



ORIGINAL ARTICLE

Virtual Reality-Based Spiritual Emotional Freedom Technique (SEFT) Model on Spiritual Well-Being and BDNF Levels in Drug Inmates in The Class 1 State Prison in Makassar

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ABSTRACT

The complex problem of drug abuse has triggered the development of non-pharmacological therapies, including Spiritual Emotional Freedom Technique (SEFT) and Virtual Reality (VR). The merger of the two, VR-SEFT, shows positive potential in reducing and improving spiritual well-being in drug users. The purpose of this study is to explain the Spiritual Emotional Freedom Technique (VR-SEFT) Model for spiritual well-being and BDNF levels in drug inmates. Method. This study uses quantitative and quasi-experimental methods (Quasi Experiment Design). The number of samples was 33 inmates in the control group and 33 inmates in the intervention group. The Spiritual Well-Being Scale (SWBS) and BDNF levels were measured using Elisa. In this study, data analysis used the Statistical test paired sample t-test, Wilcoxon test, Independent Sample t-test, Man Whitney test, and Pearson Correlation test. Result. VR-SEFT research influences spiritual well-being ($p=0.011$) and BDNF (<0.001); there is a meaningful correlation between spiritual well-being and BDNF in drug inmates in class 1 prison in Makassar. Conclusion. VR-SEFT therapy is effective in increasing spiritual well-being and BDNF levels in drug inmates in the Makassar Class 1 Detention Center. The intervention group was more responsive than the control group. These findings have the potential to support the development of further interventions in similar populations

INTRODUCTION

The problem of abuse of Psychotropic Narcotics and Other Addictive Substances (NARCO), or the term popularly known to the public as NARKOBA (Narcotics and Dangerous Substances/Drugs), is a problem of its complexity. Handling this problem requires comprehensive countermeasures involving multidisciplinary, multi-sectoral, and active community participation. The World United Nations Office on Drugs and Crime (UNODC) in 2020 recorded that around 269 million people in the world abuse drugs. Meanwhile, in Indonesia, based on the National Survey on Drug Abuse from the National Narcotics Agency (BNN) in 2022 shows an increase from 1.80% in 2019 to 1.95% in 2022. This means that 195 out of 10,000 residents aged 15-64 years have used drugs in the past year. This problem has prompted some professionals in Medicine to combine various modalities of therapy and rehabilitation. Other forms of therapy currently being developed in Indonesia are using energy in prana and meditation (Sari et al., 2018). Epidemiological studies show that compared to the general population, mood disorders increase to 4.7 times more common in substance-dependent samples. (Ross et al., 2016).

The impact of substance abuse is concerning, especially anxiety disorders, with people who are dependent on substances having a 4.7 times greater risk of even mood disorders compared to the general population (Ross et al., 2016). Untreated anxiety disorders have an impact on health, quality of life, and social relationships (Ministry of Health of the Republic of Indonesia, 2018).

The World Health Organisation (2019) states that stress is also a reaction or response of the body to psychosocial (mental stress or burden of life). When anxiety occurs, the hormone cortisol is secreted by the hypothalamus pituitary adrenal (HPA). High levels of the hormone cortisol in the body cause decreased immune function and immune dysregulation (Schmidt et al., 2016; Thong et al., 2020), as well as having an impact on worsening depression (Burke et al., 2005; Fiksdal et al., 2019; Nandam et al., 2019). Several other studies have shown that stress and depression conditions can lower BDNF levels (Zhang et al., 2016; Phillips, 2017; Koo et al., 2019; Meng et al., 2020).

Non-pharmacological interventions that can be performed for drug patients include communication and coordination interventions provided by written information, media, or health care providers, complementary and alternative therapies, acupuncture, art and therapy, caregiver or intervention partner, expressive writing, hypnosis or hypnotherapy, meditation, progressive muscle relaxation and guided imagery, reflexology, relaxation therapy, and visual image interventions, structured rehabilitation services, virtual reality, vitamin/mineral supplements, prayer therapy, chiropractic/osteopathic manipulation, and herbal therapy and yoga (Smith et al., 2012).

The spiritual Emotional Freedom Technique (SEFT) is a technique that combines the body's energy system (energy medicine) and spiritual therapy using the tapping method at certain points in the body (Zainuddin, 2009b). SEFT therapy has been widely used as an adjunct therapy to reduce anxiety (Hadju et al., 2021; Lindner et al., 2021; Sargut et al., 2022). SEFT therapy affects the bio, psychological, social, and spiritual possessed by drug addicts. This (Wijayanti et al., 2020).

Several agencies provide treatment to drug residents, such as BNN South Sulawesi Province, RS. Sayang Rakyat, Alauddin Narcotics Prison, Sungguminasa Narcotics Prison and Makassar Class I Prison. Based on preliminary studies in some of these places, it is known that the provision of therapy is usually in the form of community therapy (TC) in contrast to those in BNN, which tends to be more complex. This is also in line with the results of research by Khotimah and MH (2021), which explained that the prison-based therapeutic community (TC) program is a program that is often applied to drug residents in Narcotics prisons.

Based on primary data from the Makassar class 1 prison in 2022, the number of cases of drug inmates is 1174 people with the category of drug users 1014 people (98 men and 916 women), 117 drug dealers (108 men and nine women), and drug dealers 43 people (38 men and five women).

MATERIALS AND METHODS

This study uses a quantitative approach. The researcher begins by applying the quasi-experimental method (Quasi Experiment Design), which is research that provides manipulation of independent variables with a pre-and post-test control group design approach (Swarjana, 2012). The main approach is a quantitative study to statistically test the hypothesis based on data collected with a closed questionnaire (Creswell, J.W., & Creswell, J.D. 2018).

This research was conducted in the Makassar Class 1 prison. The selection of the research location was carried out by considering the existence of cases or inmates of drug inmates who are being detained or rehabilitated, so it is necessary to know spiritual well-being and BDNF levels. The research was conducted from June to August 2023.

Population is a generalization area consisting of objects or subjects that have certain qualities, which researchers apply to study and then draw conclusions (Sudaryono, 2017). The population in this study is all inmates with drug cases in the Makassar Class 1 Detention Center

RESULTS

Table 1: Characteristics of the inmates, equality tests, intervention, and control groups

Characteristics of inmates	inmates				p
	Intervention (n=33)		Control (n=33)		
	n	%	n	%	
Age	27,36 (19-54)		29,33 (18-45)		0,307
Gender					
Man	26	78,8	32	97	0,024
Woman	7	21,2	1	3	
Education					
Primary	4	12,1	8	24,2	0,067
Junior High	4	12,1	7	21,2	
High School	24	72,7	18	54,5	
Bachelor	1	3,0	-	-	
Occupation					
Not working	8	24,2	7	21,2	0,347
Daily laborer/construction worker	4	12,1	7	21,2	
Self-employed	7	21,2	6	18,2	
Private employee	5	15,2	6	18,2	
Driver	2	6,1	3	9,1	
Housewife	3	9,1	3	9,1	
Parking attendant	4	12,1	1	3	

Based on Table 1. above, it is known that the average age of the inmates in the intervention group (VR-SEFT) is 27 years, with an age range of 19-54 years, while the inmates in the control group have an average age of 29 years (range 18-45 years). The table above shows that age, education, and occupation characteristics tend to be the same or homogeneous, but not in the gender characteristics. Where in the intervention group, the percentage of female assisted citizens was seven inmates at 21.2%, and in the control group, only 3 inmates 3%.

Table 2: Normality test of intervention groups and groups

Variable	Intervention Groups		Control Group	
	p-value Pre	p-value Post	p-value Pre	p-value Post
Spiritual Well-Being	0,451	0,138	<0,001	<0,001
BDNF	<0,001	0,739	<0,001	0,072

Test of Normality: Shapiro-Wilk

Based on the results of the normality test in table 2 above, it is known that to analyze the difference in pre test and post test scores, the variable data that is attributed to normal ($p>0.05$) in both groups uses the Paired T-test and Independent T-test. As for analyzing the difference in median values with normal undistributed variable data ($p<0.05$) in both groups using the Wilcoxon and Mann-Whitney tests.

Table 3: Differences in spiritual well-being, and BDNF of the intervention group and control group

Variable	Intervention Mean±SD	p	Control Mean±SD	p
Spiritual Well-Being Pre Post	59,33±6,37	<0,001 ^a	55,84±10,12	<0,001 ^b
	106,36±4,41		69,60 (6,99)	
	9,78±3,48		20,18 (11,59-28,09)	
BDNF Pre Post	0,84 (0,07-5,53)	<0,001 ^b	1,03 (0,05-7,31)	<0,001 ^b
	7,83 (6,24-9,93)		2,00 (0,07-4,00)	

Paired t-test^a Wilcoxon test^b

Based on table 3. above, it shows that the variables and variables of spiritual well-being in the pre-intervention group (mean = 59.33±SD=6.37) and post intervention (mean = 106.36±SD=4.41) while the pre-intervention BDNF variables (mean = 0.84± (0.07-5.53) and post intervention (mean = 7.83± (6.24-9.93). It shows that both groups showed a significant difference in the mean score and the median score, both between spiritual well-being (SWB) and BDNF pre and post were given intervention in the form of SEFT therapy with a p value of <0.05. However, the intervention group (VR-SEFT) was known to have improved spiritual well-being scores and better serum BDNF levels than the control group (SEFT therapy standard booklet).

Table 4: Comparison of spiritual well-being, and BDNF scores before and after treatment between the intervention group and the control group

Variable		Intervention Mean±SD	Control Mean±SD	p
Spiritual Well-Being	Pre	59,33±6,37	55,84±10,12	0,061 ^b
	Post	106,36±4,41	69,60±6,99	<0,001 ^b
BDNF	Pre	0,84±(0,07-5,53)	1,03±(0,05-7,31)	0,473 ^b
	Post	7,83±(6,24-9,93)	2,00±(0,07-4,00)	<0,001 ^b

Independent t-test^a Mann-Whitney test^b

Based on table 4. above, it shows that the variable, spiritual well-being in the pre-intervention group has a value of P=0.061 (mean=59.33±SD=6.37) and pre-control (mean=55.84±SD=10.12), while the

pre-intervention BDNF has a value of $P=0.473$ (mean= $0.84\pm(0.07-5.53)$) and pre-control (mean= $1.03\pm(0.05-7.31)$). The spiritual well-being variables in the post-intervention group were $P<0.001$ (mean= $106.36\pm SD=4.41$) and post-control (mean= $69.60\pm SD=6.99$), while BDNF post-intervention $P<0.001$ (mean= $7.83\pm(6.24-9.93)$) and post-control (mean= $2.00\pm(0.07-4.00)$). Before the intervention (pre-test) there was no difference between the two groups in the conclusion of no significance or significance ($p>0.05$) but after the intervention there was a difference in the significance of variables, spiritual well-being, and BDNF between the pre-intervention and post in the intervention and control groups. The pre-intervention and pre-control groups on variables, spiritual well-being, and BDNF levels were not significant, with a value of $p>0.05$. Among the groups of post-intervention variables on variables, spiritual well-being, and BDNF levels were equally significant with a $p<0.05$ value between the intervention and control groups

DISCUSSION

The Effect of Virtual Reality Spiritual Emotional Freedom Technique (VR-SEFT) Therapy on the Spiritual Well-Being of Residents Assisted by Drugs.

VR-SEFT therapy has a significant influence on improving spiritual well-being, VR-SEFT is more influential in improving spiritual well-being than rehabilitation therapy that has become standardized. This finding is in line with the research of Merida et al. (2021), which reported that SEFT therapy affects improving spiritual well-being. The results of the study are in line with previous researchers who said that tafakur prayer spiritual therapy can improve quality of life and improve physical well-being, including lowering pain and blood pressure and improving breathing rate, besides that tafakur prayer spiritual therapy can improve psychological and emotional well-being including stress and spiritual well-being to improve social well-being.

The researcher assumes that the improvement of spiritual well-being is indeed very possible to be experienced by the inmates of standard therapy carried out in prisons, they are disciplined to participate in religious activities which of course have brought them closer to God. In the VR-SEFT therapy intervention group with three processes, namely set up, tun in and tapping, the inmates continue to be directed to make positive affirmations in the first stage, namely the relationship with themselves (personal domain), this is obtained well in this VR-SEFT therapy where in the set up the inmates are directed to give positive affirmations to themselves, especially in the search for the meaning of life and the values of their lives, patience and self-recognition and self-worth. Second, in relationships with other people (communal domain), the inmates get a routine schedule for worship that is arranged in a structured manner; this certainly makes him not alone and not only himself in his current position so that, of course, the process of getting closer to the creator becomes easier. Third, the relationship with the environment (environmental domain) of the inmates undergoing this in conducive environmental conditions so that they feel more cared for to be a peak experience for the inmates. Fourth, the relationship with the transcendent domain is a continuation of the previous stages where it can be seen that the inmates are closer to their creators, they are more solemn in carrying out worship.

Spiritual well-being is considered a psychological resource for coping with problems that alleviate suffering and leads individuals to consider traumatic situations or disturbing events from a positive perspective (Mathad et al., 2019). Spiritual well-being is a unique resource that coordinates physical, mental and social dimensions which is characterized by life stability, peace, self-adjustment and harmony as well as a sense of close connection with oneself, God, society and the environment (Alorani & Alradaydeh, 2017). Spiritual well-being influences a person's physical, social, and psychological aspects (Maazallahi et al., 2021).

Research shows that people with drug addiction consistently need programs to increase self-compassion and spiritual well-being to overcome the intensity of dependence or addiction, as both

have a positive effect on reducing cravings for drug abuse among drug addict patients (Shahin et al., 2021).

One of the efforts to improve the spiritual well-being of the inmates of drug addicts in this study is through the provision of VR-SEFT-based SEFT therapy.

Previous research has shown that VR, which offers alternatives to getting in touch with nature over time, affects physical, psychological, and spiritual changes (Chin et al., 2022). According to Church et al. (2022) the emotional freedom technique (EFT) can be done in conjunction with VR.

The use of VR facilitates a more immersive and immersive SEFT. A scientific approach to God will have a calming effect, increase relaxation, and eliminate negative physical and mental disorders, stimulating the release of endorphins in the brain that have a positive impact on mood and memory (Hadju et al., 2021). So it can be concluded that the use of VR-SEFT shows positive potential in improving spiritual well-being in drug users. The high level of immersion of VR allows drug users to experience spiritual experiences more intensely, thus helping them to connect with themselves and spiritual understanding more deeply. Spiritual well-being will be influenced by several important factors such as personal beliefs, spiritual satisfaction, religious practices, disease severity, social support and event stress. VR-SEFT therapy can improve most of these factors. When undergoing VR-SEFT therapy, the inmates will feel relaxed so that it will be easier to enter to provide reinforcement such as the personal confidence of the inmates. When the personal beliefs of the inmates increase, they will feel spiritual satisfaction, leading to them getting closer to religious practices. This will certainly reduce the stress level of the inmates and accept the condition of the disease. In this study, VR-SEFT is a focal stimulus, the initial stage of the adaptation process. According to Calista Roy, adaptation consists of several important stages, starting from Input, continuing with the coping mechanism process which in this study consists of 2 parts, namely regulators where the body releases happy hormones (endorphins) which are also part of the psychoneuroimmunology system which will increase immunity indirectly. This process will be continued at the cognitor stage where the body will begin to feel relaxed, sincere and resigned so that it will be easier to be directed to pray and strengthen its religious beliefs. The next stage, the inmates will feel connected to God, know the meaning & purpose of their lives and their lives will be more meaningful so that the spiritual well-being of the inmates will increase (Self-concept effector) which will end in the stage of increased spiritual management (Adaptive Response) as the final stage of the adaptation process.

Researchers assume that the more often VR-SEFT therapy is used, it will be able to affect the inmates, especially in spiritual well-being, where spiritual well-being is greatly affected, especially the physical, social and psychological aspects of a person's life. So, VR-SEFT therapy can allow inmates to experience spiritual experiences more intensely, thereby helping them to connect with themselves and understand spiritually more deeply.

Effect of Virtual Reality Spiritual Emotional Freedom Technique (VR-SEFT) therapy on BDNF levels of drug inmates

The VR-SEFT indicator had a significant effect on the increase in BDNF levels after the intervention. The increase in BDNF levels in the intervention group given VR-based SEFT therapy was greater than in the control group. Previous research has shown that VR-based training can improve cognitive and brain function (Yang et al., 2022). In another study that combined the effectiveness of immersive VR using serum biomarkers as an outcome measure, also showed the finding of a significant increase in BDNF (Huang et al., 2022).

Brain-derived neurotrophic factor (BDNF) is a growth factor synthesized in the neurons and glial cell body. It affects neuronal maturation, neuronal survival in the nervous system, and synaptic plasticity (Karantali et al., 2021). BDNF is concentrated in specific brain regions, including the prefrontal cortex and hippocampus, where complex cognitive processes such as memory, personality, and emotional

control occur (Naegelin et al., 2018). BDNF is released during acute stress responses, especially in the limbic system (Mosiołek et al., 2022). According to Soloey-Nilsen et al. (2022), patients suffering from psychiatric disorders show lower levels of BDNF compared to healthy people. The study also showed that serum levels of BDNF in active drug users decreased, and the level of decline was also related to the severity of addiction (Ornell et al., 2018).

Some impacts will also be felt on drug users, such as psychological responses such as irritability, mood swings, and changes in thinking ability; behavioral responses such as laziness to work; and physical consequences for users such as damaging their bodies, damaging their health (Jumilia et al., 2023) and destroying the user's future due to addiction and even resulting in death (BNN RI, 2022). The social and psychological impact of Drug users lacking empathy or compassion in which they seek pleasure and do not care much about others, disrupts the harmony of relationships with the family. In addition, they tend to lie, be unruly, and be stubborn, and they often break the law. The proportion of drivers who are seriously injured and test positive for narcotics and cannabiniol has tripled. In this study, the lack of awareness and understanding or knowledge of the inmates is one of the causes of abuse in drug use. This is also explained by the lack of understanding and knowledge of the community, especially the younger generation, which is the cause of the high rate of drug abuse. With the increasing rate of drug abuse in Indonesia, there is a lack of socialization about the types of drugs and the impact of drug abuse.

This is certainly a serious concern for the government and the community. The lack of socialization with the public is one of the triggers for the increase in the level of drug abuse due to the lack of information obtained by the public about the types of drugs and the dangers of using drugs that are not by the dosage or without a doctor's prescription. To overcome these problems, information media is needed to help disseminate information about drugs and other information to the public by utilizing technology rapidly developing in the community.

Detention centers have an integral role in ensuring drug and alcohol education that is inaccessible to various groups of adolescents. Importantly, health promotion organizations must raise awareness about environmental influences on drug use behavior, and make earnest efforts to include consumer perspectives in the design and planning of adverse impact prevention and mitigation strategies. Drug education for the younger generation involved in narcotics cases is very important.

Efforts to overcome and prevent drug problems in adolescents can be taken through two types of actions; the first is pre-emptive action, where the effort is carried out in the form of activities that have a purpose that affects opportunity factors and drivers which will later show vigilance, awareness, and create drug-free living conditions—second, preventive, efforts to prevent drug abuse through supervision and control of illicit drug trafficking routes. The National Narcotics Agency (BNN) conducts prevention efforts, conducts socialization through mass media (print and electronic), social media, outdoor media, and others, urges to stay away from drug abuse, take careless actions, and strive to carry out prevention and community affairs. Support for drug addicts and abusers to empower and break free from narcotics dependence, as well as inviting users, people with an addiction, and victims of narcotics abuse to rehabilitate and stop narcotics abuse by reducing their circulation space (BNN, 2022). Rehabilitation is a series of healing processes. The provision of effective and quality rehabilitation services will have a positive impact, namely reducing drug trafficking, reducing the death rate due to drugs nationally, and improving the quality of life of the community.

The results of this study also obtained data that there are several activity programs to reduce the stress and anxiety of residents (assisted residents with drug cases), such as medical rehabilitation and direct consultation with doctors or psychologists (communication therapy). This is in line with the research of Fatihatur Rahmah (2020) that counselors conduct interpersonal communication with drug addicts so that there can be self-openness between the two and drug addicts can find confidence.

The rehabilitation of people with addiction there are several forms of rehabilitation, namely medical rehabilitation, which is a process of carrying out comprehensive addiction treatment activities, and social rehabilitation, namely physical, mental, and social rehabilitation, allowing drug addicts in the recovery period to continue to carry out their social functions in community life. The recovery process of drug addicts consists of many programs. In general, the programs received by participants can be divided into three categories: conference, educational, and group therapy programs. The use of community-based treatment methods for rehabilitation is beneficial so that drug addicts can live better in their environment after serving their sentences.

CONCLUSION

Virtual Reality Spiritual Emotional Freedom Technique (VR-SEFT) therapy has been proven to be effective in improving spiritual well-being and BDNF levels in drug inmates in RUTAN Klas 1 Makassar. This study showed significant differences in spiritual well-being scores and BDNF levels before and after treatment in the intervention group compared to the control group. In addition, there was a meaningful positive correlation between improved spiritual well-being and increased BDNF levels, indicating that VR-SEFT therapy impacted spiritual aspects and mental health biomarkers.

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