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·Original Article·

Efficacy of Williams LifeSkills Training in improving psychological health of Chinese male juvenile violent offenders: a randomized controlled study

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ABSTRACT

This randomized controlled study was conducted to evaluate the efficacy of Williams LifeSkills Training (WLST) as a means of improving the psychological health of Chinese male juvenile violent offenders. Sixty-six participants were assigned randomly to receive the usual intervention plus 8 weeks of WLST (study group, n = 33) or only the usual intervention (control group, n = 33). We found that the study group exhibited significantly decreased State-Trait Anxiety Inventory (STAI X-1, X-2) STAX2 scores and Trait Coping Style Questionnaire (TCSQ) negative scores, and increased Interpersonal Support Evaluation List (ISEL) tangible scores from baseline to 9 weeks later (P <0.01). In addition, a between-group difference in changes of TCSQ negative score was observed at the end of week 9 (P <0.05). These findings suggest that WLST can improve trait anxiety, coping style, and interpersonal support in male Chinese juvenile violent offenders.

Keywords: violent offenders; juvenile; Williams LifeSkills Training; psychological health

INTRODUCTION

Male juvenile offenders are considered to have significant mental health concerns warranting attention. Studies have confirmed higher levels of problems such as depression, anxiety, bipolar disorder, dysthymia, and cyclothymia among young incarcerated male offenders than in the general population[1-4]. Not surprisingly, given their disturbed mood, suicide is a great risk in incarcerated youth and some data suggested that the prevalence of completed suicide is 2–4 times that among youth in the community[5]. Mental health problems in this population are associated with further offending and these problems continue into adulthood, resulting in failure to mature into reasonably healthy and well-functioning adults[6,7]. Psychological researchers have found similar problems and sequelae among incarcerated young people in China who suffer from more serious mental health problems, such as anxiety and depression[8].

Without effective interventions, young offenders' mental health symptoms and disorders are likely to worsen, resulting in an increased risk of recidivism. It is therefore clear that more effective strategies are needed to improve mental health care in this high-risk population. Researchers and experts have long-standing concerns regarding the provision of mental health interventions for incarcerated youth[9]. Most of the existing studies focus on families, schools, and community-based treatments, and find varying levels of effectiveness. Cognitive behavioral therapy, parent training, family therapy, and multi-systemic therapy have shown promise for achieving significant changes over the course of treatment[9]. In particular, cognitive behavioral therapy is generally considered to be the most effective intervention for improving mental health among offenders[10].

Williams LifeSkills Training (WLST)[11] is a highly-structured program for cognitive behavioral coping skills,

and has been used in carefully-conducted, randomized, controlled trials to reduce blood pressure, hostility, anger, depression, and anxiety, and to increase positive affect and satisfaction with social support in patients with coronary heart disease, stressed people in the community, and Alzheimer's disease family caregivers[12-15]. WLST also reduces hostility and maladaptive clinical decision-making in U.S. medical students[16] and overt aggression, hostility, and impulsivity in young Chinese male violent offenders[17]. Directly relevant to the current study, we recently reported that WLST significantly improves anxiety, depression, negative coping, social support, and self-esteem in a randomized controlled trial among Chinese medical students[18].

Few studies have estimated the effectiveness of intervention programs and mental health services among juvenile violent offenders. The prior dominant research in these young people has depended largely on investigating the psychological health and trends in youth violence. Based on the need for effective interventions among young violent offenders and the evidence-base of the WLST program, the goal of the present study was to evaluate its effectiveness in improving the mental health of incarcerated male offenders in China.

PARTICIPANTS AND METHODS

Participants

To evaluate the efficacy of WLST on psychological health and overt aggressive behavior (results reported in[17]), male juvenile violent offenders (14 to 24 years of age) from Hunan Reform School in Changsha, China, from March 2010 to March 2011, were enrolled in this study. Written informed consent was given by themselves or by their guardians. Recruitment occurred through participants' self-referral and prison guard referral. Educational lectures were held in a schoolroom of the reformatory to inform offenders about the purpose of our study. After gaining a good understanding of the purpose and content of the study, those who were willing to cooperate and complete the questionnaires were enrolled voluntarily and signed the informed consent forms. To reduce other potential confounders, participants suffering from neurological disease, serious somatic diseases (such as heart diseases, hepatic or renal diseases, or diabetes), infectious disease, and audio-visual impairments were excluded. Those who had intellectual disability, learning disorders, pervasive developmental disorders, attention-deficit/hyperactivity disorder, schizophrenia, major depression, bipolar disorder, or personality disorder were excluded as well. Participants did not receive any mental health service before this study.

Participant Protection and Ethical Approval

The current study was approved by the Ethics Committee of the Second Xiangya Hospital, Central South University in Changsha, and was performed in accordance with the Guidelines for Good Clinical Practice and the Declaration of Helsinki.

We evaluated all participants regarding their ability to independently sign informed consent. According to the General Principles of the Civil Law of the People's Republic of China, a citizen aged 18 or above is considered an adult who has full capacity for civil conduct, and may independently engage in any civil activities including deciding whether or not to participate in the present study. A citizen aged 16 to 18 and whose main income is his own labor is also regarded as a person with full capacity for civil conduct[18]. If a citizen was younger than 16 without full capacity for civil conduct, we contacted the guardian to obtain written informed consent.

In the current study, all potential participants aged 16–18 were found to be able to maintain their life by labor equal to citizens of the same age in society, and hence were qualified to have full capacity for civil conduct and provided written informed consent themselves. We gave particular consideration to informing participants of their rights and attended closely to issues of confidentiality.

Procedures

A randomized controlled study was performed. First, we collected demographic information of all participants with a self-administered questionnaire and assessed their baseline psychological health before the WLST. Then, they were computer-randomized in an equal ratio to the study group or the control group.

Participants in the study group received the usual intervention from the reform school plus 8 weeks of WLST, while participants in the control group received only the

usual intervention from the reform school (without WLST or any other cognitive-behavioral training) during the same period. After the 8-week training, all participants continued to receive the usual intervention for another week, and then received a final assessment at the end of week 9.

Usual Intervention

All participants continued to be treated by their officers in the reform school in the usual intervention with no cognitive-behavioral training, usually single educational training such as academic courses, and legal and health education.

WLST

WLST includes 10 core skill modules: (1) Being Aware (i.e. increasing awareness of and objectivity in distressing situations), (2) Making a Decision (evaluating one's reactions to those situations to decide whether to try to change one's reactions or to take actions to try to change the situations), (3) Getting Over It (changing one's reaction to distressing situations), (4) Problem Solving (using assertion to get others to change their behavior), (5) Assertion (problem solving to change distressing situations), (6) Saying "No" (saying No to reduce exposure to distressing situations), (7) Speaking Up (speaking clearly so others really listen), (8) Listening (listening skills to make sure you hear what others are saying), (9) Empathy (empathizing to increase understanding of others' behavior), and (10) Increasing Positives (increasing the positives in your interactions with others). In this study, WLST was delivered over the course of 8 weeks, with one 2-h session each week. The training included explaining the content, watching videos, role-playing, conducting group practice exercises, discussion, and assigned homework.

To ensure effective training, we divided the participants into small groups, each with 6–10 persons. All the sessions were conducted by the participants themselves under the supervision of two psychiatry post-graduates who had been trained by Dr. Virginia Williams and certified as medical practitioners qualified to deliver WLST in China. During the training of WLST facilitators at Central South University, adaptations were made to make the training consistent with Chinese culture and values. With a relatively fixed theme and content, each training session focused on one or two of the 10 core skills. The training theme and content were adjusted in the light of log entries regarding actual distressing situations reported by the participants in the training sessions.

Measures

Self-Administered Questionnaire

A self-administered questionnaire was used to obtain data for demographic information regarding age, years of education, childhood surroundings (city, small town, countryside), family income (high, >5000 RMB; medium, 2000–5000 RMB; low, <2000 RMB), physical health (very good, never or seldom get sick; good, sometimes get sick but not serious; not good, often ill or hospitalized), and major frustration (yes or no).

Psychosocial Outcome Measures

All participants were asked to complete a set of survey instruments both at baseline (before WLST) and at the end of week 9. The survey included the following questionnaires to assess psychosocial health.

Anxiety was assessed with the State-Trait Anxiety Inventory, which consists of 20-item questionnaires used to assess state anxiety (STAX1) and trait anxiety (STAX2). This inventory has been validated in a large number of studies of various populations. Scores range from 20 to 80, with higher scores indicating higher levels of anxiety[19].

Depressed mood was assessed by the Zung Self-rating Depression Scale (SDS), which comprehensively and accurately reflects the symptoms of depression and their severity. Scores range from 20 to 80, with higher scores indicating higher levels of depression[20].

Social support was assessed with Cohen's Interpersonal Support Evaluation List (ISEL)[21] which was translated into Chinese by the authors of the current study.

Coping style was measured with the Trait Coping Style Questionnaire (TCSQ) designed by Dr. Qian-Jin Jiang, and the results are presented as positive and negative coping scores[22].

The primary outcome of this study was difference between the two groups in changes of the total scores on all these scales from baseline to week 9, and the secondary outcome was changes in these scores within the two groups.

Statistical Analysis

SPSS 19.0 (SPSS Inc., Chicago, IL) was used for statistical analysis. Categorical variables are described using frequencies and percentages, whereas continuous variables are presented as mean and standard deviation (SD). Baseline between-group comparisons were performed using the *t*-test for continuous variables, and Pearson's χ^2 test for categorical variables.

Between-group comparisons of changes in STAX1, STAX2, SDS, TCSQ, and ISEL scores from baseline to the end of week 9 were performed using analysis of covariance (ANCOVA) with baseline values as a covariate. Inter-group changes in these scores from baseline to the end of week 9 were tested using repeated measures analysis of variance (ANOVA). The significance level was defined as P <0.05 (2-tailed).

RESULTS

Characteristics of Participants

Eighty-one male juvenile violent offenders were deemed eligible to participate in this study, but 14 refused to participate and one provided invalid data. The remaining 66 participants were assigned randomly to the study group (n = 33) and the control group (n = 33). During the intervention, two participants in the study group were withdrawn for missing 2 sessions and providing invalid data, respectively. At the end of week 9, 2 persons in the control group provided invalid data and were excluded from data analysis. Therefore, 31 participants were included in each group for final data analysis (Fig. 1).

All the participants were aged 16 to 23 years, being jailed when younger than 18. Among them, 14 (21.2%)

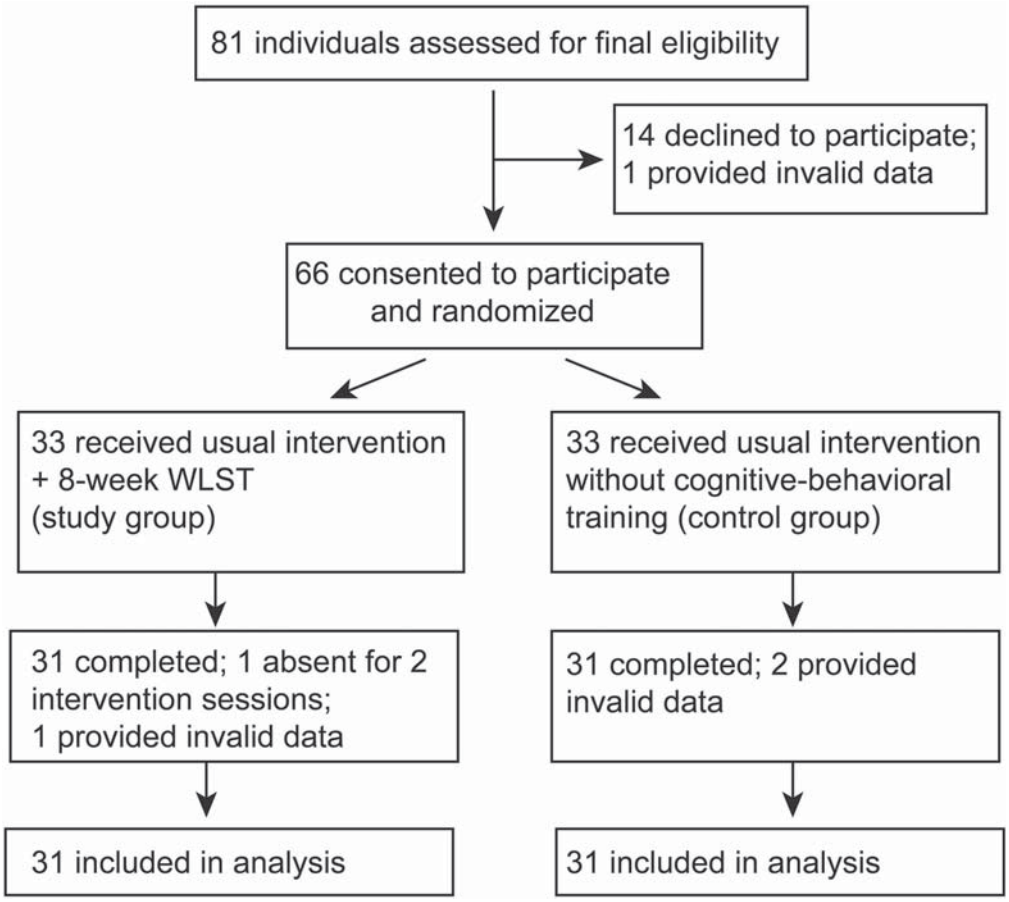

Fig. 1. Details of participant inclusion and exclusion.

came from cities, 20 (30.3%) from small towns, and 32 (48.5%) from rural areas. Their family incomes were <5000 RMB per month, and half had suffered major frustration. There were no significant differences in baseline characteristics between the two groups (Table 1).

Anxiety and Depression

To assess the effectiveness of WLST in treating anxiety and depression in young male violent offenders, we compared the mean scores at baseline and at the end of week 9. In the study group, there was a significant decrease in STAX2 [(F(1,30) = 17.663, P <0.001)]. In the control group, no significant difference was found. Further ANCOVA showed no significant between-group differences in changes of any of the anxiety or depression scores at the end of week 9 after controlling for baseline values. Between-group differences in changes of SDS scores were close to statistical significance (P = 0.057), with the WLST group decreasing more than the control group (Table 2).

Coping Style

The study group showed a significant decrease in TCSQ negative score at the end of week 9, compared with baseline [F(1,30) = 8.837, P = 0.006]. In the control group, no statistical difference was found. ANCOVA showed significant between-group differences in changes of TCSQ negative scores at the end of week 9 after controlling for baseline values (P = 0.031). In addition, there was no significant within-group or between-group difference in changes of the TCSQ positive score (Table 2).

Social Support

In the study group, there was a significant increase in ISEL tangible score at the end of week 9, compared with baseline [F(1,30) = 7.482, P = 0.010]. In the control group, no statistical difference was found. Further ANCOVA showed no significant between-group difference in changes of ISEL total and any subscale scores at the end of week 9 after controlling for baseline values (Table 2).

Table 1. Baseline demographics of participants

	Study group (n=33)	Control group (n=33)	T/χ^2	P
Demographic				
Age (years)	18.94 (1.87)	18.94 (0.86)	<0.001	1.000
Education (years)	7.67 (1.36)	7.32 (1.62)	0.946	0.348
Growth surroundings				
City	6 (18.2%)	8 (24.2%)	2.211[a]	0.331
Small Town	8 (24.2%)	12 (36.4%)		
Countryside	19 (57.6%)	13 (39.4%)		
Family Income				
High	0 (0.0%)	0 (0.0%)	0.363[a]	0.547
Medium	25 (75.8%)	27 (81.8%)		
Low	8 (24.2%)	6 (18.2%)		
Physical Health Status				
Very good	15 (45.5%)	10 (30.3%)	1.676[a]	0.433
Good	16 (48.5%)	21 (63.6%)		
Not good	2 (6.1%)	2 (6.1%)		
Suffered Major Frustration	18 (54.5%)	15 (45.5%)	0.545[a]	0.460
Sexual Activity	22 (66.7%)	18 (54.5%)	1.015[a]	0.314
Drug Abuse	7 (21.2%)	6 (18.2%)	0.096[a]	0.757

Data are expressed as mean (SD) or n (%). [a]Pearson's χ^2 test.

Table 2. Psychological outcome measures from participants before and after 9 weeks

Weighted score	Baseline mean (SD)	At the end of week 9 mean (SD)	Score change, mean (SD)[a]	Between-group difference in change score[b]	
				F	*P* value
STAX1					
Study group	43.19 (6.56)	41.74 (7.22)	-1.45 (6.07)	0.686	0.411
Control group	45.65 (4.86)	44.42 (7.88)	-1.23 (9.04)		
STAX2					
Study group	43.97 (5.76)	39.58 (5.85)	-4.39 (5.81)**	2.461	0.122
Control group	44.00 (3.82)	42.42 (8.24)	-1.58 (9.63)		
SDS					
Study group	43.19 (6.43)	41.77 (6.03)	-1.42 (6.30)	3.778	0.057
Control group	45.61 (6.06)	45.29 (4.99)	-0.32 (5.18)		
TCSQ positive					
Study group	30.90 (5.23)	31.35 (6.05)	0.45 (7.33)	1.239	0.270
Control group	30.45 (5.16)	29.71 (5.01)	-0.74 (3.92)		
TCSQ negative					
Study group	30.84 (8.00)	26.35 (6.47)	-4.48 (8.40)**	4.854	0.031
Control group	29.81 (4.89)	28.94 (5.01)	-0.87 (4.36)		
ISEL Tangible					
Study group	5.97 (1.47)	6.77 (1.28)	0.81 (1.64)**	0.163	0.688
Control group	6.39 (1.45)	6.71 (1.75)	0.32 (2.10)		
ISEL Belonging					
Study group	7.68 (2.36)	7.61 (1.52)	-0.06 (2.08)	0.026	0.872
Control group	6.77 (2.09)	7.23 (1.87)	0.45 (2.08)		
ISEL Appraisal					
Study group	6.84 (2.27)	6.68 (2.47)	-0.16 (2.41)	0.085	0.772
Control group	6.45 (1.95)	6.35 (1.76)	-0.10 (2.01)		
ISEL Self Esteem					
Study group	7.16 (1.90)	7.13 (1.78)	-0.03 (2.29)	1.132	0.292
Control group	6.58 (1.61)	6.48 (1.63)	-0.10 (1.56)		
ISEL Total					
Study group	27.65 (5.65)	28.19 (5.64)	0.55 (0.90)	0.257	0.614
Control group	26.19 (4.83)	26.77 (4.53)	0.58 (3.83)		

[a]Within-group differences analyzed using repeated ANOVA; **P <0.01. [b]Between-group differences in change scores at the end of week 9 analyzed using ANCOVA controlling for baseline values.

DISCUSSION

In this 9-week study, we found that WLST significantly improved trait anxiety, negative coping skills, and tangible social support, with a close-to-significant trend toward a larger decrease in depression, among male juvenile violent

offenders. These effects are similar to those documented in prior clinical trials of WLST in Western populations[9-16] as well as in meta-analysis of interventions relevant to young offenders with mood disorders, anxiety disorders, or self-harm tendencies[23]. These findings reinforce our similar previous findings that WLST improves psychosocial health in Chinese medical students[18], as well as our prior study in this same incarcerated population of young male offenders in which WLST produced significant reductions in overt aggressive tendencies, hostility, and impulsivity[17].

It is likely that WLST produces these improvements because it trains participants in skills that not only help them to be more aware of negative thoughts and feelings in distressing situations, but also teaches them how to evaluate those thoughts and feelings to determine whether they need to take action to change the situation or to change their thoughts and feelings and how to undertake these actions. In addition, WLST enabled participants to improve their coping styles, resulting in positive problem-solving attitudes and skills with the potential to promote improved coping performance. Previous research has shown that a positive coping style reduces depression[24] and risk for behavioral problems among Chinese adolescents[25].

These findings suggest that WLST helped the participants to be aware of feelings early, gain control of bad feelings, and make smart choices about when to act, solve problems creatively, and get more enjoyment and meaning from life. During the WLST intervention, participants learned to use the 10 skills to deal with negative feelings and thoughts. They were able to understand their mood and the consequences, in turn, were to understand and change their current state, thus relieving negative mood and negative coping style.

Last but not least, we found that WLST was effective in enhancing tangible social support. This is likely to result from in-depth training in speaking, listening, and empathy skills that can help build supportive relations with and understand the behavior of others. Taken altogether, these improved skills in handling distressing situations and improving social relationships have the potential to significantly reduce recidivism rates, as well as help solve problems encountered in life.

There are some limitations in our study. First, the improvements reported here were at a single time point following a very short follow-up period. Future studies are suggested to extend the follow-up period to document not only maintenance of improvements in psychosocial factors but also reduced recidivism in this population at high risk for future offences. Second, this study had a relatively small sample size and the findings are preliminary. While previous studies evaluating WLST have found significant improvement in psychological health, these results need to be confirmed in a larger sample size. In addition, it will also be important to evaluate WLST effects in different types of offenders at different ages and different populations.

In conclusion, we revealed that WLST reduced anxiety and negative coping style and increased tangible interpersonal support, all of which are important aspects of psychosocial well-being. If the current findings are confirmed and extended in ongoing research, WLST could be implemented more broadly to improve mental health and reduce recidivism among juvenile offenders in China and elsewhere.

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