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THESIS – BACHELOR'S DEGREE PROGRAMME

SOCIAL SERVICES, HEALTH AND SPORTS

# MINDFULNESS-BASED INTERVENTION FOR DEPRESSION

Literature review

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Abstract

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Abstract

Depression is a common mental illness which affects people worldwide. Depression not only negatively affects the life of individuals, but also has negative effects on the economical and societal levels. As a treatment of depression, different kinds of interventions are available. Intervention based on mindfulness is one of them. Mindfulness-Based Stress Reduction (MBSR) by Jon Kabat-Zinn was the first mindfulness-based intervention applied into a clinical setting.

The thesis examined effectiveness and experiences of mindfulness-based interventions on depression. The purpose of this study was to find out what kind of effectiveness mindfulness-based intervention has in the care of depression. The aim was to contribute to depression management by deepening the knowledge of mindfulness-based intervention in mental health care area. Literature review was performed as a method of the study. Eleven (N=11) articles were included from Cinahl Complete, PubMed and ScienceDirect in December 2020. The data was analyzed by using inductive content analysis. The partner organization of this thesis work was Savonia University of Applied Sciences.

The results of this thesis showed that mindfulness-based interventions had effects on depressive symptoms and depression-related factors, such as, rumination, anxiety, stress and quality of life. The patients' experiences of the interventions including positive experiences and barriers were also discovered.

The results of the study could be utilized as materials of mindfulness-based intervention in mental health care area. As a future study, a literature review including more articles with qualitative research method about the experiences of mindfulness-based interventions and the phenomenon altogether is suggested. Also, there is a need of research on use of mindfulness in nursing care to be investigated in near future.



Keywords

depression, mindfulness, mental illness

CONTENTS

# 1 INTRODUCTION

Depression has become a very common mental illness which affects people worldwide. It was estimated that 264 million people around the globe were affected by depression in 2017 (GBD 2017 Disease and Injury Incidence and Prevalence Collaborators, 1817). Depression is also causing suicide deaths close to 800,000 yearly (World Health Organization 2017, 5). Mental health problems, aside of being obvious health hazards, cause arguably considerable economic and social damages. It is also estimated that the global cost of anxiety and depression alone lingers around one trillion US dollars each year. The cost of mental health problems altogether is estimated to grow to six trillion US dollars by the year 2030. (The Lancet Global Health 2020, e1352.)

People in all walks of life can experience sadness and passing low mood and can call themselves as being depressed. Clinical depression, however, is far more consequential than passing blueness. (NHS 2019.) Clinical depression is characterized by depressed mood, loss of interest and pleasure, reduced energy and some other symptoms (Strakowski & Nelson 2015, 6). In addition, it involves high risk of suicide (MacKinnon 2015, 913). The yearly prevalence of depression in Finnish population is from five to seven percent (Current Care Guidelines 2020).

There are different kinds of treatment interventions available for depression. Interventions based on mindfulness being one. Mindfulness is defined as "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally" by Jon Kabat-Zinn (1994, 4). For the last two decades the interest of mindfulness-based intervention has been growing (Crane et al. 2017, 990).

The thesis has been implemented by using the literature review method and the data was analyzed by using the content analysis. Eleven articles (N=11) were selected from Cinahl, PubMed and ScienceDirect. The partner of this thesis work is Savonia University of Applied Sciences. The purpose of this study was to find out what kind of effectiveness mindfulness-based intervention has in the care of depression. The aim is to contribute to depression management by deepening the knowledge of mindfulness-based intervention in mental health care area.

# 2 DEPRESSION

## 2.1 Symptoms and characteristics

Clinical depression is different to normal mood changes and reactions to hardships in life. Depression affects the individual's functioning in several parts of life, including work, school and family. In addition, it can have a considerable impact on health, especially when it is severe and lasts for a long time. (World Health Organization 2020.) Depression is more than passing blueness since the low mood can last for weeks or months. It ranges from mild to severe and is triggered by challenges in life. Depression can also develop over a longer period of time. (New Zealand Ministry of Health 2020.)

Major depression is characterized by several specific symptoms. It can be diagnosed by two primarily used criteria sets, which are Diagnostic and Statistical Manual of Mental Disorders (5$^{th}$ edition; DSM-5) and the International Classification of Disease (10$^{th}$ edition; ICD-10). Symptoms of major depression include sadness and depressed mood lasting every day or nearly every day, loss of interest and pleasure, reduced energy and tiredness, inappropriate guilt or self-blame, low self-esteem and feeling of worthlessness, noticeable changes in weight and appetite, psychomotor retardation, being anxious and nervous, disturbance in sleep either insomnia or hypersomnia, reduced concentration and indecisive thinking or attitude, complaining about somatic symptoms, feeling of hopelessness and suicidal ideation or thoughts of death. There are three core symptoms in diagnosis of major depression. The first one is anhedonia. Anhedonia is described the person experiences the loss of pleasure or interest in the activities that the person used to enjoy. The second one is diminished mood. Lastly, reduced energy and tiredness. Anhedonia and diminished mood are considered as the core symptoms both in DSM-5 and ICD-10, and reduced energy is included in ICD-10. (American Psychiatric Association 2013, 160-164; Strakowski & Nelson 2015, 6, 7; World Health Organization, 1992, 119-120.) (List 1.)

Four (ICD-10) to five (DSM-5) symptoms mentioned in the earlier paragraph are needed to be present when diagnosing with depression. Furthermore, these symptoms must last for at least two weeks (DSM-5) to one month (ICD-10) including functional impairment. (Strakowski & Nelson 2015, 7.) The severity of major depression is specified into mild, moderate and severe depending on the numbers of symptoms (Ganança, Kahn & Oquendo 2014, 50). The severity can be measured using, for instance, Hamilton Rating Scale for Depression (HAM-D or HRSD), Beck Depression Inventory (BDI) and Patient Health Questionnaire (PHQ-9). (Dozois, Lee Wilde & Dobson 2020, 339-340, 342, 344).

Suicide is the most crucial expression that could be seen in the manifestation of depression. Depression brings high risk of suicide. (MacKinnon 2015, 913.) According to a review involving eight European countries conducted by Dold et al. (2018), 685 of 1410 patients with major depression, equal to 46,7 percent expressed suicidal ideation (Dold et al. 2018, 540-541).

LIST 1. Symptoms of depression (Strakowski & Nelson 2015, 6)

- Sadness and depressed mood lasting every day or nearly every day [1.2]
- Loss of interest and pleasure, so-called anhedonia[1.2]
- Reduced energy and tiredness[2]
- Inappropriate guilt or self-blame
- Low self-esteem and feeling of worthlessness
- Noticeable changes in weight and appetite
- Psychomotor retardation
- Being anxious and nervous
- Disturbance in sleep- could be insomnia or hypersomnia
- Reduced concentration and indecisive thinking or attitude
- Complaining about somatic symptoms- e.g., back pain
- Feeling of hopelessness
- Suicidal ideation or thoughts of death

1. The core symptom in DSM-5. 2. The core symptom in ICD-10

## 2.2 Prevalence and risk factors

One disability-adjusted life-year (DALY) equals for the loss of one year of good health (World Health Organization s.a.). Depression was the 19th leading cause of DALYs in 1990, and in 2019 it ranked the 13th (GBD 2019 Diseases and Injuries Collaborators 2020, 1210). This indicates increased spread of depression.

Two-thirds of depression worldwide occurred in low and middle income countries, but Finland is no exception. In 2015, the prevalence rate of depression in all age groups was 5,6% in Finland. (World Health Organization 2017, 13, 19.) In 2018 in Finland, mental health problems became the number one reason for the disability pension, especially depression being the biggest cause. In 2019, 3,862 people got disability pension because of depression, which is one third more than in 2015. In particular, depression is related to retirement of women in Finland. Two-thirds of the people who got disability pension because of depression in 2019 were women. Data also showed that most pensions that were granted for people under 35 years old were because of mental health problems. (Finnish Centre for Pensions 2020.)

Several factors are prone to contribute to cause depression, such as, gender, age, race and socioeconomic status. It has been found that women tend to have more depression than men. When considering the age, it seems that the risk stays about the same at all life stages. The prevalence of depression in different races are more related to how the culture perceives symptoms of depression

in the cultural background. The connection between the socioeconomic status and depression is feeble, but depression may affect more those with low socioeconomical status, although it is unclear if poverty causes depression, or the other way around. (Strakowski & Nelson 2015, 15-17.)

## 2.3 Treatment

Major depression is related to various medical and psychiatric statuses. When treating major depression, both clinically evidence-based medical and psychological intervention are used. (Strakowski & Nelson 2015, 49.)

The goal of pharmacotherapy is aimed not only at reduction of symptom but also its remission. It is indicated that serotonin is associated with the pathophysiology of depression. For example, decreased level of serotonin may cause depression, and some patients with suicidal ideation have low concentrations of serotonin uptake sites on platelets. (Sadock, Sadock & Ruiz 2017, 153, 188.) Different kinds of antidepressants have been used as cornerstones in pharmacotherapy for major depression. Selective serotonin reuptake inhibitors (SSRIs) are suggested as the first line agents in treating an acute episode of depression as they are tolerable, rather safe for overdose and influence less comorbid conditions. SSRIs increase the concentration of serotonin in the neural synapse by inhibiting the serotonin reuptake transporter. The common side effects are disturbance in gastrointestinal tract, activation in central nervous system and sexual side effects. Even though SSRIs are widely used, there is a possibility of an unadequate response. Considering that, it is reasonable to change into serotonin-norepinephrine reuptake inhibitors (SNRIs), bupropion and mirtazapine. (Strakowski & Nelson 2015, 50-56.)

Pharmacotherapy itself often cannot be sufficient for the best treatment outcomes for major depression (Strakowski & Nelson 2015, 69). There are certain types of psychotherapies available, such as cognitive therapy, interpersonal therapy and behavior therapy. Cognitive therapy was established by Aaron Beck in the 1960s (McLeod 2015). Cognitive therapy is used to treat cognitive distortion in depression. Depressed patient often tends to pay attention to the negative side of circumstances and reason inappropriate consequences. By having cognitive therapy sessions, the patient can learn to have positive thinking, practice new cognition and see the behavioral consequences. (Sadock et al. 2017, 184-185.) Difficulties in social environment and interpersonal relationships contribute to depression. Interpersonal therapy is focused to let patients have better coping strategies in social and interpersonal problems. (Ganança, Kahn & Oquendo 2014, 90, 92.) Behavior therapy is focused on correcting patient's maladaptive behaviors so that she/he receives positive feedback from others. Even though there are not enough controlled studies about behavior therapy, data shows the effectiveness in treatment for depression. (Sadock et al. 2017, 185.)

A combination of psychotherapy and pharmacotherapy is widely recognized as the most effective treatment in major depression. However, some data point out that psychotherapy and pharmacotherapy can be used independently at least in mild major depression. Also, the regular use of combined therapy may cause unnecessary costs and side effects to patients. (Sadock et al. 2017, 184.)

# 3 MINDFULNESS-BASED INTERVENTION

Kabat-Zinn is known as a pioneer who applied the concept of mindfulness to the medical environment by applying it to patients suffering from mental and physical symptoms (Kabat-Zinn 1994, 1-304; Kabat-Zinn 2011, 281-306; van Vreeswijk, Broersen & Schurink 2014, 15). Kabat-Zinn drew inspiration from Zen Buddhism, vipassana meditation and the practice of yoga to nourish mindfulness (Cullen 2011, 188). Originally, mindfulness is a practice based on Buddhist tradition that dates back over 2500 years (Sipe & Eisendrath 2012, 63). Mindfulness and meditation play central roles in different schools of Buddhism. In Buddhist tradition, the term vipassana is used instead of the term mindfulness. Vipassana translates as seeing clearly. The Buddhists see the vipassana, seeing clearly, as a tool to free the individual's mind from greed, hatred and delusion. (Cullen 2011, 187.) Over the past decades, there have been various attempts to apply mindfulness practices to western medical treatment (Sipe & Eisendrath 2012, 63). Mindfulness can be an antidote and medicine to the disease of twenty-first century life (Cullen 2011, 189).

Auten and Fritz (2019, 99) emphasize that mindfulness nourishes three kinds of processes, which enable increased psychological and emotional flexibility and empathy. First, the process removes the individual from experience and emotion. Second, mindfulness helps to extinguish the automatic psychological processes, that is to stop to think. Lastly, it helps the person to grow more aware of the bodily reactions rising from feedbacks considering the experienced environments. The processes and mindfulness altogether grow the individual's awareness, understanding and acceptance of emotions, which are strengthen by the on-growing self-regulatory functioning. Thus, mindfulness can promote well-being.

In the last 20 years, mindfulness-based interventions have become a popular topic both in scientific field and public (Goldberg et al. 2018, 52). There are wide amounts of literature available about mindfulness-based interventions including different kinds of research such as clinical trials, qualitative research and neuroscientific publications (van Vreeswijk et al. 2014, 16). Mindfulness-based interventions have been focused on personalized and targeted populations. The populations include various physical and psychological conditions, such as, depression, anxiety disorders, heart disease, chronic pain, psoriasis, fatigue and binge-eating disorders. Mindfulness-based interventions have also been used in prevention of relapse in substance abuse and for military personnel, cancer patients and maternal well-being. (Cullen 2011, 188, 190; Shonin, van Gordon & Griffiths 2013, 194.)

Most of mindfulness-based interventions last eight weeks, and they involve finding out what kind of behaviors result into emotional pain and pleasure by clearly focusing on internal and external life (Cullen 2011, 189). Even though the focus differs depending on target participants, in mindfulness-based interventions, the participants examine their experiences and relations to the physical, emotional or psychological difficulties which they suffer from. This allows the participants to investigate the territory of difficulties, unwanted experiences, depression and so on. All mindfulness-based interventions aim to do this although the means might be different. Through mindfulness, the participants seek to obtain knowledge on how they are experiencing difficulties and how better awareness gained from mindfulness brings new possibilities to break the old habits and reactions. (Crane et al. 2017, 995.)

The mindfulness-based interventions, which have been evaluated for their effectiveness, consist of four types: Mindfulness Based Stress Reduction (MBSR), Mindfulness-Based Cognitive Therapy (MBCT), Dialectical Behavioral Therapy (DBI) and Acceptance and Commitment Therapy (ACT) (van Vreeswijk et al. 2014, 27). Especially MBSR and MBCT have long histories and have been closely assessed (Cavanagh et al. 2013, 573).

MBSR was founded in 1979 in the University of Massachusetts Medical Center by Kabat-Zinn (Mental Health Foundation of New Zealand 2011, 1). MBSR is particularly meant for patients suffering from chronic pain and stress-related condition. One session takes about three hours and maximum 30 people with different kinds of disorders and situations can participate. The practice's setting is based on the intense mindfulness meditation. It also includes, for example, raisin exercise, in which participants observe the raisin and the eating process thoroughly, body scan, where they pay detailed attention to different body parts one at a time. And lastly sitting meditation, in which they observe the breath, rising sensations, thoughts and emotions mindfully in a seated position. (Baer 2014, 5-8.)

MBCT has been developed under MBSR's influences, and it focuses on prevention of depressive relapses (Baer 2014, 13). MBCT usually lasts eight weeks, and it is a combination of cognitive therapy and mindfulness practices. The difference from normal cognitive therapy is, however, that in MBCT the aim is to accept the thoughts and emotions that rise, not to assess, judge or alternate them in any way. It is thought that when the mind is in the state of being, it protects participants from relapsing into depression, and it also reduces rumination. (Mental Health Foundation of New Zealand 2011, 4.) Rumination is the act of the individual constantly thinking about of their illness or negative information. It is associated with depression. (Hsu et al. 2015, 22.)

MBSR and MBCT are called first-generation mindfulness-based interventions (Shonin & van Gordon 2015, 899). The first-generation mindfulness-based interventions' interpretation of mindfulness includes non-judgemental and passive attitude towards different rising experiences. There are also second-generation mindfulness-based interventions, which have been recently developed. (van Gordon, Shonin & Griffiths 2015, 591.) In the second-generation mindfulness-based interventions, the passive and non-judgemental awareness have been replaced with active and discriminative awareness. In addition, the word spiritual is used when describing the intervention, whereas in first-generation mindfulness-based interventions, the word is not used. (Shonin & van Gordon, 2015, 900.)

Recently developed interventions are, for instance, Mindfulness-Based Compassionate Living (MBCL) and Meditation Based Lifestyle Modification (MBLM). MBCL is an intervention tailored for individuals who have previously taken part in mindfulness training (van den Brink, Koster & Norton 2018, 4). Its aim is to practice cultivating kindness and more benign attitude towards oneself. It is aimed especially for individuals with continuing dysfunctional thinking and behavior. (Schuling et al. 2016, 78.) MBLM is a mind-body intervention developed for mental health setting. MBLM aims to improve health holistically instead of focusing on symptoms or disease. The intervention has three domains: ethical living, healthy lifestyle and mantra meditation. (Bringmann et al. 2020, 1-6.) (Figure 1.)

Mindfulness is also used in nursing care. In psychiatric nursing, the relationship between nurse and patient is the key element to enable the patients to accomplish long-lasting change. Mindfulness can

be one of the tools that can be utilized in mental health nursing and used in building and upholding the nurse-client relationship. It is important for nurses to decide the suitable type, length and what symptoms are targeted in mindfulness practice depending on the patient. (Tusaie & Edds 2009, 361-362.)

There are also ways to measure the levels of mindfulness. Questionnaires are used to appraise the individual's proneness to be mindful in everyday life. Currently the most used ones include the Mindful Attention Awareness Scale (MAAS), the Five Facet Mindfulness Questionnaire (FFMQ), the Kentucky Inventory of Mindfulness Skills (KIMS), the Freiburg Mindfulness Inventory (FMI), and the Cognitive Affective Mindfulness Scale-Revised (CAMS-R). (Baer 2019, 45.)

In Goldberg et al.'s (2018, 52-60) study, mindfulness-based interventions were researched for treatment of different psychiatric disorders. As a treatment of depression, mindfulness-based intervention was shown as superior to other active therapies and worked equivalently to evidence-based treatment. Also, the comprehensive meta-analysis of randomized controlled trials of mindfulness-based interventions for major depression was done by Wang et al. (2018, 429-436). The study showed that mindfulness-based interventions were effective in reduction of depressive symptoms significantly right after the interventions. However, it was identified that the effectiveness disappeared by the end of post-treatment follow-up.

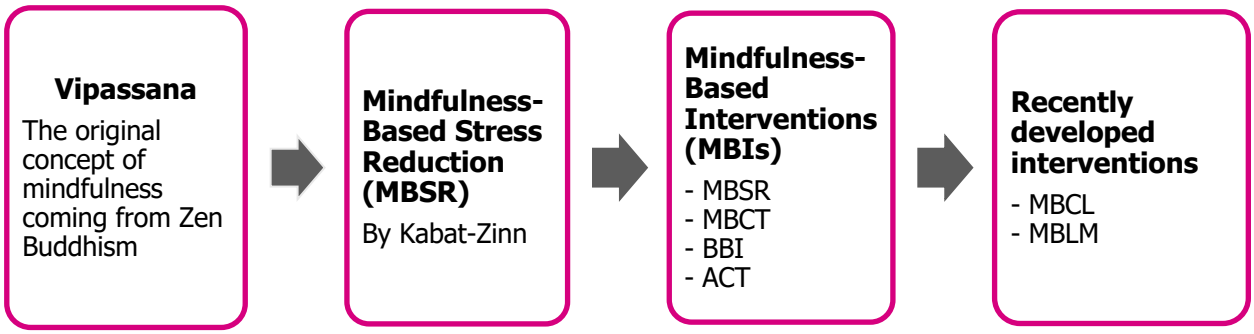


FIGURE 1. History of mindfulness-based interventions

# 4 THE PURPOSE AND AIMS OF THE STUDY

The purpose of this study was to find out what kind of effectiveness mindfulness-based intervention has in the care of depression. The aim is to contribute to depression management by deepening the knowledge of mindfulness-based intervention in mental health care area.

To achieve the purpose, the authors have set research questions. Research questions are following;

1. What kinds of effects do mindfulness-based interventions have?
2. What are the patients' experiences of mindfulness-based interventions?

# 5 IMPLEMENTATION

## 5.1 Literature review

The method of this study is literature review. Aveyard (2014, 2) defines a literature review as "the comprehensive study and interpretation of literature that relates to a particular topic." To achieve that, several steps are taken. First step is to identify the aims and purpose of the review. Identifying the aim helps to pinpoint what the authors are investigating and provide a topic for the review. According to the aims and purpose, the research questions are set. The next part is to search for the literature. Finding answers by searching and analyzing the relevant literatures are needed. Thorough search and analysis of literatures are also useful for obtaining new insight. After analysis comes synthesis. When making a synthesis, the knowledge obtained from the research articles are combined. The last part is conclusion, where the authors reflect and summarize the findings with the research questions and the topic of the review. (Coughlan & Cronin 2021, 2-4.)

Literature review is essential. There is a vast amount of information available, and the amount is growing all the time. Healthcare professionals are required to stay in touch with the up-to-date information and knowledge, but it is impossible to read all the information because of the amount. As literature reviews gather the essential information and synthesize them from many resources on a certain topic, the process of obtaining information becomes manageable for them. (Aveyard 2014, 4; Houser 2018, 266.) The review can also evaluate current understanding of the topic and provide recently published findings (Winchester & Salji 2016, 308).

The research method was implemented by searching for theoretical information about depression and mindfulness-based interventions. Various articles about the subject were read. The authors identified and set the research questions. After setting the research questions, the authors selected research articles and extracted the necessary data for answering the research questions. When the data was gathered, the results found in the articles were presented. (Figure 2.)

Qualitative research method was used in the study. Qualitative research is used to explore people's perspectives from the experiences what they have undergone, and to study human or social subjects such as behavior or feelings. The aim of qualitative research is also to understand different kinds of phenomena and their contexts. (Holloway 2016, 3: Kyngäs, Mikkonen & Kääriäinen 2020, 9). As qualitative research methods focus on peoples' experiences, the knowledge gathered in the research is subjective. Qualitative research incorporates holistic view of the study subject, the subject is seen as a whole, not as numbers or variables. In addition, as the information from qualitative research brings forth the individuals' experiences, it does not aim to generalize information. (Coughlan & Cronin 2021, 90.) The authors aimed to seek knowledge not only about whether mindfulness-based interventions have effectiveness on depression, but also broader information about different effects of the interventions and the experiences of the patients, thus qualitative research approach is needed in this study.

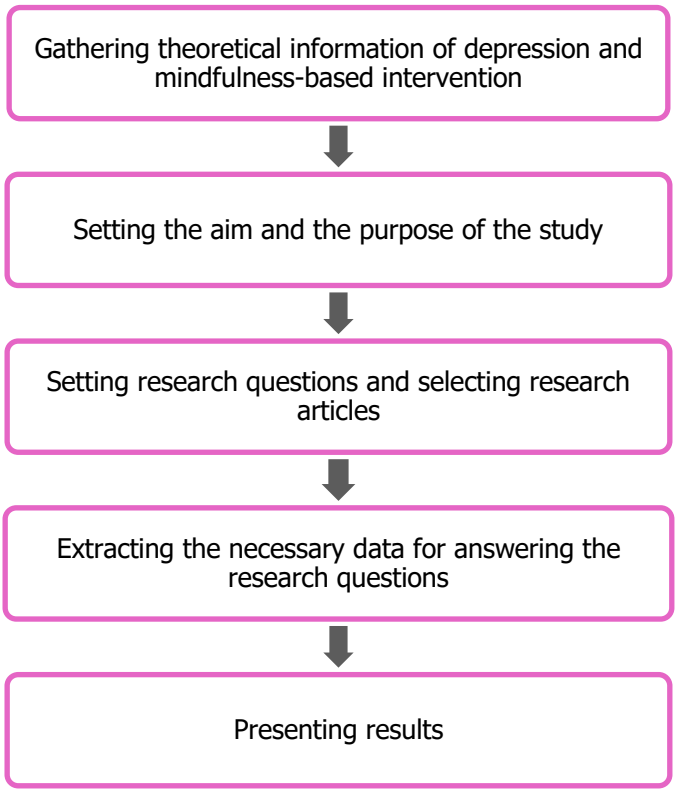


FIGURE 2. Steps of research implementation

## 5.2 Data collection

In the process of data collection, there are a few key points. Logical search process and strategy are needed. The search strategy needs to be suitable for the research questions and eligibility criteria. The data collection process may be done several times even when using search strategies or logical search process. Another key element is the selection of databases, from which the search is done. Lastly, there needs to be a balance between sensitivity and specificity. For example, too specific search may produce limited number of articles. The strategies and process used in searching data should be duplicatable, transparent and documented. This allows other researchers to duplicate the searches. (Purssell & McCrae 2020, 31, 43.)

The articles were chosen from electronic databases. The authors started the data collection process in December 2020 with possible different search words. After consideration and appraisal of what kind of information was needed, the authors concluded to use Cinahl complete, PubMed and ScienceDirect for the search. The authors also consulted a librarian about the use of different search words. Cinahl Complete is a conclusive database for nursing and other healthcare professionals (EBSCO s.a.). PubMed provides over 30 million research and literatures of medical and life sciences (National Center for Biotechnology Information s.a.). ScienceDirect is a trusted source offering vast amount of qualified research articles and academic literature from several fields of science. (Elsevier s.a.).

The study increases the opportunity of obtaining authentic results by adding inclusion and exclusion criteria (Table 1). Inclusion criteria included the articles related to the topic, especially the ones

which can answer the research questions. To provide up-to-date study, only articles published between 2015-2021 were chosen. A peer-reviewed article is a study report evaluated by one or more people in the same field as the author, such as, researchers and scholars (Purssell & McCrae 2020, 177). Therefore, only peer-reviewed articles were included to assure credibility in this study.

In Cinahl complete, a combination of "(MH "Mindfulness/MT") AND depression" was used. Initial number of results was 146 articles. After adding criteria including years, availability of abstracts, peer-reviewed articles and English language, 126 articles appeared. 29 articles were chosen by titles, and after reading abstract and full-text availability, seven articles were read, and two (n=2) were chosen.

In PubMed, 451 articles appeared with a combination of "Mindfulness/methods"[Mesh] AND depression. After setting criteria including English language, years and availability of abstract, 383 articles came out. The authors chose 29 by titles. By abstract and full-text availability, eight articles were read by full-texts, and four articles (n=4) were chosen.

In ScienceDirect, a combination of depression AND "mindfulness-based interventions" was used. Initially 1371 results came out. After setting years and research articles, 600 articles came out. 39 articles were chosen by titles and eight articles were chosen by abstracts. Lastly, they were read by full-texts and five articles (n=5) were chosen (Figure 3.) After the process of screening, eleven articles (N=11) were chosen for the analysis. The chosen articles are presented in appendix 1.

The countries where the studies were conducted were the U.S. (n=5), the Netherlands (n=3), Germany (n=1), Italy (n=1) and Norway (n=1). Quantitative research method was used in nine articles, qualitative research method was used in one article, and one article used both qualitative and quantitative methods. To get broad view of the use of mindfulness-based intervention in different kinds of depression, the articles addressed mild, moderate or severe depression, recurrent depression, chronic treatment-resistant depression and major depression currently in remission.

TABLE 1. Inclusion and exclusion criteria

| Inclusion criteria | Exclusion criteria |
|---|---|
| • Related to the research topic<br>• Published from 2015 to present<br>• Written in English<br>• Abstracts are available<br>• Research articles<br>• Full free text<br>• Peer-reviewed articles | • Not related to the research topic<br>• Published before 2015<br>• Written in other languages than English<br>• Articles without abstracts<br>• Not research articles<br>• Articles which charge for reading<br>• Not peered articles |

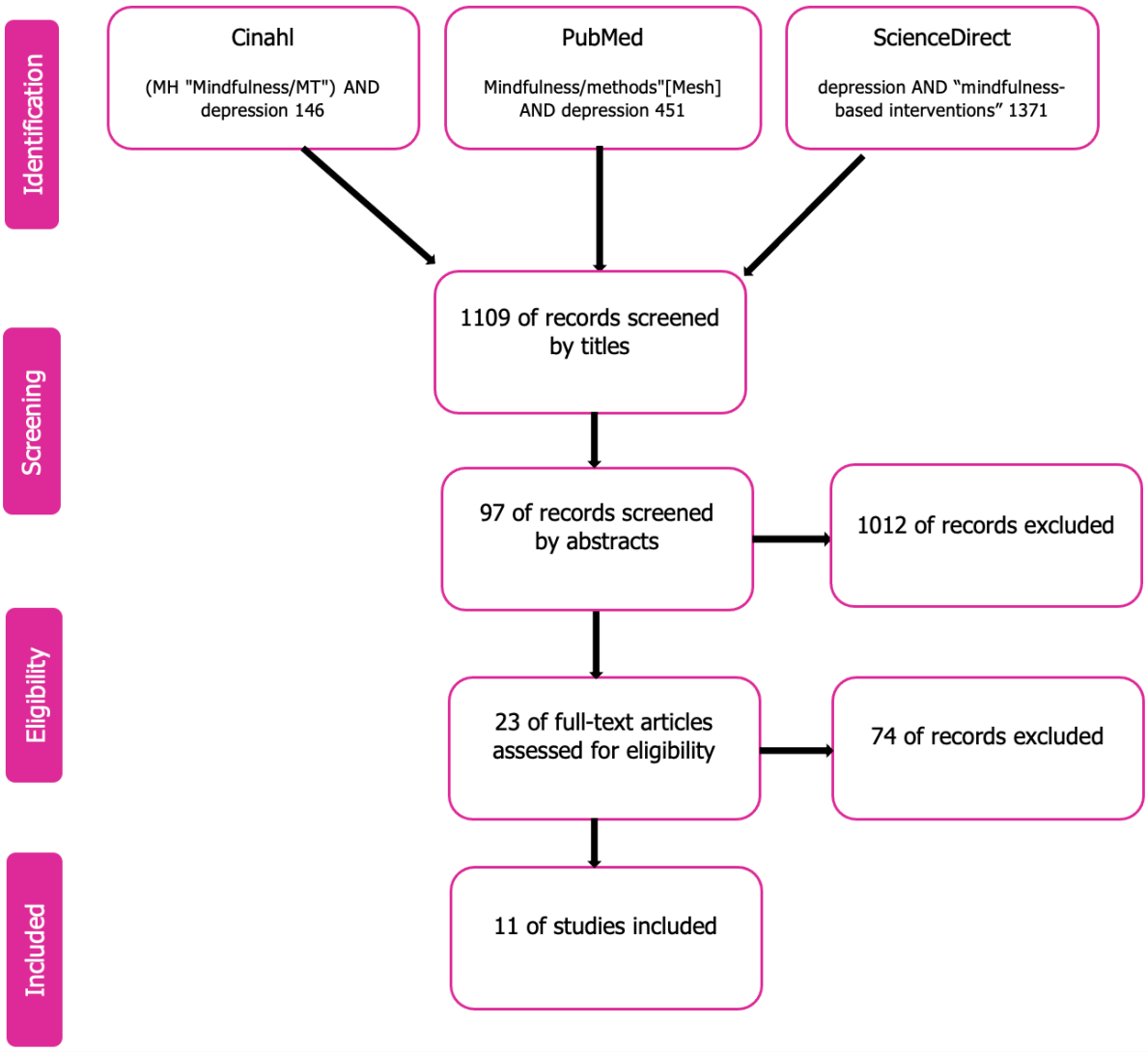


FIGURE 3. Process of the article selection

## 5.3 Content analysis

Literature review as a method itself does not offer the tools to analyze the contents of the chosen material. That is why content analysis is needed to compress, categorise and present the research material of literature review. (Tuomi & Sarajärvi 2018, 68.) Content analysis is a widely used method in nursing science research. Content analysis provides evidence for phenomenon and is important especially in nursing research that requires careful approach to sensitive topics. (Elo & Kyngäs 2008, 107, 114.) Through content analysis, documents can be analyzed systematically and objectively, and it is also used to sort, describe and quantify the subject of the study. The method fits for analyzing different kinds of documents. It offers a way to build models which compress and generalize the subject phenomena, and further, the subject can be described and categorized. Content analysis requires authors to deeply study the research material according to the purpose of the research. (Kyngäs & Vanhanen 1999, 3, 11.)

The authors used inductive content analysis as the research method. Inductive content analysis is preferable to use when the information is being integrated together from different sources or studies. The phases of inductive content analysis are defined as follows: data reduction, data grouping and formation of categories that can be used to answer the research questions. The analytical process considers reading, organizing, integrating and forming categories, concepts and themes through observing the equivalency and dissimilarity of the gathered material used in the study. (Kyngäs, Mikkonen & Kääriäinen 2020, 14.) Inductive analysis was chosen as the knowledge was gathered from different kinds of sources. The authors identified key themes and categories related to the topic from the research articles. The key themes of the study helped to identify the analytical units. Analytical units were relevant phrases or sentences inside the articles. The analytical units were chosen in order to answer the research questions. After collecting the analytical units, they were read repeatedly. Later, the analytical units were simplified, and the sub-categories were identified from the reduced data. The sub-categories were then set under generic-categories. Lastly, the generic-categories were fitted inside the main-categories that were derived from research questions (Figure 4) (Table 2.) In total, the authors extracted 51 original expression (n=51), 18 sub-categories (n=18), nine (n=9) generic-categories and two (n=2) main-categories.


FIGURE 4. Process of analysis

TABLE 2. Examples of the content analysis

| Original expression | Data reduction | Sub-category | Generic-category | Main-category |
|---|---|---|---|---|
| About half of the participants mentioned that it was difficult to integrate the contents and exercises of the course into daily life and establish a regular practice. Finding time and space in a busy life was sometimes a challenge. Individual participants also felt pressured to do the exercises or experienced them as a duty. Some also named problems of acceptance within their families..." (Bringmann et al. 2021, 6) | - Difficulties to incorporate into everyday life<br>- Schedule conflicts<br>- Pressured for home practices<br>- Family not accepting | Practical barriers of implementation | Barriers | Patients' experiences of mindfulness-based interventions |
| "Several participants stated that they did not have enough time to complete the formal home practice due to busy home schedules." (Burnett-Zeigler et al. 2019, 22) | - Not enough time to complete home practice | | | |

# 6 RESULTS

Different types of mindfulness-based interventions were used in the studies. The mindfulness-based interventions that were studied in the articles (N=11) were mainly Mindfulness-Based Cognitive Therapy, MBCT (n=6), other interventions were modified intervention of Mindfulness-Based Stress Reduction, MBSR called M-Body (n=2) and Resilience Training, RT (n=1). Also, Meditation Based Life Modification, MBLM (n=1) and Mindfulness-Based Compassionate Living, MBCL (n=1) (Table 3.) M-body is made to suit community health center setting and the patients. Although M-body is modified from MBSR, the key elements are the same. RT combines elements of MBSR and has three elements which include mindfulness meditation, nutrition and recommended exercises.

TABLE 3. Types of interventions used in the articles

| **Type of intervention** | **Frequency** (N=11) |
|---|---|
| MBCT | n=6 |
| MBCL | n=1 |
| MBLM | n=1 |
| M-body | n=2 |
| RT | n=1 |

## 6.1 Effects of mindfulness-based interventions

**Depressive symptoms** The studies found mindfulness-based interventions to have positive effects on depressive symptoms, no matter which intervention was used. The depressive symptoms were assessed using scales, such as, Beck Depression Inventory, Hamilton Rating Scale for Depression and Patient Health Questionnaire. (Bringmann et al. 2021, 7; Burnett-Zeigler et al. 2016, 63; Chiesa et al. 2015, 476; Cladder-Micus et al. 2018, 375; Cladder-Micus et al. 2018, 919; Johnson, Emmons, Rivard, Griffin & Dusek 2015, 440; Schanche et al. 2020, 8; Schuling et al. 2020, 269; Shallcross et al. 2015, 972).

Several studies also measured and found that the effects lasted after the interventions too. Burnett-Zeigler et al. (2016, 63) found the depressive symptoms to decrease still 16 weeks after M-body. Chiesa et al. (2015, 476) reported the depressive symptoms decreasing 26 weeks after MBCT. Schuling et al. (2020, 269) discovered the continued benefits on depressive symptoms still at six months after MBCL. Also, in Shallcross et al.'s (2015, 972) study, the patients still experienced benefits on depressive symptoms 60 weeks after MBCT, and lastly Johnson et al. (2015, 440) discovered decrease in depressive symptoms two months after RT.

Ter Avest et al. (2019, 7) found that when patients' age of onset of depression is under 30,5 years, they generally benefited more on depressive symptoms from MBCT. Also, Cladder-Micus et al. (2018, 921) and ter Avest et al. (2019, 7) agreed that when patients had scored high rumination level at baseline, MBCT acted more beneficially on depressive symptoms.

**Mindfulness skills** In the studies, Five Facet Mindfulness Questionnaire (FFMQ), Freiburg Mindfulness Inventory (FMI) and Kentucky Inventory of Mindfulness Skills (KIMS) were used to assess the level of mindfulness. Mindfulness skills involve the abilities of observing, describing, acting with awareness, non-judgement and non-reactivity. No matter the used questionnaire, the patients' mindfulness skills were seen to significantly increase as results of MBLM, M-body, MBCT and MBCL (Bringmann et al. 2021, 7; Burnett-Zeigler et al. 2016, 63; Chiesa et al. 2015, 476-477; Cladder-Micus et al. 2018, 375; Cladder-Micus et al. 2018, 921; Schanche et al. 2020, 8; Schuling et al. 2020, 268). MBCT also increased mindfulness skills significantly in most of the domains when compared to psychotherapy (Chiesa et al. 2015, 476-477).

**Rumination** Patients with depression often concentrate only on the negative thoughts and emotions (Hsu et al. 2015, 22). MBCT, MBCL, M-body and MBLM affected rumination positively, decreasing and reducing it (Bringmann et al. 2021, 6; Burnett-Zeigler, Satyshur, Hong, Wisner & Moskowitz 2019, 21-22; Cladder-Micus et al. 2018, 921; Schanche et al. 2020, 8; Schuling et al. 2020, 268). MBCT helped the patients to control their proneness to focus the attention on the ruminative process (Schanche et al. 2020, 10).

**Self-acceptance and self-compassion** Increased self-acceptance and self-compassion were reported in several studies using different interventions including MBLM, M-body, MBCT and MBCL, and the effects were found to be significant (Bringmann et al. 2021, 6; Burnett-Zeigler et al. 2016, 64; Cladder-Micus et al. 2018, 921; Schanche et al. 2020, 8; Schuling et al. 2020, 268). Through learning mindfulness skills, patients related to experiences in a greater feeling of warmth, kindness and compassion in MBCT (Schanche et al. 2020, 11). It was also indicated that the patients became less judgmental and developed more caring attitude towards themselves in MBCT (Cladder-Micus et al. 2018, 921; Schanche et al. 2020, 11).

**Anxiety** The effectiveness of mindfulness-based interventions on anxiety was found to be twofold. Johnson et al. (2015, 439) reported decrease in both trait and state anxiety in RT. However, in Schanche et al.'s study (2020, 8), MBCT did not seem to have significant effect on symptoms of anxiety when measured with Beck's Anxiety Inventory, but had small positive impact when measured with State-trait Anxiety Inventory. Also, MBCT in Chiesa et al.'s study (2015, 481) affected positively on anxiety, but there was no huge difference when compared to psycho-education.

**Stress** Studies found evidence that M-body and RT reduced stress potently (Burnett-Zeigler et al. 2016, 63-64; Burnett-Zeigler et al. 2019, 21-22; Johnson et al. 2015, 440). Schanche et al. (2020, 3, 8) found MBCT to have positive effect on emotional reactivity to stress, which is a risk factor of depressive relapse.

**Quality of life** Significant improvement on quality of life of the patients were reported after MBCT and MBCL (Chiesa et al. 2015, 477; Cladder-Micus et al. 2018, 921; Schuling et al. 2020, 268). The

effects of MBCT on quality of life were seen both in short and long-term (Chiesa et al. 2015, 477). MBCT also positively affected the patients' life satisfaction, which linearly and gradually improved over the course of Shallcross et al.'s (2015, 972) study. ter Avest et al. (2019, 8) found out when the psychological quality of life had scored under 27,08 with WHOQOL-Bref at baseline, MBCT improved quality of life better than for patients with higher reading. (Figure 5.)

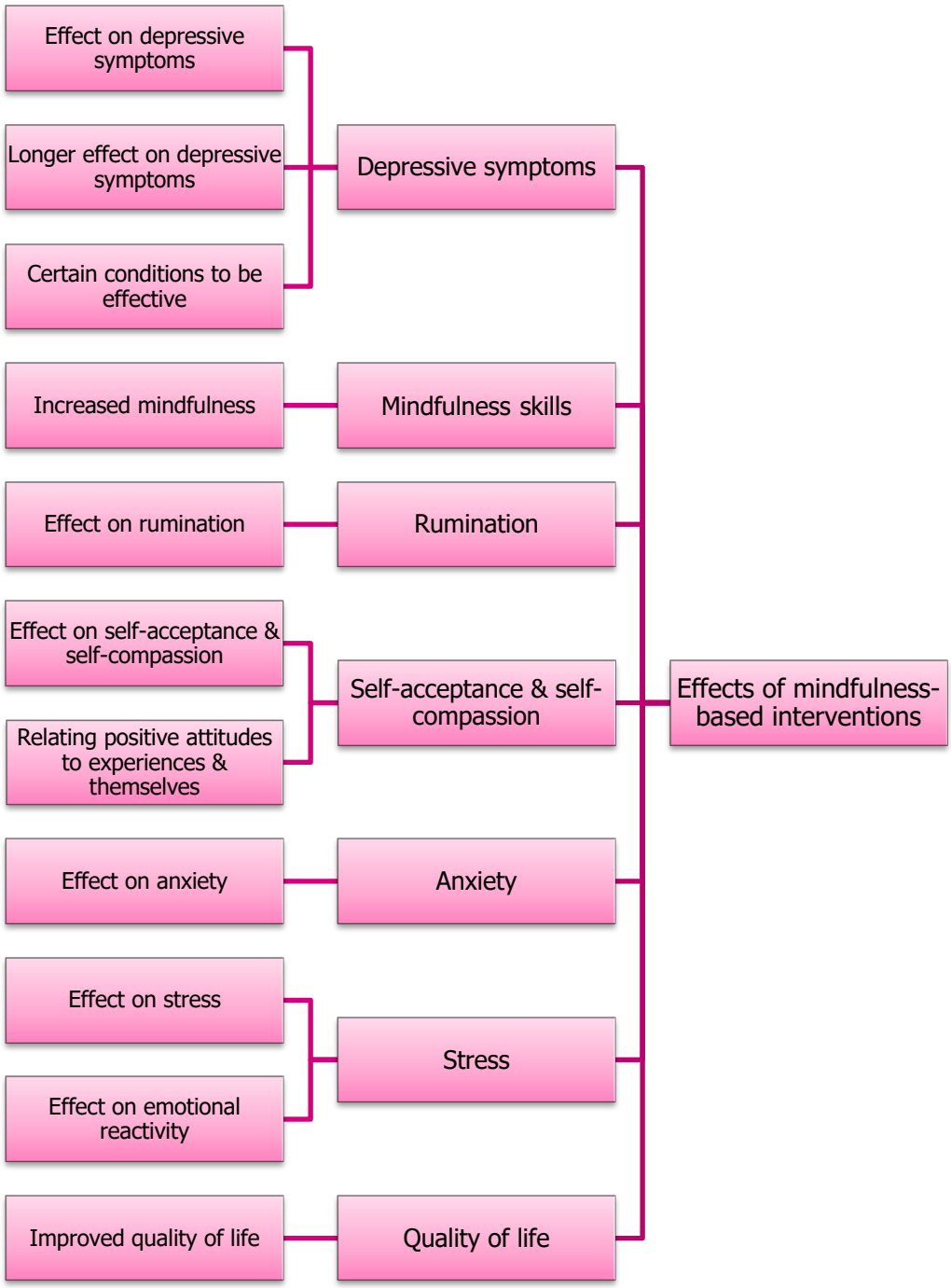


FIGURE 5. Effects of mindfulness-based interventions

## 6.2 Patients' experiences of mindfulness-based interventions

**Positive experiences** Patients who underwent M-body expressed that practicing mindfulness helped them to be in more control of their actions, thinking and feelings. The power of being in control of oneself was reported to feel good. The changes were not only psychological but also physiological, such as, absence of stomachache. (Burnett-Zeigler et al. 2019, 21.) Similar to M-body, patients of MBLM experienced being in control of their thoughts and feelings. According to that, the patients acquired the skills of handling challenging situations better. (Bringmann et al. 2021, 6.)

Improved awareness was acquired in M-body and MBLM (Bringmann et al. 2021, 6; Burnett-Zeigler et al.'s 2019, 21-22). Patients in M-body described that the cultivated awareness also extended so that they were more aware of their ways of communicating, how they were feeling, what need they had, physiological elements of stress and of what acted as a trigger for stress. Furthermore, the patients developed means to cope better with stress. (Burnett-Zeigler et al. 2019, 21-22.)

Increased peacefulness, calmness and relaxation were also cultivated by the patients in M-body and MBLM (Bringmann et al. 2021; Burnett-Zeigler et al. 2019, 21-22). In MBLM, almost all of the patients experienced relaxation, peacefulness and calmness, and these were connected to reduced emotional distress. This was said to be a result of the yoga and meditation.

The patients in MBLM described that the group element was an important factor. The patients felt that the group supported them through the learning process of the intervention. The group setting also motivated the patients to give more effort in the yoga practice. Meditation was also reported to be easier in group, which also encouraged the patients to practice at home. (Bringmann et al. 2021, 5.) Also, in Burnett-Zeigler et al.'s study (2019, 22), the patients of M-body stated a group setting as beneficial as they enjoyed social support.

**Barriers** The reported adverse events during MBLM were such as feelings of inner tension, memories of bad past experiences, exhaustion (Bringmann et al. 2021, 4, 6) and conflict related to religion in M-body (Burnett-Zeigler et al. 2019, 22). Around half of the patients reported having difficulties incorporating the contents and exercises of MBLM into their everyday life. Conflicts with schedules or not having enough time to complete the home practices were also reported (Bringmann et al. 2021, 6; Burnett-Zeigler et al. 2019, 22). In M-body, transportation, employment and family-related matters were obstacles of attendance (Burnett-Zeigler et al. 2019, 22). Some of the patients also felt that they had pressure to do the exercises and faced problems with their family not accepting MBLM. Also, the group discussion in ethical living domain was experienced as a challenge. The patients felt that the group discussions caused them stress and emotional disturbance. (Bringmann et al. 2021, 6.)

Burnett-Zeigler et al. (2019, 22) explicitly studied patients' experiences considering the participation in M-body. Hindering reason for participating in M-body for multiple patients was identified as patients' tendency to avoid problematic emotions and thoughts. One patient mentioned it was hard to recognize who she really was and taking space to think about it. There were also stigma of receiving help for mental health problems and embarrassment and challenges in accepting being depressed. (Figure 6.)

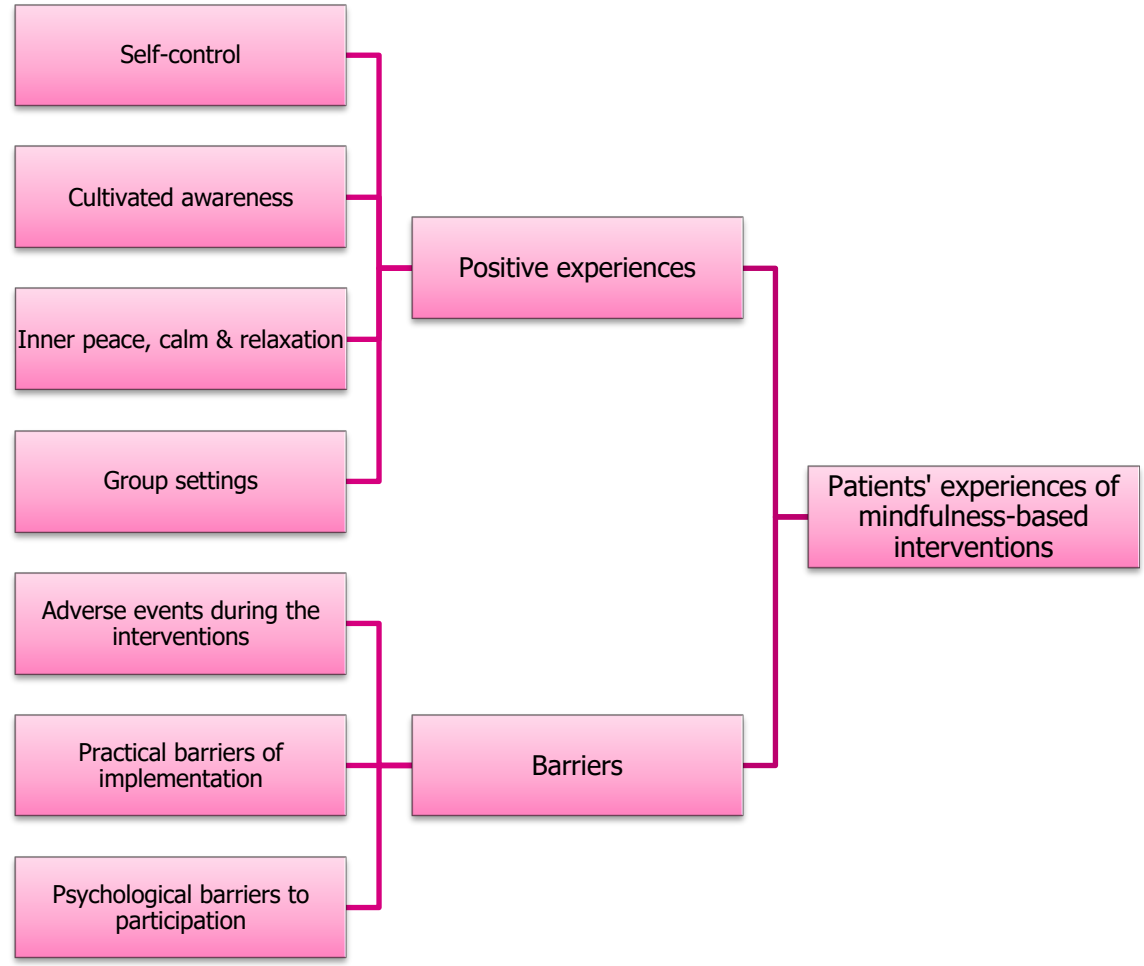


FIGURE 6. Patients' experiences of mindfulness-based interventions

# 7 CONCLUSION

## 7.1 Consideration of the results

This study was about effectiveness of mindfulness-based interventions for depression. Mindfulness-based interventions have been used in treatment of various psychological conditions, including depression, anxiety, stress and so on (Cullen 2011, 188, 190; Shonin, van Gordon & Griffiths 2013, 194). The results of this study support this since the interventions were found to have positive effects not only on depression, but also, for example, on anxiety, stress and rumination.

The first-generation mindfulness-based interventions, Mindfulness-based stress reduction (MBSR) and Mindfulness-based cognitive therapy (MBCT) were two of the mindfulness-based interventions which had long histories (Cavanagh et al. 2013, 573; Shonin & van Gordon 2015, 899). MBCT was originally developed to be used for depressed patients (Baer 2014, 13). MBCT was the most used intervention (n=6) in the study. Not only did it have long lasting, gradual decreasing effect on depressive symptoms (Chiesa et al. 2015, 476; Shallcross et al. 2015, 972), but it also affected positively on depression-related factors (Chiesa et al. 2015, 476, 477, 481; Cladder-Micus et al. 2018 375; Cladder-Micus et al. 2018 919, 921; Schanche et al. 2020, 8, 10; Shallcross et al. 2015, 972).

Unlike MBCT, the purpose of MBSR is to relieve people's stress-related condition (Baer 2014, 5). In this study, the interventions, namely M-body and RT which were based on MBSR, showed positive results. M-body and RT not only reduced stress levels but also effectively decrease depressive symptoms. Especially, the effects on depressive symptoms were long-lasting. (Burnett-Zeigler et al. 2016, 63-64; Johnson et al. 2015, 440.)

There were also newly invented mindfulness-based interventions, which were Mindfulness-Based Compassionate Living (MBCL) and Meditation Based Life Modification (MBLM). The results showed positive effects on depressive symptoms and mindfulness levels in both MBCL and MBLM, rumination, self-compassion and quality of life in MBCL, and lastly, patients' positive experiences were drawn from MBLM (Bringmann et al. 2021, 6-7; Schuling et al. 2020, 268-269).

Through the practice of mindfulness, people could examine the difficulties that they have. Furthermore, people could gain new insight and better awareness to bring forth possibilities to promote change (Crane et al. 2017, 995). This was seen in Bringmann et al.'s (2021, 6) study. The patients in MBLM expressed that the intervention had taught them new skills to handle challenging situations better. Additionally, mindfulness could help to be in control of oneself and obtain better awareness (Auten & Fritz 2019, 99). These experiences were also found as the patients reported being in control (Burnett-Zeigler et al. 2019, 21), and having better awareness in MBLM and M-body (Bringmann et al. 2021, 6; Burnett-Zeigler et al. 2019, 21-22). The results also support Auten and Fritz's (2019, 99) theory of how mindfulness increases psychological and emotional flexibility and empathy. Patients learned to relate to experiences with warmth, kindness and compassion in MBCT (Schanche et al. 2020, 11).

New insights of the patients' experiences of mindfulness-based interventions were also discovered in the study. For example, the group element of the interventions was found to be an important factor.

Patients reported the group setting to help them in various ways during the intervention. The group setting was found to be motivative and supportive for the patients in MBLM and M-body. (Bringmann et al. 2021, 5; Burnett-Zeigler et al. 2019, 22.)

Barriers and adverse events during the interventions were also uncovered. There were different kinds of barriers of implementation of the interventions. The barriers were, for example, having hard time implementing the homework to busy schedules, problems with family life and transportation (Bringmann et al. 2021, 6; Burnett-Zeigler et al. 2019, 22). Considering this, to get the most out of the interventions, commitment may be required from the patients.

Based on the results of the study, mindfulness-based interventions were found to be effective in the care of depression. The effectiveness was seen both in the older and newer interventions. Their effectiveness was not limited to depressive symptoms, but extended to various factors that had effects on depression. In line with the study of Goldberg et al. (2018, 52-60), based on the results of the study, mindfulness-based interventions can be used when treating patients with depression. What was found was largely coherent with the theoretical background of mindfulness and mindfulness-based interventions, but also new insights were brought from this study.

## 7.2 Ethicalness and reliability

The study was carried out by the ethical principles of research. Each step was implemented as thoroughly as possible. In responsible conduct of research, the research should follow principles which are integrity, meticulousness and accuracy in conducting research, recording, presenting and evaluating the results of the research. Also, the acquisition of the research materials should be ethically sustainable, and the results of the research are communicated in an open manner. It is important to mark the citations and references correctly. (Finnish Advisory Board on Research Integrity TENK 2012, 30-31.) The authors used only ethically sustainable, trusted and well-known databases and literatures available at school as sources of the research material. The eleven (N=11) chosen research articles were peer-reviewed and published within the last five years. The process of the literature review, methods and how they were used were disclosed openly. The authors paid attention to present the results of the research accurately. The original data was not changed in any way, it was presented as it was. The citations and references were marked appropriately to make sure the original authors were credited for their work.

The ethical guidelines for thesis work and student's checklist by the Rectors' Conference of Finnish University of Applied Sciences Arene (2020, 15) were used when implementing the thesis. In accordance with that, the authors did not have any conflicts of interest with the thesis or the subject of the thesis. The authors were acquainted with the topic of the thesis and ethical guidelines. The thesis process was closely supervised by a named teacher, the needed documents and agreements were signed in time. There was no outside funding or significant linkages connected to the thesis. The thesis was examined with plagiarism identification system Turnitin twice during the process. The authors understood and agreed that this thesis was a public document.

Considering the reliability of the results of the thesis, accurate documentation is required. Another important factor is the sufficiency of materials. Although, the quality of material is more important

than the amount. Interpretation of materials needs to be transparent. Also, interpretation and results need to be only based on research materials. (Kananen 2011, 138-139.)

Even though the study was conducted step by step thoroughly, a few points affected the quality of the study. Eleven articles were selected with the search words discussed with the librarian. However, most articles on databases had used quantitative research method, also often discussed depression as a comorbid disease. This also complicated the search of relevant articles, since the authors wanted to cover the subject of depression as a primary illness. Moreover, studies with full-text availability for Savonia students were used, which affected the reliability of the study since there might have been valid information in the studies not available. Among eleven (N=11) articles, seven (n=7) studies from European countries and four (n=4) studies from the United States were chosen. Thus, the results of the study may not be applicable in other areas, such as, in Asia or Africa. It should be perceived that using research studies from more various cultural backgrounds could have discovered more accurate effectiveness and experiences of mindfulness-based interventions.

Availability of articles using qualitative research method also affected the content analysis. Deriving qualitative information from quantitative studies is a different process than deriving it from qualitative studies. As qualitative studies provide information about the experiences, thoughts and narratives of the patients, they differ crucially from quantitative studies where the information is objective and based on numerical data, which does not bring out people's own voices.

### 7.3 Professional growth

The thesis work and literature review as a method were completely new to the authors. Thus, the whole process involved considerable effort and learning. The authors deepened their understanding of the workflow and steps involved in literature review as a method of scientific research. During the whole process, the authors were able to improve critical thinking, academic writing skills and performing a method of collecting and analyzing data with a logical approach to the subject.

During the thesis process, the authors also deepened knowledge of depression and use of mindfulness in mental health care. The knowledge obtained through the thesis will definitely help the authors when encountering people suffering from depression. Furthermore, the whole thesis process will benefit the authors when working as registered nurses. The authors worked as a working pair, which improved teamwork skills. Managing schedules, sharing the responsibilities of different tasks of the work, finding out each other's strengths and utilizing them into the work were obtained from the thesis process. Conducting the thesis process, the authors have learned how to incorporate feedback from the supervisor and reflect them to work.

Due to the COVID-19 pandemic, there were limited chances to meet, however, the authors could proceed the thesis work with the motivation and encouragement from the supervisor. The authors used different kinds of digital groupwork methods, including sharing written documents and meetings through Microsoft Teams. Sometimes it was difficult, but this experience would be helpful in the future.

The thesis work has empowered the authors to retrieve information from health sciences databases and to critically assess and utilize scientific publications. Furthermore, learning competences were

deepened by performing collaboration and sharing knowledge in a teamwork. Through the whole thesis process and used research methods, the authors learned the research, development and innovation processes. The thesis process also enabled the authors to critically assessed own work and the working practices. (Savonia University of Applied Sciences s.a.)

## 7.4 Applicability and development ideas

The purpose of the study was to find out what kind of effect mindfulness-based interventions have in the care of depression. From the study results, it was discovered that whatever the type of mindfulness-based intervention was, there were effects on depressive symptoms and other depression-related factors. The interventions were used with a wide demographic of depressed patients, and the effects were positive in different groups of patients. This implies that mindfulness-based interventions can be used to treat depression in adults. Mindfulness requires the individual to concentrate on the experiences and relations to the emotional and psychological difficulties (Crane et al. 2017, 995). Because of this, it may not be suitable as an intervention for patients in the acute treatment phase of depression.

Mindfulness-based interventions are relatively new and not as well-known as other established evidence-based interventions. Therefore, the knowledge about mindfulness-based interventions could be implemented into the curriculum of mental health nursing in nursing degree programme. This study may be utilized as a material. Also, there is a need for healthcare professionals of further education of mindfulness-based interventions.

The authors wished to draw more data from qualitative studies, but because of a lack of these studies, this was impossible. Thus, it would be worthwhile to conduct a literature review including more articles with qualitative research method about the experiences of mindfulness-based interventions and the phenomenon altogether. The patients' point of view is important. Even though interventions might be effective, the patients' experiences, feelings and emotions towards the interventions are crucial. Nurse-patient relationship and patient's attitude towards the nursing care and interventions are significant especially in mental health area. Acknowledging the earlier mentioned, the authors were content to find that most of the patients' experiences were positive, but further study is needed. Especially, the experiences of Finnish patients participating in mindfulness-based interventions would be relevant. This may reveal needed information in developing mindfulness-based interventions more in Finnish demographic.

Mindfulness can be utilized as one of the tools in mental health nursing. However, the latest literature on mindfulness in nursing care used in this study was published in 2009 (Tusaie & Edds 2009, 359-365). Accordingly, more research on mindfulness in nursing care needs to be investigated in near future for further studies.

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# APPENDIX 1: PRESENTATION OF THE SELECTED ARTICLES

The list is written in alphabetical order of the authors' names.

| | Authors, title, country and published year | Purpose | Participants | Study design | Main findings |
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| 1. | Bringmann, Holger, Bringmann, Nicole, Jeitler, Michael, Brunnhuber, Stefan, Michalsen, Andreas & Sedlmeier, Peter.<br><br>Meditation Based Lifestyle Modification (MBLM) in outpatients with mild to moderate depression: A mixed-methods feasibility study.<br><br>Germany, 2021. | To examine the feasibility and acceptability of Meditation Based Lifestyle Modification (MBLM) on outpatients with mild or moderate depression. | Psychiatric care outpatients age over 18 years with mild or moderate depressive episode. (N=25) | Pilot single-arm mixed methods feasibility study before a larger randomized-controlled trial. Qualitative and quantitative data collected from group that partake in MBLM course. | Improvement in depression levels and increased mindfulness were discovered after MBCL. Improved body-awareness, ability of self-control, handling difficult situations better and calm and relaxation were achieved by MBLM. Group setting was also beneficial. Adverse effects and barriers of implementation were reported. |
| 2. | Burnett-Zeigler, Inger, Satyshur, Maureen, Hong, Sunghyun, Wisner, Katherine & Moskowitz, Judith.<br><br>Acceptability of a mindfulness intervention for depressive symptoms among African-American women in a community health center: A qualitative study.<br><br>The U.S, 2019. | To examine acceptability and feasibility of mindfulness-based group intervention (M-Body) for women who are disadvantaged socio-economically in an urban community health center. | Women patients aged 18-65 with mild to severe depressive symptoms. (N=27) | Qualitative research method. After eight weeks of mindfulness-based intervention, focus group was held to discuss about the intervention. | Self-control, improved awareness, increased calmness and relaxation were reported as experiences in M-body. Also, group setting was beneficial. Practical barriers of implementation and psychological barriers to participation were described. |
| 3. | Burnett-Zeigler, Inger, Satyshur, Maureen, Hong, Sunghyun, Yang, Amy, Moskowitz, Judith & Wisner, Katherine.<br><br>Mindfulness based stress reduction adapted for depressed disadvantaged women in an urban Federally Qualified Health Center.<br><br>The U.S, 2016. | To examine the feasibility and preliminary effectiveness of MBSR for depressed people in an urban Federally Qualified Health Center. | African American women ages 18-65 with mild to severe level of depression. (N=31) | Assessment done at baseline, eight weeks and 16 weeks after the intervention. | Decreased depressive symptoms, increased mindfulness skills, improved self-acceptance and decreased stress level were achieved after M-body. Especially, depressive symptoms were still decreasing 16 weeks after the intervention. |

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| 4. | Chiesa, Alberto, Castagner, Vittoria, Andrisano, Costanza, Serretti, Alessandro, Mandelli, Laura, Porcelli, Stefano & Giommi, Fabio.<br><br>Mindfulness-based cognitive therapy vs. psycho-education for patients with major depression who did not achieve remission following antidepressant treatment.<br><br>Italy, 2015. | To compare MBCT with psychoeducation on patients with major depression who did not achieve remission after at least eight weeks of antidepressant treatment. | Patients ages 18-65 with single or recurrent episode of major depression who did not achieve remission after at least 8 weeks of antidepressant treatment. (N=43) | Randomized-controlled trial. Participants were randomized into MBCT or psycho-education group. Assessments at baseline, four, eight, 17 and 26 weeks after the intervention. | Improved depressive symptoms and quality of life in both short and long term and improvement in quality of life in MBCT plus treatment as usual group were shown. Significant increase in mindfulness skills in most of the domain was also shown when compared to psycho-education group. The effect did not differ significantly than psycho-education group in anxiety domain. |
| 5. | Cladder-Micus, Mira, Speckens, Anne, Vrijsen, Janna, Donders, Rogier, Becker, Eni & Spijker, Jan.<br><br>Mindfulness-based cognitive therapy for patients with chronic, treatment-resistant depression: A pragmatic randomized controlled trial.<br><br>The Netherlands, 2018. | To examine the effectiveness of MBCT for patients with chronic, treatment-resistant depression who did not improve during previous pharmacotherapy or psychological treatment. | Patients over 18 years of age who are moderately to severely chronically depressed over twelve months of symptoms present. (N=106) | Randomized-controlled trial. Comparing MBCT+TAU (treatment as usual) group with TAU group. Assessments at baseline, three and six months after the intervention. | Significant improvement on depressive symptoms and significant increase in mindfulness skills were found out in MBCT+TAU group. |
| 6. | Cladder-Micus, Mira, van Aalderen, Joël, Donders, Rogier, Spijker, Jan, Vrijsen, Janna & Speckens, Anne.<br><br>Cognitive reactivity as outcome and working mechanism of mindfulness- based cognitive therapy for recurrently depressed patients in remission.<br><br>The Netherlands, 2018. | To examine the effects of MBCT on cognitive reactivity on patients with recurrent depression in full or partial remission. | Patients who have recurrent depression, but in full or partial remission. (N=115) | Randomized-controlled trial. Participants were randomized into two groups after baseline measurements. After finishing MBCT or after three months of TAU, post measurements were taken. | Significant less depressive symptoms was achieved when compared to TAU-only group. Significant improvement in mindfulness levels, rumination, self-compassion and quality of life in MBCT+TAU-group. Patients developed more caring attitude towards themselves through MBCT. It was also discovered that patients with high rumination level benefitted more from MBCT. |

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| 7. | Johnson, Jill, Emmons, Henry, Rivard, Rachael, Griffin, Kristen & Dusek, Jeffery.<br><br>Resilience training: a pilot study of a mindfulness-based program with depressed healthcare professionals.<br><br>The U.S, 2015. | To investigate the possible effects of resilience training (RT) on symptom relief and psychological outcomes for healthcare professionals with current/ recurrent depression. | Actively working healthcare professionals age 18–65 years with single/recurrent episode of major depression. (N=40) | Wait-list comparison pilot study. Comparison between RT-group and a wait-list group. Measurements before, right after and two months after the intervention. | Decrease in depressive symptoms up to two-month follow-up, decrease in both state and trait anxiety level and significant improvement on stress in RT-group were reported. |
| 8. | Schanche, Elisabeth, Vøllestad, Jon, Visted, Endre, Svendsen, Julie, Osnes, Berge., Binder, Per Einar, Franer, Petter & Sørensen, Lin.<br><br>The effects of mindfulness-based cognitive therapy on risk and protective factors of depressive relapse – a randomized wait-list controlled trial.<br><br>Norway, 2020. | To examine what effects MBCT had on risk and protective factors within the domains of cognition, emotion and self-relatedness in depressive relapse. | Patients age over 18 years with at least three episodes of major depression and in full or partial remission. (N=68) | Randomized-controlled trial. Participants were randomized into a MBCT-group or wait-list-group. Assessments pre- and post intervention. | Decreased depression scores, effect on mindfulness, decrease in rumination, increased levels of self-compassion, no significant effect on anxiety with Beck's Anxiety Inventory, reduced stress level and effect on emotional reactivity to stress were shown in MBCT group. Patients learned to become less judgemental and relate themselves and experiences positively through MBCT. |
| 9. | Schuling, Rhoda, Huijbers, Marlos, van Ravesteijn, Hiske, Donders, Rogier, Cillessen, Linda, Kuyken, Willem & Speckens, Anne.<br><br>Recovery from recurrent depression: Randomized controlled trial of the efficacy of mindfulness-based compassionate living compared with treatment-as-usual on depressive symptoms and its consolidation at longer term follow-up.<br><br>The Netherlands, 2020. | To examine the efficacy of mindfulness-based compassionate living (MBCL) for patients with recurrent depression who received MBCT previously and to examine the strengthening effects of MBCL at follow-up. | Patients over 18 years of age with recurrent depression who had previously participated in MBCT. (N=122) | Study had two parts. First was randomized-controlled trial, comparing MBCL+TAU to TAU alone. Second part was uncontrolled study of the intervention and control groups, which studied the treatment effect of MBCL over six months follow up. | Decreased depressive symptoms still after six months after MBCL, increase in mindfulness, decrease in ruminative thinking, significant improvement in self-compassion and improvement in quality of life were achieved in MBCL+TAU-group. |

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| 10. | Shallcross, Amanda, Gross, James, Visvanathan, Pallavi, Kumar, Niketa, Palfrey, Amy, Ford, Brett, Dimidjian, Sona, Shirk, Stephen, Holm-Denoma, Jill, Goode, Kari, Cox, Erica, Chaplin, William & Mauss, Iris.<br><br>Relapse Prevention in Major Depressive Disorder: Mindfulness- Based Cognitive Therapy Versus an Active Control Condition.<br><br>The U.S, 2015. | To compare the effect of MBCT and active control condition (ACC) for preventing relapse of major depression, symptom reduction and life satisfaction. | Patients ages 18-65 years who are in remission from major depression with residual symptoms. (N=92) | Randomized-controlled trial. Participants were randomized into two groups, which underwent eight weeks of MBCT or ACC. Assessment at baseline, post intervention, six and 12 months after the intervention. | Gradual depressive symptom reduction 60 week after the intervention and gradual improvement in life satisfaction were found out in MBCTgroup. |
| 11. | ter Avest, Marleen, Dusseldorp, Elise, Huijbers, Marloes, van Aalderen, Joël, Cladder-Micus, Mira, Spinhoven, Philip, Greven, Corina & Speckens, Anne.<br><br>Added value of Mindfulness-Based Cognitive Therapy for Depression: A Tree-based Qualitative Interaction Analysis.<br><br>The Netherlands, 2019. | To find out different kinds of moderators of effects of MBCT compared with patients who received treatment as usual. | Patients average age of 48.05 years, mainly female and are suffering currently from depression, or have chronic, treatment-resistant depression, or are currently in partial remission. (N=292) | Data analysis from three randomized-controlled trials that researched the effect of MBCT+TAU versus TAU alone. | Patients with age of onset 30,5 years, they generally benefitted more on depressive symptoms in MBCT+TAU-group. Patients with higher baseline rumination showed larger improvement in depressive symptoms in MBCT. Also, patients with lower quality of life benefited more from MBCT. |