Original article

Effect of Nursing Interventions on Depression Treatment in Depressive Patients: A Meta-Analysis

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Introduction: Depression accounted for 4.4% of total disability-adjusted life years (DALYs) in worldwide. In 2020, due to increasing incidences of depression and immense impacts of this condition, research about depression has grown in many different research fields, such as medicine, nursing, psychology, and social science. We wanted to synthesize previous literature on interventions to reduce levels of depression and improve patient outcomes in order to develop evidence-based clinical practice guidelines for treating depression. **Objectives**: To analyze characteristics and the effect sizes of studies about nursing interventions conducted to reduce symptoms of depressive patients in Thailand. **Methods**: Inclusion criteria included: 1) being an experimental or quasi-experimental research, 2) examining impact of a nursing intervention to reduce depression symptoms among patients in Thailand, 3) published during 2006-2013. Twenty-eight studies met all the inclusion criteria and were selected. Data was extracted a research characteristics recording form based on materials developed by Glass, McGraw, and Smith (1981). Descriptive statistics were used to analyze content and research methods. **Results**: All studies were conducted using quasi-experimental design. Most of the studies used psychological interventions (n=24), and a small proportion used cognitive therapy (n=5). One-third of studies had a sample size between 10-20 samples (n=10). Half of the studies utilited a one-group pretest-posttest design to test the effectiveness of the intervention was used as hypothesis testing of the interventions (n=14). About 21% of the included studies were conducted between 3 and 5 weeks (6 studies). Based on the results from the 28 studies, the standardized mean difference (d) for measures of depressive symptoms was 2.57. We considered this standardized mean difference to be large when considering the type of study that was conducted. The operation focused on mental health. Nursing practice focuses on the social care and influences as well (d = 2.48, 2.07 and 2.93). **Conclusion**: This study suggested that depression treatment should be an integrated operation that includes psychological care, nursing, social care, and of course, the people with depression themselves. The results of our meta-analysis should encourage the patients to seek out integrated treatments.

Keywords: Depression, Meta-Analysis, Nursing Interventions

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Introduction

According to a report of World Health Organization (WHO), major depression was one of the top ten diseases causing the greatest health burden, based on Disability Adjusted Life Years (DALYs) (Murray et al, 1996). One DALY is equivalent to losing one year of full health. It combines years of life lost due to premature mortality and years lived with a disability due to a disease or health condition being prevalent in a population (Murray et al, 1996). Depression accounted for 4.4% of total DALYs in 2000. In 1996, about 10.7% of the world population had depression. Approximately, 10-25 % of female and 5-12% of male have depression (WHO, 2010). In 2020, it was estimated that depression would be the fourth leading cause of disease burden (WHO, 2010). Depression causes the largest amount of non-fatal DALYs, accounting for almost 12% of total DALYs worldwide. Economic and social impacts from major depression are ranked in second place worldwide, which is lower than heart disease and arteriosclerosis.

In Thailand, depression is increasing in all age groups and genders (Eakvarungkul, 2015). Depression may be increasing in Thailand due to tremendous changes within society and the economy, devastation due to natural disasters, drug and criminal issues and unsafe conditions. A survey showed that Thailand had 93,566 patients suffering from depression in 2005 (about 149.90: per 100,000 populations). Depression was ranked the fifth among diagnosed psychiatric symptoms in Thailand (Department of Health, MOPH Thailand, 2007). Increasing incidence and immense impacts of depression have spurred more research about the biomedical, socio-medical, and psychological aspects of depression than in the past.

Based on our literature review, we found that the first group of research studies on depression were conducted in 1974. Since then, researchers have continuously conducted more research about depression. By 2013, the depression research in Thailand appeared in more than 300 papers. Our review found that depression research in Thailand has developed from descriptive to experimental research. Thai research on depression has been diverse, including many different research problems or research questions, objectives, and designs. Therefore, the aim of our study was to synthesize research conducted to reduce depression in Thai patients that were published from 2006 to 2013 through meta-analysis. We calculated the effect size measuring the effectiveness of the intervention on lowering the levels of depression patients with depression. Our goal is that our study results can help develop evidence-based practice guidelines to improve the nursing care for patients with depression. We hope to answer the question: What kind of nursing interventions help to the lower levels of depression the most? The main objective of this study was to identify published studies on depression treatment in depressive patients in Thailand published from 2006 to 2013, including the characteristics of depression research studies conducted in Thailand and the effect size of nursing intervention research on decreasing depression of depressive patients in Thailand.

Material and Methods

Population and Sampling

Using the **PICOS** format, we defined the eligibility criteria for inclusion in our meta-analysis as follows:

1. **P**articipants: Patients living in Thailand or treated at Thai hospitals for depression
2. **I**nterventions:Nursing intervention conducted to reduce depression
3. **C**omparisons Patients receiving nursing intervention compared to patients not receiving intervention (between-group comparison); or patients tested for depression symptoms before and after intervention (within-patient comparison)
4. **O**utcomes: Measurement of depression symptoms
5. **S**tudy design: Experimental or quasi-experimental

We restricted our search to peer-reviewed studies published from 2006 to 2013. We only included studies with complete statistical data such as mean and standard deviation for comparison groups with results from the t-test or F-test. This data was used to calculate effect sizes for studies included in the meta-analysis

Data collection

Finding and Identifying Studies

We conducted electronic and manual searches from university database related to mental health database for studies conducted from 20016 to 2013. The last search was made on (insert data here). We used limited keywords and combination regarding the relevant words including key terms such as: Depress*, depression, depressive disorder and depression therapy. We included the term cognitive therapy since this form of treatment typically incorporates behavioral interventions. We manually searched for a complete copies of studies from university library and organization's departments. We reviewed all studies and removed duplicates. If a title and the researchers' name were repeated, we discarded one of the copies. We screened all research studies based on its inclusion criteria The resulting list of articles and book chapters was retrieved and reviewed. Additional meta-analyses on the same topic were identified in the texts of these reviews and a second series of articles and book chapters were retrieved.

Initially, 46 studies matching our criteria were identified. After culling based on several criteria, we had 28 studies for analysis. Ten were excluded because they were superseded by more extensive or methodologically rigorous reviews of the same literature. Six were excluded because they did not clearly distinguish intervention from other interventions. One was excluded because it addressed process variables rather than outcome. One study was excluded because it did not focus on any specific psychological disorders.

Coding and Data Extraction

This study's authors and a research coordinator evaluated methodological quality of studies and extracted data from studies. The researchers developed a data form with two parts to extract relevant data from the studies that were chose. Part 1 contained basic demographic information and descriptive characteristics. Part 2 contained details related to characteristics of research. The form included questions with multiple

choices and fill-in answers. First, the researcher filled out the form. Next, the researcher asked 3 experts to review the draft record and provide comments .We also tested for content validity including accuracy, precision, suitability, and consistency of language and agreement among experts. The researchers revised the record forms following experts' comments.

Data analysis

We used a computer program to calculate statistics for demographic characteristics and effect sizes for the impact of nursing interventions on reducing depression symptoms. We calculated descriptive statistics such as frequency and percentage were estimated. We also calculated effect sizes using the standardized mean difference for all individual studies according to Glass, McGraw, and Smith[6]. We used Pearson correlation test to the relationship of different study characteristics (such as study sample size) with effect size, which was measured using standardized mean. We used the Kruskal-Wallis Test to compare effect sizes among several different types of interventions.

Results

The characteristics of depression research in Thailand were as follows:

All studies were conducted at academic institutions (n=28). 96.40% of the research was conducted by institutions granting master degrees (n=27). 50% (n=14) of studies were conducted by Chulalongkorn University. 78.50% of studies (n=22) were conducted in the nursing field. 46.4% (n=13) of studies were conducted in 2008.

Regarding the research methodology, all of studies were quasi- experimental studies. For the study population, 85.7% of the studies examined patients (n= 24), 46.4% (n=13) included both genders. 67.9% (n=10) of the studies had 10-20 study subjects. 28.60% (n=8) of the studies included teenagers. 57.1% (n=22) of studies selected participants using purposive sampling technique. 53.6% (n=14) of the studies studied 1 group, in which all patients received the intervention 21.4% (n=6) of the studies performed the intervention for 3 to 5 weeks Most of the studies (82.1%, n=23) used t-test for data. analysis. With respect to intervention, 85.6% (n=24) used a psychological intervention, 17.7% (n=5) used a cognitive therapy, 10.7% (n=3) used a cognitive behavioral therapy), and 10.7% (n=3) used a supportive therapy. The pooled outcomes of nursing interventions for depression in Thailand were as follows:

After calculating the effect size measures in 28 studies, we found that the standardized mean difference for nursing interventions to reduce depression was d = 2.57. This SMD is fairly large when considering the type of intervention that was used . The interventions focused on mental health. The SMD was also large for other interventions focusing on social nursing and a mix of the big influences as well (d = 2.48, 2.07 and 2.93).

Most variables for characteristics of the studies had low correlation levels with the effect size. For example, sample size had a small positive correlation with effect size (r = 0.135). There were small negative correlations between effect size with duration of the experiment or intervention (r=-0.175) and the practice of nursing (r = - 0.145).

We did not find significant differences in the reduction of depression symptoms when comparing different types of nursing interventions to reduce depression of depressive patients. We compared the different impacts of psychological intervention, social intervention, and mixed

intervention) by the Kruskal-Wallis Test. (Correct interpretation. After testing for content validity and for agreement among our three experts, we found the level of acceptance to be 0.79.

Discussion:

Characteristics of research on nursing practice to reduce the level of depression in depressive patients

The majority of patients (85.72%) were studied were depressed and sad. In studies of depression, depression has been diagnosed both in males and females, including those who are during adolescents. In studies in the United States, the prevalence of depression among White males was 7% and among white females was 12%. Study of Runggreankulkij (2010) found that depression can happen to people of all ages. Both women and men in Thailand had equal prevalence equal for depression. The size of the study samples in the experimental studies varied from 10-20 participants. This may be the optimum sample size for this kind of research . Selected participants ideally should ideally represent the overall population. This is especially important in experimental and quasi-experimental research, which is used to determine an appropriate sample treatment. (intervention). The acquisition of the sample using a probability, mainly to store specific. So researchers sampled a group that they felt best matched the overall population with depression.

Cognitive therapy was the most common types of nursing practice to treat depression found in the experimental studies, followed by group therapy, behavioral idea, the supportive therapy and self talk. Depression may be due to the accumulation of thought, perception, and negative feelings to a patient and their environment. These negative feelings distort reasons. The cognitive therapy aims to correct negative thinking to become more suitable (Beck et al, 1961) by stimulating the depressed person to see know and understand and can analyze the effect. Treatment is focused on people with depression speaking, thinking, and analyzing situations to distinguish the effects of negative thinking and to learn how to modify the idea for themselves. Over time, depressed patients develop mechanisms to adapt to stressful or threatening situations by developing their own abilities. In accepting the consequences of choice without thinking about punish themselves about depressed behaviors and the situation, Beck Steer &, Garbin (1988) recommend (therapy to cope with the problem. These techniques can be effective to reduce depression to milder levels.

The outcomes of nursing interventions to reduce levels of depression in depressive patients.

The combined effect size of the nursing practice interventions described in 28 studies to reduce the levels of depression was 2.57. This result provides evidence that nursing activities that were used in these studies can reduce depression. Upon review of the different studies, we found that these interventions fit within the framework of the nursing theory and provided credible evidence that their interventions had conceptual bases. However, many individual differences, including age, education, illness experience, health care experience determine what types of nursing intervention best suit individual patients with depression. Thus, the relationship between nurses and those with depression is very important so that patients will trust the advice and assistance of the nurse caring for them.

The relationship between effect sizes of the intervention with methodological features of clinical research

We found consistently low correlation between effect sizes of the intervention with methodological features of the research. Sample size had a positively correlation with the effect size (r = 0.135). There was a weak negative correlation with the duration of the trial and the nature of nursing practice (r = -0.175 and. r = -0. 145, respectively). This suggests that it is important to use the correct sample size for your research. In quasi-experimental and experimental research, the goal is to determine the appropriate treatment of the sample. For Intervention research studies, researchers also must take into account how well their study sample represents the overall population. However, the effect size of the intervention may be low due to errors in measurement. The discrepancy between the measured effects of an intervention and the actual effects may arises from various factors. For example, the male gender of the researchers or research assistant during data collection may make female participants less comfortable with giving true responses or may result in biased data collection due to gender bias.

We found no significant differences in effect sizes among different types of nursing intervention to treat depression. We found that each type of nursing intervention was provided within the framework of the nursing theory. Each study also examined if their particular activity or program reduced levels of depression. The conceptual framework must be clear and the choice of nursing theory needs to be correct to provide a clear foundation framework for the study. However, weaknesses of the studies in our review include that studies often had small samples and study subjects were not completely chosen random. The lack of random sampling makes it difficult to generalize the findings to the overall population.

Implications for sustainable health development:

1. Nursing care for depressed patients should encourage the use of the various areas of nursing practice combined. Psychological therapy and social care should be provided for depressive patients appropriately to achieve optimal mental health and treatment for depression..

2. Research should be relevant to the adding to the database of knowledge for nurses to reduce depression among their patients.

Conclusion

Results from this study suggested that depression treatment should be an integrated operation that includes psychological care, nursing, social care, and of course, the people with depression themselves. The options include the preparation of the information about the patient and a personalized plan designed by nurses to reduce the level of depression based on the most up-to-date medical evidence and literature on such patients.

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