



Mindfulness as a Method for increasing psychological wellbeing and quality of life in Patients with Cancer

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Abstract

Cancer patients experience a large amount of psychological distress, such as mood symptoms, and challenges in emotional control, functioning and coping. It is essential that mental health problems among cancer patients are recognized early and can be effectively treated. There is a need for impactful non-pharmacological interventions in oncological care to help cancer patients cope with the burden of the disease. Mindfulness-based stress reduction (MBSR) is a well-researched method, that can be used by healthcare personnel to promote wellbeing in their patients.

Thesis was conducted as a literature review. The aim of the study was to research how mindfulness interventions can be used to promote psychological wellbeing in patients suffering from cancer. The purpose of the study was to provide nursing staff meaningful information about mindfulness interventions, and how they can be used as a tool in nursing care. Data search was done in ProQuest, and Pubmed. Seven articles from scholarly journals were chosen for the review according to the specific inclusion criteria. Data was analysed using thematic analysis. Two main categories were identified in the process: developing coping capacity through mindfulness training, and increased mindfulness as a mediator for improved quality of life.

Participants reported noticeable reduction self-reported mood symptoms, such as anxiety, depression, and anger. There were also improvements in measures of emotional control, coping capacity and mindful states. The improvements were most evident at 8-week time point, and up to 4 months. The impact was significantly diminished in the longer follow-up measurements. MBSR improved mindfulness scores in the participants, notably in the dimensions of awareness and nonjudging. Increased mindfulness experienced by the participants was found to be correlated with the reported reductions in psychological wellbeing. More research with longitudinal design is needed to better understand the long-term effects of MBSR.

Keywords/tags (subjects)

Mindfulness, psychological wellbeing, outpatient cancer care

Miscellaneous (Confidential information)

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Tietoinen läsnäolo menetelmänä syöpäpotilaiden psyykkisen hyvinvoinnin ja elämänlaadun parantamisessa.

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Tiivistelmä

Syöpäpotilaat kokevat laaja-alaista psyykkistä kärsimystä, kuten ahdistusta, masennusta, vihaa, ongelmia ja haasteita tunteiden säätelyssä, käsittelyssä sekä toimintakyvyn ylläpitämisessä. On tärkeää, että syöpäpotilaiden mielenterveyden ongelmat tunnistetaan aikaisessa vaiheessa, jotta niitä pystytään hoitamaan tehokkaasti. Tehokkailla lääkkeettömille keinoille psyykkisen hyvinvoinnin lisäämiseksi on tarvetta syöpähoitossa. Tietoiseen läsnäoloon pohjaava stressin lievitys on laajasti tutkittu menetelmä, jota terveydenhuollon ammattilaiset voivat hyödyntää potilaiden stressinhallinnassa.

Opinnäytetyö toteutettiin kirjallisuuskatsauksena. Sen tarkoituksena oli tuottaa terveydenhuollon ammattilaisille tietoa tietoisesta läsnäolosta, ja tutkia kuinka tietoista läsnäoloa voidaan käyttää menetelmänä terveydenhuollossa. Katsauksen tavoite oli tutkia, kuinka tietoista läsnäoloa voidaan käyttää menetelmänä psyykkisen hyvinvoinnin lisäämisessä syöpäpotilaissa. Kirjallisuuden haku toteutettiin PubMed ja ProQuest-tietokannoissa. Seitsemän artikkelia valittiin mukaan kirjallisuuskatsaukseen. Artikkelit analysoitiin käyttäen temaattista analyysia. Kaksi pääkategoriaa nousi esiin analyysin päätteeksi: toimintakyvyn kehittäminen tietoisesta läsnäolon kautta ja lisääntynyt läsnäolo parantuneen elämänlaadun mediaattorina.

Osallistujat kokivat ahdistus- ja masennusoireiden selvästi vähentyneen tietoinen läsnäolo- menetelmän jälkeen. Myös tunteiden säätelyn taidot sekä toimintakyvyn ylläpitämisen taidot olivat parantuneet selvästi. Positiiviset vaikutukset olivat kaikkein voimakkaimmillaan jälkeen 8 viikon kohdalla, mutta myös jatkomittauksissa neljään kuukauteen asti. Menetelmällä ei ollut enää varteenotettavaa vaikutusta myöhemmissä mittauksissa. MBSR-menetelmä lisäsi läsnäoloa osallistujissa, varsinkin tietoisesta toimimisesta ja tuomitsemattomuuden kategorioissa. Lisääntyneellä läsnäololla huomattiin olevan yhteys tietoinen läsnäolo- menetelmän positiivisiin vaikutuksiin psyykkisen hyvinvoinnin lisäämisessä. Uusia pidemmän aikavälin tutkimuksia tarvitaan lisää, jotta menetelmän pidempiaikaisia vaikutuksia voidaan ymmärtää paremmin.

Avainsanat (asiasanat)

Tietoinen läsnäolo, psyykkinen hyvinvointi, avohoito, syöpähoito

Muut tiedot (salassa pidettävät liitteet)

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1 Introduction

Mental health problems, such as depression and anxiety, are becoming increasingly prevalent in the society. The global pandemic has brought many challenges to the health care systems around the globe. Social isolation, health worries and uncertainty caused by the pandemic have been challenging for many. Patients suffering from cancer are more susceptible to a severe infection (COVID-19: What People with Cancer Should Know, 2022). Cancer patients experience a lot of psychological distress. Anxiety-and depressive symptoms are widespread, as well as feelings of fear (Cancer and Mental Health.)

There is a need for nonpharmacological interventions that can help cancer patients cope better with the burden of the disease. Mindfulness-based interventions, especially the mindfulness-based stress reduction program (MBSR), have been widely studied. MBSR is a clinically tested method, that can help people in healthcare professions, as well as patients with various diseases (Baer 2014, 5-9.) It is also considered a viable self-help method, that can help all kinds of people (Shao, Zhang, Cui, Sun, Li & Cao (2021). Nurses working in oncology departments have a great opportunity to guide and encourage their patients in promoting mental health.

The purpose of the thesis is to provide information about mindfulness interventions for healthcare professionals, and how mindfulness-based stress reduction can be used as a tool in clinical environment. The aim is to find out how mindfulness-based stress reduction can be used to promote psychological wellbeing and functioning in cancer patients. It is necessary to seek out new ways and methods to appropriately recognize and treat cancer patient's issues with mental health as early as possible for better outcomes. The thesis may be beneficial for nurses working in oncology, who wish to learn new methods and update their professional knowledge.

2 Mindfulness in Health Care

2.1 Definition of mindfulness

With mindfulness, even the most disturbing sensations, feelings, thoughts, and experiences— including fear, anxiety, panic, and worry— can be viewed from a wider perspective as passing events in the mind rather than as “us” or as necessarily true. (Brantley & Kabat-Zinn, 2007, 63.)

Mindfulness is a form of meditation, and it consists of attention and acceptance. Attention means being mindfully aware of everything that is going on in the present moment: the breath, thoughts, and feelings, as well as how physical sensations are perceived in the body. The next part is acceptance. It means being unreactive to those sensations that come up, not reacting to them in a judgmental way. Instead, the goal is to simply acknowledge, and then let them go (Mindfulness meditation: A research-proven way to reduce stress 2019.)

Mindfulness has many different definitions in literature. According to Brantley & Kabat-Zinn (2007), that mindfulness can be described by 3 attributes: nonjudgment & openness, kindness & intimacy, and stillness & silence. With meditating, it is possible to develop these virtues within oneself. Mindfulness does not aim to change, deny, or reject anything, as it is about being open to different experiences and sensations that you may come across. The trait of kindness is important in mindfulness practice. Having a kind and friendly outlook will help you to experience life without judging anything and to be mindfully aware in the present moment (61.)

2.2 Mindfulness-Based Stress Reduction

Mindfulness-based stress reduction (MBSR) is an 8-week program that was created by Jon Kabat-Zinn, a professor emeritus of medicine. MBSR originates from ancient buddhist teachings and meditation practices centered around mindfulness. It is a system for ordinary people, created to help manage stress and be used as a tool in recognizing ones coping abilities (Mayer 2022.) Mind-

fulness-based stress reduction courses consist of both group sessions, and home meditation practices. Home practice is an essential part regarding the effectiveness of the program. Group meetings consist of exercises, as well as discussion with the other group members. Different types of interventions in MBSR include sitting meditations, and yoga, among others. The participants will also learn tools how to be incorporate mindfulness in activities of daily life as well. There is significant evidence, that methods in MBSR can benefit people regardless of their condition, and people in healthcare professions (Baer 2014, 5-9.)

Jain, Shapiro, Swanick, Roesch, Mills, Bell & Schwartz (2007) compared the effects of mindfulness meditation techniques to relaxation training on medical, health- and nursing students. The mindfulness intervention was effective in decreasing psychological distress in students, compared to a waitlist control group. The meditation group also experienced increased positive mood after the intervention (18.) The mechanism behind the effects of mindfulness interventions is thought to be increased development of mindfulness skills, according to recent research. Mindfulness-based interventions improve the skills to respond mindfully to the challenges of life (Baer 2014, 20.) Increased scores in self-reported mindfulness as measured by Five Facet Mindfulness Questionnaire (FFMQ) (Baer, Smith, & Allen, 2004, as cited in Chowdbury., 2019) was found to act as a mediator for increased mental health. It suggests that mindfulness-based interventions exert their effects through changes in mindfulness (Bränström, Kvillemo, Brandberg & Moskowitz, Judith 2010, 159.)

3 Anxiety

3.1 Definition and Prevalence

According to THL, anxiety can manifest as feelings of dread, worry or fear. Person affected by anxiety can also experience diminished confidence in oneself, and their abilities. In addition to psychic symptoms, anxiety is also associated with somatic symptoms such as: palpitations, sweating, muscle tension, headache, or nausea (Ahdistuneisuushäiriöt 2022.) Anxiety is body's normal reaction to stressful situations. In anxiety disorders such as generalized anxiety disorder, the symptoms become prolonged. Consequently, the ability to perform daily activities is affected negatively. Other anxiety disorders include social anxiety disorder, and different phobias (What are Anxiety Disorders? 2021.) Brantley & Kabat-Zinn (2007) explain, that the fear system embedded in humans is the body's way to prepare you to survive impending dangerous situations, such as a dog suddenly

attacking you. The fear system activates the fight-or-flight response (or stress response), and as a consequence, fear is felt in the body. The physical effects (e.g. increased heart rate) associated with fight-or-flight state are driven by stress hormones adrenaline and cortisol (34-35.) Stress response can be also triggered in the body, if an unpleasant of the past is recalled. This is because the body remembers the fearful situation, and makes a memory of it (ibid., 38.) The feeling of anxiety is more intrinsic, and is less tied to a threatening, external event. Nevertheless, its mechanism is governed by the body's fear system (ibid.)

Ströhle, Gensichen & Domschke (2018) highlight, that pre-existing anxiety disorders raise the risk of developing other psychiatric disorders such as depression, and disorders related to substance use. (612). Different anxiety symptoms are associated with a lot of different somatic diseases, including COPD, Parkinson's, heart diseases, and palliative cancer patients. The number of diagnosed anxiety disorders, however, is lower (Ahdistuneisuushäiriöt: käypä hoito-suositus, 2019.) Anxiety is widespread as a comorbid condition along other psychiatric disorders, such as depression. As stated by Bendixen and Engedal (2016), anxiety was discovered to be common among psychiatric elderly patients in a psychiatric care unit. Majority of the patients with high anxiety scores did not have a diagnosed anxiety disorder. Anxiety was the most common in patients with depression (1133-1134.)

Due to the COVID-19 outbreak, anxiety issues have become increasingly common all around the globe. A scientific brief presented by The World Health Organisation states, that since the pandemic, the world has seen a 25% increase in anxiety globally. Isolation from social contacts during the pandemic is believed to be the number one cause for the increase, but also other factors e.g., loneliness and fear of getting sick, are in play. Thus, the epidemic has put people more at risk of getting mental illness. People with mental illnesses also appear to be more susceptible to getting a severe COVID-infection (WHO 2022.)

3.2 Treatment

Symptoms of anxiety are very common among the adult population, and patients in primary care in Finland. 4-8% of clients in primary care are estimated to have generalized anxiety disorder (GAD). A large number of these patients utilize health care services more frequently compared to the rest of the population (Ahdistuneisuushäiriöt: käypä hoito-suositus, 2019).

Treatment guidelines

Psychotherapy is an effective treatment for anxiety disorders. It can also be used in conjunction with appropriate medication. Cognitive Behavioral Therapy (CBT) is the most impactful form of therapy when it comes to treating anxiety symptoms. Other forms of therapy, such as exposure therapy or acceptance and commitment therapy can also be used. These are, however, not as comprehensively researched as CBT (Anxiety disorders 2022.) Antidepressants are an effective treatment in acute phase of generalized anxiety disorder, as well in long-term therapy. Pregabalin can also be used, but there is a potential risk of abuse for certain patients. Benzodiazepines are a proven short-term treatment option for GAD, but they should be used sparingly, not as a routine treatment. It is best to use them only when needed. Regular, daily use of benzodiazepines is advised to be avoided to mitigate the risk of addiction (Ahdistuneisuushäiriöt: käypä hoito-suositus, 2019.)

Nonpharmacological interventions

Ding & Jiang (2022) showed that high-quality nursing interventions were effective in improving cancer patients' mental wellbeing. The intervention included a variety of methods to help create a calm environment for optimal treatment, as well as psychological guidance to help cope with stress, discomfort and negative emotions associated with chemotherapy. Family members's participation in treatment process was also supported. The study group reported decreased anxiety, depression, and improved quality-of-life. The patients receiving the intervention also reported less adverse effects, such as nausea and vomiting (2-5.) Niu, Ma, Zhang & Sun (2021) reported how psychological nursing interventions improved mental wellbeing and functioning of isolated patients with suspected COVID-infection. Methods used by the nurses included: health education about pandemic, explanation of the isolation and treatment procedures and their importance, self-management, and different remote communication techniques (6346.)

According to Duyvestyn (2021), nurses in primary care have good possibilities to provide simple advice and self-care strategies to patients, when intensive mental health interventions are not necessary. The author recommends paying attention to basic self-care strategies including exercise, sleep, and nutrition. Consuming a lot of nutrient-poor foods, such as foods high in sugar or caffeine can have detrimental effects on a person's mood. Eating nutrient-rich whole foods is an important factor, and it is often left without much attention at all (24-25.) There is evidence, that

physical exercise can possibly help alleviate symptoms in patients with generalized anxiety disorder. The research, however, is not yet conclusive on the benefits (Laukkanen & Kukkonen-Harjula 2019.) Landreville, Gosselin, Grenier, Hudon & Lorrain (2016) confirmed the efficacy of a guided self-help program utilising cognitive behavioral principles to reduce anxiety in older adults. The interventions and exercises proved to be impactful, as none of the participants met the diagnostic criteria for generalized anxiety disorder upon completion of the treatment. The reduction of anxiety seemingly had a positive effect on other aspects as well, e.g., sleep quality and cognitive functioning (1075-1076.)

4 Psychological distress experienced by Patients With Cancer

Margari, Karapuolios, Getsios, Rizou, Kostopoulou, Balodimou & Siagouli (2016) researched anxiety and depression levels of oncology patients in Greek hospital using questionnaires (309). The questionnaire DASS 21 (Depression, Anxiety and Stress Scale 21) was utilized by the authors (Taylor et al, 2005, as cited in Margari et al., 2016). According to results of the study, severe anxiety was discovered in an estimate of 17.9% of the patients. (ibid., 310). In a study conducted in Taiwan by Hu, Ku, Wang, Shen, Hu, Yeh, Chen, Chiang, Lu, Chen, Teng & Liu (2015), the authors discovered that the incidence of depression and anxiety were quite a lot higher in patients with esophageal cancer than in the matched cohort group. This shows that the psychiatric needs of those with cancer were higher, and they had a higher risk of developing psychiatric disorders. Furthermore, comorbid conditions of cirrhosis, cerebrovascular diseases, and surgical treatment were identified as risk factors for anxiety and depressive disorders. (733-735.)

A qualitative study done in Canada highlighted the negative effect that COVID19 had on oncology patients' mental wellbeing. Most patients reported suffering from increased stress and anxiety. The participants were anxious about the pandemic impacting their cancer treatments negatively. Being uncertain if the treatment would continue as scheduled, and not be delayed, was a big stressor for the patients. The patients were also worried about the increased possibility of getting infected, as they could be more susceptible to getting a severe infection due to cancer. Those patients that had to go to hospital for treatment also feared that they could get sick while receiving treatment. (Savard, Jobin-Théberge, Massicotte & Banville 2021, 5721-5724.)

Milligan, Martinez, Aal, Ahmed, Joby, Matalam, Nair, De Leon Maxion, Sayed & Melepeedikayil (2018) suggest, that screening for anxiety and depressive disorders in cancer patients would be beneficial in helping direct certain patients to specific psychological interventions (22.) The tool researched for screening was Hospital Anxiety and Depression Scale (HADS) questionnaire (Zigmond & Snaith, 1983, as cited in Milligan et al, 2018.) A considerable number of patients in the study were found to have varying levels of anxiety and depression. Many even had severe symptoms. A lot of times anxiety and depression are not recognized well in healthcare, and therefore many patients with those illnesses are not getting the treatment they need. (ibid.)

According to Marco & White (2019), psychological distress significantly decreased health related quality of life (HRQoL) scores among patients, no matter their cancer type. The differences associated with different types of cancer on anxiety and depression were not clinically important in this study. Out of different treatments, chemotherapy had the strongest negative impact on HRQoL among patients. Similar to the findings of Milligan et al. (2016), The authors emphasize that screening is essential regarding anxiety and depression. (3425-3427.) Nurwahyuni, Poeranto & Supriati (2019) also confirmed the process of chemotherapy to be associated with decreased mental wellbeing. Patients felt stressful about the side effects of chemotherapy, that could be possibly severe. Anxiety was also felt ahead of chemotherapy procedures, because of the pain that would be associated with the treatment (66.)

5 Aim, purpose and research question

The aim of the study is to research what impact mindfulness interventions have on psychological wellbeing of patients suffering from cancer. The purpose of the study is to provide nursing staff information about mindfulness interventions, and how they can be used as a tool in nursing care.

Research question: How can mindfulness interventions be used in promoting psychological wellbeing for cancer patients?

6 Implementation

6.1 Method

This thesis was carried out as a literature review. Literature review was decided to be the appropriate method for conducting bachelor's thesis, considering that the author has no prior experience in the field of nursing research. Smith & Noble (2022) state, that the purpose of a literature review is to synthesize research findings to influence clinical practice by providing scientific evidence about the most effective methods in healthcare (2). Literature search is carried out to find out what type of research has been published on the subject. Based on the approaches and methods that come up, while reviewing the material, the researcher can establish a knowledge base on the subject. The researcher will discuss and try to understand the reason behind certain outcomes of the studies. This will help highlight gaps in research, and thus come up with suggestions on how future research strategies can be improved for more reliable results (Parahoo 2014, 119.) Literature review also aims to critically appraise evidence to evaluate the current studies' reliability. (Smith & Noble 2022).

The process of literature review started with finding a topic that was of interest to the researcher and had credible existing research. A scoping data search was done to identify the state of research on the topic. At first, the author identified a wide topic, and then proceeded to narrow it down until topic was appropriate and defined enough for bachelor's thesis. A focused research question was generated based on the identified topic. An electronic literature search was carried out to collect the literature that would be best suited for the thesis, according to the aim and purpose of research. A comprehensive description of the data collection is illustrated in table 4. The research papers were thoroughly read through, and the key points were then summarized to get an overview of the methodologies, and the findings of the articles (Cronin, Ryan, & Coughlan 2008, 39-41.) The research was analysed using inductive thematic analysis, as described by Braun & Clarke (2006). The analysis process is described in chapter 6.3. The thesis was written in accordance with JAMK reporting instructions. Table 1 summarises the review process.

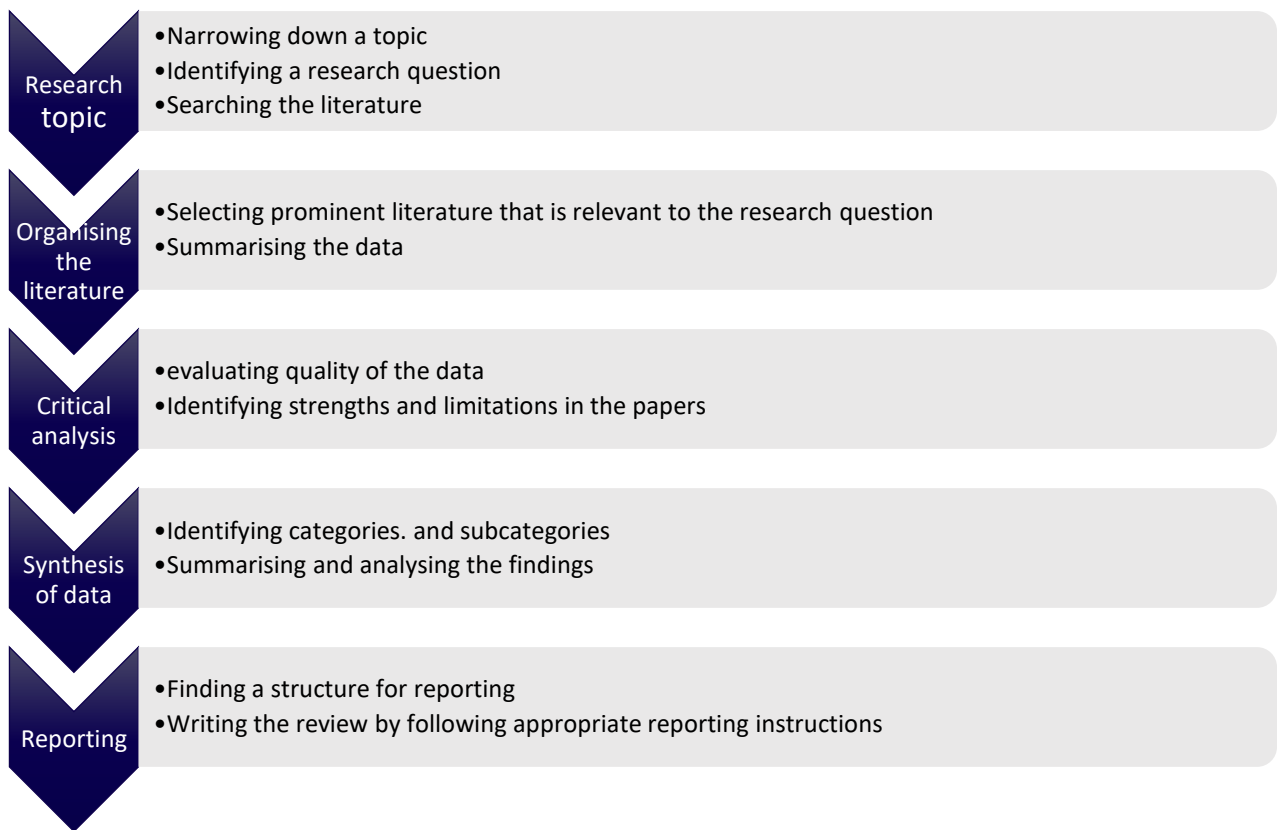


Table 1 Literature review process

The PICO-method (Table 2) was used to help the author pinpoint the appropriate data search terms that were relevant to the research question. According to Schiavenato & Chu (2021), PICO is a mnemonic, that stands for Population, Intervention, Context and Outcome. It was designed to help in creating research questions for clinical research (1.) With PICO, one can formulate more accurate literature searches, and help the researcher cooperate with the librarian more effectively (Booth et al, 2000 as cited in Schiavenato & Chu 2021).

P	• Cancer patients
I	• Mindfulness
C	• Outpatient cancer care
O	• Psychological distress

Table 2 PICO strategy

6.2 Data collection

The data search for the literature review was done in PubMed, and Proquest central databases. PICOS- strategy was utilized in identifying the search terms, and boolean operators “AND”, “OR”, were used in formulating the search. The literature search was conducted as follows: “mindfulness” OR “mindfulness intervention” OR “mindfulness-based intervention” OR “mindfulness-based stress reduction” OR “mbsr” AND “psychological distress” OR “depression” OR “anxiety” OR “stress” AND “cancer” OR “neoplasm” OR “tumor”. The inclusion criteria included: Articles that had full text available for JAMK students, published in 2010-2022, peer reviewed, were relevant to the study. The exclusion criteria included articles that did not answer the research question or were not primary studies. Detailed inclusion criteria is laid out in table 3. A total of 545 articles were identified after data search, 291 from ProQuest, and 254 from Pubmed. Out of the 254 articles identified from Pubmed, after reviewing the title and abstract, 239 articles were excluded due

to exclusion criteria. Finally, after reviewing the 15 full articles, 11 articles were excluded. This yielded 4 articles that best suited the research, and the inclusion criteria. In ProQuest, 278 were excluded after reviewing the title and abstract. 10 more articles were excluded after reading full text, and that left 3 total articles suitable for the research. The data collection process is illustrated in Table 4.

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none">• Studies published in 2010-2022• Full text available for JAMK students• Peer reviewed studies• primary articles• English articles• patients with any type of cancer	<ul style="list-style-type: none">• Studies published earlier than 2010• Secondary research e.g. meta-analyses• Mindfulness cognitive therapy or intervention not based on mindfulness e.g. yoga• Studies on cancer survivors

Table 3 Inclusion and exclusion criteria

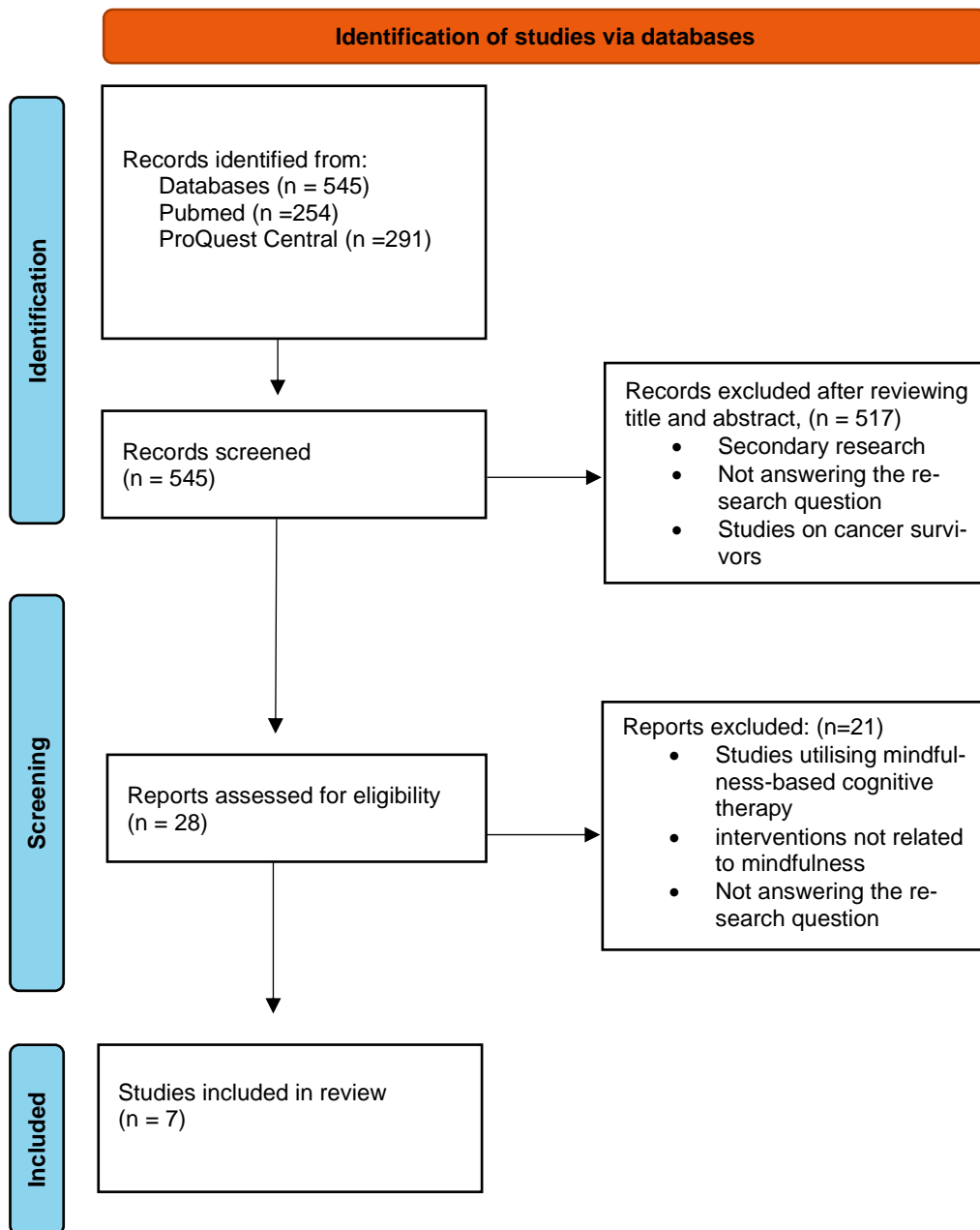


Table 4 Prisma flow chart

6.3 Data analysis

The data in this thesis was analysed by using thematic analysis model laid out by Braun & Clarke (2006). The analysis was done using an inductive research method, or “bottom-up” approach. This means that the themes of the analysis are dependent on data. The analysis process was started with getting acquainted to the data at hand. The articles were read through multiple times, while trying to pinpoint patterns that could emerge from the data. After learning the material, the data was systematically coded. With the aim of the research in mind, the author went through the data set, identifying interesting aspects from the data that could be used in the analysis. The identified data extracts were then analysed thoroughly, with the aim of finding meanings and relationships within the data. Finally, the codes were arranged into appropriate categories and subcategories, that would correctly represent the underlying ideas and meanings in the data. (12-21.) The categories and subcategories can be seen in table 5.

7 Studies included

According to the inclusion criteria and relevance to the study, seven studies were chosen for the literature review. All studies were published in scholarly journals that pertained to the field of oncology. The intervention method used in the studies was mindfulness-based stress reduction program (MBSR). The only intervention that slightly differed from standard 8-week MBSR was a 6-week mindfulness-based self-help intervention derived from original MBSR, that was used by Shao et al. (2021). Henderson, Massion, Clemow, Hurley, Druker & Hébert (2012, 2013) used standard 8-week MBSR in their studies, but the intervention had been prolonged to a duration total of 4 months. To evaluate the effectiveness of MBSR in the studies, the intervention group (mindfulness) was compared to a control group. The only study that did not have a control group was Garland, Tamagawa, Todd, Speca & Carlson (2013). In that study, a standard 8-week MBSR procedure was used. In six studies, the control group was established as a group that received “usual or “routine” nursing care. Henderson et al. (2012) researched a sample of breast cancer patients in the study whereas Henderson et al. (2013) included breast cancer patients who were undergoing radiotherapy.

To measure the outcomes of the intervention, various self-report questionnaires were used as the instrument in all studies. For example, Garland et al. (2013) utilized Mindful Attention Awareness Scale (MAAS) to gauge the state of being mindfully attentive and aware. Another instrument that was used in evaluating the states of mindfulness in participants was Five Facet Mindfulness Questionnaire (FFMQ). Other examples are Zung Self-Rating Depression Scale (SDS), and Beck Anxiety Inventory (BAI). The articles were quantitative in nature, since statistical analysis was used in the research process. The studies were conducted in 5 different countries, China (n=2), United States (n=2), Canada (n=1), Sweden (n=1), Iran(n=1). The publication dates of the studies were: 2012 (n=2), 2013 (n=2), 2017 (n=1), 2019 (n=1), 2020 (n=1), 2021 (n=1). Appendix 1 summarises the studies that were used in the review.

8 Findings

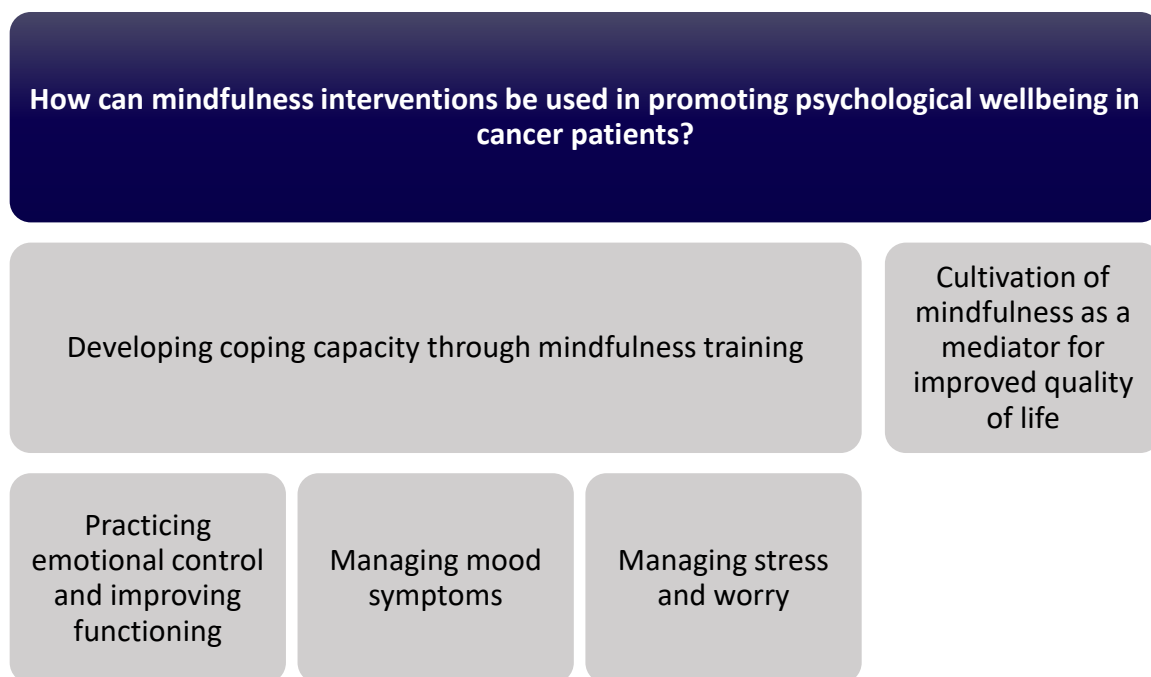


Table 5 Categories and subcategories

8.1 Developing coping capacity through mindfulness training

In study by Henderson et al. (2013), the participants had increased their cancer-related coping on many different parameters. The MBSR group demonstrated more active coping strategies, and less avoidance-driven strategies in comparison to the control groups, and the positive impact carried into both follow-ups as well, 12 months and 24 months. The participants also reported experiencing increased spirituality, resilience to stress as well as reduced helplessness because of the intervention (5-6.) Sarenmalm, Mårtensson, Andersson, Karlsson & Bergh (2017) confirmed these findings, reporting increased coping ability in MBSR participants. Coping ability was assessed with the help of Sense of Coherence-scale (SOC), also used in studies by Henderson et al. (2012,2013.) It is suggested that higher scores on SOC are associated with increased resilience, functioning, and meaningfulness in life with cancer (Sarenmalm et al. 2017, 1115).

Managing mood symptoms: Symptoms of mood disorders are common in cancer patients, namely anxiety- and depression symptoms. Majority of the participants in the reviewed studies reported decreases in mood disorders symptoms, and in turn, overall improved mood states. There were some outliers, though: Sarenmalm et al. (2017) reported notable depression improvement in the MBSR group, but no significant impact on anxiety at 8 weeks. There was a total of 7 (11%) cases of improved depression in the intervention group, and 4 (8%) in both control groups (1111-1114.) Similar results were observed by Shao et al. (2021), where participants experienced decreased depression, but there was no notable effect on perceived anxiety. Furthermore, depression scores showed a declining pattern from the initial measurement all the way into the 3-month follow-up (1380.)

Mirmahmoodi (2020) noticed that MBSR reduced depression in comparison to the control group, but the change was not statistically notable. However, intervention was found to have significant effects on anxiety. The effects on anxiety were amplified even more due to increased prevalence of anxiety in the control group during the study (5-7.) Henderson et al. (2012, 2013), and Liu, Zhang, Xiao, Xu, Wen, Bai, Ma & Ji (2019) found MBSR to be effective for both anxiety and depression. The intervention was most effective 4-month time point (after program completion) as the improvements did not persist into one year follow-up. However, improvements in anxiety remained after two years of program completion (Henderson et al 2012, 103.). According to Liu et al. (2019), decreased depressive symptoms were observed at postintervention, and 3-month points

(473). In radiotherapy patients, improvements in mood symptoms were no longer meaningful in any follow-ups (Henderson et al. 2013, 5-6). In a study by Garland et al. (2013), there was a 55% decrease in mood disturbance after the intervention (36).

Managing stress and worry: Garland et al. (2013) found that there was a 29% reduction in stress levels in the MBSR group as measured with Calgary Symptoms of Stress Inventory (C-SOSI) (33). C-SOSI included 8 different subscales, measuring both psychological and physical manifestations of stress, such as muscle tension, and irritability. The scores improved on all scales, but the improvement was more evident on psychological categories (ibid., 37.) Mirmahmoodi et al. (2020) on the other hand, reported insignificant change in self-reported stress levels after 8-weeks of intervention (6). According to Shao et al. (2012), a self-help mindfulness intervention reduced rumination (repetitive thinking) and worry in participants (1381-1382).

Practicing emotional control and improving functioning: According to Henderson et al. (2012), there were large improvements in parameters regarding emotional control: paranoid ideation, anger, and hostility. In addition to postintervention measures (4 months), increases were reported two years after the postintervention point as well. Emotional control was described in the study as the extent to which participants would suppress their emotions. Higher scores would indicate more emotional acceptance, and in turn, less emotional suppression (102-103.) Henderson et al. (2013) showed similar results in patients undergoing radiotherapy, but the initially observed increase in level of emotional control did not remain in either of the follow-ups (5-6). In a study by Liu et al. (2019), differentiated thyroid cancer patients reported increased emotional functioning in both postintervention and 3-month time periods. The MBSR intervention was concluded before the start of radioactive iodine treatment at the hospital. The results suggest MBSR to potentially be effective in reducing distress ahead of taxing medical treatments (470-473.)

8.2 Cultivation of mindfulness as a mediator for improved quality of life

In studies by Garland et al. (2013), Sarenmalm et al. (2017), The Five Facet Mindfulness Questionnaire (FFMQ) was used as a measuring instrument. Additionally, Garland et al. (2013) also used Mindfulness Attention Awareness Scale (MAAS) in their study. Increased scores on both MAAS and FFMQ impacted the change in mood symptoms, and perceived stress scores by as much as 20%.

Improved attributes of mindfulness were shown to effectively reduce psychological distress. However, noticeable influence on the psychological outcomes was only observed within the facets of “nonjudging of inner experience” and “acting with awareness” of the FFMQ (37.) The results strongly support the idea that improvements in traits of being present, aware, and nonjudgmental are linked with psychological benefits offered by mindfulness interventions (37.) According to Shao et al. (2012), a self-help mindfulness intervention reduced repetitive thinking (measured as rumination and worry) in participants. Furthermore, the authors noticed that rumination and worry mediated the beneficial effects on depression, and sleep symptoms. It is suggested that reducing patterns in repetitive and negative thinking plays a role in the effectiveness of mindfulness interventions (1382-1384.)

9 Disussion

The goal of the thesis was to find out how mindfulness-based interventions can be used to promote psychological wellbeing among patients with cancer. The purpose was to provide nurses and other healthcare professionals with information about mindfulness interventions and discuss how mindfulness could be applied in clinical environment. The findings illustrate that mindfulness-based stress reduction effectively reduced anxiety- and depressive symptoms (Henderson et al. 2012, 103; Henderson et al. 2013, 5; Liu et al. 2019, 470; Sarenmalm et al. 2017, 1111; Garland et al. 2013, 36; Shao et al. 2021, 1380; Mirmahmoodi et al. 5-6). and increased states of mindfulness in outpatient cancer patients (Sarenmalm et al. 2017, 1112; Garland et al. 2019, 37). The participants also experienced improvements in coping ability, functioning and emotional regulation (Sarenmalm et al. 2017, 1115; Liu et al. 2019, 470; Henderson et al. 2012, 102-103; Henderson et al. 2013, 5). The improvements in mood symptoms were most prevalent at 3-4 months at the longest (Shao et al. 2021, 1380; Liu et al. 2019, 473; Henderson et al. 2012, 103; Henderson et al. 2013, 5-6).

Similar findings were observed with coping, functioning and emotional control. The peak effect for those outcomes was found to be at immediate postintervention, and at 3-4 months. Only in studies by Henderson et al. (2012, 2013), the effects were sustained for a longer period, up to two years. In most cases, MBSR lowered both anxiety and depression scores in the participants, but there were some exceptions. Sarenmalm et al. (2017) and Shao et al. (2012) found, that MBSR was

effective for reducing depression, but not anxiety. Mirmahmoodi et al. (2020) had opposite findings, with improvement on anxiety, but only insignificant amount on depression (7). A wide range of evidence has established MBSR as an impactful method in reducing mood symptoms. For example, Hoffman, Ersser, Hopkinson, Nicholls, Harrington & Thomas (2012) reported, that MBSR intervention had noticeable effects in lowering anxiety, depression, and emotional wellbeing after 8 weeks of MBSR practice. There was reduction in other related measurements as well, such as anger and confusion (1337.) The findings were confirmed in a study by Bränström et al. (2010), where the participants reported decrease in self-reported stress and more positive states of mind after 8-week intervention (155). Mirmahmoodi et al. (2020) on the other hand, found no significant impact of MBSR on perceived stress scores (6.) This was confirmed by a study conducted in the Netherlands by Nyklíček & Kuijpers (2008, 335).

The majority of the studies reviewed only observed the effects of MBSR after 8-weeks of intervention, as they did not incorporate any meaningful follow-up measurements. Only the studies done by Henderson et al. (2012, 2013) included follow-ups past 4 months. Consequently, the lack of follow-up was identified as a limitation in this thesis. As described in the results, the effects of MBSR were most evident up to 4 months after intervention and tended to diminish significantly in the longer follow-up points. Long term effects of MBSR are not completely clear, as the most existing research is focused on the immediate effects. Bränström, Kvillemo & Moskowitz (2012) looked at how the effects of MBSR would persist at 6-month follow-up point and did not report notable improvements in stress or mood outcomes versus control group. The researchers argue that the results might be due to poor adherence to the meditations after the MBSR program, as not all the participants practiced actively. The absence of a support group could also have a possible role (538-541.) More studies with a longitudinal design are needed to better understand the benefits of MBSR.

Positive changes in mindfulness qualities, such as awareness and nonjudging have been shown to occur in people training in mindfulness. Both Sarenmalm et al. (2017) and Garland et al. (2013) state considerable improvements measured with Five Facet Mindfulness Questionnaire Scale (FFMQ). Stronger mindfulness states were found to mediate the reduction in psychological distress by MBSR (ibid., 37). The link between increased mindfulness and psychological wellbeing is

supported by Dehghan, Jazinizade, Malakoutikhah , Madadimahani , Iranmanesh , Oghabian , Mohammadshahi, Janfaza & Zakeri (2020). The authors explain that changes in mindfulness levels decreased the stress of the patients, and in turn, positively impacted their quality of life. It is suggested that emotional regulation and the reduction in negative thinking helps to drive the positive effects of MBSR (4-5.)

The quantitative nature of the research articles made it more difficult to analyse the results. It was challenging to extract meaningful codes from the data, and in turn, create meaningful categories for the analysis that would be congruent to the research question. There was a certain amount of incongruence between the aim of the research, and the literature in the earlier stages of the research. The problem was solved by slightly tweaking the research question, so that it could be answered by reviewing the papers that were already chosen for the review. The process of critically appraising articles was left out of the thesis due to time constraints. In spite of the limitations, the findings in this work may be useful to healthcare professionals who are interested in using mindfulness as a tool in clinical environment. It highlights how mindfulness-based stress reduction can be a viable nonpharmacological tool in increasing emotional health and improving functioning. This thesis would be the most beneficial to professionals who work with cancer patients. The thesis was conducted using appropriate scientific principles and ethical conduct. Proper techniques in reporting were followed, to make sure that all the authors were given adequate credit for their work. Original research was credited according to JAMK instructions.

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Appendices

Appendix 1. Description of studies

No.	Author(s), year, country, title of study	Participants	Context	Methodology	Key Findings
1	<p>Henderson, Massion, Clemow, Hurley, Druker & Hébert, 2013, United States</p> <p>A Randomized Controlled Trial of Mindfulness-Based Stress Reduction for Women with Early-Stage Breast Cancer Receiving Radiotherapy</p>	<p>172 women with stage I or II breast cancer undergoing radiotherapy treatment randomized into three groups</p>	<p>Outpatient cancer care</p>	<p>Randomized-controlled trial. 8-week MBSR intervention group was compared to two control groups, usual care (UC) and nutritional education program</p> <p>Self-report questionnaires were utilised to measure effects</p> <p>Follow-up measurements were conducted at 4 months, 1, and 2 years</p>	<p>MBSR group significantly increased their scores in quality-of-life, coping capacity and other measures including anxiety, depression, and emotional control among others, compared to control groups.</p> <p>The biggest impact was seen at 4 months after intervention, most outcomes were not significant at follow-ups</p>
2	<p>Henderson, Massion, Clemow, Hurley, Druker & Hébert, 2012, United States</p>	<p>172 women with stage I or II breast</p>	<p>Outpatient cancer care</p>	<p>Randomized-controlled trial. 8-</p>	<p>There was remarkable increase in quality-of -life measures, coping ca-</p>

	<p>The effects of mindfulness-based stress reduction on psychosocial outcomes and quality of life in early-stage breast cancer patients: a randomized trial</p>	<p>cancer randomized into three groups</p>		<p>week MBSR intervention group was compared to two control groups, usual care (UC) and nutritional education program</p> <p>Self-report questionnaires were utilised to measure effects</p> <p>Follow-up measurements were conducted at 4 months, 1, and 2 years</p>	<p>capacity and various other psychological measurements in MBSR group compared to control groups</p> <p>The biggest impact was seen at 4 months, positive effects were not maintained at follow-ups</p>
3	<p>Shao, Zhang, Cui, Sun & Cao, 2021, China</p> <p>The Efficacy and Mechanisms of a Guided Self-Help Intervention Based on Mindfulness in Patients with Breast Cancer: A Randomized Controlled Trial</p>	<p>144 postoperative breast cancer patients randomized into two groups</p>	<p>Outpatient cancer care</p>	<p>Randomized-controlled trial. 6-week mindfulness-based self-help intervention group was compared to routine care treatment control group</p> <p>Self-report questionnaires were</p>	<p>Participants in the MBSR experienced significant increases in depression and sleep quality after intervention. The positive impact sustained into both follow-ups. Variables of rumination and worry were found to act as mediators on effects of MBI on depression and sleep symptoms</p>

				<p>utilised to measure effects</p> <p>Follow-up measurements were conducted at 1-month, and 3-months</p>	
4	<p>Liu, Zhang, Xiao, Xu, Wen, Bai, Ma & Ji, 2019, China</p> <p>Mindfulness-based stress reduction in patients with differentiated thyroid cancer receiving radioactive iodine therapy: a randomized controlled trial</p>	<p>120 patients with differentiated thyroid cancer (DTC) randomized into three groups</p>	<p>Outpatient cancer care</p>	<p>Randomized-controlled trial. 8-week MBSR intervention group was compared to usual care control group.</p> <p>Self-report questionnaires were utilised to measure effects</p> <p>Follow-up measurements were conducted at 3-months</p>	<p>Patients in MBSR group experienced improvement in parameters of health-related quality-of-life, anxiety and depression</p> <p>Outcome measures in anxiety, depression and QoL among others in MBSR group were noticeably improved at three-month follow-up compared to control group.</p>

5	<p>Mirmahmoodi, Mangalian, Ahmadi & Dehghan, 2020, Iran</p> <p>The Effect of Mindfulness-Based Stress Reduction Group Counseling on Psychological and Inflammatory Responses of the Women With Breast Cancer</p>	44 breast cancer patients randomized into two groups	Outpatient cancer care	<p>Randomized-controlled trial. 8-week MBSR intervention group was compared to usual care control group</p> <p>Self-report questionnaires were utilised to measure effects</p>	MBSR group showed noticeable improvement in anxiety compared to the control group. The intervention reduced stress and depression, but not by significant amount.
6	<p>Garland, Tamagawa, Todd, Speca & Carlson, 2013, Canada</p> <p>Increased Mindfulness Is Related to Improved Stress and Mood Following Participation in a Mindfulness-Based Stress Reduction Program in Individuals With Cancer</p>	268 patients with cancer	Outpatient cancer care	Clinical trial of 8-week MBSR intervention. Self-reporting questionnaires were administered to participants to measure effects.	There was large increase in scores for mood disorder and stress. Participants also increased their mindfulness levels during the intervention, as measured with the MAAS AND FFMQ-scales. A correlation was found between changes in mindfulness, and improved stress and mood disorder symptoms.
7	<p>Sarenmalm, Mårtensson, Anderson, Karlsson & Bergh, 2017, Sweden</p>	166 women diagnosed with breast cancer randomized into three groups	Outpatient cancer care	Randomized-controlled trial. 8-week MBSR intervention (including 8 group sessions) was compared to self-instructed	Participants reported remarkable improvement in depression compared to non-MBSR group. Positive effects were also noticed in parameters of coping, mindfulness, and

	Mindfulness and its efficacy for psychological and biological responses in women with breast cancer			MBSR of 8 weeks (active control), and usual care control group. Self-reportion questionnaires were utilized in measuring outcomes	psychological distress. The intervention was not effective in decreasing anxiety by a significant amount.
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