18.553	1.599	0.001
	Control	15.649	1.598	0.001
Creativity Training	Choice Theory	18.553	1.599	0.001
	Control	34.192	1.598	0.001
Control	Choice Theory	-15.649	1.598	0.001
	Creativity Training	-34.192	1.598	0.001

As shown in Table 4, there is a significant difference between the effect of the experimental groups (i.e., Choice Theory and Creativity Training) and the control group ($p < 0.001$). Comparing the adjusted means indicates a significant difference in the scores of EoT in the experimental group between the Choice Theory (93.84) and Creativity Training (102.60) groups. In other words, creativity training was more effective on the EoT level than the choice theory method.

Table 5. Bonferroni's post hoc test for pairwise comparison of means in the PWB variable

I group	J Group	Mean difference	Standard Error	p
Choice Theory Training	Creativity Training	12841	2.123	0.001
	Control	36.430	2.123	0.001
Creativity Training	Choice Theory	-12.841	2.123	0.001
	Control	23.589	2.122	0.001
Control	Choice Theory	-36.430	2.123	0.001
	Creativity Training	-23.589	2.122	0.001

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According to Table 5, the effect of the experimental groups (i.e., Choice Theory and Creativity Training) is different from the control group ($p<0.001$). Comparing the adjusted means reveals a significant difference in the scores of PWB between the experimental group and Choice Theory (81.73) and Creativity Training (68.93) groups. In other words, the choice theory training method was shown to be more effective on PWB than creativity training.

Discussion

There was a significant difference between the effect of the experimental groups (Choice Theory and Creativity Training) and the control group ($p < 0.001$). Comparing the adjusted means indicates a significant difference in the scores of EoT between the experimental groups trained with the choice theory method (93.84) and creativity (102.60). In other words, creativity training was more effective on the EoT level than choice theory. The results of this research are in line with those of Barimani and Alizadeh Paji (2020), Khabiri et al. (2019), Jalali and Heidari (2016), Hassanzadeh and Mahdinejad (2013), and Kouchi et al. (2021).

To explain this finding, we can state that the following factors could lead to an increase in their dynamism and PWB: 1) participation in group meetings and an increase in group actions and reactions, 2) exchange of information and experiences of healthcare workers in training sessions, 3) familiarization with Glasser's basic needs, 4) responsibility in work and acquaintance with the behavior machine (thought, action, physiology, and feeling), 5) familiarization of employees with creativity techniques and components including fluidity and flexibility, mental dynamics, mental design, 6) improvement of thinking and perception and solution-finding, and 7) the personality components of creativity training including (self-confidence, boldness, and risk-taking). Besides, Glasser believes that not judging, feeling responsible, controlling, and satisfying needs (especially the need for love and belonging that is satisfactorily fulfilled in the group) improve mental health (Kouchi et al., 2021).

The nature of group training itself can positively increase the healthcare workers' mental well-being and dynamics. The explanation is that gathering people in a group and the fact that each person feels that others have the same problems as them effectively reduces their impatience and negative mood, thereby increasing their dynamism (the EoT component). Hence, participation in creativity training sessions and group counseling of the choice theory can enhance employees' psychological well-being and dynamics (Casstevens, 2011).

Glasser (2013) argues that people can improve their lives by consciously choosing their emotions and behavior. According to this author, the choice theory (or what was later called the control theory) posits

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that humans always behave in such a way as to control the world and themselves as a part of the world to maintain their basic needs. Researches show that training choice theory lowers anxiety and increases people's responsibility, self-esteem, and adaptability. In the group training of choice theory and creativity, people are trained to encounter their issues and problems to be prepared for life in society. In addition, encountering other people with the same problems can certainly reduce their stress and relieve them (Raddadi et al., 2017).

Notably, the basic human needs, especially the two needs of exchange of love and affection and the need to feel valued, were emphasized in the choice theory and current studies and were addressed in the course of treatment. Therefore, training these components can have an important effect on increasing PWB and EoT. Familiarity with the concept of choice theory (internal control) instead of external control, the correct way of fulfilling needs, familiarity with the concept of a qualitative (desirable) world, and the proper training of skills for responsibility increase their self-control (Tang & Gao, 2012). It can be stated that they provide employees with training in the concepts of the theory of effective choice of action. Also, they provide them with the necessary skills to improve their performance, and more importantly, train them in these skills. The active participation of employees in discovering their feelings and opinions through cooperation with the therapist, who is one of the key figures of the treatment process, provides the conditions for a kind of effective and real face-to-face interaction. Besides, during these training sessions, the employees perceive the relationships and feel comfortable. Accordingly, they use it as a tool to establish communication, act responsibly, exchange, and test and master external realities. Overall, it can be said that employees who have low PWB during this training course learn reality acceptance, responsible action, and, consequently, internal control in a safe environment, thereby increasing their mental well-being (Taghipour et al., 2019).

Based on our results, it is suggested to recognize the creativity and choice theory training and to identify their components by holding workshops on these constructs and their relationship with EoT, PWB, and other overlapping variables. It is also recommended to provide training in creativity and choice theory to psychologists, counselors, and psychotherapists through an educational package such that they can apply the therapeutic and educational results of these packages in counseling and psychotherapy centers.

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