**ORIGINAL RESEARCH**

**EFFECT OF GROUP-BASED HOPE INTERVENTION ON DEPRESSION IN FEMALE INMATES**

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**Abstract**

**Background:** Life in prison may cause negative feelings and thoughts which triggers depression for female inmates. This results in difficulty in finding purpose in life and loss of interest or motivation. Group-based hope intervention seems to be effective in decreasing depression, but it has not yet been applied in female inmates in a prison.

**Objective:** To determine the effect of group-based hope intervention on depression level in female inmates.

**Methods:** This study used a quasi-experimental study with pre-test post-test and control group design. Eighty-eight participants were selected using proportionate stratified random sampling, with 44 assigned into intervention and control groups. Data were collected from September to November 2019. The level of depression was measured using Beck Depression Inventory-II (BDI-II). Mann Whitney U and Wilcoxon tests were used for data analyses.

**Results:** Both group-based hope intervention in the intervention group and routine intervention in the control group has a significant effect on depression level ($p<.01$). However, further analysis showed that the group-based hope intervention was much more effective than the routine group in decreasing depression level in female inmates ($p<.01$).

**Conclusion:** Group-based hope intervention is effective in lowering the depression in female inmates. Therefore, this therapy can be used as a valuable intervention in nursing practice, especially in a correctional setting.

**KEYWORDS**
female inmates; depression; hope intervention

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**BACKGROUND**

Female inmates are belong to the group of a vulnerable population who need to be paid more attention because the problems they experience may affect family, children, and community (Covington, 2003). The highest stress and depression episodes are when individuals undergo trial due to the initial phase of adjustments in prisons and the conditions of uncertainty about long-standing criminal decisions to be served (Goyal et al., 2011). Several reports stated the number of female inmates increased even to exceed the capacity of both the global and regional levels (Directorate General of Corrections, 2018; Statistics Indonesia, 2017; Walmsley, 2015). Female inmates sustained a very complex issue, 4% of psychotic disorders, 12% of major depression, 21% of personality disorders, and 42% of antisocial disorders, and more focused on medical treatment after severe depression (Pazel & Danesh, 2002; Joffres et al., 2013).

Our preliminary study conducted at one of the prisons showed that, of the 159 female inmates, 86 had mild depression, 39 had moderate depression, 10 had depression severe, and 24 were normal. This prison did not have special instruments to measure the level of depression on female inmates. Screening was only done when the female inmates entered the prison, and there was no program to follow up if problems were found. The program focused on the physical health problem while overcoming psychological, emotional, and motivational issues were still lacking.

Depression is the dysfunction of trust that will enable a negative self-scheme characterized by various interpretations or triad of cognitive negative, which perceive self, world, and future negatively, and focus on the negative personal information that more likely leads to somatic disorders such as fatigue, affective disorders such as feeling sad, and disorders of motivation such as loss of interest and hope (Beck, 2013; Kamoyo et al., 2015).

Depression on female inmates is the feeling of fear leaving/left the family, guilt for not being able to raise and educate the child, lose the right to social interests, and loss of identity, characterized by the occurrence of the change of emotions, physique, mind, and behavior (Maunder & Cameron, 2013; Pinese et al., 2010). Depression occurs due to cultural differences in the environment of prisons, the conditions of prisons overcapacity, lack of health facilities, and the emergence of...
psychological problems (Gunter, 2004; Kaloeti et al., 2018; Pettus-Davis et al., 2018).

Depression suffered by female inmates has an impact on psychological disorders that can trigger negative behaviors such as self-injury and suicidal behavior especially in the early years of being in prison due to the need to adapt to the new environment (Ahmad & Mazlan, 2014; Kamoyo et al., 2015; Majekodummi et al., 2017). Depression causes bad mood, inability to enjoy activities, sleep disorder because of scheduled routine, fatigue, irritability, decreased ability to concentrate, and feeling guilty for leaving their children (Caballudue et al., 2019), as well as drug abuse that has an impact on the increased mortality (Shrestha et al., 2017). In addition, depression can also cause the occurrence of mental disorder problems, sexual assault, and the presence of complex chronic diseases such as hypertension, sexually transmitted disease, asthma, diabetes, and heart disease (Chen et al., 2014).

Female inmates who experience depression show problems in finding hope and goals in the future, also losing interest and motivation (Aoffres et al., 2013). They need a therapy which can increase their spirit and motivation to survive, such as hope intervention. Hope intervention involves cognitive processes to develop strategies to achieve goals by motivating themselves through ways of thinking (Edwards et al., 2007; Snyder, 2002). Hope intervention is done by sharing experiences, feelings, thoughts among the clients. The process of narrating experiences, listening to stories from other people can motivate group members to find a sense of comfort and motivate each other to work together to resolve the problems faced (Augustin & Retnowati, 2012; Morgan & Winterowd, 2002). Therefore, hope intervention is needed.

The hope intervention can be done individually or in a group. But, due to the limitations of human resources in prison compared to the number of female inmates that exceeds capacity, group strategy is more appropriate to resolve female inmates’ problems than individual strategy. Group-based hope intervention involves psychoeducation, counseling and psychotherapy, treatment and healing so that female inmate can channel emotions, receive support and attention, empathy and sympathy as well as building self-confidence and finding safe conditions with each other which ultimately prevent the risk of suicide (Anderson, 2007; Morgan & Winterowd, 2002; Nedderman et al., 2010; Oyama et al., 2006; Retnowati et al., 2015).

Group-based hope intervention can be done in community settings and involves the role of nurses. The purpose of nursing itself in this intervention is to be a facilitator or therapist (Almost et al., 2013). As a facilitator, nurses give solutions to problems that female inmates have, so that they have realistic expectations and goals by devising various strategies. Therefore, depression will be decreased (Cutcliffe & Herth, 2002). As counselors, nurses are to explore feelings and situations and seek solutions to problem-solving, and influence and rebuild goals and expectations so that after leaving prison, the goals can be achieved, especially for family and financial problems (Herth, 2001; Machdi, 2013). Also, nurses act as the motivator to generate strategy in achieving hope and goal (Herth, 1995). Group-based hope intervention has never been applied in a prison setting because the problems, goals, and characteristics of female inmates are different from the population. Therefore, this study aimed to determine the effect of group-based hope intervention on the level of depression in female inmates.

**METHODS**

**Study Design**

This was a quasi-experimental study with pre and post-test with control group design.

**Participants**

Participants were selected using a disproportionate stratified random sampling. The inclusion criteria of sample were age above 18 years, having the verdict live a long criminal past, experiencing mild to moderate depression, and willing to participate in this study. The total sample size was 88 participants. A sample calculation using the application G Power 3 with effect size = .64, α = .05, and power = .84, yielded the sample size of 44 for each group (Shekarabi-Ahari et al., 2012; Shin & Park, 2007).

**Instrument**

The BDI-II questionnaire was adopted from Jodi (2016), with $r_{a.h.e}= .361$ and α .866. The BDI-II questionnaire includes 21 items, in which the scores ranged from 0 to 63, and classified into four group levels of depression: normal (0-13), mild (14-19), moderate (20-28), and severe (29-63). A higher score indicates a higher level of depression.

**Intervention**

A pre-test was conducted one day before the intervention. We divided the groups into eight groups, consisting of five to six participants in each group with the distribution of mild and moderate level of depression. The researchers acted as a therapist and leader assistant. The leader in this study were female inmates selected on the recommendation of the health officer in the prison, well-behaved, having a long experience in the prison, able to communicate, and having the level of education of at least junior high school. The group formation was performed in one week with four sessions, with the time duration of 60 minutes for each session in accordance with the situation and conditions in prison. Group-based hope intervention was conducted in four meetings (facilitator guidance) and four meetings (independently and accompanied by the leader), with the time duration of 90 minutes each meeting. The control group was given an intervention by the program routine in prison. The post-test was conducted one week after the intervention (See Table 1).

**Data Collection**

Data were collected from September to November 2019 at a prison in Indonesia. Data related to depression on female inmates were collected by the researchers assisted by a nurse in the prison to select the participants and to ensure the security of participants. Before data collection, the researchers already made a schedule and gave it to the nurse in prison, so the activity of participants in the prison service was not interrupted.

**Data Analysis**

The normality of the data was tested by using Kolmogorov Smirnov, and it is found that the data was not normally distributed. The data on participants’ characteristics between groups were analyzed by using the Levene test. Pre and post-test data on the depression were analyzed using the Wilcoxon test. Post-test data of the intervention group and the control group were analyzed by using the Mann-Whitney U test because the data were in the form of categories.
Ethical Consideration

This research was approved by the Ethics Commission of the Department of Nursing Science Faculty of Medicine Diponegoro University with Number 41/EC/KEPK/D. Kep/VI/2019. The researchers ensured that all participants in this study signed an appropriate informed consent.

Table 1 The Stages of the Implementation of the Group-Based Hope Intervention (Sinaga et al., 2019)

| Session         | Objective                                      | Activities                                                                 |
|-----------------|------------------------------------------------|-----------------------------------------------------------------------------|
| **Group Formation** |                                                |                                                                            |
| Forming         | Forming a sense clustering                      | ▪ Explaining about the sessions and determine the schedule according to the group  |
|                 |                                                 | ▪ Getting to know each other                                                |
|                 |                                                 | ▪ Finding out more in-depth understanding of group members about the concept of groups, group goals, things that need to be considered to be a solid group by performing the task on the worksheet  |
|                 |                                                 | ▪ Performing the task to get to know each other at least 5 people about the name, age, hobbies, things like and dislike  |
| Storming        | Equating differences in the perception to create unity in the group | ▪ Discussing about the task                                                |
|                 |                                                 | ▪ Discussing about how to resolve conflict in the group                    |
|                 |                                                 | ▪ Performing the task to proceed the stage of mutual get to know about the strengths and weaknesses related to the task in the previous session |
| Norming         | Forming the rules in the group                  | ▪ Evaluating the task and the obstacles encountered                        |
|                 |                                                 | ▪ Discussing rules agreed in the group and the consequences if not adhered to |
| Performing      | Work together to achieve group goals            | ▪ Discussing the meaning of the group through playing exercises to help strengthen the trust in the relationship group, forming a commitment to achieve a common goal in a group |
|                 |                                                 | ▪ Implementing role-playing through game techniques                        |

Implementation of Hope Intervention

| Session         | Objective                                      | Activities                                                                 |
|-----------------|------------------------------------------------|-----------------------------------------------------------------------------|
| Goal setting    | Determining the purpose of meaningful          | ▪ Sharing a story about the feelings of the first time being in prison      |
|                 |                                                 | ▪ discussion about the experience of past success in solving a problem      |
|                 |                                                 | ▪ Making a list of goals that have been achieved before entry in prison     |
|                 |                                                 | ▪ Explaining the material about the goal setting                           |
|                 |                                                 | ▪ Doing tasks about the objectives have not been achieved because the conditions were in prison, the goal as already achieved, and the objectives to be achieved after getting out of prison |
| Pathway thinking| Developing a strategy in achieving goal         | ▪ Discussing about the task                                               |
|                 |                                                 | ▪ Discussing about the ways and strategies that never do solve the problems |
|                 |                                                 | ▪ Explaining the material about the pathway thinking                      |
|                 |                                                 | ▪ Doing tasks about the objectives to be achieved, how that can be taken to achieve these objectives, barriers encountered, and reasons to achieve that goal |
| Agency thinking | Identifying the source of the motivation        | ▪ Giving appreciation to the active members of the group and motivate members of other groups |
|                 |                                                 | ▪ Explaining the material about the agency thinking                       |
|                 |                                                 | ▪ the discussion about sources of motivation that can be used as a strategy to achieve the goal such as the system support existing and potential |
|                 |                                                 | ▪ Discussing the role of the support group members, family, spiritual force in the achievement of the objectives |
| Reflection and evaluation | Determining the target achievement of each session, constraints and alternative solutions to achieve the goals together in group | ▪ The overall review of the material and achievement of the target of each session |
|                 |                                                 | ▪ The implementation results of the plan of activities as the activities in life in prison or after leaving prison |

RESULTS

The characteristics of participants in this study were based on age, marital status, educational level, and criminal record. The results showed that the characteristics of the participants were homogeneous in both groups (p>0.05). The average age of the participants was 29-40 years in the intervention group and 18-28 years in the control group. The majority of the participants in both groups were married and has a criminal record for 1-5 years (Table 2).
Table 2 Characteristics of Participants in the Intervention and Control Groups

| Participants' Characteristics | Intervention group (n=44) | Control group (n=44) | Statistics | P-value |
|-----------------------------|--------------------------|----------------------|------------|---------|
|                             | N | %   | N | %   |          |           |
| Age (years)                 |   |      |   |      |          |           |
| 18-28                       | 15 | 34.1 | 23 | 52.3 | 2.53     | 0.11      |
| 29-40                       | 24 | 54.5 | 15 | 34.1 |          |           |
| >40                         | 5  | 11.4 | 6  | 13.6 |          |           |
| Marital status              |   |      |   |      |          |           |
| Married                     | 33 | 75   | 36 | 81.8 | 2.41     | 0.12      |
| Single                      | 11 | 25   | 8  | 18.2 |          |           |
| Educational level           |   |      |   |      |          |           |
| Low (elementary school, junior high school) | 17 | 38.6 | 30 | 68.2 | 1.70     | 0.19      |
| High (senior high school, diploma, bachelor) | 27 | 61.4 | 14 | 31.8 |          |           |
| Criminal record (years)     |   |      |   |      |          |           |
| < 1                         | 2  | 4.5  | 1  | 2.3  | 0.01     | 0.90      |
| 1-5                         | 29 | 65.9 | 24 | 54.5 |          |           |
| 6-10                        | 4  | 9.1  | 10 | 22.7 |          |           |
| > 10                        | 9  | 20.5 | 9  | 20.5 |          |           |

Table 3 illustrates the depression level in a group given group-based hope intervention has a median value of 10, with a minimum value of 6 and a maximum value of 18. The control group that was not given group-based hope intervention has a lower depression level than those in the control group. Based on the Wilcoxon-test, there was a significant difference in the level of depression in both intervention and control groups at pre-test and post-test (p<.01). But, although both groups have lower depression levels, the intervention group has better effect than the control group in lowering depression level (p<.01) (Table 3).

Table 3 Comparison Depression Level of the Pretest-Posttest Between Intervention and Control Groups

| Group            | Min | Max | Median | Delta Median | P-value |
|------------------|-----|-----|--------|--------------|---------|
| Intervention Group | 14-6| 28-18| 19-10  | -9           | <.001*  |
| Control Group     | 14-0| 28-27| 21-16.5| -4.5         | <.001*  |
| P-value           |     |     |        |              | <.001** |

DISCUSSION

The aim of this study was to determine the effect of group-based hope intervention on depression level in female inmates. Findings revealed that the group-based hope intervention had a significant and better effect in lowering depression level. This is in line with the previous research where group-based hope intervention had been proven effective to reduce the level of depression of survivors of Merapi volcanic eruption (Retnowati et al., 2015), hemodialysis patients (Rahimpour et al., 2015), mothers of cancer survivors (Shekarabi-Ahari et al., 2012), nurses in nursing homes (Wilson et al., 2010), and elderslies in nursing homes (Farzaledgean et al., 2016). This study also shows the hope intervention process influenced depressive symptoms varying from each domain, namely cognitive, affective, and somatic, through a process of self-understanding to recognize problems, strengths, and weaknesses so that they can change negative views of that was believed (Fitriana & Hadjam, 2016).

The results of this study also were similar to the previous study that shared the story through the experience and gives each response that can help to find solutions and a sense of comfort so the psychological pressure is reduced (Retnowati et al., 2015; Snyder, 2002). It is also supported by the opinion that unrealistic/unrealized goals would open the mind to disappointment and suffering so that it is necessary to improve identity by changing abilities and life goals. Group-based hope intervention would construct thought/identity from past experiences which are realized through future goals, and not focus on individual weaknesses, especially if depression experienced by female inmates in prisons is long-term or chronic (Cheavens et al., 2006; Wiles et al., 2002).

Group-based hope intervention cause changes in the somatic, affective, and motivation in participants. Changes in the somatic that female inmates could do activities with capacity that they have such as making pictorial writing, painting, poetry, and feel more refreshed after waking up because they really can enjoy the activities, not just as a routine. Hope interventions such as placebo have biological effects and could have a positive impact on pain, suffering, and physical weakness (Khaledisardashti et al., 2018). Changes in the effect that female inmates can shift negative assessments of the problems faced in the positive direction by actively carrying out activities in guidance work, sharing with friends in prison. Through group-based hope intervention, group members are given a chance to share, input, and comments through each other's experiences and support each other so that this process can be a means to strengthen and motivate. This was in line with the result of the study that, through hope intervention, sympathy
and empathy among group members exist to achieve goals through sharing experiences (Retnowati et al., 2015).

With group-based hope intervention, female inmates also find motivation through self-approach to God, the desire to immediately meet children and families, as well as the support of others, including group support. This is consistent with the result of research that spiritual power can motivate, reduce negative emotions, so that female inmate can face psychological pressure by participating in various religious activities and spiritual guidance in prison or correctional setting (Nedderman et al., 2010). Female inmates who suffered from depression found it difficult to recognized themselves and felt unable to do useful things including others. Through group-based hope intervention, female inmates were trained to be able to make a list of goals for themselves, taking into account the strengths and abilities possessed by sharing in groups that have the same problem characteristics because, through the mind full of hope and support from the group, it could reduce feelings of failure. The result of this study was appropriate that perceptions will change based on past successes, focus on goals, and make obstacles a challenge, rather than a barrier that could stop achieving goals. Thus, when facing obstacles, there would be more new paths to be created, more goals to be achieved with the focus on the past (Ward & Wampler, 2010).

Group-based hope intervention is carried out on female inmates who suffer from depression to help them be able to set goals after leaving prison and what strategies should be taken to achieve them. The purpose of female inmates after leaving prison is to find a new job, be a good wife and mother, continue school, apologize to parents or husband, and be a better person by staying away from the negative environment. This is in line with research states the main objectives of female inmates after leaving prison are for families and finances, improving relations with children and partners, and finding work (Machdi, 2013). Also, the incidence of depression of female inmates is associated with low social support (Bevan et al., 2017). Through group-based hope intervention, it is found that social support is strengthened among group members being able to establish intimate relationships, especially female inmates who rarely get family visits, so this intervention is very beneficial. In previous studies, social support could provide reinforcement and self-control in someone who is depressed so that negative views could be diverted by positive activities (Brown et al., 2014; Siller et al., 2017).

CONCLUSION

Group-based hope intervention is effective in decreasing depression; therefore, it can be used as one of the nursing interventions to decrease depression in female inmates. It is expected that nurses, especially in prison, can improve their skills in group-based hope interventions by two-way communication with female inmates to explore the thoughts and feelings, paying attention to the characteristics of female inmates in group formation, the existence of learning modules, and videos that can be a means of learning and the development of nursing. Further research is needed to deepen the findings with qualitative research methods for comprehensive understanding.

Declaration of Conflicting Interest
The authors have no conflict of interests.

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Authorship Contribution
M.R.E.S: Collected the data, drafted the manuscript, and performed the analysis. M.A and A.N: Verified the analytical methods, supervised the findings, contributed to data analysis. All authors agreed with the final model of the manuscript.

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