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Life skills program for improving adolescent mental health in the aftermath Mount Merapi eruption, Yogyakarta-Indonesia

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Abstract

The ability of adolescents to cope with stressful life events has not been well developed. Facing stressful situations might trigger them to engage in many dangerous and self-destructive behaviors. Life skills program in improving mental health of adolescents has been proven in many countries, as it has in Indonesia. In post-disaster situation, there is rarely any community program which focuses on adolescent mental health. Life skills program is a psychological intervention to teach adolescents to improve their skill to cope with stress, develop self-esteem, deal with peer pressure, think critically, communicate appropriately and act assertively. Teachers and local health professionals who have already been trained about life skills program apply this program in adolescents experiencing a stressful event, a natural disaster from the eruption of Mount Merapi in Yogyakarta-Indonesia. This study attempts to apply and evaluate the effectiveness of the program for adolescents who had survived a natural disaster in Yogyakarta-Indonesia. Three-weeks life skills training was conducted in 2012 on 40 junior and senior high school students, post Mount Merapi eruption in Yogyakarta and Magelang. Subjects were assessed for their self-image using Rosenberg self-image questionnaire, and their emotional-behavioral problems and mental strength using Strength and Difficulties Questionnaire (SDQ), before and after the training. SPSS was used for the statistical analysis. The average age of the subjects was 14.48 ± 1.21 years old. There were significant differences on the self-esteem and mental strength aspects of the subjects before and after intervention. Score on low self-esteem was improved ($p=0.005$), negative self perception also became better ($p<0.001$), and prosocial behavior was increased ($p=0.001$). There were also decreasing difficulties and emotional-behavioral problem score after intervention, and other aspects of self-esteem such as instability and self-consciousness. Life skills training has several positive effects in improving mental strength and self-image and decreasing emotional and behavioral problems of adolescents post-disaster.

Keywords: adolescents; life skills; self-esteem; emotional-behavioral problems; mental health

1. Introduction

Adolescence is a transition period from childhood to adulthood, which is very important to prepare an adolescent to be able to grow and develop into a healthy and productive adult. During this period, many changes occur both physically and emotionally to the adolescents. Other than that, adolescence is also the period in which the youth starts to be more engaged to the risk-taking behaviors and experimentation. (Pataki, 2005).

As youths are still maturing during the period of adolescence, their ability to cope with problems has not been fully developed. Therefore, a stressful life event may cause major emotional and behavioral problems among adolescents (Pataki, 2005; Departemen Kesehatan RI Direktorat Bina Kesehatan Masyarakat, 2004). These problems can manifest as mental health problems, such as post-traumatic stress disorder (PTSD), separation anxiety disorder, or depression. Moreover, traumatic life events can also increase risky behaviors in adolescents, which may occur in many forms, such as substance abuse or smoking, (Steinberg, 1999; Pusat Kajian Bencana dan Tindak Kekerasan Departemen Psikiatri FKUI-RSCM,

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2005; Fullerton & Ursano, 2005). A study conducted by Reijneveld et al. (2003) in Netherland has proven that the adolescents experiencing a disaster significantly increased the excessive use of alcohol compared to those who did not, in both short-term (5 months) and long-term (12 months) periods of time (Reijneveld, Crone, Schuller, Verhulst, & Verloove-Vanhorick, 2004)

Currently, natural disasters continue to plague regions of Indonesia. One of the examples is the eruption of the Mount Merapi volcano which took place in October-November 2010, causing approximately 350 deaths and about 350,000 people had to be evacuated and stayed in temporary shelters (Wikipedia, 2017). As much as the disaster affects adults and children, the eruption of mountain surely also affects adolescents in the area. Even though the aids for the daily needs are mostly provided for all age groups (Badan Nasional Penanggulangan Bencana, 2009), the medical and psychological aid mostly focus on adults and children issues, while adolescents may not feel fit into those age group programs.

As the program focusing on adolescent issues in the community post-disaster period is very rare, this study attempts to use an adapted program from WHO, called the life skills program, to help improving the mental health of the adolescents in the area, as well as to evaluate the effectiveness of the program in post-disaster condition. Life skills program is an intervention to teach adolescents to improve the skill to cope with stress, develop self-esteem, deal with peer pressure, through critical thinking, good communication skills and be assertive. As this adapted program has been proven to successfully improve the mental health of adolescents in a normal situation, it is also hoped that this program could help improve the mental health of the adolescents post-disaster. As a result, it is expected that the maturing period of adolescents in the area would not be much affected by the disaster.

2. Theoretical Background

2.1. Development of Adolescence

During adolescence (age 12-18), many changes occur to youth both physically and emotionally. Because most children start to undergo puberty before this period (at the age of 11), many hormonal changes occur and affect many domains of youth, including the domain of cognition and language and the domain of social-emotional skills and behavior. As the effect of these changes, adolescents also begin to pay more attention to their peer groups, thus they would be more susceptible to the influences from their peers. It is also a period when they may start to engage in the risk-taking behavior and experimentation as they want to become more independent from family or parental influences. (Pataki, 2005; Steinberg, 1999).

Some of the changes occur in the domain of cognition and language include the improvement in information-processing skill, the growth of self-consciousness, the difficulty of rational decision-making and impulsivity, as well as vocabulary growth (approximately 40.000 words by the age of 18) and conversational skills progress. Meanwhile, for the social-emotional and behavioral domain, some of the changes include the frequent and intense fluctuation of self-esteem and emotional experiences, the importance of peer group conformity, the tendency to participate in risky behaviors (acts of violence and aggression, drug and alcohol abuse, bully behavior, and others), prosocial characteristics (loyalty, support, and mutual trust), and peer victimization are also developed as adolescent becomes more social or relationally focused in content (more verbal rather than physical aggression)(Departemen Kesehatan RI Direktorat Bina Pelayanan Kesehatan Jiwa, 2006).

As a transitional period which prepares children to face adulthood, adolescence is an especially important period which shapes and formulates their adult identities. Therefore, adults and environment play an important role to help youths mature properly (Moya, 2011).

2.2. The Effect of Disaster to the Mental Health of Adolescents

It has been known that disaster could cause major mental health problems to the surviving victims, especially to adolescents. Youths are at particular risk for post-disaster distress because they are less equipped to cope with disasters than adults due to less well-developed coping skills (Garnefski, Legerstee, Kraaij, Van den Kommer, Teerds, 2002). It could increase the risk for psychiatric disorders, which might occur in the form of post-traumatic stress disorder (PTSD), acute stress disorder, major depression, adjustment disorders, and anxiety disorders. The changes in emotions, such as anger, sadness, fear, disbelief, anxiety, and irritability, could also be expected as the responses following the traumatic event. Of note, the increasing risk-taking behaviors following the disaster are commonly seen in adolescents (Fullerton & Ursano, 2005), such as excessive consumption of alcohol (Reijneveld et al., 2003; Reijneveld et al., 2004). Lower self-esteem could also be seen among adolescents after disaster (Pfefferbaum et al., 2014).

Responses to natural disasters are affected by the ability to predict and prepare for them. PTSD symptoms are often reported by youths exposed to heterogeneous disorders, depression is less common but may also occur. Numerous variables, such as individual, family and community, may relate to post disaster outcome (Garnefski, Legerstee, Kraaij, Van den Kommer, Teerds, 2002). Adolescents' social environment may play an important role in predicting post-disaster distress and may interact with other characteristics to convey risk or resilience. One important variable of importance in this area is social support (Paul, Felton, Adam, Welsh, Miller, Ruggiero, 2015).

2.3. Mental Health Interventions for the Surviving Victims after Disaster

The main goals of the interventions for the surviving victims after disaster are to help the victims to cope with the trauma, to help the victim adjusting to the new situation, and to return the victim to the previous level of functioning (Benveniste, 2006). In order to achieve these goals, psychotherapy is commonly used, especially for the victims who suffer from psychiatric disorders. One commonly used approach of the psychotherapies to help victims after disaster is the psychosocial approach (Bolton et al., 2007; Jordan et al., 2010).

According to Ruddy & House (2005), psychosocial intervention is defined as any intervention, which focuses on social and/or psychological factors, rather than the biological factors, thus counseling can also be included as one of the psychosocial interventions. Psychosocial intervention can be divided into several types: individual psychotherapy, group psychotherapy, and the other psychosocial intervention strategies, such as the individual psychological debriefing. The individual psychotherapies include the psychodynamic psychotherapy, cognitive-behavioral therapy, and eye movement desensitization and reprocessing (EMDR) (Ursano et al., 2004).

As the attempt to find the best intervention for victims post-disaster, many studies have been conducted, especially by using various types of psychosocial approaches. The examples

include the study conducted by Bolton et al (2007) which used the group interpersonal psychotherapy, the study conducted by Ruzek et al (2008) which used the cognitive-behavioral therapy, and the study conducted by Mayou, Ehler, & Hobbs (2000) which used the psychological debriefing therapy. However, most of these studies do not target any specific age group. There is one program, called the life skill education program, which has been designed 1997 by WHO to specifically target to help adolescent age group post-disaster using psychosocial approach as well. As the program is specifically designed for adolescents, the contents of the program are also customized and adapted to fit this age group, thus it is ought to be more helpful and more effective for them. This program will be explained in-depth in the next section.

2.4. Life Skills Education for Adolescents

The life skills education is a program developed by WHO in 1997 to improve the needed skills by adolescents to handle their personal lives. These programs include communication skills, decision making, critical thinking, assertive actions, coping with emotions, development of self-esteem, dealing with peer pressure and social interaction with other people. The aim of the education is to improve the responsibility of adolescents for their own lives by having healthy decision-making skills, and strong will to avoid negative pressure and unsafe/dangerous behaviors (Tiendrebeogo, Meijer, & Engelberg, 2003; Departemen Kesehatan RI Direktorat Bina Pelayanan Kesehatan Jiwa, 2006; Unicef, 2011; WHO, 2011). From previous studies, it has been proven that this training program could help adolescents in preventing depression and helping them during the transition period to universities (Quayle, Dziurawiec, Roberts, Kane, & Ebsworthy, 2001), decreasing the smoking rate in junior high school students (Zollinger et al., 2003), and avoiding alcohol and drug abuse (Botvin, Schinke, Epstein, & Diaz, 1994; Botvin, Schinke, Epstein, & Diaz, 1995; Quayle et al., 2001; Anonymous, 2002; Zollinger et al., 2003). Furthermore, UNICEF of Myanmar has also proven that this program positively affects the relationship between adolescents and parents as well as decreasing the aggressiveness of adolescents. (UNICEF, 2011)

In 2004, Directorate of Mental Health Services, Director General of Medical Services, Indonesian Ministry of Health developed the Training Module for Improving Adolescent Mental Health in Schools Through Life Skills Education for adolescents in Indonesia. This program was developed by referring to the life skill education established by WHO (1997), but was translated and adapted to the conditions and culture of Indonesia. This life skills education consists of five modules: increasing self-esteem, overcoming emotions, understanding and dealing with stress, dealing with peer pressure, and resolving conflict (Departemen Kesehatan RI Direktorat Bina Kesehatan Masyarakat, 2004). This program has also been proven to improve the self-image of adolescents in a junior high school in Jakarta, Indonesia (Kaligis, Widyawati, & Wiguna, 2008; Kaligis, Wiguna, & Widyawati, 2009). The life skills training which was given to the subjects in this study consists of three modules: dealing with stress, increasing self-esteem, and dealing with peer pressure.

The objectives of module understanding and dealing with stress are to improve adolescent's skills in understanding stress, identifying events that can cause stress, analyzing personal experience when experiencing stress, understanding the impact of stress (physical, emotional, and behavioral), and practicing simple techniques to cope with stress. Dealing

with Stress Module consists of eight activities: Activity (1) Sharing feelings in times happiness and unhappiness; Activity (2) Meaning of stress and its causes, Activity (3) Effects of stress on the physical, emotional and individual behavior, Activity (4) Events that can cause stress, Activity (5) Learning to identify events that can cause stress, Activity (6) Role play, analysis and discussion of the causes and effects of stress, Activity (7) Unhealthy ways of dealing with stress, and Activity (8) Identifying strategies for coping with stress.

The objectives of the module in increasing self-esteem are to improve adolescent's skills in understanding oneself, strengths, potential, and talent; understanding happy feelings in oneself; gaining self-confidence, self-acceptance and self-appreciation. Increasing self-esteem module consists of seven activities: Activity (1) Build good relationships with other persons, Activity (2) Feel good about yourself, Activity (3) Search for self identity, Activity (4) Understand the sense of self-confidence, Activity (5) Snakes and Ladders, Activity (6) To be a confident person, and Activity (7) Enhance self-image

Meanwhile, the objectives of module dealing with peer pressure are to improve adolescent's skills in understanding the difference between good and bad peer pressure, learning that one's opinion effects decision-making under pressure, learning various techniques on how to say "no". Dealing with Peer Pressure Module consists of five activities: Activity (1) Introduce a friend, Activity (2) Peer pressure, Activity (3) Making the decision to deal with peer pressure, Activity (4) Saying "no", and Activity (5) Not following temptation of friends.

3. Methods

The study was performed in Yogyakarta and Magelang in 2012, after the eruption of Mount Merapi took place. Before the study was begun, a focus group discussion with adolescents in the area was conducted to assess the problems they were facing in order to adjust the topic of the module as needed. It was subsequently continued with the Training of Trainers (TOT) program on adolescent life skills modules to educate health workers and teachers in Yogyakarta area on life-skills training for adolescents. Local teachers and health professionals, who had been trained by experienced psychiatrists from Department of Psychiatry Faculty of Medicine Universitas Indonesia - Cipto Mangunkusumo Hospital, Jakarta. Included in this 5 days training were topics such as understanding about psychosocial support for adolescents after disaster; concept on participation training; facilitator roles in the participatory training; reflection for the facilitators, and the process of mentoring and supervision. The purpose of the training is to prepare the health workers to become the trainers of the adolescent life skill modules for high school students in the area. This program was carried out in five days in the Department of Psychiatry, Sardjito Hospital, Yogyakarta. As many as 30 participants, which consisted of medical doctors (general practitioners) and psychiatrists from Yogyakarta, and teachers attended this program. In the last session of this ToT, the participants were doing role-play for teaching the modules and got feedback from source persons and other participants.

Life-skills training consisting of modules coping with stress; dealing with peer pressure; understanding and handling emotion were performed to adolescents in three weeks by local teachers and supervised by trained psychiatrists. Out of all adolescents in the area, 40 junior and senior high school students were randomly selected as the subjects for this study. Subjects were chosen from four schools in Cangkringan Village, Yogyakarta. Before the intervention was given, the subjects were asked for to fill in the questionnaires regarding self-image and the strength and difficulties.

The time allocated for each activity in one module of life-skills training varied between 45-60 minutes group discussion, interactive lecture and role-play. One module was done in one-week duration. Subjects joined the session everyday after school for 2-3 hours. The program was divided into two groups; consisting of twenty subjects in each group of junior high school student group and the senior high school student. The aim of this division was only to ensure that the program was delivered suitably for each age group. However, as the division of program into two groups is expected not to change any of the results, and the results would be merged as one.

Upon the completion of the training, the subjects were encouraged to create one project to share the knowledge they gained from the training to their friends at school. Two weeks after undergoing the training, the subjects were asked to fill in the same questionnaires as the ones before the training. The instrument used to measure the self-image was Rosenberg questionnaire, while the instrument used to measure the strength and difficulties was Strength and Difficulties Questionnaire (SDQ). These instruments had also been used as the measurements in the prior studies. The Rosenberg questionnaire consists of 23 questions, which are divided into 4 domains: self-consciousness, instability, low self-esteem, and negative perceived self. Meanwhile, the statistical analysis was performed by using SPSS.

3.1. Rosenberg Questionnaire

The Rosenberg questionnaire is a self-report instrument used to evaluate the individual self-esteem. The questionnaire consists of 23 questions, which are divided into 4 domains: *self-consciousness, instability, low self-esteem, and negative perceived self*. These instruments had been translated and validated into Indonesian language by Bastaman TK, 1982 and also been used as the measurements in the prior study in Indonesia (Kaligis, 2009). Self-consciousness domain consists of seven questions; instability and negative perceived-self domains consist of five questions; while low self-esteem domain consists of six questions. All questions are scored 0 if the responds from the subjects relate to good self-image and scored 1 if the answers correspond with poor self-image. From the result, subject categorized as having self-consciousness if the score is more than 3 in the domain, having instability if the score is more than 3, having low self esteem if score 2 in the domain, and having negative perceived self if the score is more than 2 (Bastaman, 1982).

3.2. Strength and Difficulties Questionnaire (SDQ)

SDQ was created by Goodman (1997) to evaluate the mental health in children and adolescents. There are several versions of the instrument, which are ought to be used according to the age of the assessed children or adolescents: teacher report for the ages of 4-11 and 11-17, parent report for the ages of 4-17, and youth self-report for the ages of 11-17. (Youth-inmind Ltd, 2015) As the participants in this study were adolescents (junior and senior high school students), the SDQ version used in this study was the self-report version. This instrument has been widely used worldwide (Gómez-Beneyto, 2013; He, 2013; Liu, 2013), as well as in Indonesia in the previous study (Ang, 2007).

The questionnaire consists of 25 items, which requires the participants to answer using a three-point Likert scale to indicate how true each item applies to the participants. The re-

sults of this instrument are classified into five domains: *emotional symptoms, conduct problems, hyperactivity, relationship/peer problems*, and *prosocial behavior*. An overall *total difficulties* score is also generated by summing the scores of all five domains (Goodman, 2001). The categorization of the results can be seen in table 1.

Table 1. Categorization of the result of self-report SDQ instrument

	Close to average	Slightly raised	High	Very high
Total difficulties	0-14	15-17	18-19	20-40
Emotional symp- toms	0-4	5	6	7-10
Conduct problems	0-4	5	6	7-10
Hyperactivity	0-5	6	7	8-10
Peer problems	0-2	3	4	5-10
	Close to average	Slightly lowered	Low	Very low
Prosocial behavior	7-10	6	5	0-4

Source: Youthinmind Ltd (2015)

4. Results and Discussion

The mean age of the subjects participating in this study was $14,48 \pm 1,21$ years old, consisting of 24 female students and 18 male students. All of the subjects were from Javanese ethnicity and followers of Islam. Even so, the 40 subjects had various backgrounds such as activists in school organizations and leaders in school, while some others had self-image issue according to school teachers and school counselor observation. Combination of the subjects from these various backgrounds also gave a positive impact, as they could learn from each other in the group dynamic about social interaction, empathy, assertiveness, and self-confidence. All of the adolescents voluntarily agreed to participate in the training, which consisted of the topics of how to cope with stress, dealing with peer pressure, and understanding and handling emotion. After the training, the students were also given a lecture on reproductive health.

Before and after the training, the subjects were given Rosenberg's self-image questionnaire and Strength and Difficulties Questionnaires. Among those 40 subjects, all of the subjects completed all sessions or activities from these three modules of life skills training. After life skills training, an evaluation form was distributed to each participant in order to ask for feedback and to assess the impact of the program for the subjects. Most participants answered they benefited from the program in term of increasing the knowledge about how to cope with stress. The participants also answered that they enjoyed doing the presentation and making the poster to educate their friends, which made them feel more confident in dealing with their peers.

4.1. Adolescent Self-Image

Before life skills training was applied to the subjects, baseline data on adolescent's self image were collected. It showed that the subjects had normal score on self consciousness, instability and negative perceived self domains, which were below 3, below 5 and below 2 respectively. Meanwhile, the score from domain low self esteem was considered abnormal as it was scored more than 2. Following disaster, adolescents need to adjust wide ranges of biological, cognitive, emotional and behavioral components. The post-disaster reactions also include anxiety, depression, grief, bereavement, academic difficulties, and substance use, all of which may cause to impairment of self-esteem. (Pfefferbaum, et al., 2014).

There were significant differences in several domains of the self-image of the subjects before and after the training, which were the domain of low self-esteem ($p = 0.005$) and negative self perception ($p < 0.001$). The comparison of self-image results of the 40 students who participated in the training can be seen in Table 1.

Table 1. Comparison of self-image before and after training

	Before training (pre-test) Mean \pm 2SD	After training (post test) Mean \pm 2SD	p^*
Self consciousness	2,60 \pm 1,466	2,17 \pm 1,25	0,083
Instability	3,36 \pm 0,727	3,10 \pm 1,08	0,214
Low self esteem	3,38 \pm 1,975	2,33 \pm 1,60	0,005
Negative self perception	1,29 \pm 1,470	0,38 \pm 0,854	<0,001

*paired t-test

As most of previous studies using the life skills program assessed other outcomes (Quayle et al., 2001; Zollinger et al., 2003; Botvin et al., 1994), the only study that could be compared to this study is the one conducted to adolescents in Jakarta (Kaligis et al., 2009). The study also used self-image as its outcome and the instrument used to assess the self-image was also the same, which was the Rosenberg self-image questionnaire. However, in that study, it was found that there were significant differences before and after the training in every domain of the self-image. The better results were shown in the previous study compared to this study might be due to the larger number of modules (5 modules for 5 weeks) and the longer duration of training than this study (3 modules for three weeks). However, as abnormal baseline score is only shown on the low self-esteem domain, other domains which showed within normal range also had improved scores after the training even though the differences were not statistically significant. The aim of this project was to propose a program that could be used as a mental health aid for adolescents post-disaster. The significant differences in half of the domains of self-image could show that this program helped improve the mental health of adolescents post-disaster.

4.2. Adolescent Strength and Difficulties

The baseline data of strength and difficulties showed that all domains were within normal range. Total difficulties score was slightly more than normal limit (normal range: 0-15), whereas emotional symptoms, conduct problems, hyperactivity, peer problems and prosocial scores were all normal.

There were significant differences in adolescent mental strength following the intervention, which can be seen in the domain of prosocial behavior, in which the results increased after the intervention ($p = 0.001$), and also in the total adolescent difficulties results ($p = 0.007$). The comparison of the strengths and difficulties in the 40 students who participated in the training can be seen in Table 2.

Table 2. Comparison of adolescent strength and difficulties before and after training

	Before training (pre-test) Mean \pm 2SD	After training (post test) Mean \pm 2SD	p^*
Total difficulties	15,95 \pm 5,276	13,42 \pm 5,446	0,007
Emotional symptoms	4,87 \pm 2,029	4,21 \pm 1,947	0,116
Conduct problems	2,74 \pm 1,427	2,66 \pm 1,279	0,454
Hyperactivity	4,53 \pm 2,050	3,97 \pm 2,060	0,173
Peer problems	3,82 \pm 1,971	3,47 \pm 1,502	0,330
Prosocial	6,74 \pm 1,811	8,11 \pm 1,556	0,001

*paired *t*-test

The slightly raised baseline score of the total difficulties of the participants (15,95 \pm 5,276) represents that before the intervention, the participants had emotional and/or behavioral problems slightly more than normal adolescents. This result was in accordance with the result of the focus group discussion which was conducted before the intervention, which revealed that the adolescents reported about the changes in their emotions (stress level, anxiety, anger, and depression) and the increased trend of risky behaviors, such as smoking.

As the result of this study showed that the life skill program had successfully decreased the total difficulties score of the participants significantly ($p = 0.007$), it suggests that this program is effective in improving the mental health of adolescents after disaster. As this study is the first to evaluate the effectiveness of life skill program in improving the strength and reducing the difficulties of the adolescents post-disaster, comparison of the effectiveness of the program for this section could not be made. However, as one of the psychosocial inter-

ventions, life skill program showed similar results to the other studies conducted using psychosocial approaches in improving the emotional and behavioral problems for adolescents after disaster. A study conducted by Jordan et al (2010) revealed the significant beneficial effects of psychosocial approach in improving social-behavior and resilience as well as reducing aggression and psychological difficulties in youth aged between 11-14 in the situations of ongoing violence in Nepal. Another study conducted by Bolton et al (2007) also reported the effectiveness of group interpersonal therapy in reducing depression symptoms of the adolescents after the war and displacement in Northern Uganda.

4.3. Strengths and Limitations

This was the first study conducted with the aim to improve the mental health of adolescent community in a post-disaster situation by using the life skill program, as well as to educate the local community to be the trainers of the program. By educating the local teachers and health professionals, it could be expected that the local trainers were able to educate more trainers and, thus, the program could be widely applied. Furthermore, the participants of this study were also encouraged to share what they had learned from the program to their mates. Therefore, it could be expected that this study would not only benefit the participants, but also the other adolescents in the community.

However, as the study was conducted in a post-disaster situation, the amount of time available for the program was very limited, which was a limitation of the study. As a result, the program conducted in this study could only provide 3 modules (conducted in three weeks) instead of 5 modules referring to the program established by WHO and Indonesian Ministry of Health. Therefore, if possible, further studies should be performed to evaluate the effectiveness of the application of all modules in a post-disaster situation and compare the result to this study. Nevertheless, as the results of this study have proven the effectiveness of the 3-module program, it could be suggested to implement the program to improve the mental health of the adolescents in a post-disaster situation, rather than doing nothing at all.

5. Conclusion

The analysis results clearly state the presence of self-image problems, difficulties with peer relationships, emotional and behavioral problems on the students. Therefore, life skills training to improve the capacity and resilience to the problem of adolescent risk behavior is highly needed.

The training showed a positive effect in improving mental strength and self-image of the adolescents and also decreased emotional and behavioral problems. The adolescent students who participated in this training were also continuously disseminating the information and knowledge gained from the training to their friends through the activities organized by the students at their school. Upon completion of the training, the participants were encouraged to share the information to their friends and act as the agents of change for teen groups in their community.

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References

- Ang E.A. (2007). Karakteristik Gangguan Mental pada Pelajar Sekolah Menengah Pertama di Wilayah Jakarta Pusat. Thesis. *Faculty of Medicine Universitas Indonesia, Jakarta, Indonesia*.
- Anonymous. (2002). Lifeskills Training Effective for Adolescent Drug Prevention. *Journal of Psychosocial Nursing & Mental Health Services*, 40(12), 12.
- Badan Nasional Penanggulangan Bencana (BNPB). (2009). Kajian tentang Penanggulangan Bencana Alam di Indonesia: Laporan Akhir. Retrieved from <http://open.jicareport.jica.go.jp/pdf/11928892.pdf>.
- Bastaman TK (1982). Citra Diri Remaja di Panti Asuhan. Jakarta: Department of Psychiatry Faculty of Medicine Universitas Indonesia. Thesis.
- Benveniste, D. (2006). *Crisis intervention after major disasters*. Carter-Jenkins Website. Retrieved from http://www.thecjc.org/pdf/benveniste_crisis.pdf.
- Bolton, P., et al. (2007). Interventions for depression symptoms among adolescent survivors of war and displacement in northern Uganda: a randomized controlled trial. *Jama*, 298(5), 519-527.
- Botvin G.J., Schinke S.P., Epstein J.A., Diaz T. (1994). Effectiveness of Culturally-focused and Generic Skills Training Approach to Alcohol and Drug Abuse among Minority Youths. *Psychology of Addictive Behavior*, 8, 116-127.
- Botvin G.J., Schinke S.P., Epstein J.A., Diaz T. (1995). Effectiveness of Culturally-focused and Generic Skills Training Approach to Alcohol and Drug Abuse among Minority Youths: Two-Year Follow-Up Result. *Psychology of Addictive Behavior*, 9, 183-194.
- Departemen Kesehatan RI Direktorat Bina Kesehatan Masyarakat. (2004). Materi Pelayanan Kesehatan Peduli Remaja. Jakarta: Depkes RI.
- Departemen Kesehatan RI Direktorat Bina Pelayanan Kesehatan Jiwa. (2006). Modul Pelatihan Meningkatkan Kesehatan Jiwa Remaja di Sekolah Melalui Pendidikan Kecakapan-Hidup (Life Skills Education). Jakarta: Depkes RI.
- Fullerton C.S., Ursano R.J. (2005). Psychological and Psychopathological Consequences of Disasters. In: Lopez-Ibor JJ, Christodoulou G, Maj M, Sartorius N, & Okasha A (Eds), *Disasters and Mental Health* (pp. 13-36). England: John Wiley & Sons Ltd.
- Garnefski, N., Legerstee, J., Kraaij, V., van den Kommer, T., & Teerds, J. (2002). Cognitive coping strategies and symptoms of depression and anxiety: A comparison between adolescents and adults. *Journal of Adolescence*, 25, 603-611.

- Gómez-Beneyto, M., et al. (2013). Psychometric behaviour of the strengths and difficulties questionnaire (SDQ) in the Spanish national health survey 2006. *BMC psychiatry*, 13(1), 95.
- Goodman, R. (1997) The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry*, 38, 581-586.
- Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire. *Journal of the American Academy of Child & Adolescent Psychiatry*, 40(11), 1337-1345.
- He, J. P., Burstein, M., Schmitz, A., & Merikangas, K. R. (2013). The Strengths and Difficulties Questionnaire (SDQ): the factor structure and scale validation in US adolescents. *Journal of abnormal child psychology*, 41(4), 583-595.
- Jordans, M. J., Komproe, I. H., Tol, W. A., Kohrt, B. A., Luitel, N. P., Macy, R. D., & De Jong, J. T. (2010). Evaluation of a classroom-based psychosocial intervention in conflict-affected Nepal: a cluster randomized controlled trial. *Journal of Child Psychology and Psychiatry*, 51(7), 818-826.
- Kaligis F., Widyawati I., Wiguna T. (2008). Efektivitas Pelatihan Kecakapan Hidup dalam Mempengaruhi Kekuatan, Kesulitan dan Citra Diri Remaja. Thesis. *Faculty of Medicine Universitas Indonesia, Jakarta, Indonesia*.
- Kaligis F., Wiguna T., Widyawati I. (2009). Efektivitas Pelatihan Kecakapan Hidup terhadap Citra Diri Remaja. *Majalah Kedokteran Indonesia (Journal of the Indonesian Medical Association)*, 59(3), 100-106.
- Liu, S. K., Chien, Y. L., Shang, C. Y., Lin, C. H., Liu, Y. C., & Gau, S. S. F. (2013). Psychometric properties of the Chinese version of Strength and Difficulties Questionnaire. *Comprehensive psychiatry*, 54(6), 720-730.
- Mayou, R. A., Ehlers, A., & Hobbs, M. (2000). Psychological debriefing for road traffic accident victims. *The British Journal of Psychiatry*, 176(6), 589-593.
- Moya C. (2011). Life Skills Approaches to Improve Young Adult Reproductive Health. Retrieved from <http://www.unicef.org>.
- National Health Promotion Associates. (2011). Life Skills Training Resource Fact Sheet. Retrieved from: http://www.lifeskillstraining.com/resource_fact.php.
- Pataki, C S. (2005). Normal Adolescence. In: Sadock BJ & Sadock VA (Eds.), Kaplan & Sadock's Comprehensive textbook of psychiatry (pp. 3035-43). (8th Ed.). Philadelphia: Lippincott Williams & Wilkins.
- Pfefferbaum B, Noffsinger M.A., Wind L.H., Allen J.R. (2014). Children's coping in the context of disaster and terrorism. *J Loss Trauma*, 9(1), 78-97.
- Pusat Kajian Bencanadan Tindak Kekerasan Departemen Psikiatri FKUI-RSCM. (2005). Penatalaksanaan Berbagai Gangguan Psikiatri akibat Peristiwa Traumatik.

- Quayle D, Dziurawiec S, Roberts C, Kane R, Ebsworthy G. (2001). The Effect of an Optimism and Lifeskills Program on Depressive Symptoms in Preadolescence. *Behavior Change*, 18(4), 194-203.
- Reijneveld, S. A., Crone, M. R., Schuller, A. A., Verhulst, F. C., & Verloove-Vanhorick, S. P. (2005). The changing impact of a severe disaster on the mental health and substance misuse of adolescents: follow-up of a controlled study. *Psychological medicine*, 35(3), 367.
- Reijneveld, S. A., Crone, M. R., Verhulst, F. C., & Verloove-Vanhorick, S. P. (2003). The effect of a severe disaster on the mental health of adolescents: a controlled study. *The Lancet*, 362(9385), 691-696.
- Ruddy, R. and House, A. (2005) Psychosocial interventions for conversion disorder. Cochrane Database of Systematic Reviews, 4. Art. No.: CD005331.
- Ruzek, J. I., et al. (2008). Cognitive-behavioral psychology: Implications for disaster and terrorism response. *Prehospital and disaster medicine*, 23(05), 397-410.
- Steinberg L. (1999). Adolescent Development in Context. In: Steinberg L, Adolescence. (pp. 4-11). (5th Ed.). Boston: McGraw-Hill College.
- Tiendrebeogo G, Meijer S, Engelberg G. (2003). Life Skills and HIV Education Curricula in Africa: Methods and Evaluation. Africa: Office of Sustainable Development Bureau for Africa.
- Unicef. (2011). Life Skills-Based Education. Retrieved from <http://www.unicef.org/life-skills/>.
- Ursano, R. J., Bell, C., Eth, S., Friedman, M., Norwood, A., Pfefferbaum, B., ... & Charles, S. C. (2004). Practice guideline for the treatment of patients with acute stress disorder and posttraumatic stress disorder. *Am J Psychiatry*, 161(11 Suppl), 3-31.
- WHO. (2011). Mental Health: Strengthening Mental Health Promotion. Retrieved from <http://www.who.int/mediacentre/factsheet/fs220/en/>.
- Wikipedia. (2017). 2010 eruptions of Mount Merapi. Retrieved from https://en.wikipedia.org/wiki/2010_eruptions_of_Mount_Merapi.
- Youthinmind Ltd. (2015). Assessment Name: Strengths and Difficulties Questionnaire (SDQ). Retrieved from: <http://ebi.missouri.edu/wp-content/uploads/2015/10/SDQ-Brief.pdf>
- Zollinger T.W., et al. (2003). Impact of the Life Skills Training Curriculum on Middle School Students Tobacco Use in Marion County, Indiana, 1997-2000. *Journal of School Health*, 73, 338-346.