Application of Three-Dimensional Interactive Mode of Emotion Regulation Coaching to Reduce the Incidence of Unsafe Behavior Based on SPSS Analysis

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Abstract. Unsafe behaviors often occur in the large-scale training of new employees and reducing the incidence of unsafe behaviors is the primary prerequisite for ensuring the successful completion of the new employee training task. In this study, we first analyzed the correlation between the incidence of unsafe behaviors and the coverage of emotion regulation coaching, using a questionnaire for independent samples t-test analysis by SPSS 20. Based on the correlation analysis, we implemented three-dimensional interactive mode of emotion regulation coaching, reaching the expected goal of reducing unsafe behaviors. This study shows that improving the coverage of emotion regulation coaching can effectively reduce the occurrence of unsafe behaviors in new employee training.

Keywords: emotion regulation coaching · incidence of unsafe behavior · new employee training · SPSS analysis

1 Introduction

Large state-owned enterprises in China will basically organize centralized training for new staff. According to surveys, new-staff trainees tend to show a positive spirit [1]. Still, some of them also display the characteristics of poor security awareness and sometimes conduct unsafe behaviors that are in violation of training disciplines, a healthy lifestyle or the code of ethics, such as illegal operations in practical training, alcohol drinking, staying up late or losing ID cards, etc. Some of the unsafe behaviors even triggered campus security incidents, such as negative public opinion, accidental injuries, etc., seriously affecting the campus security and stability.

To reduce the occurrence of unsafe behavior, we should change the idea from "knowledge education" to "quality education," which advocates first educating humans and then talents [2]. However, human education is more involved in regulating emotional states and cultivation of positive psychologies [3]. Sun Yue [4] proposed that a bad mental state may lead to unsafe behaviors through the study of drivers. Jason [5] also found that improving psychological sate reduces unsafe behaviors.

Inspired by the above research, we analyzed the correlation between the incidence of unsafe behaviors and the coverage of emotion regulation coaching, using a questionnaire for independent samples t-test analysis by SPSS 20. Based on the analysis, we conducted "three-dimensional interactive" emotion regulation coaching to reduce unsafe behaviors. This study shows that raising the coverage of emotion regulation coaching can reduce the occurrence of unsafe behaviors in new staff training.

2   Objects and Methods

2.1   Research Objects

In 2021, 4070 trainees involved in new-staff training by a large state-owned enterprise were selected as research objects. All participants were informed of the methods of using the data, which met the requirements of psychological ethics.

2.2   Research Methods

A self-designed questionnaire is used to study the coverage of emotion regulation coaching among trainees with unsafe behaviors, and data is analyzed by SPSS.20.

3   Data Analysis

3.1   The Coverage of Emotion Regulation Coaching

3.1.1   Investigation of the Coverage of Emotion Regulation Coaching Among the Trainees Who Conducted Unsafe Behaviors

We inspected the records of heart-to-heart talks between the tutors and 34 trainees with unsafe behaviors. According to the records, 21 of the 34 trainees mentioned that they could not control anger, depression, anxiety or other negative emotions when giving their reasons for unsafe behaviors. Moreover, through one-to-one interviews, we knew that only 2 of the 21 trainees had received emotion regulation coaching and all of them hoped to get the regulation coaching to avoid unsafe behaviors.

As shown in Fig. 1, the actual emotion regulation coaching coverage among the trainees who conducted unsafe behaviors is far lower than necessary or expected.
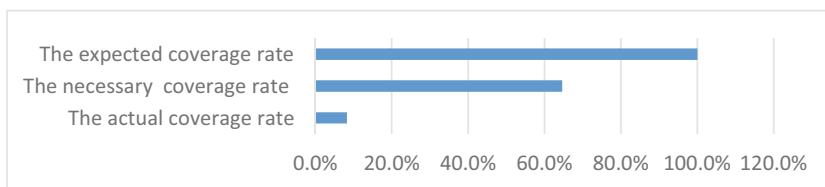

Fig. 1. Emotion regulation coaching coverage among trainees with unsafe behaviors (Excel)

Table 1. The regulation coaching coverage and the psychological service satisfaction among all trainees [Owner-draw]

The actual coverage of coaching	The necessary coverage of coaching	The expected coverage of coaching	The service satisfaction	The target rate of satisfaction
26%	43%	87%	35%	95%

3.1.2 Investigation of the Emotion Regulation Coaching Coverage Among All Trainees

A questionnaire survey was conducted among 4070 trainees and 3897 pieces of data were collected. The survey result showed that 43% experienced negative emotions in the past month, 87% hoped to receive emotion regulation coaching, but only 26% had received the coaching and 35% were satisfied with the psychological service.

According to Table 1, the actual coverage of emotion regulation coaching among all the trainees is much lower than necessary or expected. Likewise, the satisfaction rate of psychological service is much lower than the target value.

3.2 The Correlation Between the Coverage of Emotion Regulation Coaching and the Incidence of Unsafe Behaviors

A total of 93 classes were selected as samples, and the coverage of emotion regulation coaching (including online learning, group coaching, class activity organization, c.) and the incidence of unsafe behaviors was analyzed. The data show that the average coaching coverage rate is 36% with an interval of 9–83%, and the average incidence rate of unsafe behaviors in each class is 4.92% with an interval of 4.21–5.46%. Their correlation is shown in the Fig. 2.

As shown in Fig. 2, the incidence of unsafe behavior in each class was strongly correlated with the coverage rate of emotion regulation coaching, with an inverse ratio. The influence formula extracted from the scatter plot is $Y = 0.0003x2 - 0.043x + 5.8526$ and $R2 = 0.9884$, indicating that the formula has strong predictability. It can be concluded that the higher the emotion regulation coaching coverage, the lower the unsafe behavior incidence and there is a strongly negative correlation between them.

We did a grouping experiment to further analyze the correlation. We selected ten classes as Experimental Group 1, ensuring the emotion regulation coaching coverage for each class reached 50%, and another ten classes as Experimental Group 2, trying to ignore emotion regulation coaching requirements for each class, with other variables in control. The results show that the average incidence rates of trainees' unsafe behaviors in Group 1, Group 2 and all classes are 3.81%, 5.19% and 4.52% respectively.

We further calculated the degree of impact using the formula: The impact degree = the difference in the rate of emotion regulation coaching among Group 1, Group 2 and all the classes = (5.19%–3.81%) /4.52% = 30.5%. According to statistics, the 30.5% degree is significant, so it can be concluded that the coverage of emotion regulation coaching is the main reason for the incidence of trainees' unsafe behaviors. The average
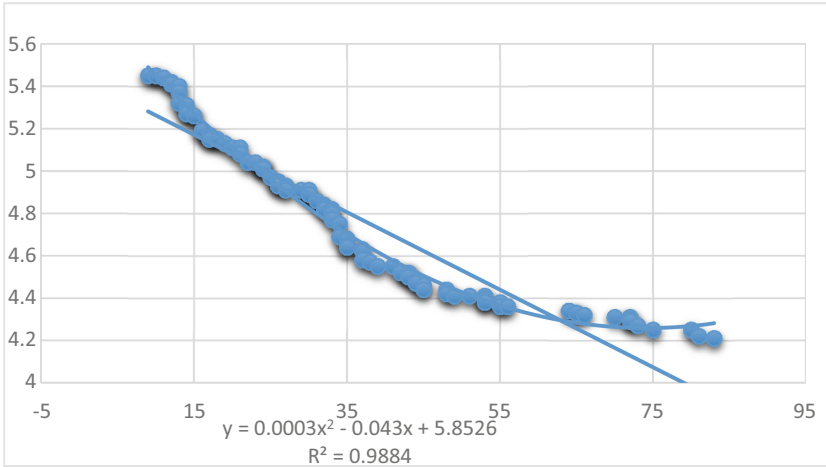
$$y = 0.0003x^2 - 0.043x + 5.8526$$
$$R^2 = 0.9884$$

Fig. 2. Distribution plot of coaching coverage and unsafe behaviors incidence (Excel)

Table 2. The independent sample test sheet [SPSS.20]

		Levene test of variance equation		T-test of the mean equation						
		F	Sig.	t	df	Sig. (On both sides)	The mean difference	Standard error value	95% confidence intervals for the difference	
									The lower limit	The upper limit
Incidence of unsafe behavior	Assuming the variance is equal	.124	.729	-15.92	18	.000	-1.375	.0864	-1.5565	-1.1935

rate of unsafe behaviors for each class was taken as the control, and the differences were compared according to the Table 2.

4   Implementing the "Three-Dimensional Interactive" Mode of Emotion Regulation Coaching

Under the guidance of humanistic psychology and positive psychology, we formulated a three-dimensional interactive mode of emotion regulation coaching. This mode realizes the interactive development of psychological coaching in three dimensions of online-offline guidance, peer coaching and moral-mental education for cultivating trainees'

positive mentality. It aims to minimize unsafe behaviors due to negative emotions by increasing the coverage of emotion regulation coaching up to 90% and decreasing the incidence rate of unsafe behaviors to 3%.

4.1 Online-Offline Interactive Guidance

We exploited the potential of mental health services online and actively created a mental health service system combining online and offline, making "offline work with online reflecting, online transmission with offline practice" [6].

4.1.1 Providing "Cloud Relaxation" Online Coaching

During the epidemic, the campus management mainly adopted a completely closed mode, which increased some pressure on the trainees. Therefore, it is necessary for trainees to have access to psychological relaxation techniques to alleviate possible negative emotions such as anxiety and tension. Six recorded audio and video micro-lessons of "cloud relaxation", covering safety island training and breathing relaxation techniques, were pushed to relevant WeChat official accounts and class WeChat groups simultaneously. With the micro-lessons, all trainees were organized to receive emotional cultivation through psychological salon activities.

4.1.2 Developing Positive Emotion Cultivation Manuals

We wrote and printed positive emotions training manuals covering how negative moods are produced and how to deal with them, which were distributed to every trainee. With the manuals, the trainees use the fragmented time to acquire knowledge and promote their awareness and ability of emotional regulation and self-service.

4.2 Peer Interactive Coaching

We established a peer interactive service system to help all trainees learn how to alleviate psychological problems when facing tremendous mental pressure.

4.2.1 Setting Up a Four-Level Emotion Regulation Coaching Organization

First, we set up a four-level emotion regulation coaching organization, including the mental health development center, the training group with professional qualifications, the class psychological commissar and the dormitory safety information personnel. In this way, the service network is formed to ensure that the coaching covers all trainees.

4.2.2 Carrying Out Emotion Regulation Coaching Layer by Layer

The psychological service group trained all the staff to master the scientific methods for class group coaching and "one-to-one" "heart-to-heart" talk. The instructor organized the classmates to share the methods of emotional regulation. In daily management, the instructor paid attention to the trainees with abnormal performance and carried out

heart-to-heart talks with them with the skills of "respect, listening and empathy." Class psychological committee members in the class and dormitory safety personnel played the role of safety guard and carried out peer coaching to encourage positive emotions. They built a mental bridge among trainees by distinguishing between normal and abnormal emotions and providing timely guidance.

4.3   Moral and Mental Interactive Education

At present, most trainees are "post-95" and "post-00", who are in the "jointing and plucking period" of life, and most need careful guidance and cultivation [7].

4.3.1   Grasping the Important Time Nodes to Cultivate Positive Emotions

We grasped the key time points and timely posted articles on the official WeChat account according to the psychological development of trainees during the training. With such psychological nourishment, we encouraged trainees to cultivate positive emotions and keep away from conducting unsafe behaviors.

4.3.2   Focusing on the Critical Trainees to Conduct Psychological Coaching

Through the psychological survey, daily observation and one-to-one talks, we understood the mental health status of trainees and established the mental health Ledge. For critical trainees with problems such as exam anxiety, interpersonal tension and emotional frustration, we took the initiative to intervene and provide timely psychological coaching so that they can get rid of emotional distress as soon as possible and enhance self-regulation and self-development.

4.3.3   Combining with the Trainees' Psychological Characteristics to Implement Both Moral and Psychological Education

In combination with the training objectives of new employees and the psychological characteristics of youth, we paid attention to the ideology and value guidance of trainees in the process of psychological coaching. We take care to cultivate their noble character for good so that they consciously resist safety violations from the heart. Special lectures such as "Psychological Adjustment during the Epidemic" and "Sunshine Psychological Forum" were held to help trainees master the necessary skills for emotion regulation and cultivate a positive and rational attitude. A painting contest with the theme of "Heart Blooming when Walking Together in the Epidemic" was held to guide the trainees to strive for the rejuvenation of the Chinese nation, rather than focusing on some trivial life worries.

Table 3. Comparison of emotion regulation coaching and unsafe behavior incidence before and after the implementation of "three-dimensional interactive" mode [Owner-draw]

Items	Before implementation	After implementation	Target checking
The satisfaction rate of psychological service	33%	97%	More than 90%
The coverage rate of counseling psychological	26%	98%	More than 95%
The incidence rate of unsafe behaviors	4.92%	2.56%	Less than 3%

5   Result Analysis

After the implementation of "three-dimensional interactive" emotional regulation, the coverage rate of emotion regulation coaching and the satisfaction rate of psychological services were studied through questionnaire and interviews. The comparison of the coverage rate of emotion regulation coaching, the satisfaction rate of psychological services and the incidence rate of unsafe behaviors before and after implementation is as shown in Table 3.

After the implementation of "three-dimensional interactive" emotion regulation coaching, the coverage rate of emotion regulation coaching reached 98%, the satisfaction rate of psychological service reached 97% and the incidence rate of unsafe behaviors went down to 2.56%, achieving the expected goal.

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