Mindfulness-Based Cognitive Therapy in Primary Care

Clinical Applications and Analysis of the Five Facet Mindfulness Questionnaire (FFMQ)

Mindfulness-Based Cognitive Therapy in Primary Care

Clinical Applications and Analysis of the Five Facet Mindfulness Questionnaire (FFMQ)

Josefine L. Lilja

Department of Psychology

UNIVERSITY OF GOTHENBURG

Doctoral Thesis in Psychology
Department of Psychology
University of Gothenburg
20161028

Cover layout: Carin Sjöström-Greenwood
Photo cover (front): Johannes Berner AB
Photo cover (back): Karin Samsson
Printing: Ineko AB, Gothenburg, Sweden, 2016
ISBN: 978-91-628-9928-8 (PDF)
ISBN: 978-91-628-9927-1 (Print)
ISSN: ISSN 1101-718X Avhandling/Göteborgs universitet, Psykologiska inst.
ISRN: GU/PSYK/AVH--346—SE
http://hdl.handle.net/2077/47520

To Michael, Dina and Noah

My joy is like Spring, so warm
it makes flowers bloom all over the Earth.
My pain is like a river of tears,
so vast it fills the four oceans.

Please call me by my true names,
so I can hear all my cries and laughter at once,
so I can see that my joy and pain are one.

Please call me by my true names,
so I can wake up
and the door of my heart
could be left open,
the door of compassion.

Thich Nhat Hanh

Please call me by my true names

ABSTRACT

Lilja, J.L. (2016). *Mindfulness-Based Cognitive Therapy in Primary Care – Clinical Applications and Analysis of the Five Facet Mindfulness Questionnaire (FFMQ).* University of Gothenburg.

The overall objective of this thesis is to analyse the concept of mindfulness as measured by the Five Facet Mindfulness Questionnaire (FFMQ) and its clinical usefulness in primary care through group Mindfulness-Based Cognitive Therapy (MBCT). Because no Swedish version of the FFMQ was available, that became the starting point of this research project. Mindfulness came into practice in Sweden in the early 2000s as a complement to clinical treatment thanks to evidence-based treatment models developed in the United States and Great Britain including Mindfulness-Based Stress Reduction (MBSR); MBCT, Acceptance and Commitment Therapy (ACT), and Dialectical Behaviour Therapy (DBT). International researchers have been interested in analysing how mindfulness is defined and operationalized and in investigating its usefulness in clinical practice. The Swedish research has mainly focused on MBSR and its effects on stress-related illness. The aims of this thesis are therefore to examine the clinical applications of mindfulness by analysing the usefulness and effectiveness of MBCT in Swedish primary health care and the mindfulness construct measured by the FFMQ.

This thesis consists of four studies. In *Study I* (N = 495) the aims were to (1) develop and assess the Swedish version of the FFMQ; (2) compare the psychometric properties of the Swedish FFMQ with the original version of Baer et al.; and (3) examine the overall mindfulness construct, using confirmatory factor analysis (CFA). In *Study II* (N = 817) the aim was to look for differences in profiles between meditators and non-meditators (325 meditators and 317 non-meditators) through analysing the FFMQ using a person-oriented approach. In *Study III* (N = 19) a qualitative method was used, with the aim of exploring how primary care patients with recurrent major depressive disorder (MDD) perceived the usefulness of MBCT in preventing relapse. In *Study IV* (N = 45) quantitative methods were used, with the aim of examining the clinical effects of MBCT in primary care (prevention of relapse in depression) and generalizability of effects.

The main findings indicate that mindfulness is a multidimensional skill that can be developed with practice, and that MBCT can work as a preventative primary health care intervention for patients with MDD. *Study I* showed that the Swedish FFMQ (FFMQ_SWE) provides results comparable to those obtained for the original version. Cronbach's alpha was high for all facets and the CFA showed that the Observe subscale was not a significant part of the overall self-reported mindfulness construct in a population of Swedes with little experience of meditation. In *Study II* the hypothesized relationship between the Observe facet and mindfulness (which we assumed to be higher among meditators), was tested and the results showed mindfulness to be related to high levels of observing and attending to experience. In *Study III* the thematic analysis suggested two overarching themes: "Strategies for remission" and "Personal development". The formal and informal meditation exercises that focused on the body and the breath were described as the most important strategies for remission and the mindfulness practice helped the participants to deal with everyday stress and interpersonal functioning. In *Study IV* a benchmarking approach, used to compare the relapse rate in the study participants (16%) with that of patients receiving treatment as usual (TAU) (68%) in the efficacy study, revealed a large effect size. The person-centred approach, measured by the Reliable Change Index, showed that 67% of participants in the clinical group improved, none worsened, and women's depression and anxiety improved significantly more than men's.

In conclusion, the thesis shows that the concept of mindfulness should be seen as a multidimensional skill that can change over time, and that may develop differently in various subgroups. The clinical studies showed that participants perceived meditation and yoga as most helpful in preventing the recurrence of depression. Improvement of interpersonal functioning was another prominent change after participation in MBCT. The overall results suggest that MBCT can be implemented successfully in Swedish primary care as a preventive intervention for patients with recurrent depression.

Keywords: *mindfulness; Five Facet Mindfulness Questionnaire (FFMQ), internal consistency, factor structure, cluster analysis, meditators, non-meditators, MBCT, Primary Care, thematic and benchmarking analysis*

Josefine L. Lilja, Department of Psychology, University of Gothenburg, P.O Box 500, 40530, Gothenburg, Sweden. Phone: +46(0)706126924, Email: josefine.lilja@vgregion.se
ISSN 1101-718X Avhandling/Göteborgs universitet, Psykologiska inst.
ISBN: 978-91-628-9927-1 (Print) ISBN: 978-91-628-9928-8 (PDF)
ISRN GU/PSYK/AVH--346—SE

SVENSK POPULÄRVETENSKAPLIG SAMMANFATTNING

I Sverige har psykoterapeutiska interventioner som innehåller ”medveten närvaro” (eng. mindfulness) blivit ett komplement i klinisk behandling sedan mitten av 00-talet, mycket tack vare de evidensbaserade behandlingsmodeller som tagits fram i USA och Storbritannien: Mindfulness–baserad stresshanterings program (MBSR), Mindfulness-baserad kognitiv terapi (MBCT), Dialektisk beteendeterapi (DBT) och Acceptans och engagemang terapi (ACT). Den internationella forskningen har dels intresserat sig för att analysera hur medveten närvaro definieras och operationaliseras, dels för att undersöka dess användbarhet i klinisk praktik. Den svenska forskningen har hittills främst fokuserat på MBSR och dess effekter på stressrelaterad ohälsa. Relativt lite forskning avseende mindfulnessbaserade interventioner har bedrivits inom primärvård. Eftersom forskning ännu inte har presenterats avseende MBCT´s generaliserbarhet till svensk primärvård, är behandlingen ännu inte rekommenderad av Socialstyrelsen. Det övergripande syftet med detta forskningsprojekt har därför varit att studera begreppet medveten närvaro och dess kliniska användbarhet inom primärvård genom MBCT-behandling i grupp. Frågeformuläret Five Facet Mindfulness Questionnaire (FFMQ), som användes för att mäta självrapporterad medveten närvaro utvecklades av Baer och medarbetare i USA. Formuläret har uppvisat god reliabilitet och validitet och eftersom det inte fanns en svensk version av FFMQ blev detta startpunkten i forskningsprojektet.

FFMQ utvecklades utifrån ett multidimensionellt synsätt på medveten närvaro, dvs. att det är en förmåga/livshållning som innehåller ett flertal utvecklingsbara komponenter. FFMQ innehåller fem delskalor: “Observing” (Observe, som förkortning) vilket avser förmågan att uppmärksamma inre och yttre upplevelser och sinnesförnimmelser (ljud, tankar, emotioner, etc). “Describing” (Describe) är förmågan att kunna benämna inre upplevelser med ord. “Acting with Awareness” (Actaware) innebär förmågan att kunna uppmärksamma egna beteenden i nuet, till skillnad från att gå på autopilot medan uppmärksamheten är någon annanstans. “Non-judging of inner experience” (Nonjudge) innebär att man har en icke-dömande attityd gentemot egna tankar och känslor, och slutligen, “Non-reactivity to inner experience” (Nonreact) innebär förmågan att kunna uppleva stressande känslor och tankar utan att fastna eller dras med i dem.

I de två första studierna användes två olika metodologiska arbetssätt, en variabel-orienterad och en person-orienterad för att undersöka begreppet medveten närvaro. Medveten närvaro definieras av Segal, Williams och Teasdale som en medvetenhet som uppstår när vi är uppmärksamma avsiktligt, i nuet, och utan dömande attityd. I de två följande studierna undersökte vi dess kliniska tillämpning genom att studera MBCT och dess användbarhet i primärvården. Vi använde oss av kvalitativa och kvantitativa metoder för att undersöka nyttan och effektiviteten.

Syftet med första studien var att (1) utveckla och utvärdera en svensk version av FFMQ, och (2) undersöka psykometriska egenskaper av den svenska versionen av FFMQ med ursprungsversionen, och (3) undersöka begreppet medveten närvaro genom att använda en konfirmatorisk faktor analys. Data inhämtades från 495 personer. Deltagarna fyllde i FFMQ och kommenterade vilka frågor de tyckte var svåra att förstå, vilket gav tillgång till kvantitativ och kvalitativ information. Resultatet innebar att tio frågor togs bort från skalan, vilket har gjort FFMQ_SWE mer användarvänligt. Vidare analyserades vilken påverkan ålder, kön och meditationserfarenhet hade på graden av medveten närvaro. Avseende ålder fanns en generell tendens att äldre deltagare fick högre värden än yngre och att kvinnor beskrev sig själva som bättre på att observera och beskriva sina upplevelser än vad män gjorde. Regressionsanalysen visade att ålder hade högst samband med grad av medveten närvaro, äldre personer skattade sig i genomsnitt högre än yngre. Vidare visade resultaten att meditationserfarenhet endast förklarade 2-3% av variansen i medveten närvaro, när vi kontrollerade för effekten av ålder och kön. Den konfirmatoriska faktoranalysen gav liknande resultat som den engelska versionen av FFMQ, dvs. att delskalan Observe inte var en signifikant del av medveten närvaro hos en svensk population med lite meditationserfarenhet. En förklaring till resultatet kan vara att individer med liten erfarenhet av meditation tenderar att värdera och förhålla sig dömande till sina egna tankar och upplevelser. Sammantaget visade resultaten att den svenska versionen av FFMQ var jämförbar med de värden som presenterats av Baer och medarbetare och att reliabiliteten i samtliga delskalor var hög.

Syftet med den andra studien var att undersöka det paradoxala resultatet från studie 1 – att delskalan Observe inte var en signifikant del av medveten närvaro – genom att använda en person-orienterad metod. Data inhämtades från 817 personer, varav 325 bedömdes vara meditatörer och 317 icke-meditatörer. Hierarkisk kluster analys användes för att gruppera deltagarna i 13 kluster. För att testa relationen mellan förmågan att observera och medveten närvaro (värdena antogs vara högre bland meditatörer), jämfördes in-

delningen av meditatörer och icke-meditatörer med de olika FFMQ klusterna. Resultaten visade att meditatörerna var överrepresenterade i alla kluster med höga värden på Observe och underrepresenterade i alla kluster med låga värden på Observe – vilket stöder hypotesen att träning i medveten närvaro är relaterat till hög förmåga att uppmärksamma olika upplevelser/förnimmelser. Resultatet visade även att relationen mellan att kunna observera förnimmelser och vara icke-dömande var mer komplex än förväntad. I strid med hypotesen fann vi ett kluster där meditatörer var överrepresenterade. I detta kluster fanns ett mönster av höga värden på observande förmåga och låga värden på icke-dömande. Detta resultat antyder att även meditatörer kan uppleva svårigheter med att bibehålla en öppen och icke-dömande attityd gentemot sina upplevelser. En förklaring till resultatet är att se det som en naturlig tendens hos människan att kritiskt utvärdera sitt beteende och tankemönster. Denna tendens kan komma att förstärkas under en tidig del av meditationsträningen. Successivt borde dock denna tendens minska i takt med att meditatörer tränar på att bemöta tankemönster och händelser med en icke-dömande attityd. Resultat i studien visar att en sådan utveckling hade skett i det kluster med högst värden på medveten närvaro på samtliga FFMQ-skalor. Meditatörer var överrepresenterade i detta kluster (39 av 41 individer var meditatörer). Resultaten visar att en person-orienterad metod kan bidra med nya perspektiv i hur vi förstår begreppet medveten närvaro och hur detta kan utvecklas över tid.

Syftet med tredje studien var att undersöka hur primärvårdspatienter med återkommande depressioner uppfattade nyttan av MBCT för att förhindra återfall i depression. Patienter (N = 19) som deltagit i ett MBCT-program intervjuades 14 månader efter avslutad behandling. Kvalitativ tematisk analys användes för att identifiera, analysera och rapportera mönster i intervjuerna. Analysen gav två övergripande teman, “Strategier för återfall” och “Personlig utveckling”. De formella och informella meditationsövningarna, med fokus på kroppen samt acceptans av psykisk ohälsa, beskrevs som de viktigaste strategierna för att inte återinsjukna i depression. Deltagarna rapporterade att träning i medveten närvaro gav dem en ökad självkännedom vilket hjälpte dem att bättre ta itu med vardagens stress och olika relationer. Studien ger ny information om vad deltagarna i MBCT-klasser beskriver som de mest användbara interventioner för att förhindra återfall.

Syftet i fjärde studien var att undersöka MBCT i svensk primärvård avseende effektivitet (genom minskad risk för återfall i depression), generaliserbarhet och klinisk progress för patienter med återkommande depressioner. De patienter (N = 19) med tre eller flera tidigare depressiva episoder som deltog i studie 3 deltog också i studie 4, tillsammans med ytterligare 26 (N=45).

Benchmarking metod användes för att jämföra de egna resultaten med en välrenommerad genomförd RCT-studie (Randomized control trial). Då det i klinisk verksamhet kan vara svårt att få ihop en egen kontrollgrupp kan benchmarking användas för att bedöma effektiviteten när evidensbaserade behandlingsmanualer överförs till befintlig skandinavisk sjukvård. En personcentrerad metod (Reliable Change Index, RCI) användes för att bedöma i vilken grad patienternas rapporterade förändring var kliniskt signifikant. Alla tre effektmåtten, psykiatriska symptom, medveten närvaro och förbättrad livskvalité, visade måttliga eller större effekter från pre-test som kvarstod under 14 månader. Resultaten visade att 84% av deltagarna inte hade återfallit i depression 14 månader efter avslutad behandling. Analys av återfallsfrekvensen (16%) i den aktuella studien jämfört med sedvanlig behandling i RCT-studien (68%) visade på stor effekt av MBCT (h = 1.12). Enligt RCI förbättrades 67% av deltagarna i den kliniska gruppen, ingen enskild individ försämrades, och kvinnor visade en signifikant större förbättring avseende depression och ångest än män. Resultatet tyder på att MBCT kan implementeras i den svenska primärvården som en förebyggande insats för patienter med återkommande depressioner.

Sammantaget stödjer studierna antagandet att begreppet medveten närvaro bör ses som en multidimensionell förmåga, som kan förändras över tid och som kan utvecklas på olika sätt i undergrupper av individer. De kliniska studierna visade att deltagarna i MBCT ansåg att meditation- och yogapraktiken var mest hjälpsamt för att förhindra återfall i depression. Vidare var utveckling av interpersonellt fungerande en framträdande förändring efter deltagande i MBCT. Det övergripande resultatet tyder på att MBCT kan implementeras framgångsrikt i den svenska primärvården som en preventiv insats för patienter med återkommande depressioner.

Nyckelord: medveten närvaro/ mindfulness; FFMQ, reliabilitet, validitet, faktor struktur, kluster analys, meditation, meditatörer och icke-meditatörer, MBCT, MDD, primärvård, tematisk analys och benchmark

TABLE OF CONTENTS

FIGURES AND TABLES

ABBREVATIONS & GLOSSARY

ACT	Acceptance and Commitment Therapy
CBT	Cognitive Behaviour Therapy
CFA	Confirmatory factor analysis
CFI	Comparative fit index
DBT	Dialectical Behaviour Therapy
DMN	Default mode network
DSM-IV	Diagnostic Statistical Manual of Mental Disorders, 4th Ed
FFMQ	Five Facet Mindfulness Questionnaire
FFMQ_SWE	Five Facet Mindfulness Questionnaire – Swedish version
HADS	Hospital Anxiety and Depression Scale
HADS-D	Subscale in HADS measuring symptoms of depression
HADS-A	Subscale in HADS measuring symptoms of anxiety
IAA-model	Intention-Attention-Attitude model
MANOVA	Multivariate analysis of variation
MBCT	Mindfulness-Based Cognitive Therapy
MBIs	Mindfulness-based interventions
MBSR	Mindfulness-Based Stress Reduction programme
MDD	Major Depressive Disorder
RCI	Reliable change index
RCT	Randomized control trial
RMSEA	Root mean square error of approximation
TAU	Treatment as usual
QoL	Quality of life

Compassion meditation: Focus on physical and/or psychological suffering of others (ranging from loved ones to all humanity) and cultivate compassionate attitudes and responses to this suffering.

FA meditation Focused attention meditation: Directing and sustaining attention on a selected object (e.g., breathing). Detecting mind wandering and distractions (e.g., thoughts). Disengagement of attention from distractions and shifting of attention back to the selected object. Cognitive reappraisal of distraction (e.g., "just a thought", "it is okay to be distracted").

Loving-kindness meditation: Focus on generating feelings of kindness, love, and joy toward self, then progressively extend these feelings to imagined loved ones, acquaintances, enemies, and eventually all living beings.

OM meditation Open monitoring meditation: No explicit focus on objects. Non-reactive metacognitive monitoring (e.g., for novices, labelling of experience). Non-reactive awareness of automatic cognitive and emotional interpretations of sensory, perceptual, and endogenous stimuli.

LIST OF PUBLICATIONS

This thesis is based on the following four papers which are referred to by their roman numerals:

I. Lilja, J. L., Frodi-Lundgren, A., Johansson Hanse, J., Josefsson T., Lundh, L-G., Sköld, C., Hansen, E., & Broberg, A.G. (2011). Five Facet Mindfulness Questionnaire – reliability and factor structure: A Swedish version. *Cognitive Behaviour Therapy, 40,* 291–303. doi:10.1080/16506073.2011.580367

II. Lilja, J. L., Lundh, L.-G., Josefsson, T., & Falkenström, F. (2013). Observing as an essential facet of mindfulness: A comparison of FFMQ patterns in meditating and non-meditating individuals. *Mindfulness, 4,* 203–212. doi:10.1007/s12671-012-0111-8

III. Lilja, J. L., Broberg, M., Norlander, T., Broberg, A. G. (2015). Mindfulness-Based Cognitive Therapy: Primary care patients' experiences of outcomes in everyday life and relapse prevention. *Psychology, 6,* 464–477.doi:10.4236/psych.2015.64044

IV. Lilja, J. L., Zelleroth, C., Axberg, U., Norlander, T. (2016). Mindfulness-based cognitive therapy is effective for patients with recurrent depression in Scandinavian primary health care. Online: *Scandinavian Journal of Psychology*. doi:10.1111/sjop.12302

ACKNOWLEDGEMENTS

I would like to thank all those who read portions of this thesis and attended presentations of this research. I would like to thank the participants for giving up their time to take part in interviews and for sharing their reflections. I am ever so thankful to my colleagues Heléne Möller and Clara Zelleroth for their help with the interviews and MBCT classes.

I would also like to give my thanks to Maria Dottori and Lotta Kjellgren who held some of the MBCT classes, and all the general practitioners who referred patients, even though you had some initial scepticism.

Most of my doctoral studies were financed by a research grant from the Lokal Research and Development Board for Gothenburg and Södra Bohuslän, by support from the Tjörns Health Clinic and the Heads of Clinic, Dr. Torbjörn Erneholm and Ann-Sofie Lekander, RN.

Thanks to Carin Sjöström-Greenwood, Inger Hansson, Maria Larsson, Närhälsan Research and Development Primary Health Care, and the "Tuesday fika" gang for all your support, ideas, and inspiring help.

Thanks to Clara Zelleroth, who truly co-authored the fourth article! Those summer days in your kitchen with baby Erik and oatmeal all over the SPSS show how unstoppable women are.

A special thanks to my "superwoman", Karin Samsson: our mix of private and academic talks improved my research and lightened up my work day more than once. A true friend in real life. And my mentor, Anette Jervelycke: you are the ultimate combination of hard work and warmth. Thank you for being there and for always making things clearer, more understandable, and solvable. Thanks to the doctoral students at the Department at Psychology, you know who you are!

I thank my supervisors Professor Anders Broberg and Professor Lars-Gunnar Lundh for their academic support and for trusting my ability to invent, manage, and lead this research project. Extra thanks to Anders Broberg for staying with me through this long ride and thanks to Professor Jan Johansen Hanse, who helped me to understand the world of statistics in an enjoyable way and supervised me though my first article.

Thanks to Senior Lecturer, Katarina Plank, my true saviour in hard times! Your thoughts, comments, and ideas improved this thesis by far.

I am ever so thankful for all the support, cheering-on, and supervision from Evidens University College.

And to you who matter the most, my roots and my family, Bo Lilja and Kerstin Lilja. Thank you for believing in me, giving me sound values in life and awakening my academic curiosity. Thanks Dad for giving me perspective on my first article and Ma for giving me the ability to choose. I hope you like the scenery from heaven! All my love forever.

A special thank you:

To my brother, sisters, and friends that keep reminding me of the bigger picture and that it is "just" a thesis.

Finally, and most importantly, my present family, Michael, Dina, and Noah, all my thanks for your everlasting support, love, and for making me a better researcher in terms of balancing the workload and prioritizing the things that are most central in life. Love to you all!

Josefine Lilja
Gothenburg, a summer day in August, 2016

INTRODUCTION

Mindfulness and Science

In 2005 the International Congress of Psychotherapy was held in Gothenburg. The central topic was the integration of Western scientific explanations with Eastern experiences to understand the mind through different forms of meditation and cognitive psychotherapy. His Holiness the 14th Dalai Lama and Aaron Beck attended, but what caught my interest was a presentation by Michael J. Mahoney (1946-2006). He talked about "minding the heart of science and human inquiry", and pointed out how important it is to attend to the whole being (mind and body) of the patient. A person in the audience asked; "But how do you bring the body into therapy?" to which Mahoney answered "How do you *not* bring the body into therapy?" At that time, I worked with patients with psychosomatic disorders, and although we worked closely with the physiotherapist, the therapeutic sessions were still divided according to our attention to physical or mental disorders. This inspired me to explore the field of mindfulness. Almost instantly I had several questions about mindfulness: How can mindfulness be defined? Are there coherent or diverse understandings of mindfulness? How can we measure the outcome of Mindfulness-Based Cognitive Therapy (MBCT)? How are the current applications of mindfulness experienced by the patients, in terms of usability, and can they be integrated in public health care? Later on, working in primary care, where little research had been done on MBCT, I was given the opportunity to work with patients to try to prevent recurrences of depression. At that time the most recently developed self-report questionnaire was the Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006). It seemed promising since it had a multidimensional approach and measured several of the abilities (e.g., awareness of thoughts/feelings/sensations, non-reactivity, and low self-criticism) practised in MBCT. Because no Swedish version of the FFMQ had yet been developed, this became the starting point of the research project.

The questions above are still current, although clinical work and research beginning in the early 2000s has provided some illumination. Several attempts have been made to develop measures of mindfulness, and we now have evidence-based treatments that include mindfulness and meditation. Activities including mindfulness have become widespread and popular in the West. As with meditation and yoga, which have been current in Western society for several decades, most people have also heard about mindfulness (Eklöf, 2014; Plank, 2014). In the Western world of health care, mindfulness

is used mostly as an interventional therapy: a self-regulatory tool used for a variety of mental and physical conditions (Didonna, 2009; Schmidt, 2011; Wilson, 2014).

Mindfulness has attracted the interest of academic disciplines as various as psychology, medicine, and religion, each of which has approached the subject with questions arising from their own theoretical perspectives. Researchers in psychology have tended to focus on how the term "mindfulness" should be defined and applied (e.g., Baer, 2003; Bishop et al., 2004; Brown & Ryan, 2003; Brown & Ryan, 2004; Germer, 2005; Shapiro, Carlson, Astin, & Freedman, 2006). Clinical researchers have been more interested in examining the practice's health benefits (e.g., Goyal et al., 2014; Hoffman, Sawyer, Witt, & Oh, 2010) and its therapeutic effects on different medical and psychiatric disorders (Ma & Teasdale, 2004; Simon & Engström, 2015; Morone, Greco, & Weiner, 2008; Valentine & Sweet, 1999; Zylowska, Smalley, & Schwartz, 2009; Watkins & Teasdale, 2001). And religious and Buddhist studies have focused on the context in which mindfulness is practised and on how to interpret the original texts. Plank (2011, 2014) offers an overview of the concept as understood in religious studies. Through the analysis of "mindfulness" and its effectiveness, this thesis aims to contribute to new understandings of the possible clinical applications of mindfulness in Swedish primary health care.

During the 21st century mindfulness training has grown and become a widespread practice in the West, represented in an increasing number of therapies, self-help regimes, and forms of intervention (Baer, 2003; Didonna, 2009; Grossman et al., 2004, Segal, Williams, & Teasdale, 2013). A few of the early clinical studies showed that Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1982), Mindfulness-Based Cognitive Therapy (MBCT; Segal, Williams, & Teasdale, 2002), Dialectical Behaviour Therapy (DBT; Linehan, 1993a; Linehan 1993b), and Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999; 2004) could be effective and beneficial forms of treatment for a variety of mental and physical conditions (Baer, 2003; Didonna, 2009; Grossman et al., 2004). MBCT is used in the treatment of recurrent depression (Segal, Williams, & Teasdale, 2002), MBSR and ACT have been used mainly in those suffering from stress and/or chronic pain (Hayes, 2002; Kabat-Zinn, 2013), and DBT has been largely aimed at treating borderline personality disorders (Linehan, 1993b). Research in this area has increased exceptionally since the early 2000s, mainly in the fields of clinical psychology and neuroscience (Eklöf, 2014), but there is

growing interest in applying mindfulness to business and leadership (Williams & Kabat-Zinn, 2011).

In addition to these more established mindfulness-based regimes there are a number of lesser known programmes that focus on improving couple's relationships including Mindfulness-Based Relationship Enhancement (Carson, Carson, Gil, & Baucom, 2004), treatment of addictive behaviour (Mindfulness-Based Relapse Prevention; Marlatt & Kristeller, 1999; Witkiewitz, Marlatt, & Walker, 2005), Mindfulness-Based Eating Awareness Training (MB-EAT; Kristeller, Baer, & Quillian-Wolever, 2006), and pregnancy- and parenting-related depression and stress (Mindfulness-Based Childbirth and Parenting; Duncan & Bardacke, 2010; Vieten & Astin, 2008).

Over a period of 15 years several studies on how to measure mindfulness have been presented and revised, but there are still no clear or agreed-upon definition (Park, Reilly-Spong, & Gross, 2013). Meta-analyses of clinical interventions have concluded that although the results are promising, methodological considerations and weaknesses remain, such as small samples, few RCT studies, and the dominance of self-measurements (Baer, 2003; Bishop et al., 2004; Goyal et al., 2014; Grossman et al., 2004). Another concern is that many of the prominent researchers within mindfulness are themselves Buddhist and/or mindfulness instructors (Drougge, 2014; Plank, 2014). This has led to an interesting discussion and articles considering how this may affect which aspects of mindfulness are researched and how the data are presented (Drougge, 2014; Wilson, 2014). For example, the meta-analysis of Coronado-Montoya et al. (2016) concluded that the proportion of mindfulness-based therapy studies reporting statistically significant results may overstate the effects that would occur in practice.

Definitions of mindfulness have mainly been shaped by their applications and the context they been presented in (Plank, 2011), and the various forms of therapy emphasizes the different effects of mindfulness interventions. Even within Buddhist tradition, several different understandings and interpretation of mindfulness can be found (Analayo, 2003). In this thesis the following definition will be used: "paying attention in a particular way: on purpose, in the present moment, and non-judgmentally" (Kabat-Zinn, 1995, p.4) and the reason for this is presented in the Background chapter (p. 9). The concept of mindfulness has its roots in Buddhist traditions and is often associated with the formal practice of insight (*vipassana*) meditation (Williams & Kabat-Zinn, 2011). The term "mindfulness" is used to denote several aspects: a psychological construct, a method, and the outcome of treatments that con-

tain elements of mindfulness (Hayes & Wilson, 2004; Vago & Silbersweig, 2012; Wallis, 2012; Wilson, 2014). The main aim of this thesis is to examine mindfulness as a psychological construct and the ways it can affect relapse in major depressive disorder (MDD). Researchers have tried to operationalize the mindfulness construct, based on the principle that a phenomenon can only be studied if it is properly defined and measurable (Brown & Cordon, 2009). Several researchers have stressed the need to systematically study the construct of mindfulness and develop an operational definition (Baer, 2003; Bishop et al., 2004; Brown & Cordon, 2009; Brown & Ryan, 2004; Shapiro et al.,, 2006), but so far there remains no authoritative definition of mindfulness for research or therapeutic use. In order to disentangle the religious and cultural aspects of mindfulness, contemporary researchers are attempting to extract what they believe are the essential ingredients of mindfulness and operationalize the construct based on items in self-report questionnaires.

But does the Western definition of mindfulness contain the same elements as the Buddhist traditional form of mindfulness? Olendzki (2011) and Plank (2011), claim that Western forms of mindfulness practice often contain an element of self-therapy or treatment that focuses mainly on health-promoting skills, and that the Western mindfulness construct veered in meaning from the religious tradition. This criticism is developed in the analysis that shows there is less focus on original ethical, moral, and religious principles and more on personal processes leading to individual development and self-realization. Plank (2011) states that "when mindfulness is lifted from its Buddhist traditions, there is a strong tendency among its proponents to describe meditation as something ahistorical and as an element that can be isolated from its religious context and taught in a secular setting" (p. 239, translated from Swedish by J.L.). Sharf (2014) states that mindfulness in the West does not originate from its unbroken 2500-year-old Buddhist tradition, but rather represents a "modernistic Buddhism" that emerged when Western colonization and Buddhism met at the end of the 19th century. This modernized form then underwent further "whitenization" during the introduction of mindfulness to United States (Wilson, 2014).

This thesis begins with a short background of the concept of mindfulness and its relations to the constructs of attention and awareness, followed by a review of the components and definitions of mindfulness. I will review the efforts that have been made to operationalize and measure mindfulness and then summarize the usability of existing mindfulness-assessment instruments. This will be followed by a description and analysis of the FFMQ to examine how mindfulness can be constructed and measured through a self-report

measure. Next, I will give a short background of mindfulness in the fields of clinical psychology and neuroscience and then address the clinical problem at hand – depression – and give a background of the development and rational of MBCT. I will conclude with a broader introduction to MBCT, its theoretical standpoint, and its clinical usefulness in qualitative and quantitative research in the field of psychology.

BACKGROUND

Definitions of Mindfulness

Understanding mindfulness: origins

According to Watson (2008), Buddhism differs from other religions in that it acknowledges neither a god nor a set of beliefs that demand total allegiance. Instead it offers a close exploration of the mind, which reveals that things are not always what we immediately and innately believe them to be. It is important to realize that there are various Buddhist traditions, (e.g., Tibetan Buddhism, Japanese Buddhism, and the Theravada tradition in Sri Lanka) and that they differ from each other. However, they share a core that is sufficiently consistent for them to all settle under the umbrella term, "Buddhism". An important focus of Buddhist practice is on the moral and ethical aspects of a person's actions and thoughts (Plank, 2011).

The concept of mindfulness can be found in many different contexts in Buddhist literature (Gethin, 2011). Mindfulness or *sati* is a central and complex concept in Theravada Buddhist meditation (*Vipassana* meditation) (Plank, 2011). The English term "mindfulness" is a translation of the Pali word *sati* (*smrti* in Sanskrit) (Analayo, 2003; Germer, 2005; Olendzki, 2014) which connotes "remembrance" or "memory" (in the sense that we have to remember to stay present and keep our intention with the practice clear) (Germer, 2005), but it is more frequently used as a description of a certain quality of attention or awareness that is skilful and right from a Buddhists perspective. To attentively notice the details of one's present experience is a practice that is probably as old as humankind itself. But doing so in a structured and deliberate way seems to have particularly strong roots in the religious traditions of Buddhism. Olendzki (2005) writes that according to Buddha, mindfulness meditation is the starting point in a person's progress toward extinction of suffering.

Meditation practice is often referred to as *satipatthana*, a concept that can be broken down into mindfulness itself (*sati-patthana*) and establishing mindfulness (*sati-upatthana*) (Thanissaro, 2010). The foundation of mindfulness involves focusing on the object of the meditation practice. Altogether there are four aspects of being mindful: you can be mindful of your body, your feelings, your mind, or mental objects. For example, being mindful of the body means viewing the body on its own terms, rather than in terms of its functions, beauty, or strength (Thanissaro, 2010), and mindfulness of the mind aims toward a certain quality of attention or awareness that is also skil-

ful and right from a Buddhist perspective (Olendzki, 2005). Establishing mindfulness involves focusing on the process of meditation.

Buddhist psychology often distinguishes between two main methods of meditation: *vipassana* (translated as "insight") and *samatha* (translated as "concentration") (Germer, 2005, p.15). Concentration meditation involves focusing attention on an internal object such as a word, the breath, or a phrase (mantra), or on an external object, such as a candle or sound. When attention wanders from the object, the meditator is asked to gently but firmly bring the attention back to the object. Awareness and attention point us toward the present moment and away from thinking, acting, or feeling automatically. By contrast, insight meditation brings consciousness to the moment-to-moment flow of our present experience, for example our thoughts, feelings, desires, and so on (Brown & Ryan, 2004). Concentration meditation tends to have a calming effect, while insight meditation is more active and energy-gathering. Many scholars believe that these two forms of meditation are equally important for cultivating mindfulness (Kornfield, 1993; Plank, 2011; Wilber, 2000). In sum, mindfulness means remembering, keeping things in mind, and being able to feel or know one's experience with clarity as it is happening. This requires concentration, but goes further by allowing the focus to move, with whatever we are observing in the present moment (Olendzki, 2014).

The borders between Buddhism and research have lately been remodelled in the medical and scientific context. Insight meditation has been put into more psychological terms and has been integrated into Western psychotherapy (Plank, 2011). Mindfulness practice has been said to have become secular and the core of meditation no longer Buddhism, but a universal element aimed to understanding human suffering (Eklöf, 2014). The Mind & Life Institute (MLI, 2016), which works to enable collaboration and research partnership between modern science and Buddhism, can thus be seen as an institutional symbol of the emerging field of collaboration between Western research and Buddhism.

Generally speaking, there are two models for cultivating mindfulness in meditation: the 2500-year-old Buddhist psychological model and the recent adaptation of specific Buddhist techniques aimed at stress reduction and influenced by the MBSR programme (Kabat-Zinn, 1990). These two models overlap somewhat in their aims of reducing suffering and improving quality of life (QoL), but they also differ as described in the Introduction (p. 3).

Scientific understanding of mindfulness

In research mindfulness has been conceptualized both as a state of practice in meditation (e.g., Lau et al., 2006) and as a trait, a predisposition to be mindful in daily life (e.g., Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). Without intervention, trait mindfulness appears to be stable over time (e.g., Brown & Ryan, 2003). However, several studies have found that mindfulness-based interventions (MBIs) generally increase trait mindfulness, and that such increased trait mindfulness contributes to psychological health (Carmody, Reed, Kristeller, & Merriman, 2008; Shahar, Britton, Sbarra, Figueredo, & Bootzin, 2010; Shapiro, Oman, Thoresen, Plante, & Flinders, 2008). Regular meditation and repeated elevation of state mindfulness have been shown to lead to increases in trait mindfulness (Kiken, Garland, Bluth, Palsson, & Gaylord, 2015). Most Western definitions of mindfulness are based on a combination of several different components. A widely cited definition is that of Kabat-Zinn (1995): "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally" (p. 4). This definition was adapted by Segal et al. (2002) in developing MBCT. In this sense, mindfulness is viewed as a state rather than a trait, and while it might be promoted by certain practices or activities (e.g., meditation and yoga); it is not equivalent to or synonymous with them.

Bishop and co-workers (2004) partly reflect Kabat-Zinn's definition in their two-component model of mindfulness, which includes *self-regulation of attention* and a particular orientation toward one's experiences in the present moment involving an *attitude* of non-judgement, curiosity, openness, and acceptance. These two components are seen in the instructions that are common to most mindfulness exercises, and mindfulness is defined as an active process – a skill that can be developed with practice.

Brown and Ryan (2004) criticize the two-component model proposed by Bishop and colleagues by pointing out that both attention and awareness are features of consciousness. They stress the importance of differentiating attention, which is focused awareness, from awareness itself, which is "the ground upon which perceived phenomena are expressed" (p. 243). Attention can thus be focused on a particular aspect of awareness, such as the thought process, while awareness itself is much broader.

The Intention-Attention-Attitude model

To elucidate potential mechanisms to explain how mindfulness affects positive change, Shapiro et al. (2006) developed a three-component model of mindfulness: the Intention-Attention-Attitude model (IAA) based on Kabat-Zinn's definition of mindfulness. Shapiro and co-workers (2006) viewed the

skills of mindfulness as a process involving three interactive qualities called axioms or elements: intention, attention; and attitude. These elements are the building blocks from which other changes emerge. Axiom 1, intention, is the motivational aspect of practising mindfulness. Axiom 2, attention, is the core of mindfulness and entails "observing the operations of one's moment-to-moment, internal and external experience" (Shapiro et al., 2006, p. 376). Axiom 3, attitude, points toward the quality of the awareness (i.e., how we attend to what we observe). The practitioner should learn to bring the attitudes of acceptance, compassion, openness, and non-striving to the practice. Intentionally attending to the moment with openness and non-judgement leads to a significant shift in perspective, labelled "reperceiving". Reperceiving is posited as a meta-mechanism of action that leads to change and positive outcomes such as self-regulation; values clarification; cognitive, emotional, and behavioural flexibility; and exposure (the ability to experience strong emotions with greater objectivity and less reactivity). However, Shapiro and coworkers (2006) state that "[i]ntention, attention and attitude are not separate processes or stages – they are interwoven aspects of a single cyclic process and occur simultaneously" (p. 375). Shapiro has also noted its likeness to psychological models of decentring (Safran, 1990) and detachment (Bohart, 1983).

What empirical support is there for the IAA-model? Carmody, Baer, Lykins, and Olendzki (2009) studied the proposed mindfulness mechanisms by examining the relation between changes in self-reported mindfulness (reperceiving) as measured by the Experiences Questionnaire (EQ; Fresco et al., 2007) designed to assess decentring, and the four additional mechanisms (self-regulation; values clarification; cognitive, emotional and behavioural flexibility; and exposure) in MBSR-participants. In line with the predictions, significant increases in mindfulness, reperceiving, and the four potential mechanisms were found after the intervention, whereas psychological symptoms and stress were, as expected, significantly reduced. However, mediation analyses did not support a sequential model in which increases in mindfulness would lead to enhanced reperceiving. Hence, reperceiving did not mediate the relations between mindfulness and self-regulation; values clarification; cognitive, emotional, and behavioural flexibility; or exposure. On the other hand, values clarification and cognitive, emotional, and behavioural flexibility partly mediated the relation between a composite mindfulness/reperceiving variable and reductions in psychological symptoms. Carmody and co-workers (2009) hypothesized that the results could be due to the fact that mindfulness and reperceiving, as measured by the FFMQ and the EQ respectively, are exceedingly overlapping constructs (Carmody et al., 2009) since the measures were highly correlated.

As a clinician it is important to know whether the interventions you give patients target the aspect that you want to help them with. Gu, Strauss, Bond, and Cavanaugh (2015) presented a meta-analysis of mediation studies of MBIs (MBCT and MBSR). They found strong consistent evidence that MBIs mediate cognitive and emotional reactivity, moderate and consistent evidence for mindfulness, rumination, and worry, and preliminary results for self-compassion and psychological flexibility. These findings are largely consistent with the theoretical underpinnings of MBCT (Segal et al., 2002) regarding the mechanism of rumination and the postulation that participation in MBCT may decrease depressive recurrence through increasing insight into, and disengagement from, recurrent maladaptive thinking about one's depressive symptoms (Segal et al., 2002). These results from Gu and co-workers are well in line with the model presented by Shapiro et al. (2006) that highlights emotional, cognitive, and behavioural flexibility as a contributing mechanism to beneficial outcomes of MBIs.

In sum, mindfulness appears to be both a trait (predisposition to be mindful in daily life) and a state practised during meditation. An important question that remains to be explored is whether mindfulness is a single, multidimensional skill, or a combination of separate skills.

Mindfulness and attention

Attention is a central aspect of mindfulness, and even if it might seem, as William James stated in 1890, that everyone knows that attention is "the taking possession by the mind, in clear and vivid form, of one out of what seem several simultaneously possible objects or trains of thought. Focalization, concentration of consciousness is of its essence" (p. 403), attention is complex to define. Brown and Ryan (2003) define attention as a "process of focusing conscious awareness, providing heightened sensitivity to a limited range of experience" (p. 822). Awareness, according to Brown and Ryan (2003), is "the background 'radar' of consciousness, continually monitoring the inner and outer environment" (p. 822). Mindfulness can, in this sense, be considered to be enhanced attention to, and awareness of, current experience. Brown and Ryan (2003) further propose that a core characteristic of mindfulness is "... open or receptive awareness and attention" (p. 822). As previously described, attention is widely regarded as an essential feature in mindfulness conceptualizations (Bishop et al., 2004; Brown & Ryan, 2003; Shapiro et al., 2006) and mindfulness meditation is often described as a practice of attentional control (e.g. Claxton, 1987; Lutz, Slagter, Dunne, & Davidson, 2008, Thera, 1996; Thera, 1972).

"Sustained attention" refers to an ability to maintain awareness of a specific object, thought, or feeling over prolonged periods of time. This is a common aspect of concentration/focused meditation. "Switching attention" involves flexibility, the ability to shift focus from one object to another, for example to bring attention back to the breath once a thought, feeling, or bodily sensation has been acknowledged. "Non-elaborative attention" involves the direct experience of thoughts, feelings, and sensations, rather than ruminative elaborative thought streams about one's experience, origins, or predictions about the future (Bishop et al., 2004). In this context, mindfulness can be considered a metacognitive skill (involving cognition about one's cognition).

Attention and meditation practice

The assumed relation between mindfulness and attention has gained strong support in the neuropsychological line of research. Several studies investigating meditation and cognition have shown superior performance in attention-related brain activation and processing, as well as changes in brain structure in experienced meditators than in controls (Brefczynski-Lewis, Lutz, Schaefer, Levinson & Davidson, 2007; Carter et al., 2005; Pagnoni & Cekic, 2007; Pagnoni, Cekic, & Guo, 2008) For example; in a study by Lutz and Greischar (2004) highly experienced Tibetan Buddhist meditators showed higher baseline resting EEG coherence, which further increased during meditation, and stayed higher after meditation than at the initial baseline level. Lazar et al. (2005) found that brain regions associated with attention are thicker in long-term meditators than in controls. Slagter et al. (2007) found that Vipassana meditators performed significantly better on an attentional blink task after a three-month retreat than non-meditators. Valentine and Sweet (1999) showed evidence supporting an association between superior performance on sustained attention tests and mindfulness meditation. Meditators performed significantly better than non-meditators on a sustained attention task, and long-term meditators performed better than short-term meditators, which indicates a positive correlation between length of meditation experience and the ability to sustain attention. In another study Jha, Krompinger, and Baime (2007) compared experienced meditators taking part in a mindfulness retreat with an MBSR group and a control group. After the intervention, the mindfulness retreat group improved significantly in sustained attention.

When studying the effects of mindfulness there are at least three different styles that are commonly studied: focused attention (FA), open monitoring (OM), and compassion or loving-kindness meditations (Brewer et al., 2011; Cahn & Polich, 2006; Fox et al., 2016; Lutz et al., 2008; Vago & Silbersweig, 2012). FA meditation involves voluntarily focusing the attention on a

chosen object (i.e., sustained attention). OM entails non-reactive monitoring of one's experience moment-to-moment (i.e., both switching attention and non-elaborative attention). Loving-kindness meditation aims to deepen feelings of sympathetic joy for all living beings, including the practitioner, as well as to promote altruistic behaviours (Gyatso & Jinpa, 1995; Harvey, 1990; Lutz et al., 2008; Salzberg, 1995). Compassion meditation generally takes this practice a step further: practitioners imagine the physical and/or psychological suffering of others and cultivate compassionate attitudes and responses to this suffering. Both practices share the long-term goals of enhancing a person's ability to empathize with others in pain (Gyatso & Jinpa, 1995; Lutz et al., 2008). These meditations are implicated in secular interventions that draw from Buddhist meditation traditions, such as MBSR and MBCT. Fox et al. (2016) found in a recent meta-analysis of 78 neuroimaging investigations reliably distinct patterns of brain activation and deactivation in at least three common styles of meditation (FA, OM, and compassion/loving), and those patterns were congruent with the psychological and behavioural aim of each practice.

An interesting question is whether there are different outcomes depending on type of meditation and experience in meditation, and a few studies have examined this. Manna et al. (2010) had experienced meditators and novices alternate between FA and OM meditation while undergoing magnetic resonance imaging. They found significant differences in between the patterns of brain activity of monks and novices and different parts of the brain were activated depending on what meditation form they were practising. Ainsworth et al. (2015) compared the effects of FA meditation, OM meditation, and relaxation in a non-clinical population who had inhaled 7.5% carbon dioxide, which increases anxiety and autonomic arousal. OM and FA practice reduced participants' feelings of anxiety during inhalation more than relaxation. OM meditation produced a strong anxiety-reducing effect, whereas the effect of FA was more modest. The findings are consistent with neuropsychological models (e.g., Hölzel; Lazar et al., 2011) that posit that mindfulness meditation activates prefrontal mechanisms than support emotion regulation during periods of anxiety and physiological hyper-arousal.

Although, the notion that mindfulness meditation improves attentional abilities is well recognized (e.g. Bishop et al., 2004; Shapiro et al., 2006), a few studies that have explored the effect of MBIs on objective measures of attention regulation have found contradictory results (Josefsson & Broberg, 2010; Tang et al., 2007; Zylowska et al., 2008).

Research on sustained attention and its relation to mindfulness has shown mixed results, but in general the studies thus far indicate no clear associations. It should be noted, though, that research design, methodological quality, and measures of attention vary greatly extent among trials, making it difficult to draw clear conclusions. However, because all existing definitions of "mindfulness" place observing (i.e., paying attention to) one's experiences at its very heart (Bishop et. al, 2004; Brown & Ryan, 2003; Germer; 2005; Kabat-Zinn, 1995; Shapiro, Carlson, Astin & Fredman, 2006) and attention is included in all mindfulness questionnaires, there is need for further research on attention and its relation to mindfulness.

Assessing mindfulness

Mindfulness is a deceptively simple-seeming concept that is difficult to characterize. However, to measure inter- and intra-individual differences in mindfulness, a number of research groups have developed instruments in the form of self-assessment questionnaires. These include the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003), the Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004), the Freiburg Mindfulness Inventory (FMI; Buchheld, Grossman, & Walach, 2001), the Toronto Mindfulness Scale (TMS; Lau et al., 2006), the Cognitive and Affective Mindfulness Scale, revised (CAMS-R; Feldman et al., 2007), the Southampton Mindfulness Questionnaire (SMQ; Chadwick et al., 2008), the Philadelphia Mindfulness Scale (PHLMS; Cardaciotto et al., 2008), the Mindfulness/Mindlessness Scale (MMS; Haigh et al., 2011), and the Experiences Questionnaire (EQ; Fresco et.al. 2007). See Table 1 for psychometric characteristics of instruments followed by more detailed information.

The MAAS is a 15-item instrument measuring attention to and awareness of present-moment experiences in daily life (Brown & Ryan, 2003). It assesses indirectly experienced mindfulness and has a unidimensional factor structure. The internal consistency (α) is 0.82 and the test-retest reliability is 0.81.

The KIMS is a 39-item questionnaire developed by Baer et al. (2004), influenced by Linehan's (1994) DBT model and emotional regulation. The KIMS measure everyday mindfulness. It is designed for general and clinical populations regardless of prior meditation experience, and aims to measure several components of mindfulness using four facets: Observing, Accepting without Judgement, Describing, and Acting with Awareness. Internal consistency is adequate to good, ranging from $\alpha = 0.83–0.91$ and it has shown good construct validity (Baer et al., 2004).

Table 1. Psychometric characteristics of instruments

Instrument	Area of utility	Dimensions/ Subscales (items)	Construct Validity	Reliability
Mindful Attention Awareness Scale (MAAS)	Measure attention and awareness of present-moment experience	One dimensional(15)	Supported	α = 0.82
Kentucky Inventory of Mindfulness Skills (KIMS)	Everyday mind-fulness	Observe(12) Describe(8) Act with aware-ness(10) Accept without judgement (9)	Supported	α = 0.83–0.91
Freiburg Mindfulness Inventory (FMI)	Designed for experienced medi-tators	Present-moment(12) Non-judgemental(7) Openness to negative states of mind(7) Process-oriented understanding (4)	Supported in a sample with medita-tion experi-ence	α = 0.93
Toronto Mindfulness Scale (TMS)	Measure mindful state during medi-tation exercise	Curiosity(6) Decentring(7)	Supported	α = 0.86–0.87
Southampton Mindfulness Questionnaire (SMQ)	Measure outcome of MBIs on psy-chotic patients	One dimension(16)	Moderately supported	α = 0.85
Cognitive and Affective Mindfulness Scale (CAMS-R)	Brief self-report measure of mind-fulness - attitudes and approaches toward emotions and thoughts	Attention(3) Present-focus(3) Awareness (3) Acceptance/ Non-judgemental(3)	Supported	α = 0.77
Philadelphia Mindfulness Scale (PHLMS)	Present-moment awareness and acceptance	Awareness(10) Acceptance(10)	Mixed re-sults	α = 0.75–0.82
Mindful-ness/Mindless ness Scale (MMS)	Assess mindful-ness from a cogni-tive-information processing framework as active awareness of and engage-ment with the environment	Novelty Seeking(6) Novelty Producing(6) Engagement(5) Flexibility(4)	Four-factor solution is not support-ed	α =0.45–0.77
Experiences Questionnaire (EQ)	Measuring decen-tring	One dimension (11)	Supported	α = 0.83–0.90

The FMI is a 30-item instrument assessing non-judgemental present-moment observation and openness to negative experiences (Buchheld, Grossman, & Walach, 2001). It is designed for use with experienced meditators but can also be used in subjects with no previous meditation experience. The internal consistency (α) is 0.93, and has shown good construct validity for individuals with meditation experience (Buchheld, Grossman, & Walach, 2001; Walach et al., 2006).

The TMS is a 13-item measure of attainment of a mindful state during a preceding meditation exercise (Lau et al., 2006). It is designed to be administered immediately after a meditation session, which limits the settings in which it can be applied. The TMS has two factors, Curiosity and Decentring. Internal consistency for the scales was found to be 0.86 and 0.87 and it has shown good construct validity (Lau et al., 2006).

The SMQ is a 16-item measure of mindful awareness of distressing thoughts and images (Chadwick et al., 2008). It was developed to assess outcome in mindfulness for psychotic patients. The SMQ is conceptualized in terms of four related constructs. The factor analysis, however, indicated a single factor structure. The SMQ has shown good internal consistency ($\alpha = 0.85$) and significant positive correlations with other mindfulness measures (e.g. the MAAS) and distinguishes between meditators, non-meditators and people with psychosis (Chadwick et al., 2008).

The CAMS-R has twelve items and was developed as a brief self-report measure of mindfulness (Feldman et al., 2007). Items were written to express attitudes and approaches toward internal experiences of emotions and thoughts. The CAMS-R demonstrates acceptable internal consistency ($\alpha = 0.77$) and validity with coexisting measures of mindfulness, distress, psychological well-being and emotion regulation.

The PHLMS was developed as a bidimensional measure of mindfulness to assess two key components: present-moment awareness and acceptance (Cardaciotto et al., 2008). Internal consistency was acceptable for the Awareness subscale ($\alpha = 0.75$) and good for the Acceptance subscale ($\alpha = 0.82$). The PHLMS Awareness subscale correlated significantly with awareness/attention and reflection. The PHLMS Acceptance subscale was significantly correlated in a positive direction with acceptance, and in a negative direction with thought suppression and rumination (Cardaciotto et al., 2008).

The MMS was designed to assess mindfulness from a cognitive-information processing framework as active awareness of and engagement with the envi-

ronment (Haigh et al., 2011). Its Western cognitive derivation distinguishes the MMS from the other measures presented above. The MMS is composed of four subscales: Novelty Seeking, Engagement, Novelty Producing, and Flexibility. Evidence of internal consistency was positive for the MMS as a single scale with Cronbach alphas ranging from 0.81 to 0.86.

The EQ was designed to measure decentring, a construct described as the ability to adopt a wider perspective where one's thoughts are viewed as separate from oneself, and not necessarily an objective reflection of reality (Fresco et al., 2007). The EQ had evidence of internal consistency (Cronbach alphas ranging from 0.83 to 0.90), and construct validity has been supported (Park, Reilly-Spong & Gross, 2013).

The instruments have been developed to assess mindfulness in different populations and for different purposes. Most of the instruments use a one- or two-dimensional mindfulness construct and focus on awareness and attention as the key components; these include FMI (Buchheld et al., 2001), MAAS (Brown & Ryan, 2003), TMS (Lau et al., 2006), and PHLMS (Cardaciotto et al., 2008). Some instruments emphasize a multidimensional construct including acting with awareness, acceptance, ability, and attitudes toward internal experiences, in addition to awareness/attention. These include KIMS (Baer et al., 2004), SMQ (Chadwick et al., 2008), and CAMS-R (Feldman et al., 2007). Park, Reilly-Spong and Gross (2013), concluded in their meta-analysis that the MAAS, KIMS, CAMS-R, FFMQ, TMS, EQ, and PHLMS are preferred on psychometric grounds over the other instruments, but that all the instruments have psychometrics flaws that need to be considered in clinical settings.

To conclude, even if the majority of the instruments described above have been validated, serious criticism of the psychometric development of these self-report questionnaires have been raised (Grossman, 2008). First, as seen above, researchers have emphasized several different characteristics of mindfulness in their operationalizations. For instance, in the MAAS, "mindfulness" is defined as "enhanced attention to and awareness of current experience or present reality" (Brown & Ryan, 2003, p. 822). In the PHLMS, "mindfulness" is "the tendency to be highly aware of one's internal and external experiences in the context of an accepting, non-judgemental stance toward those experiences" (Cardaciotto et al., 2008, p. 205), and in the TMS, it is viewed as "a mode, or state-like quality, that is maintained only when attention to experience is intentionally cultivated with an open, non-judgemental orientation to experience" (Lau et al., 2006, p. 1447). In addition, although the majority of the measures include the aspect of attention (or

awareness), they differ somewhat in how much weight they give it. Also, there is great variety in the numbers of subscales, ranging from only one (MAAS) to four subscales (KIMS). Moreover, several of the instruments have no items to measure compassion, acceptance, intention, or attitude, although these aspects are included in most existing definitions of mindfulness (Kabat-Zinn 1995; Shapiro et al., 2006; Grossman, 2008). These are just some examples of the diversity that these questionnaires show, which is puzzling since they all aim (and claim) to assess the same construct of mindfulness.

Another critique that has gained some empirical support came from cross-cultural studies that indicate weak cultural validity, at least for some mindfulness self-report measures. American college students, for example, scored higher than Buddhist Thai monks on three of the four subscales of the KIMS: Observing, Describing, and Accepting (Baer et al., 2004). However, in another study, Thai monks scored higher than American students on the MAAS (Christopher, Christopher, & Charoensuk. 2009). In another study using the MAAS, there were, unexpectedly, no mean differences between American and Thai college students (Christopher, Charoensuk, Brennan, Neary, & Pearce, 2009). Thus, the results from these validation studies suggest that there are, as of yet unexplained, cultural differences between Eastern and Western countries with regard to measures of mindfulness. This also brings to the fore the question of whether, and in what way, Western operationalizations of mindfulness are compatible with the Buddhist understanding of mindfulness.

Five Facet Mindfulness Questionnaire

To explore existing self-measurements of mindfulness, Baer et al. (2006) factor-analysed a combined pool of items from the MAAS, KIMS, FMI, CAMS, and SMQ: a total of 112 items, N = 613 undergraduate psychology students, mean age 20.5 (range = 18–57) years, 70% female. The analysis revealed a five-factor solution. Four of the five factors corresponded to the four KIMS-factors. In addition, a new facet emerged from items on the FMI and SMQ, describing non-reactivity to inner experience, which led to the construction of the 39-item FFMQ. Observing ("Observe") refers to noticing, or attending to, internal and external experiences; Describing ("Describe") refers to labelling internal experiences with words; Acting with Awareness ("Actaware") includes attending to one's activities and experience in the moment, in contrast to behaving automatically while attention is focused elsewhere; and Non-judging of inner experience ("Nonjudge") refers to taking a non-evaluative stance toward thoughts and feelings. Finally, Non-reactivity to inner experience ("Nonreact") refers to the tendency to allow

thoughts and feelings to come and go, without getting caught up in or carried away by them. Baer and co-workers (2006) showed that whereas Describe had a strong positive association with emotional intelligence, Actaware showed strong negative associations with dissociation and absent-mindedness. Nonjudge was strongly negatively associated with thought suppression and neuroticism, and Nonreact was strongly positively associated with self-compassion. Observe, however, showed positive correlations with the psychological symptoms of dissociation, absent-mindedness, and thought suppression.

One objection that can be raised to the original development of the FFMQ is that it relied entirely on a student sample. Another is that the number of participants was somewhat low in relation to the number of items. But although the FFMQ has some psychometrical weaknesses, it is still the mindfulness questionnaire that incorporates most of the mindfulness skills that have been defined within Western research and at the same time has shown good psychometric results (Baer et. al. 2006).

All existing definitions of mindfulness refer to the activity of observing (paying attention to) one's external and internal experiences as part of the very core of mindfulness. Yet in Baer and co-workers' (2006) study, the Observe facet failed to fit in as a component of the overall mindfulness construct. The results from Baer and co-workers also showed that four of the facets (all but Observe) were consistently related in expected ways to a variety of other variables. In a second study by Baer and co-workers (2008), data were collected from experienced meditators, and a confirmatory factor analysis (CFA) was performed. The result confirmed a hierarchal five-factor model among individuals with meditation experience. Furthermore, the positive relationship between Observe and symptoms of well-being varied with meditation experience. This means Observe was significant only in the meditating sample, suggesting that the tendency to notice internal and external stimuli is strongly related to well-being in meditators but not in others.

Psychometrics properties of the Five Facet Mindfulness Questionnaire. Previous reports (Baer et al., 2006, Baer et al., 2008) have found evidence of validity in positive correlations between all FFMQ subscales and total score with a measure of psychological well-being. Important evidence for the validity of the FFMQ has also been found in the measure's responsiveness to various forms of mindfulness training and changes in mindfulness in response to clinical outcomes in meta-analyses of MBIs (Khoury et al., 2013) and convergent validity (Goldberg, et al., 2015). In addition, both the amount and quality of mindfulness practice have been associated with changes in the

FFMQ (Goldberg, et al., 2014). The FFMQ received the highest possible rating for two properties, internal consistency and construct validation, in a systematic review of instrument measuring mindfulness (Park, Reilly-Spong, & Gross, 2013).

To conclude, there is a need to further investigate the FFMQ and its facet structure. Baer and co-workers' (2006) study should be replicated in other cultures and languages and in samples with a broad variety of meditation experience. Additional research within this field may also enable MBIs to be evaluated in clinical samples in non-English-speaking countries. Given the clear inconsistency between commonly used definitions of "mindfulness" and the results on the Observe facet in a non-meditating sample, there is a need for further research in this area.

Person-oriented approach

Since current research paradigms rely almost entirely on variable-based analyses, a person-oriented approach could be an alternative method for studying mindfulness. The description of variables over individuals can be difficult to translate into properties characterizing individuals (Bergman & Magnusson, 1997). Since much of Western research on mindfulness deals with the possible health-related effects of mindfulness training, the basic unit of interest is the individual patient rather than one or more variables. Therefore, from a clinical perspective, a person-oriented analysis can be more fruitful, since it enables researchers to ask new questions and to look at the concept of mindfulness from a different angle. In a person-oriented approach, linear associations can be misleading because a certain value on a specific variable may have very different meaning depending on the pattern, or "Gestalt", that it is part of (Bergman & Magnusson, 1997). Other methods (e.g. cluster analysis, configuration analysis, latent class analysis) are advocated as a complement to variable-focused methods. In research with the FFMQ, for example, high scores on Observe may have very different meanings depending on the respondents' scores on the other FFMQ scales; whereas one person may have high scores on Observe in combination with high scores on Nonjudge as a result of long experience in the practice of mindfulness, another person may have equally high scores on Observe in combination with low scores on Nonjudge as part of the kind of self-critical, ruminative observation that is known to be characteristic of depressed individuals (Nolen-Hoeksema, 2000). By focusing on patterns or profiles of values on a set of variables, a person-oriented approach should be able to clearly differentiate between individuals who show different kinds of patterns.

There is an obvious problem within the field of mindfulness research. On the one hand, mindfulness is a holistic and intertwined phenomenon in which, according to the traditional form of Buddhist thinking, no parts can or should be separated out in order to manifest *sati*. On the other hand, there is the contemporary Western research paradigm, focusing on dismantling a global construct into its components in order to reliably measure it.

Clinical Applications of Mindfulness

Mindfulness, neuroscience, and psychological well-being

There is now a considerable body of research that has shown the effects of meditation training on brain function and structure (Hölzel et al., 2007; Hölzel et al., 2010, Hölzel, Carmody et al., 2011; Tang, Hölzel & Posner, 2015). Functional neuroimaging studies provide insights into neural processes associated with the practice of mindfulness. The studies clearly indicate that the practice of mindfulness changes brain function in areas including the medial cortex, default mode network (DMN), insula, hippocampal dimensions, amygdala, lateral frontal regions, and basal ganglia (Luders et al., 2013; Marchand, 2014). Evidence has suggested that meditation practice may help induce increased plasticity in the brain (Lutz & Greischar, 2004), and intensive meditation practice has been shown to be associated with structural changes in key areas implicated in the regulation of emotions (Fox et al., 2014; Hölzel et al., 2010, Lazar et al., 2005).

Research over the past two decades supports the claim that mindful meditation practice promotes reduction of stress and has beneficial effects on physical and mental health (Tang, Hölzel, & Posner, 2015). Though this indicates that mindfulness has considerable potential for reversing vulnerability on the neural level, there has been relatively little effort so far to explicitly relate neural mechanisms to the clinical application of mindfulness practice.

Few studies have examined sex differences in outcomes of meditation practice. In 2013 Luders et al. observed that hippocampal dimensions were more enlarged in meditators than in sex- and age-matched controls. Furthermore, Luders, Thomson, and Kurth (2015) examined the effects of biological sex on hippocampal anatomy in long-term meditators (on average, more than 20 years of experience, with a minimum of 5 years). Hippocampal dimensions were more enlarged in both male and female meditators than in sex- and age-matched controls. Their analyses revealed that meditation effects, although present in both sexes, differ between men and women in the, laterality, and location of the effects on the hippocampal surface. Can it be that mindfulness meditation affects men and women differently? Is it possible that men and

women process mental events during meditation differently? These are interesting questions that need further attention.

Mindfulness, mind wandering, and default mode network

So what does neuroscience show about the mechanisms of mindful emotional regulation? What information may it provide that is relevant for the understanding how best to prompt therapeutic learning and offer helpful interventions to increase the effectiveness of MBCT? Mindfulness practice can indeed increase patients' ability to decentre, and such increases are associated with reductions in risk for relapse (Bieling et al., 2012). Additionally, there is evidence that symptom reductions in treatment outcomes are mediated by decreases in rumination (Heeren & Philippot, 2011). However, despite some optimistic findings (Raes, Dewulf, Van Heeringen, & Williams, 2009), evidence for its effects on cognitive reactivity (e.g., depressive thinking patterns that are easily reactivated while patient in recovery) is presently weak.

Default mode network and depression

Recent research on the function and dynamics of the DMN (Barnhofer, et al., 2016) signals progress in our understanding of the neural correlates of maladaptive thinking patterns underlying vulnerability for depression. The DMN are proposed to consists of a set of brain regions, including the medial prefrontal cortex, posterior cingulate/ retrospinal cortex, and the left and right inferior parietal lobules (Buckner, Andrews-Hanna, & Schacter, 2008; Whitfield-Gabrieli, & Ford, 2012), and, less consistently identified, the medial temporal lobes and hippocampal formation (Buckner et al., 2008). DMN show increases in activity during passive, internally directed states and decreases in activity during externally directed task performance (Raichle et al., 2001; Shulman et al., 1997). DMN activity has been shown to be a characteristic correlate of mind wandering (Mason et al., 2007). A characteristic that is evocative of the nature of ruminative processes assumed to be at the core of cognitive vulnerability for relapse to depression. Although mind wandering per se may not be problematic (Schooler et al., 2014), it has been suggested that it can turn into maladaptive recurrent thinking if the content is negative and engagement in the process becomes rigid and prevailing (Teasdale et al., 1995). Consistent with this view, results from research in depressed patients have shown a number of alterations in both DMN connectivity and activation. In particular, there is evidence for increased connectivity between regions of the DMN and the anterior cingulate (Berman et al., 2011; Berman et al., 2014; Greicius, Krasnow, Reiss & Menon, 2003), a region that is hyperactive during the depressive state and plays an important role in regulating autonomic responses during feelings of sadness, fear, and stress (Mayberg, 1997; Phan, Wager, Taylor, & Liberzon, 2002).

For the depressed patient, reduced DMN activity is thought to allow the individual to experience the present moment with greater objectivity, reducing bias or judgement (Ives-Deliperietal, 2011). Simon and Engström (2015) have reviewed the research regarding DMN and therapeutic effects of meditation. Their meta-analysis examined the specific neurocorrelates of meditation and found support for a reduction in DMN activity as a primary outcome of mindfulness meditation practices. This is, of course, an interesting result for the effects of MBCT. Is this one of the main reasons why patients' self-perceptions change and become less fixated and ruminative?

The scope of the problem: Depression

Depression is a major public health problem worldwide (Baxter et al., 2014; Ferrari et al., 2013). With a lifetime prevalence of 16.6% (Kessler et al., 2005), it causes much distress and psychosocial disability (Judd, Akiskal, Zeller, et al., 2000; National Institute for Clinical Excellence [NICE], 2009). In 2004, depression accounted for 33% of, and was the most expensive, psychiatric disease in Europe (Kaplan & Laing, 2004) with a total annual estimated cost of €118 billion (Sobocki, Angst, Jönsson, & Rehnberg, 2006). According to the World Health Organization (WHO), MDD is now the leading cause of disease burden in middle- and high-income countries, and it is expected to be so worldwide by the year 2030 (2008).

Women are 1.7 times as likely as men to report a lifetime history of MDD, but they do not have a higher risk than men of either chronic or recurrent depression (Kessler, McGonagle, Swartz, Blazer &, Nelson, 1993; Kessler et al., 2005). The gender difference in depression is one of the most robust findings in psychiatric epidemiology. A comprehensive review of almost all general population studies in the United States of America, Puerto Rico, Canada, France, Iceland, Taiwan, Korea, Germany, and Hong Kong, reported that women predominated over men in lifetime prevalence rates of MDD (Piccinelli & Homen, 1997). Gender differences also exist in patterns of help-seeking for psychological disorders. Women are more likely to seek help for and to disclose mental health problems to their general practitioner, while men are more likely to seek specialist mental health care (Allen et al., 1998). This suggests that gender-based expectations about the proneness of women to emotional problems and the disinclination of men to disclose symptoms of depression reinforce help-seeking along stereotypical gender patterns.

The development of Mindfulness-Based Cognitive Therapy

Mindfulness training to prevent relapse to depression arose from a new interpretation of the cognitive processes involved in relapses (Teasdale, 1999a; Teasdale, 1999b; Teasdale, Segal, & Williams, 1995). Developed as a clinical intervention against recurrent MDD and an alternative to antidepressant medications (Segal, Williams & Teasdale, 2002). MBCT is an 8-week systematic group training in mindfulness meditation and CBT (Segal et al., 2002; Segal, Williams, & Teasdale, 2013, 2014). Originally envisioning a CBT maintenance programme, faced with the enormity of the problem of depression and the high costs of one-to-one psychotherapy, Segal et al. (2002) developed MBCT as group intervention.

Rational of Mindfulness-Based Cognitive Therapy

MBCT is based on the theoretical foundation that patients who have suffered several episodes of depression gradually become more vulnerable to relapse at times of low mood through the automatic activation of old habitual thought patterns. Negative repetitive thinking, (rumination) about the causes and consequences of one's negative mood (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008) reinforces the schemata that guide negative interpretations of events. It activates depressive body states that further increase the likelihood of depressive thinking, creating a mutually reinforcing process that is referred to as "depressive interlock" (Teasdale, 1999a; 1999b). Repeated engagement in this process prevents effective problem-solving and establishes a predisposition to engage in dysfunctional patterns of thinking, thus strengthening their associations with negative mood (Segal, Williams, Teasdale &, Gemar, 1996). Research has also shown that, in previously depressed patients, negative thinking patterns predominant during episodes of depression could be easily reactivated when patients were in recovery (Scher et al., 2005) The degree to which patients showed such cognitive reactivity predicted later relapse, highlighting the central role of these mechanisms in relapse to depression (Segal et al., 2006).

In MBCT, mindfulness practice is introduced as a way to help participants learn to identify and disengage from maladaptive responses to negative mood (Segal et al., 2002). The patients are trained to process thoughts and feeling mindfully and to process them experientially rather than conceptually. This allows individuals to see their negative thoughts and feelings as transient mental events. This metacognitive skill was proposed to change patients' relation to dysfunctional thoughts and to subvert the feedback loop of depressive interlock. The assumption is that if individuals can experience their difficulties with openness and acceptance, if they can be willing to tolerate and even turn toward their experience, they may gradually reshape their internal

schematic models. Rather than reverting to the automatic patterns of rumination and avoidance that guided maladaptive responses to negative mood, they should learn to replace dysfunctional responses with more adaptive ones and, thus, reverse their established cognitive vulnerabilities (Segal et al., 2002).

Mindfulness-Based Cognitive Therapy and relapse prevention

MBCT has been shown to reduce the relapse rate from 68%–78% to 30%–40% in MDD patients with three or more previous episodes (Godfrin & van Heeringen, 2010; Ma & Teasdale, 2004; Segal et al., 2010; Teasdale et al., 2000), for a relative risk reduction of 43% over orthodox treatment or placebo controls (Piet & Hougaard, 2011). MBCT has also proven to be more effective than maintenance medication in reducing residual symptoms and improving both physical and psychological QoL (Kuyken et al., 2008). Patients with a history of recurrent depression are generally recommended to continue antidepressant medication for at least 2 years (NICE, 2009). Although this has shown to be effective for some, many have unpleasant side effects and/or drop out of treatment, and many express a preference for psychosocial interventions (Cooper et al., 2007; Dwight-Johnson et al., 2000; Keller & Boland, 1998; NICE, 2009). It is therefore important to further investigate what components of MBCT reduce relapse and how research can contribute to increasing the effectiveness of MBCT.

Mindfulness-Based Cognitive Therapy and the body

Michalak, Burg and Heidenreich (2012) stressed the importance of the body and the interaction between physical, cognitive, and emotional processes in the recently emerging interdisciplinary research field of "embodiment". They argue that all meditation exercises in MBCT are based on the development of a heightened awareness of the body, that the body has an important role in emotional expression and process in depression and is therefore a potent mechanism of action in MBCT. Josefsson, Lindwall, and Broberg (2014) found no differences between an MBI group and relaxation group (active control group) in decentring, levels of anxiety, depression, and coping style, indicating that there is a need to further investigate bodily processes as active ingredients in MBCT for relapse prevention.

Mindfulness-Based Cognitive Therapy and preventative effects in subgroups

Recent studies have shown some ambiguous results concerning MBCT. There are two studies that, despite having achieved low rates of relapse, have failed to demonstrate significant advantages of MBCT over control interventions (Bondolfi et al., 2010; Meadows et al., 2014). Moreover, two large trials have reported significant preventative effects only in subgroups of patients

with recurrent depression: Segal et al. (2010) showed preventative effects only for patients with unstable remissions, and Williams et al. (2014) showed preventative effects only in patients with a history of childhood trauma. So, although MBCT has proven significant potential to reduce risk in individuals who are most vulnerable, they also have shown that there is variation in results. It seems important, therefore, to further refine our knowledge of how the intervention works in terms of both the vulnerabilities that need to be targeted and the mechanisms through which patients learn to deal with their vulnerabilities. One way to gain access to the mechanisms behind MBCT is to use qualitative research methods.

Patients' experience of Mindfulness-based interventions and treatment generalizability

Prior qualitative studies of participants' experiences of MBCT have focused mainly on therapeutic change and the development of mindfulness skills (Allen, Bromley, Kuyken, & Sonnenberg, 2009; Bihari & Mullan, 2012; Cebolla i Martí & Barrachina, 2009; Mason & Hargreaves, 2001). In 2011, Malpass and colleagues (2011) carried out a meta-ethnography of qualitative research on MBCT and MBSR published since 2001. They conceptualized the way in which participants changed by developing a new understanding of their illness over time and the role mindfulness had in helping them to manage their difficulties better. The final phase of change, "grounded flexibility" (p. 70), is marked by transformation in the experience of the illness and sense of self. Participants felt that they were better at taking action and more flexible in their responses; had a greater sense of control and self-regulation, and were more accepting of themselves and their challenging thoughts and sensations; they also had a sense of embodiment and command over the body that involved a new tolerance of physical difficulty and discomfort.

Qualitative methods can be used to elucidate psychological processes and highlight participants' experiences and evaluations of the programme, which in turn can provide important clinical information that may help MBCT therapists to support and guide participants through obstacles in class. Allen and colleagues (2009) described the psychological processes involved when participants evaluate and describe MBCT. Their results showed four themes: control, acceptance, relationships, and struggle. They also showed that attending an MBCT class can enhance people's self-compassion and interpersonal relationships.

In their long-term follow-up of MBCT participants, Munshi, Eisendrath, and Delucchi (2012) found that the average number of minutes spent on mindfulness practice did not correlate with depression outcome, but that MBCT's

effects might be more related to regularity of practice than to quantity. Langdon and colleagues (2011) interviewed 13 participants who had attended MBCT courses for an average of one year (range: 3.5 months to 4.5 years) before the study. They found that participants moved in and out of mindfulness practice over time, and that integration of mindfulness into lifestyle seems an important component of the continued practice cycle. They also found that cultivating mindfulness led to further intention to practise and to develop more advanced mindfulness skills.

Deepening the understanding of utility

None of the qualitative clinical studies cited above focused on MBCT as a long-term relapse-prevention programme, nor on its utility in everyday life. The focus of Study III was on the utility of MBCT in order to outline the relationships between mindfulness training, the most useful parts of MBCT for preventing relapse, and how participants transfer MBCT into everyday life. Most studies on the effect of mindfulness training have collected data through self-report questionnaires; as noted by Grossman (2008) "a number of intractable issues […] continue to go unconsidered in investigations associated with the psychometric assessment of self-reported mindfulness" (p. 405). Qualitative studies of participants in mindfulness-based treatment programmes therefore present an interesting research path toward obtaining new knowledge and deepening our understanding of the concept. Qualitative studies are particularly well-suited to studying unexplored phenomena and to improving our understanding of what is effective in treatment (Malterud, 2001). They can therefore be an important tool in developing a theoretical understanding of the psychological mechanisms at work in people who participate in MBCT and how these people use the class experience in their everyday lives to remain in remission.

Generalization of quantitative research

MBCT has become a strong scientific platform over the last 10 years and is recommended for treating MDD by the UK National Institute for Health and Care Excellence (NICE, 2009). In Sweden, treatment of MDD is usually managed in primary care, and maintenance antidepressants are still the main approach to preventing relapse. Because no data have been presented on how effects generalize when protocols are adjusted for clients in primary care and applied in a real world Scandinavian setting, MBCT is still not recommended by the National Board of Health and Welfare in Sweden. Translating efficacious practices and evidence-based programmes to real world settings is a major challenge (Weersing, 2005) and became the main focus of Study IV. A community setting may apply less rigid standards of diagnostic evaluation (e.g., basing intake on the clinical evaluation of self-referred patients). This

could lead to a more diverse population than in the original studies. Programmes may also be adapted to fit the unique demands and resources of particular settings. Weersing proposes the use of benchmarking methodology (the creation of a gold-standard outcome after defining the targeted problem, population, and treatment model). Using comparable methods, outcomes in applied settings can be compared with the benchmark outcome. Because the statistical measure of the treatment effect might not always correspond with the clinical significance of the treatment, we also used the person-centred approach of the Reliable Change Index (RCI) proposed by Jacobson and Truax (1991) in Study IV. To our knowledge no study has investigated outcome differences for MBCT between men and women. Because of their higher prevalence of MDD and patterns of help-seeking, we expected more women than men to attend the MBCT classes.

To investigate previous findings of the FFMQ outside the United States, the questionnaire needs to be evaluated in the specific culture where it is to be used. Good psychometric characteristics in one culture do not automatically translate to another (Erkut, 2010). Although two other instruments for measuring mindfulness have been translated into Swedish (Hansen, Lundh, Homman, & Wångby-Lundh, 2009) –the MAAS (Brown & Ryan, 2003) and the KIMS (Baer et al., 2004) – the broad approach and comprehensive aims of the FFMQ make it especially interesting to test in a Swedish setting. For this reason, a group of researchers from the universities of Lund and Gothenburg and Karolinska Institute agreed to translate the FFMQ into Swedish and investigate its psychometric properties. Once a reliable Swedish self-report instrument of mindfulness was constructed, we wanted to use it in a clinical setting. MBCT is recommended for treating MDD by the UK National Institute for Health and Care Excellence (NICE, 2009). In Sweden, treatment of MDD is usually managed in primary care, and no data have been presented on how effects generalize when protocols are adjusted and applied in a real world Scandinavian setting, which became an additional research project. To further increase the understanding of how MBCT works as relapse intervention a qualitative research study was added to the initial clinical study.

AIMS

General aim

The general aim of this thesis is to examine clinical applications of mindfulness by analysing the usefulness and effectiveness of MBCT in Swedish primary health care and to examine the mindfulness construct as measured by the FFMQ.

The overall aim of Studies I and II was to examine the mindfulness construct, assessed by the FFMQ, using two different methodological approaches: one variable-based and one person-oriented. The first aim was to develop a Swedish version of the original FFMQ, to test the psychometric characteristics of the Swedish translation, and to relate the empirical findings theoretically to both Western and Buddhist definitions of "mindfulness".

The overall aim in Studies III and IV was to investigate the usefulness and effectiveness of MBCT in primary health care, using two different methodological approaches: one qualitative and one quantitative. The second aim was to explore how patients with recurrent depression perceived the usefulness of an MBCT programme for preventing relapse of depression and to examine the treatment effectiveness, outcomes, and generalization of MBCT in Swedish primary care, and to compare the outcomes to a benchmark.

To achieve the first aim two studies were performed with the following purposes and research questions:

Study I

Since the FFMQ has a broad approach and has shown good reliability and validity, the purposes of the first study were to (1) translate the FFMQ items and develop and assess a Swedish version of the FFMQ; (2) compare the Swedish version psychometrically with the original version by Baer et al. (2006) to establish whether their FFMQ findings are replicable for reliability and factor structure in another culture; and (3) examine the overall mindfulness construct, assessed with the FFMQ, with a variable-based model, using a confirmatory factor analysis (Pett, Lackey, & Sullivan, 2003).

Study II

The purpose of the second study was to examine the mindfulness construct, as assessed with the FFMQ, using a person-oriented approach, namely hier-

archal cluster analysis. The aim was to shed more light on the paradoxical findings regarding the Observe facet, which are that the CFA supported all identified factors except Observe (Baer et al., 2006). More specifically, the purposes of Study II were to (1) identify different FFMQ profiles and (2) compare meditators and non-meditators on how frequently they showed these different profiles.

To achieve the second aim two studies were performed with the following purposes and research questions:

Study III

The study aimed to explore how patients with recurrent depression perceived the usefulness of an MBCT programme for preventing relapse of depression. The general research question was "After 14 months' participation in MBCT classes, how do patients describe their treatment in terms of functions to prevent relapse into depression and does it affect patients' ability to cope with everyday life?"

Study IV

This study aimed to examine treatment effectiveness and outcomes of MBCT in primary care patients and to compare the outcomes to a benchmark. The benchmarking method was applied as an analytic strategy to test the hypothesis of the generalizability of effects found in the efficacy study to effects obtained in the current study. We wanted to investigate whether MBCT is effective as a preventive treatment in primary care, whether it affects perceived QoL, and whether there were gender differences in outcomes, and to see how many participants displayed a statistically reliable change and in what direction. To control for in-therapy effects we also investigated whether and in what way therapeutic alliance affected outcome.

PROCEDURES & METHODS

Participants

Study I

The total number of participants was 495 (296 women); 73 were < 21 years, 241 aged 21–30 years, 118 aged 31–50 years, and 61 > 50 years (2 did not state an age). Data were collected from a wide range of individuals, including Swedish university students, health care practitioners, teachers at a Swedish university, and the general population. The sample also included 22 mindfulness meditators recruited from different Buddhist meditation centres in Gothenburg (see Table 1 in Study 1). About 58% of the participants reported no meditation experience at all, while 25% reported "a little", 14% "a fair amount", and 4% "a lot of" experience. The participants from the meditation centres were combined with other participants who reported "a lot of" meditation experience into a subgroup of experienced meditators (N = 29).

Study II

The study group comprised several different samples recruited from four studies on mindfulness: (1) the sample used in Study I; (2) a yoga sample that included five different yoga centres (Classic Yoga, Natha Yoga, Yoga Kendra, Bikram Yoga, and Manfrinato Yoga) in Malmö, Sweden, with a total 153 individuals; (3) 85 individuals from a *Vipassana* centre in Stockholm (Falkenström, 2009); and (4) participants recruited as part of a study comparing experienced meditators (N = 47) with non-meditators (N = 45) on tasks of sustained and executive attention (Josefsson & Broberg, 2010). There were complete FFMQ data available for 817 participants, 317 of whom responded that they had no experience of meditation (non-meditation group), and 325 who responded that they had at least 1 year's experience of meditation, or that they had "a fair amount" or "extensive" experience of meditation (meditation group). The remaining participants, who reported "little" experience of meditation, were excluded when comparisons between meditators and non-meditators were performed. There were significantly more women than men among the meditators (227 vs. 97) than among the non-meditators (173 vs. 142), $\chi 2(1) = 15.6$, $p < 0.001$.

Studies III and IV

Participants were recruited at two primary health clinics in the western region of Sweden. In Study III data from three MBCT classes were used and in Study IV data from three additional classes were added. In Study III there

were initially 38 participants; 6 patients dropped out of class, 4 because their work schedule was not compatible with the class schedule and 2 because of private matters. The 22 who attended a minimum of six classes of the MBCT programme were invited to participate in the interviews. One interview was excluded because the quality of the audiotape was poor, leaving 19 participants (17 women and 2 men) aged 30 to 68 years (M = 49) with complete qualitative data.

In Study IV there were 45 patients (36 women and 9 men) with a mean age of 49 years (SD = 1.01, range = 25 to 70, age distribution: 25–30 years, n = 3; 31–40 years, n = 13; 41–50 years, n = 9; > 50 years, n = 20). Participants reported the following previous meditation experience: 22 (48.9%) "none at all"; 15 (33.3%) "a little"; 8 (17.8%) "some"; and 0 "a lot". The criteria for inclusion were (a) having had recurrent depression (three or more past episodes) and being in full or partial remission and (b) the ability to speak and read Swedish. Initially 57 patients who met the criteria were included in the study. Of these, 5 never started the MBCT class, 6 dropped out of class, and 1 received a cancer diagnosis during the 6-month follow-up period and dropped out, leaving 45 patients (79%). The data contained few missing answers (<10%) and were calculated using mean imputation. In the dataset 2 participants did not hand in their 6-month follow-up, 2 did not hand in their 14-month follow-up, and 2 did not hand in their Alliance inventory. Last values carried forward were used to calculate these results.

Procedure

Studies I and II

Three Swedish research groups (from the University of Lund, Karolinska Institute, and the University of Gothenburg) collaborated on the Swedish translation of the FFMQ. The original FFMQ (Baer et al., 2006), designed to measure mindfulness in daily life, and described in the Introduction, was used. This work proceeded in several steps. First, the FFMQ was translated into Swedish in collaboration between two of the authors of the study I (L-G.L. & C.S.). In the second step, the remaining authors of this paper scrutinized the Swedish formulations in detail, and came up with a number of alternative formulations that were discussed in terms of meaning and general comprehensibility, and compared with regard to their resulting back-translation, until consensus was reached. This resulted in the Swedish 39-item version of the FFMQ. The FFMQ uses a 1–5 Likert scale ranging from "Never or very rarely true" to "Very often or always true". The participants were also asked to report demographic information: age, gender, meditation

experience, and type of meditation experience. The Swedish 39-item version of FFMQ was used in Study I and Study II, since the 29-item version had not yet been developed at the time the data were collected. The studies were approved by The Regional Ethics Committee in Gothenburg (D.nr: 316-08).

Studies III and IV

Consent was obtained from the responsible head of each clinic to conduct the study in the way planned. Information about the study was then given to the general practitioner at the clinic, who consecutively referred patients with recurrent depression to the study. Potential participants were screened and interviewed following criteria outlined in the Primary Care Evaluation of Mental Disorders (Prime-MD; Spitzer et al., 1994) and the Diagnostic Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association [AMA], 2002). The patients who met the criteria for recurrent depression and were in full or partial remission were included. All participants signed an informed consent. The patients were instructed not to change their medication during a 14-month period without notifying their general practitioners. The studies were approved by The Regional Ethics Committee in Gothenburg (D.nr: 316-08).

In Study III interviews were conducted at the 14-month follow-up by three certified clinical psychologists. The interviews were semi-structured and the interview guide contained two major subject areas designed to elicit information about (a) the patients' perceptions of how the treatment had affected the way they handled their everyday lives and (b) their use of treatment components to prevent relapse into depression. The questions were open-ended to facilitate reflection, and probing questions were asked to elicit further exploration (Kvale & Brinkmann, 2009). Interviews lasted for 30 to 50 minutes and were recorded using a digital voice recorder. The interviews were transcribed verbatim.

In Study IV data collection took place in the following steps: (a) pre-assessment = T0, (b) pre-intervention assessment = T1, (c) post-intervention assessment = T2, (d) 6-month follow-up assessment = T3, and (e) 14-month = T4. Measurements were the Five Facet of Mindfulness – Swedish version (FFMQ_SWE; Baer et al., 2006; Lilja et al., 2011), Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983; Herrman, 1997; Lisspers, Nygren, Soederman, 1997), and Life Satisfaction Questionnaire (LSQ; Carlsson & Hamrin, 1996; Carlsson, Hamrin, and Lindqvist, 1999). To measure the patients' motivation for the treatment we administered the Nijmegen Motivation List2 (Keijsers, Schaap, Hoogduin, Hoogsteyns & de Kemp,

1999) at the pre-intervention assessment (T0). To measure Alliance, the Working Alliance Inventory (Horvath & Greenberg, 1989; Hatcher & Gillaspy, 2006) was administered to the patients at MBCT classes 3 and 7. Primary Care Evaluation of Mental Disorders (Prime-MD; Spitzer et al., 1994) and the Diagnostic Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association [AMA], 2002).was used at pre-assessment and at 14-month follow-up to diagnose the participants' mental health. Background data were collected on the participants' gender, age, working/sick leave status, prior experience of yoga or meditation, and prescribed medication.

Statistical and methodological analyses

Study I

Reliability and regression analysis

Cronbach's alpha was used as a measure of internal consistency. Internal consistency is considered to be "acceptable to good" at alpha 0.70–0.90 (Kline, 1999; Norman & Streiner, 1989). Fisher's r-to-x transformation was applied for significance testing of the difference between two correlation coefficients (VassarStats, 2009). Pearson correlation coefficient analysis and one-way analysis of variance with post hoc multiple-comparison tests were conducted for an analysis of overall associations between variables and differences between groups. A hierarchical regression analysis was done to test whether levels of mindfulness were predicted by gender, age, or meditation experience.

Confirmatory factor analysis

Initially, an exploratory factor analysis (EFA) was conducted to establish the underlying structure among the items, number of factors to retain, and cumulative percentage of the total variance. A CFA was then performed using AMOS version 18 (SPSS Inc., Chicago, IL, USA) to statistically test whether the Swedish data confirmed Baer and co-workers' (2006) model and thus to test the cross-cultural validity of the model. We used three different fit indices for these analyses: the comparative fit index (CFI), the root mean square error of approximation, (RMSEA) and a normed chi-square test for discrepancy between the model and the data (Kline, 2005). The modification index was used for potential improvement (Byrne, 2010).

Study II

Cluster analysis

Cluster analysis was used to group the participants on the basis of their different profiles of scores on the five FFMQ scales, according to the LICUR

procedure (Bergman, 1998). This was done in four steps. First, 14 multivariate outliers were identified by means of the residue procedure in the statistical package for pattern-oriented analyses, SLEIPNER 2.1 (Bergman & El-Khouri, 2002). Second, Ward's hierarchical clustering method was applied. Third, a data simulation was undertaken to verify that the explained total error sum of squares was higher than could be expected on a random dataset with the same general properties as the dataset used in the real analysis. Fourth, a non-hierarchical relocation procedure (Wishart, 1987) was carried out. The samples of meditators and non-meditators were then cross-tabulated with these clusters, and the observed frequency in each cell was compared with the frequency that should be expected by chance alone, using the EXACON test for significance (Bergman & El-Khouri, 1987).

Study III

Thematic analysis

Thematic analysis (Braun & Clarke, 2006) of the data set was used to identify, analyse, and report patterns in participants' descriptions of MBCT classes. Thematic analysis was chosen because it can be used with theoretical freedom and provides a valuable and flexible research tool. The method can provide general and detailed interpretation of data. Thematic analysis is not bound to a particular theory and can therefore be applied either inductively or deductively (Braun & Clarke, 2006). The data was analysed inductively ("bottom-up"), and thus the initial basic text was coded with no a priori theoretical grid and the analysis was carried out on a semantic level (Braun & Clarke, 2006). This decision was made with the aim of gaining information and research knowledge that matched the participants' own experience as closely as possible.

Analysis and interpretation

The thematic analysis was conducted in the six phases suggested by Braun and Clarke (2006). First, the researchers read all of the interviews to familiarize themselves with the depth and breadth of the content. Second, initial codes were generated by noting interesting features. Third, all codes were gathered into potential themes (repeated patterns). Fourth, a thematic map of the analysis was drawn to verify that the themes worked with the initial codes and across the entire data set. At this phase we had several potential themes such as "personal change", "mindfulness as coping", and "understanding of self/insight". Fifth, a final refinement of the thematic map was made and the themes were divided into two different groups: "Strategies for remission" and "Personal development". In the sixth phase, producing the report, we chose data that captured the essence of the participants' experience, analysed the

thematic map, and linked that data through our map to our research questions and points for discussion. The software Nvivo10 was used to facilitate the analysis.

Study IV

Baseline check and overall effects

To investigate the stability of the baseline, paired samples *t*-test (5%) was performed on assessments made 3 months before baseline (pre-assessment) and at baseline (pre-intervention). To investigate overall effects, two-way mixed Pillais' MANOVA was performed with Alliance, Gender, and Motivation as between-subject factors and time (T1, T2, T3, T4) as a within-subject factor. Responses on Alliance and Motivation scales were categorized as strong/weak or high/low. Dependent variables were Mindfulness, Depression, Anxiety, and QoL. Univariate F tests were used to investigate improvement over time, with post hoc testing between each assessment.

Benchmarking, comparison of treatment effects, and Reliable Change Index

The benchmarking method was applied as an analytic strategy to test the hypotheses of generalizability of effects found in the efficacy study to effects obtained in the Swedish study. Since MBCT targets patients with recurrent MDD the measure of efficacy has mainly been relapse/recurrence of depression in the follow-up assessment.

In addition to reporting effect sizes, we used a person-centred approach to assess the clinical significance of the RCI proposed by Jacobson and Truax (1991). RCI has been used in several studies and has been recommended by Bauer, Lambert, and Nielsen (2004) and Lambert & Ogles (2009). The RCI, developed by Jacobson and Truax, calculates whether the magnitude of change is statistically reliable. Specifically, it subtracts the post-test score from the pre-test score and divides the result by the standard error of the difference to ensure that the individual change is larger than could be attributed to chance or measurement error. A change is considered statistically reliable when the value is α level of 0.10, following the proposal of Burgess, Pirkis, and Coombs (2009). The RCI was made on the HADS. The maximum score on each subscale is 21, and 11 points is the cut-off level for a diagnosis of anxiety or depression (Zigmond & Snaith, 1983).

RESULTS

Developing the Swedish Five Facet Mindfulness Questionnaire

Content validity and internal consistency

Study I

Initially the respondents' comments were qualitatively analysed by focusing on missing answers and items that the respondents had commented on. Most of the comments and missing answers concerned four items in the Nonreact facet, which all had the formulation "distressing thoughts or images" (*känslomässigt upprörande tankar eller bilder* in Swedish). In order to analyse this result we reformulated the phrase to "when I have distressing thoughts or images" (*när jag har oroande tankar eller bilder som får mig att må dåligt/känna mig illa till mods* in Swedish) and asked an additional 47 individuals in the general population to rate which of the two formulations they found the most comprehensible. We rephrased three of the items so that they were closer to Swedish idiom.

We examined each facet separately for internal consistency. Cronbach's alpha for the facets was: Nonreact = 0.75, Observe = 0.75, Actaware = 0.89, Describe = 0.90, and Nonjudge = 0.89, with 0.86 for the Global Scale. The range for each facet's inter-item correlations was: Nonreact = 0.366–0.586, Observe = 0.389–0.618, Actaware = 0.528–0.622, Describe = 0.603–0.722, and Nonjudge = 0.568–0.751. Based on the qualitative results (e.g., comments about iterations and complicated wording) and the quantitative results (high internal consistency and inter-item correlations), we consulted R. A. Baer (10 June, 2008) and discussed the possibility of item reduction with her.

After this, 10 items were deleted (items 12–14, 21, 23, 30, and 34–37). This resulted in the FFMQ_SWE consisting of 29 items. Correlations between the two versions ranged from 0.96 to 0.99 for the different facets. The correlation between the two versions of the FFMQ Global Scale was 0.98. Internal consistency and intercorrelations of the FFMQ_SWE with 29 items were analysed. In Table 2, Cronbach's alpha coefficients for the study are presented next to those presented by Baer et al. (2006). The majority of the intercorrelations did not differ significantly from those of Baer et al. (2006).

Table 2. Cronbach's alpha coefficients in each study

	Baer et al. (2006)	Present study Swedish version N = 495
Facet	**39 items**	**29 items**
Nonreact Item: 4, 9, 19, (21), 24, 29, 33	0.75	0.75
Observe Item: 1, 6, 11, 15, 20, 26, 31, (36)	0.83	0.75
Actaware Item:5R, 8R, (13R), 18R, (23R), 28R, (34R), 38R	0.87	0.82
Describe Item: 2, 7, (12R), 16R, 22R, 27, 32, (37)	0.91	0.85
Nonjudge Item; 3R, 10R, (14R), 17R, 25R, (30R), (35R), 39R	0.87	0.82
Global Scale	0.87	0.81

Deleted items within brackets. Reversed items = R (Table 2 in Study I).

Gender, age, meditation experience, and mindfulness – the 29-item Swedish Five Facet Mindfulness Questionnaire

Gender differences were found in the Observe and Describe facets. Women rated themselves higher than men ($p < 0.01$). Significant age differences were found on all facets and on the Global Scale ($p < 0.01$). All FFMQ scores were related to meditation experience: the more meditation practised, the higher the FFMQ scores ($p < 0.01$). The general picture indicated that participants with no meditation experience differed from those with "a fair amount of" or "a lot of" experience. On the Global Scale the post hoc analysis indicated a linear trend regarding the relationship between self-reported mindfulness and meditation experience ($p < 0.05$).

A regression analysis, however, showed that meditation experience explained only an additional 2% to 3% of the variance in self-reported mindfulness once the effects of age and gender were controlled for. Age entered into model 1 predicted levels of mindfulness in all the five facets and on the Global Scale, while meditation experience entered into model 2 only predicted levels of mindfulness in three of the five facets (Nonreact, Observe, and Describe) and on the Global Scale.

Confirmatory factor analysis – Swedish Five Facet Mindfulness Questionnaire

Firstly, an EFA using principal axis factoring with five fixed factors was performed. Results showed that the five-factor solution accounted for 51% of

the total variance. Secondly, a hierarchical model of overall mindfulness with five first-order factors and 29 variables was executed. The model fit was only marginally adequate and the Observe facet showed no significant loading (standardized loadings: Describe = 0.36, Actaware = 0.74, Nonjudge = 0.69, Nonreact = 0.24, and Observe = 0.05). Thirdly, a hierarchical model of overall mindfulness from which we excluded the Observe facet to examine if we could get a sound model and a better model fit. This model indicated a reasonably good fit. The standardized loadings were: Describe = 0.35, Actaware = 0.74, Nonjudge = 0.70, and Nonreact = 0.24. After we had applied two correlated errors between one pair of items (original items 2 and 32), the model fit was somewhat better and the standardized loadings were: Describe = 0.40, Actaware = 0.74, Nonjudge = 0.70 and Nonreact = 0.23 (see Figure 1). To sum up, the results of the current Swedish study were fairly similar to those presented by Baer et al. (2006).

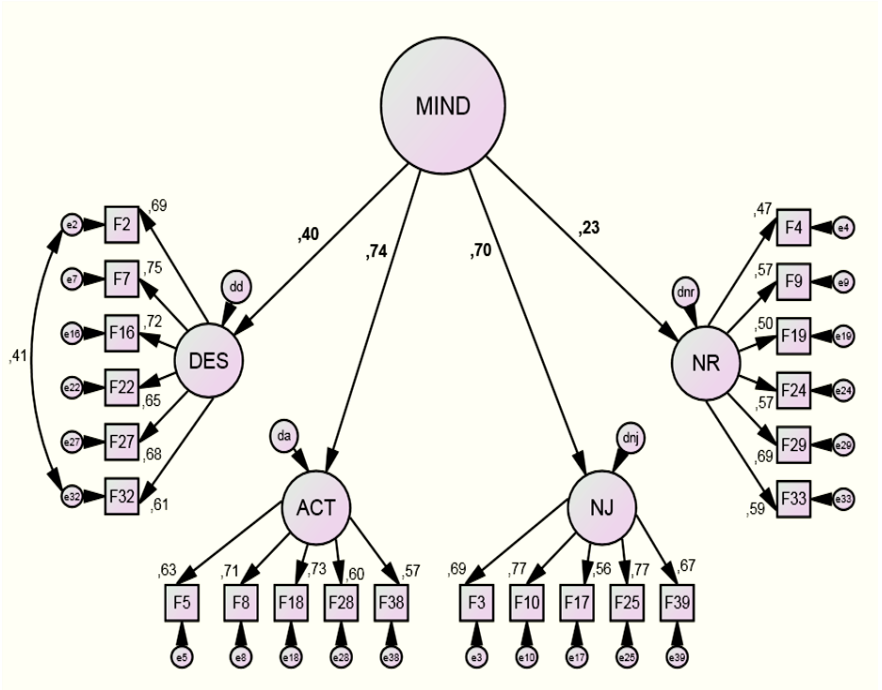


Figure 1. Final hierarchical model of mindfulness (standardized loadings) in a Swedish population with little meditation experience. All standardized loadings are significant, p <0.05. DES = Describing, ACT = Acting with Awareness, NJ = Nonjudging, NR = Non-reactivity, e = error terms, d = residual error term associated with each of the lower-level latent variables.
(Figure 1 in Study I).

Five Facet Mindfulness Questionnaire patterns in meditating and non-meditating individuals

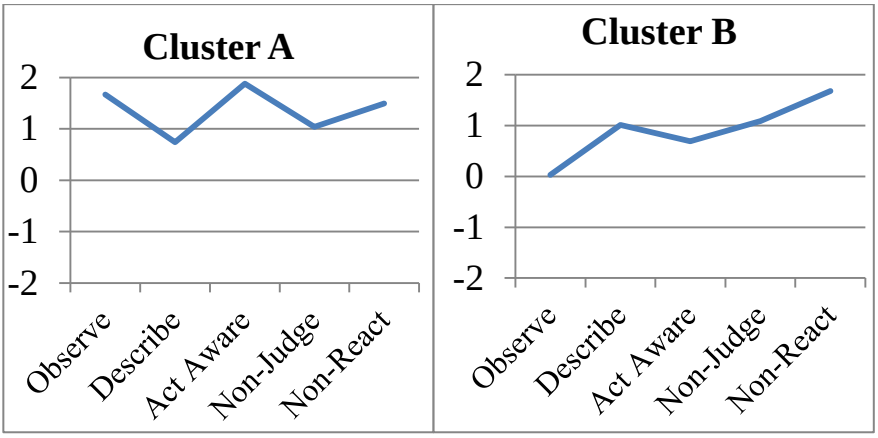
Person-oriented approach

Study II

The cluster analysis resulted in a 13-cluster solution that explained 65% of the variance. Four clusters were characterized by high FFMQ scores, five clusters characterized by mixed high-low scores on the FFMQ facets, and four clusters characterized by low FFMQ scores. Z-values of 0.40 and -0.40 were chosen as cut-offs for classifying scores on an FFMQ facet as "high" or "low", respectively (Figure 2 shows a selection of clusters from Study II).

The analysis identified one cluster (Cluster A) that showed high scores on all FFMQ facets. Cluster B showed high scores on all FFMQ facets except Observe, where participants scored close to average. Cluster C showed high scores especially on Observe, Describe, and Nonreact. Cluster D, finally, scored high particularly on Nonjudge, Nonreact, and Observe.

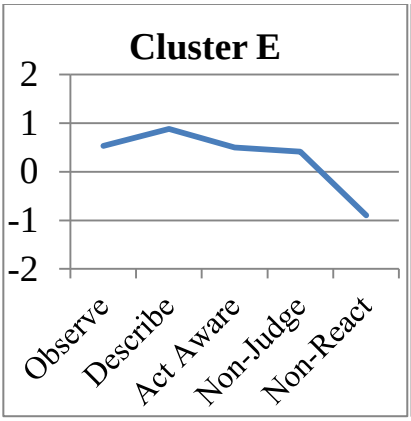
CLUSTERS CHARACTERIZED BY HIGH FIVE FACET MINDFULNESS QUESTIONNAIRE SCORES



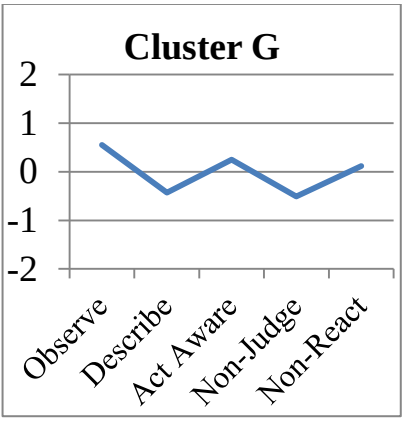
Cluster A. High on all facets.

Cluster B. High on all facets, except Observe.

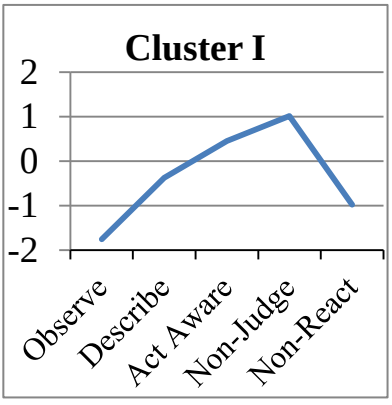
CLUSTERS CHARACTERIZED BY MIXED HIGH-LOW FIVE FACET MINDFULNESS QUESTIONNAIRE SCORES



Cluster E. High on Describe, Observe, Actaware; low on Nonreact

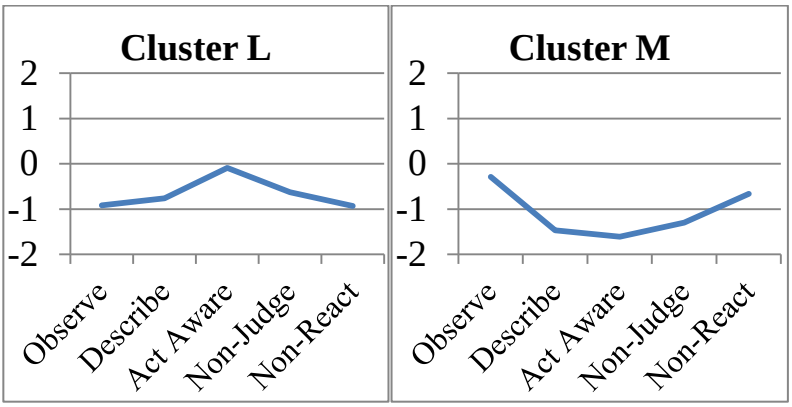


Cluster G. High on Observe, low on Nonjudge and Describe



Cluster I. High on Nonjudge, low on Observe and Nonreact.

CLUSTERS CHARACTERIZED BY LOW FIVE FACET MINDFULNESS QUESTIONNAIRE SCORES



Cluster L. Low on Observe, Describe, Nonjudge, Nonreact.

Cluster M. Low on Describe, Actaware, Nonjudge, Nonreact.

Figure 2. Selected profiles of the 13 Five Facet Mindfulness Questionnaire clusters, in terms of z-scores (where z = 0 corresponds to the sample mean on each FFMQ facet). (All 13-clusters are shown Figure 1 in Study II)

Among the clusters with mixed high-low FFMQ scores, a number of different profiles were found. The most variation was seen on the scales Observe and Nonjudge. It may be noted that the scores on Observe and Nonjudge most often went in opposite directions in these clusters (in four of five cases, if one facet had a positive score the other had a negative score).

Finally, there were four clusters with low scores on at least one FFMQ facet, and high scores on none. Although there was no cluster with low scores on all facets, Clusters L and M came fairly close by showing low scores on all but one facet (Actaware in Cluster L, and Observe in Cluster M).

Five Facet Mindfulness Questionnaire clusters in which meditators were over- or under-represented

Table 3 shows a cross-tabulation of the two categories of meditating and non-meditating individuals across the 13 FFMQ clusters. As shown in Table 3, significant findings were obtained with regard to seven clusters.

According to Hypothesis 1, all FFMQ profiles which are over-represented among meditators should be characterized by high scores on Observe. As seen in Table 3, this hypothesis was clearly confirmed. There were four clusters (A, C, D, G) in which meditators were over-represented, and they all had high scores on the Observe facet.

There was similar unambiguous support for Hypothesis 2, which stated that in all clusters with low scores on Observe, meditators would be under-represented. As seen in Table 2, three clusters were characterized by low scores on Observe, and meditators were under-represented in all three. On the other hand, Hypothesis 3 was not supported; according to this hypothesis, all FFMQ clusters in which meditators are over-represented should combine high scores on Observe with high scores on Nonjudge and/or Nonreact. Actually meditators were over-represented in one cluster (Cluster G), which showed a combination of high scores on Observe and low scores on Nonjudge, which clearly disproves the hypothesis.

Finally, Hypothesis 4 stated that if the analysis identified FFMQ profiles with high scores on Observe in which meditators were *no*t over-represented, then these cluster profiles would be characterized by low scores on Nonjudge and/or Nonreact. As seen in Table 3, there was one cluster (Cluster E) that scored high on Observe in which meditators were not over-represented; this cluster was also characterized by low scores on Nonreact, which means that the hypothesis gained support.

Table 3. Cross-tabulation of the Five Facet Mindfulness Questionnaire clusters and the categories of meditating and non-meditating individuals, with a comparison between observed and expected frequencies in each cell (expected frequencies in parentheses)

FFMQ clusters	Meditators	Non-meditators
A. High on all FFMQ facets	39 (21)***	2 (20)***
B. High on all FFMQ facets, except Observe	19 (16)	13 (16)
C. High on Observe, Describe, Nonreact	29 (21)**	12 (20)**
D. High on Nonjudge, Nonreact, Observe	49 (35)***	21 (35)***
E. High on Describe, Observe, Actaware; low on Nonreact	22 (21)	19 (20)
F. High on Actaware, Nonjudge, Describe; low on Observe	13 (20)*	27 (20)*
G. High on Observe, low on Nonjudge and Describe	45 (32)***	19 (32)***
H. Low on Actaware	35 (33)	30 (32)
I. High on Nonjudge, low on Observe and Nonreact	3 (20)***	37 (20)***
J. High on Nonjudge, low on Describe and Actaware	14 (19)	23 (18)
K. Low on Nonjudge, Actaware, Nonreact; high on Describe	24 (25)	25 (24)
L. Low on Observe, Describe, Nonjudge, Nonreact	14 (37)***	59 (36)***
M. Low on Describe, Actaware, Nonjudge, Nonreact	15 (20)	25 (20)

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$
(Table 2 in Study II).

Primary Care Patients' Experiences of Mindfulness-Based Cognitive Therapy in everyday life and as relapse prevention

Thematic analysis

Study III

The analysis resulted in the identification of two overarching themes and subthemes (each composed of two or more categories; Figure 3). The theme "Strategies for remission" comprised the subthemes "mindfulness practice" and "knowledge of sickness and health", and "Personal development" comprised "intrapersonal" and "interpersonal" development.

The first theme, "Strategies for remission", describes the parts of MBCT participants still used and the strategies they developed to remain in remission. The second theme, "Personal development", relates participants' accounts of what they learned from therapy and their daily use of mindfulness to deal with life and mental distress. Illustrative quotations demonstrate the general themes.

Strategies for remission

I really use the short breaths ["breathing space"] a lot at my work – yes, I do. Then I do all the other exercises at home several times a week, but not always daily. But I notice in my body when I have rushed too much; the headache comes and I pull up my shoulders and feel in my body that I am tense. Then I think "Oh, now, I have not done my homework as I should have" and then I do it and then I do it daily, sometimes both in the morning and in the evening. Participant 5

I try to think about it as often as I can really, because you cannot just think about it when it is at its worst; it follows you the entire time. I'm trying to improve all the time, but it is small steps, nothing revolutionary. But I have to live with this for the rest of my life, to have with me these things and practise a little now and then. Participant 8

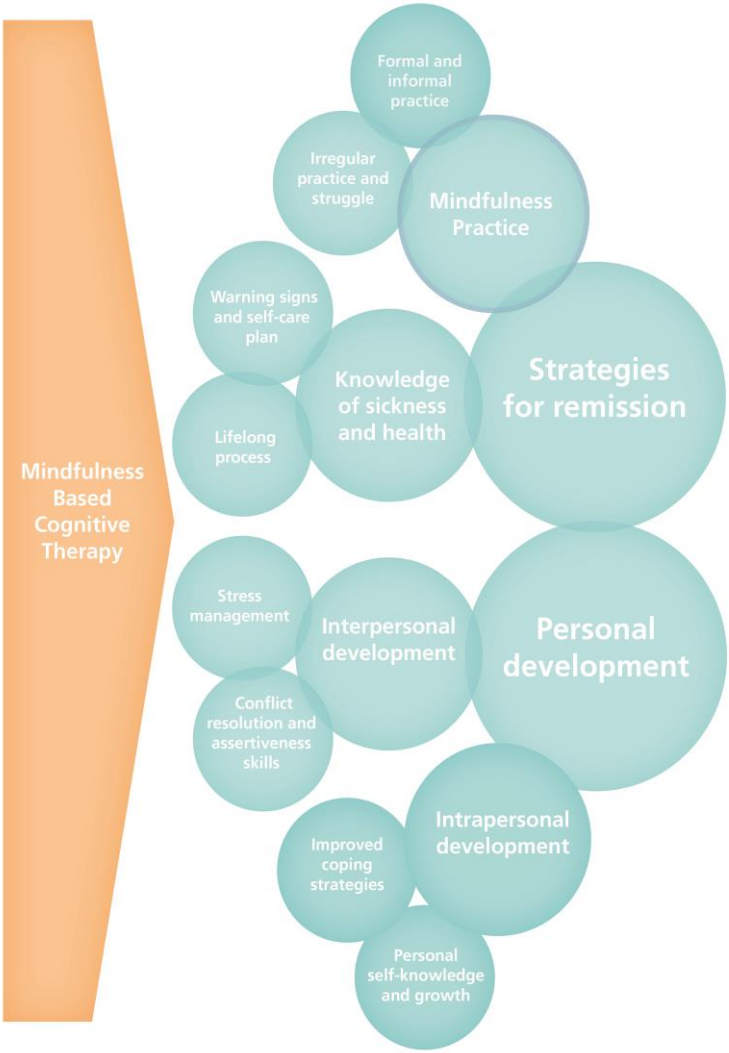


Figure 3. Two main overarching themes, "Strategies for remission" and "Personal development", with subthemes and categories.

The analysis of answers about strategies for remission resulted in two main subthemes, "mindfulness practice" and "knowledge of sickness and health". *Mindfulness practice* tended to be irregular and often included a mix of informal and formal exercises. The most formal meditation practices were breathing space, yoga meditation, and body scanning. The patients generally used a 3-minute session of breathing space to calm themselves in stressful situations and to step out of self-devaluating thinking. Yoga meditation and body scanning helped to anchor patients in the body, making them more aware of early warning signs and their feelings in the moment, and they were the most frequently used exercises. These meditations played an important role in helping participants access their own emotional states and set priorities in their daily lives. Several participants credited mindfulness practice as the foundation of their ability to react well to the stresses of everyday life.

Knowledge of sickness and health included knowledge and acceptance of depression. Participants learned that they could manage depression as a life process and that there were ways they could stay healthy. Only a minority of used traditional behavioural activation to handle low moods, but they accepted that sensitivity to a lowering mood was a part of their lives that they had to handle continually. Participants described being able to handle their moods by slowing down, taking better care of themselves, and making small behavioural changes. They had become aware of their early warning signs and had learnt how to take care of themselves when feeling low. None of the participants adhered regularly to the maintenance plan designed during the class to prevent relapse, but all had incorporated much of it in their daily thinking and behaviour. This helped them get through times of rumination and passive behaviour.

Personal development

I reflected on that the other day. There have been situations in the past when I just reacted. But now, after it happened a few times, I could see it, so now I can take it in differently, relate to it in a different way. When that happens, I can see that my feelings are rushing ahead. I can see that it is not about me, but about the person, and then I can relate to it in a different way. When it begins to repeat itself, I see that I can sort each thing out. Participant 11

The analysis of the answers relating to personal development and psychological change process resulted in two subthemes, "intrapersonal development" and "interpersonal development".

Intrapersonal development deals with psychological long-term changes reported by participants. Using mindfulness in everyday life, they were able to step back when feeling overwhelmed by emotional stimuli. They could observe and describe their emotions and negative cognitive processes and take a more balanced decision or action. They also noted having new coping strategies for thinking, behaving, and handling emotions. Mindfulness training had helped participants become more intentionally aware of the present moment and less judgemental in the aftermath of a situation. They could calm down, stop their "mind-train", and catch themselves before their mood lowered or rumination took over. Another pattern that emerged circled around personal growth. Some participants said the course had given them a different perspective on themselves, their opportunities, and how they could live their lives. Some had also become aware that they had often downplayed their own needs and placed too many demands on themselves. After MBCT, participants felt more secure and stable about themselves.

Interpersonal development centred on behavioural changes toward people at work, at home, and elsewhere. Participants reported a better ability to manage stress and resolve conflicts, and said the changes were noticeable enough to have been commented on by others. *Stress management* illustrated how participants had learned to recognize and deal with their automatic reactions to stressful situations. Mindfulness training helped them to estimate the situation in a balanced way, act appropriately, and move on. This conduct not only helped them during times of stress, but minimized their worry and rumination before and after stressful situations. *Conflict resolution* describes how MBCT helped participants to be more assertive and to face conflicts rather than avoid them. This effect was most noticeable in close relationships and in work relationships. Participants were also less judgemental of others' opinions and ideas.

Mindfulness-Based Cognitive Therapy in Primary Care

Effectiveness and generalizability

Study IV

Baseline check

To investigate the stability of the baseline measures, comparisons were performed between assessments made 3 months before baseline (T0) and at baseline (T1) for Global Scale Mindfulness, Depression, Anxiety, and QoL. There were no significant differences between assessments at T0 or T1 ($p > 0.05$).

Overall effects

A two-way mixed Pillais' MANOVA was performed with Alliance (weak/strong) as a between-subject factor and with Time (T1, T2, T3, T4) as a within-subject factor. Dependent variables were Global Scale Mindfulness (FFMQ_SWE), Depression (HADS-D), Anxiety (HADS-A), and QoL (LSQ). Analyses showed a significant effect for Time ($p < 0.005$, Eta2 = 0.79, power > 0.99), but not for Alliance ($p = 0.214$, Eta2 = 0.13, power = 0.43) nor for the Time × Alliance interaction ($p = 0.278$, Eta2 = 0.32, power = 0.58). Two subsequent two-way mixed Pillais' MANOVAs with the same within-subject factor and the same dependent variables, but with Gender (men/women) and Motivation (low/high) as between-subject factors were performed. The analysis for Gender showed a significant effect for Time ($p < 0.001$, Eta2 = 0.64, power > 0.99), but not for Gender ($p = 0.170$, Eta2 = 0.15, power = 0.47) nor for the Time × Gender interaction ($p = 0.237$, Eta2 = 0.34, power = 0.61). The analysis for Motivation showed a significant effect for Time ($p < 0.001$, Eta2 = 0.80, power > 0.99), but not for Motivation ($p = 0.968$, Eta2 = 0.02, power = 0.08) nor for the Time × Motivation interaction ($p = 0.657$, Eta2 = 0.23, power = 0.35).

Improvement over time

Univariate F tests yielded significant effects for Global Scale Mindfulness [$F(3, 129) = 25.10$, $p < 0.001$], Depression [$F(3, 129) = 11.84$, $p < 0.001$], Anxiety, [$F(3, 129) = 24.85$, $p < 0.001$ and QoL [$F(3, 129) = 11.82$, $p < 0.001$]. Post hoc testing using paired samples *t*-test (5% level) showed a significant difference between T1 and T2 and between T2 and T3 for Global Mindfulness, but there was no significant difference between T3 and T4. Further post hoc testing showed significant differences for Depression, Anxiety, and QoL between T1 and T2, and for Anxiety between T2 and T3. There were no significant differences from T2 to T3 for Depression and QoL or

between T3 to T4 for Depression, Anxiety, and QoL. The analysis revealed a moderate to large effect size in pre- to post-treatment reduction of symptoms of depression (Cohen's d = −.62, $p < 0.001$) and anxiety (Cohen's d = −.91, $p < 0.001$) and in pre- to post-treatment increase of QoL (Cohen's d =.60, $p < 0.001$) and Global Mindfulness (Cohen's d = 1.13, $p < 0.001$).

Comparison of treatment effects versus relapse rates

The effects of MBCT can be expressed in terms of relapse into depression (Piet & Hougaard, 2011). In the 14-month follow-up in the current Swedish study, 38 participants were in full remission, 5 were in partial remission, and 2 had an ongoing depressive episode, for a relapse rate of 16%. In the efficacy study of the MBCT treatment group (n = 40) 12 patients relapsed during the 14-month follow-up, for a relapse rate of 30%. In the treatment as usual (TAU) group (n = 47), 32 patients (68%) relapsed during the follow-up period. Comparing the relapse rate in the current study (16%) and the TAU in the efficacy study (68%) yields an h value of 1.12, a large effect size. The difference between the 30% and 68% relapse rates yields a moderate effect size (Cohen, 1988, p. 185) of h = 0.78.

Clinical significance on an individual level (Reliable Change Index)

Significant individual changes on the Hospital Anxiety and Depression Scale. On the HADS Depression scale, 22 participants (49%) displayed a statistically significant positive change from pre-to post-intervention, while four (9%) reported a statistically significant negative change, and 19 (42%) displayed no statistically significant change. Further analysis of individual changes revealed that only women reported a positive change, and the difference between women and men was statistically significant (Fisher exact test; $p < .01$). Twenty-two (61%) of the women rated a significantly positive change on the HADS Depression scale. There was a statistically significant difference between women (12 [33%] and men 7 [78%]; Fisher exact test; $p < 0.05$) in those who showed no change. However, men had statistically significantly lower pre-ratings than women (NM = 9, MM = 4.44, SDM = 4.19; NW =36, MW = 7.88, SDW = 3.16; $t = 2.730$, $p < 0.01$), which might inflate the difference in outcomes between men and women.

On the HADS Anxiety scale, 24 (53%) participants reported a statistically significant positive change while 1 (2%) reported a statistically negative change, and 20 (44%) displayed no statistically significant change. In further analysis of individual change, a larger proportion of women reported a significant positive change (23 [64%] women and one [11%] man): Fisher exact test; $p < 0.01$). However, there was no statistically significant difference on

pre-ratings of women and men on the Anxiety scale (NM = 9, MM = 8.67, SDM = 5.61: NW = 36, MW = 9.17, SDW = 3.47; t =.255, p >0.05).

Classification of individual development

In the next step participants were divided into a "clinical group" with pre-ratings of 11 or above (within the clinical range) on both the Depression and the Anxiety scales, and a "non-clinical group" (with pre-ratings below 11). In the clinical group 65% to 67% of the participants improved and recovered, no individual worsened, and 33% to 35% participants stayed unchanged. In the non-clinical group 44% to 46% participants improved, about 50% stayed unchanged, no individual worsened, and five individuals deteriorated. Frequencies and percentage of subjects assigned to each category are displayed in Tables 2 and 3 in Study IV.

DISCUSSION OF RESULTS

Study I. Five Facet Mindfulness Questionnaire – reliability and factor structure

Similar correlations to Baer's model were found, which indicates that the overall structure of the original FFMQ is also applicable to a Swedish population. The CFA also showed that Describe, Actaware, Nonjudge, and Nonreact were all part of an overall mindfulness construct, but that the Observe facet was not part of that construct, at least not in a population in which most participants had little or no meditation experience.

The finding that Describe was part of an overall mindfulness construct is interesting because labelling feelings, words, and bodily sensations is not always recommended by mindfulness teachers within the Buddhist tradition. For example, Gunaratana (2002) stresses wordless observation of cognitions, emotions, and other phenomena, although he acknowledges the utility of verbal labelling in the early stages of meditation exercises. The main task in the majority of meditation practices is to notice and attend to whatever arises in the mind, not to verbalize those thoughts or feelings. In accordance with this, Josefsson and Broberg (2010) found no association between Describe and meditation experience, suggesting that the ability to describe feelings and thoughts, at least as operationalized in FFMQ, is not enhanced with meditation.

The weak negative correlation between Observe and Nonjudge replicate previous research that has shown a significant negative correlation between Observe and Nonjudge, as measured by the KIMS among participants with little meditation experience (Baer et al., 2004; Hansen et al., 2009). This tendency may illustrate one of the great challenges of mindfulness: the difficulty of combining high levels of (self-) observation with a high level of a self-acceptance, which might explain why the Observe facet does not seem to fit as an aspect of mindfulness among individuals with little or no meditation practice.

Study II. Observing as an essential part of mindfulness: patterns of mindfulness in meditators and non-meditators

That the four clusters in which meditators were over-represented all had high scores on the Observe scale is consistent with the central idea that meditation practices develop and enhance a person's ability to mindfully notice and attend to (i.e., observe) internal and external experiences (Baer et al., 2008; Brown & Ryan, 2003; Carmody & Baer, 2007; Kabat-Zinn, 2004). A basic assumption in Study II was that the practice of mindfulness (as seen in meditators) would be incompatible with a pattern of high scores on the Observe facet and low scores on Nonjudge. This assumption was not supported. Also, among the clusters with mixed high-low scores on the FFMQ facets, the most variation was clearly seen on Observe and Nonjudge. In fact, the scores on these two facets in the clusters most often went in opposite directions. In Study I this was demonstrated in a weak negative correlation between Observe and Nonjudge. This pattern was confirmed in one cluster (G), in which meditators were over-represented, which combined high scores on Observe with low scores on Nonjudge. Thus, among meditators, the ability to observe does not always go hand in hand with a non-judgemental attitude. This could represent a subgroup of meditating individuals with strong self-judgemental tendencies who have learnt to observe these tendencies. With the gradual acquirement of mindfulness skills, we should expect some convergence between the abilities to attend/observe and to hold a non-judgemental attitude, so that these abilities will be associated in the most highly mindful individuals. Such convergence was clearly seen in the cluster with the highest mindfulness scores (Cluster A), and meditators were over-represented in this cluster (39 individuals out of 41 in this cluster were meditators).

We identified one cluster (E) with high scores on the Observe facet in which meditators were not over-represented. This cluster was characterized by low scores on Nonreact. This cluster pattern may represent the kind of high self-conscious observation and rumination that is found among people with depression and anxiety (Nolen-Hoeksema, 2000; Watkins & Teasdale, 2001; Watkins & Teasdale, 2004). The low scores on Nonreact then represent their inability to decentre from the contents of their thought and to perceive thoughts as constructions of the mind rather than aspects of reality (Watkins & Teasdale, 2001; 2004).

Study III. Mindfulness-Based Cognitive Therapy: Primary Care Patients' Experiences of Relapse Prevention and Outcomes in Everyday Life

Strategies for remission

Continued mindfulness practice, both regular/irregular and formal/informal, was, according to the patients, the most effective intervention against relapse. This supports the results of Munshi, Eisendrath, and Delucchi (2012), who showed that integration of mindfulness practice into the lifestyle promotes continued practice. Overall, meditations involving the body (i.e., body scanning, yoga meditation, and breathing space) seem to be more accessible than most of the other MBCT exercises and are therefore more regularly used to train and cultivate mindfulness. A majority of the participants stated that their mindfulness practice served as an anchor to their continued mental well-being. These results are in line with those of Ingvarsson, Nordén, and Norlander, whose 2014 case study of MBCT participants indicated that the practice of mindfulness was the most important path towards healthy behaviours.

The participants' knowledge of sickness and health was also an important strategy to prevent relapse. The participants re-evaluated their knowledge of their own mental health and reappraised their cognitive and emotional experiences. The findings also support the hypothesis of Malpass and co-workers (2011) that the participants' final change phase is marked by transformation of both the illness experience and the sense of self. Researchers have different opinions about whether mindfulness evokes cognitive restructuring. Kabat-Zinn (2003), founder of the MBSR programme, argued that no active reappraisal takes place in mindfulness practice, that the issue is only to mindfully and non-judgementally observe all experiences as they are and then to let them go. Nyklicek (2010) disputes this theory and argues that mindfulness practice involves reappraisal of prior knowledge concerning thoughts, emotions, and behaviours. Although the current study seems to support Nyklicek's view, this observation needs further examination.

When the themes were matched with the theoretical model that underpins MBCT, we found considerable correspondence, but also some parts, specifically the behavioural and cognitive interventions, in need of further elaboration. This raises questions about how effective these interventions are as components of a relapse programme. Should they be given less time during the classes? If so, should the meditation exercises be increased? Our

findings suggest that important ingredients in the programme, especially meditation practice, are more potent strategies for remission and stable well-being than the interventions originally intended to form the basis of the therapy.

Personal development

Themes similar to "Personal development" have been identified in previous qualitative studies (Allen et al., 2009; Finucane & Mercer, 2006; Mason & Hargreaves, 2001). The core construct "Relating mindfully" found by Bihari and Mullan (2012) also bears some resemblance to the subthemes "Interpersonal development" (since it centres on participants' better interpersonal functioning) and "Intrapersonal development" (since it shows patterns of improved individual coping strategies).

The MBCT classes improved participants' abilities to handle everyday life and relationships. Mindfulness practice seemed to aid personal development through contributing to improved coping strategies and the progress of several cognitive-emotional and behavioural changes. These personal changes were also noted by Allen et al. (2009), who found that participants reported attending an MBCT class enhanced their self-compassion and interpersonal relationships. Patients reported improved self-understanding and they felt that they had grown as individuals (in the subtheme Personal self-knowledge and growth). This result is in line with Carlson's 2013 hypothesis that mindfulness is a path to enhanced self-knowledge and that mindfulness training improves people's understanding of themselves because it addresses two major barriers to self-awareness: informational barriers, related to the quantity and quality of information people have about themselves, and motivational barriers, related to how attempts for self-protection affect how people process information about themselves.

Study IV. The effectiveness of Mindfulness-Based Cognitive Therapy in Swedish Primary Health Care

MBCT was an effective preventive intervention for patients in remission from recurrent MDD, as indicated by the fact that at follow-up 84% were still in remission. This also indicates a better effect than found in the efficacy study of Godfrin and van Heeringen (2010). The difference in dropout rates (13% vs. 40%) may indicate a difference in the severity or complexity of depression between the two groups. Another contributing factor could be the participants' preferences of therapy conditions, possibly indicating a better match of participant preferences and type of treatment in the current Swedish sample. Patients' preferences are recognized as a key component of evidence-based practice, but research has yet to confirm the actual influence preferences have on treatment outcome. In a meta-analysis, Swift et al. (2011) summarized the results of 35 studies examining the preference effect in adult clients. Overall, participants who were matched to their preferred therapy conditions were less likely to drop out of therapy and showed greater improvements. Study design was also a significant moderator, with RCTs showing the largest differences between preference-matched clients and non-matched participants. In this sense the present study's design, with a combination of self-referral and thorough diagnostic assessment, might decrease dropout and enhance the treatment outcome.

Mental health improved and stabilized during the follow-up period and the mean values of the 14-month follow-up suggest that participants' well-being in terms of depression, anxiety, and QoL were comparable to those in a non-clinical population (Carlsson, Hamrin, & Lindqvist, 1999; Lisspers, Nygren, & Soederman, 1997). Effect sizes from pre-test to post-test were moderate for depression and QoL and large for anxiety and mindfulness, indicating that the intervention was effective.

Group-based comparisons showed no significant statistical or clinical difference between men and women from pre-test to post-test. However, when using RCI, which enables a more precise measure of clinical progress, more women than men had a significant improvement in depression and anxiety. The difference in depression results could partly be explained by the fact that men had significantly lower pre-ratings and thus less room for further improvement. Still, could it be that men felt less comfortable with the treatment, since they were a minority in each group? Lilja et al. (2011) found that women in the general population rated themselves higher on Observe and Describe – at noticing and verbalizing their emotions – than men did. Since

each MBCT class includes a component of meditation, with the focus on noticing mental, physical, and emotional processes, and sharing these observations with the other participants, it could be that the programme is more appealing to women. This needs to be thoroughly examined in a larger study of gender differences in mental health outcomes and levels of mindfulness, as the results of such a study may contribute to an important guideline for clinicians on how to assemble groups and work effectively to recruit and retain individual patients.

METHODOLOGICAL CONSIDERATIONS

General strength and limitations

Strengths of Study I included the rigorous translation process and the use of both qualitative and quantitative methods to develop the FFMQ_SWE. A limitation of Study I was that the shortened scale was not administered to new participants, but rather was derived from administration of the longer scale.

Study II had the drawback of combined data from four different datasets that were not calibrated in terms of the questionnaire measures; also, the inclusion criteria for categorizing someone as a "meditator" differed somewhat between the samples. Also, although most of the meditating participants reported that their practice did not involve the use of a mantra and probably did involve some form of insight meditation, rather than concentration meditation, this was not controlled for. Additionally, because the four datasets did not share any other measures on psychological well-being, personality, or psychopathology, we were not able to compare clusters with different psychological outcomes.

The qualitative research design in Study III was chosen to gain greater understanding of the ingredients of MBCT that patients perceive as helpful to prevent relapses. The thematic analysis is a structured method that stays close to the analysed text and to the informants' own words. Evidently, the method has some limitations. Patients may follow a cultural script and give answer they expect the interviewers want (e.g., how often and how long they meditated or how the MBCT classes affected their life). Although this might have been the case, the diversity of the answers and the interviewer's probing questions ought to have counterbalanced this risk. Additionally, patients may not have on a conscious (verbal) level been aware of the changes they have gone through. This might have influenced the content and the level of information they provided. At the same time, we wanted the information from the participants to be as close to their reality as possible; we kept the interview technique simple and the qualitative analysis on a semantic level. This provided us with the bottom-up perspective that we aimed for. The qualitative research design raises the possibility that participants could be affected by how the study is presented and what is focused on during the

interview. To minimize the possible effect of interviewer bias, the qualitative aspects of the research process were monitored according to Malterud's (2001) overall standards for qualitative inquiry concerning reflexivity, transferability, and shared assumptions of interpretation.

As stated initially, there is a need to translate evidenced-based programmes into real-world, clinical settings, such as primary health care with more diverse populations and a majority of self-referred patients. One obvious limitation in Study IV is the absence of a control group. This leaves open the possibility that factors other than the intervention (e.g., the passing of time, alternative strategies for dealing with mental health, or being observed) caused the effect. However, the benchmarking strategy that was used leads to the conclusion that this was most likely not the case. Participants in the present study showed no significant improvement in the baseline check, which points to the effect observed later on being a result of the intervention, thus strengthening the validity of the study. Other obvious limitations of the study, due to its natural setting, were the low number of participants and our inability to investigate how many patients were excluded by the general practitioners who referred the patients. However, the benchmarking strategy, focused on comparing outcomes, makes these limitations less important. Overall, considering that this is the first study to focus on the generalizability of MBCT in Swedish primary care, the results seem promising in the Scandinavian context.

GENERAL DISCUSSION

Mindfulness as a multidimensional skill

One way of understanding the results in this thesis is to think of mindfulness as the development of a "multidimensional skill". Trait mindfulness may differ from one individual to another, depending among other things on individual differences in baseline tendencies to be attentive/observant and to maintain an accepting, non-judgemental attitude to experience. In fact, the results of the thesis are what might be expected if problems with attention/observation and keeping an accepting/non-judgemental attitude are both a hindrance to the development of mindfulness skills and difficulties often found in different subgroups of individuals. If problems in these two areas tend to occur in different categories of individuals in the general population, then they may take time to overcome and they may be found even in people who have practised mindfulness meditation.

In MBCT these difficulties are often in focus during different phases of the training (Segal et al., 2002). The practice usually starts by applying mindful, non-judgemental observation to external sense impressions and physical sensations. Soon, however, mindfulness skills are applied to other areas, including the non-judgemental observation of disturbing thoughts and painful feelings. It is interesting to note that the ability to be non-judgemental and non-reactive tap not only different aspects of how you observe yourself or your surroundings, but also different areas of application of mindfulness skills. For example, being non-judgemental and able to regulate your emotions applies not only to sense impressions or physical sensations, but also to distressing emotions, perceptions, feelings, thoughts, images, and ideas. Therefore, it may be argued that these mindfulness skills can be used to handle more difficult applications than merely to observe.

Could it be that individuals have different mindfulness profiles and that this affects their well-being? At least two more studies have used a person-oriented approach and analysed the concept of mindfulness. Pearson, Lawless, Brown, and Bravo (2015) used latent profile analysis (LPA) to identify four classes of individuals based on their mindfulness scores. The groups were (1) high-mindfulness, (2) low-mindfulness, (3) judgementally-observing (high on Observe, low on Nonjudge and Actaware), and (4) non-judgementally aware (low on Observe, high on Nonjudge and Actaware). When cross-analysing this with emotional outcomes, they found that the

judgementally observing group had the least adaptive emotional outcomes followed by the low mindfulness group. The groups with high mindfulness and non-judgemental awareness had the most adaptive emotional outcomes. Bravo, Boothe, and Pearson (2016) used LPA to identify distinct subgroups defined by their mindfulness profiles, and they cross-analysed this with experience of mindfulness meditation. They found that the high mindfulness group demonstrated the highest levels of psychological well-being, decentering, self-regulation, and psychological flexibility.

The results are well in line with the IAA model of mindfulness (see page 9 in Introduction; Shapiro et al., 2006), but go further by deepening the understanding of mindfulness as a multidimensional skill. Previous studies have provided support for Shapiro's model of mindfulness using variable centred analyses (Brown, Bravo, Roos & Pearson, 2015; Carmody & Baer 2007; Pearson, Brown, Bravo & Witkiewitz, 2015). The person-oriented approach has demonstrated that different levels of meditation practice can result in different mindfulness profiles, which in turn can generate diverse psychological outcomes. Used accordingly, the person-oriented approach can help clinicians to tailor specific mindfulness-based practices to individuals based on their mindfulness profiles, which may be a way to enhance the efficacy of MBIs.

Assessment of mindfulness with self-report measures

Can we be sure that it is mindfulness we measure with self-report measures? Goldberg et al. (2015) studied the discriminant construct validity of the FFMQ. They examined changes in mindfulness in an RCT that included MBSR, a wait-list control condition, and an active control condition – the Health Enhancement Program (HEP; MacCoon et al., 2012). However, they did not find evidence for discriminate validity. The HEP condition showed pre–post increases on facets of the FFMQ both when examined in the HEP group alone and when examined relative to the wait-list control. Moreover, there were no differences noted in changes on the FFMQ between the MBSR and HEP conditions when compared directly. The lack of specificity in the FFMQ found by Goldberg and co-workers has also been found in other self-measurements of mindfulness. A recent meta-analysis by Goyal et al. (2014) found no differences in response between mindfulness and active control interventions as measured on the MAAS or CAMS-R.

Evidently, there are difficulties and limitations with using self-report questionnaires to assess mindfulness. To counter these, Grossman (2011) proposed renaming existing mindfulness questionnaires with clearer

descriptions of the psychological characteristics measured and creating new self-reports to measure the degree to which respondents value specific meditative behaviours or psychological attitudes. Greater emphasis could also be put on qualitative investigation to gain greater insight into the psychological mechanisms and features related to the practice of mindfulness.

Another difficulty with research on mindfulness that relies on self-report instruments is the possibility that some participants with no mindfulness meditation experience may score higher on mindfulness than they would if they were aware of limitations in their mindfulness (the so-called Dunning-Kruger-effect; Dunning, Johnson, Ehrlinger, and Kruger, 2003; Kruger & Dunning, 1999). Moreover, parts of the Buddhist practice seem to have been lost when questionnaires on mindfulness were developed. The modern concept of mindfulness differs from traditional Buddhist practice in that aspects such as compassion, empathy, and the intention of practice are excluded, as is the moral and ethical stance towards oneself and all living creatures. The results of this thesis suggest that research aiming to understand and dissect a holistic concept may very well lose some parts of the original construct and instead create a new or hybrid. Buddhist practices were brought into health clinics and contemporary research because it was suggested that regular meditation practice reduces suffering and develops positive qualities such as awareness, insight, compassion, and equanimity (Goldstein, 2002; Kabat-Zinn, 2000). In the 21st century, health professionals and researchers have suggested that the cultivation of mindfulness could be beneficial to Westerners, but they have been unwilling to adopt Buddhist terminology or traditions. Thus, mindfulness practices are sometimes conceptualized as sets of skills that can be taught independently of their spiritual origins (Kabat-Zinn, 1982) and sometimes independently of traditional meditation (Dimidjian & Linehan, 2003).

The idea that self-report instruments measure a hybrid form of mindfulness is supported by the contemporary research paradigm focusing on dismantling a global construct into its components in order to measure and define it (Brown & Cordon, 2009). For example, Brown and Ryan (2003) state that awareness and attention are foundational to mindfulness, rather than "attributes such as acceptance, trust, empathy, gratitude, or the various others that have been associated with mindfulness" (p. 824). Baer and co-workers, on the other hand, view mindfulness as a multidimensional concept with several potential components. Developing their mindfulness questionnaire (KIMS; Baer, et al., 2004; FFMQ, Baer et al., 2006), they took note of the fact that researchers in

psychology and stress reduction and mindfulness teachers in the Buddhist tradition all describe mindfulness as a set of different skills that can be taught and practiced (Goldstein, 2002; Goldstein and Kornfield, 1987; Gunaratana, 2002; Linehan, 1993a; 1993b; Rosenberg, 1998; Segal et al., 2002).

In summary, the results presented in this thesis show that mindfulness is a multidimensional concept that includes skills that can change over time and might develop differently in different clinical subgroups.

Implications for theory

Mindfulness awareness and relapse prevention

The findings in this thesis contribute to the theoretical framework of the mindfulness construct in several ways. Mindfulness can be measured as a multidimensional skill and it might have different trajectories in various subgroups. Mindfulness skills can develop in a clinical population and function as relapse prevention. These reflections are presented both in Figure 4 and in the following paragraph.

There seem to be five basic psychosocial resilience factors (Southwick, Vythilingham, & Charney, 2005) and these are all trained in MBCT: (1) positive emotions (sympathetic joy), (2) cognitive flexibility and acceptance, (3) meaning (including religion, spirituality, and altruism), (4) social support, and (5) active coping style. MBCT promotes resilience and thereby relapse prevention. Mindfulness practice seems to be the foundation from which the process of change develops in an evolving chain reaction. Also, there seem to be differences in how individuals perceive and adhere to the practice, which might give different levels of embodiment and degrees of formal/informal practice. Additionally, mindfulness practice seems to start a personal development process that the participants experience as affecting their knowledge of themselves and thereby improving their personal coping strategies and ability to deal with interpersonal conflicts. The practice further promotes acceptance of experience, living with a lifelong mental health problem, and the adjustments and techniques that are needed to stay well. The result of these processes could lead to a general level of a mindful awareness and relapse prevention. This is in line with the hypothesis proposed by Brown and Ryan (2003) who suggested that mindfulness practice leads to an evolving interconnection between self-regulation of behaviour and hedonic experiences, which enable meditators to act in greater accordance with their true values and interests.

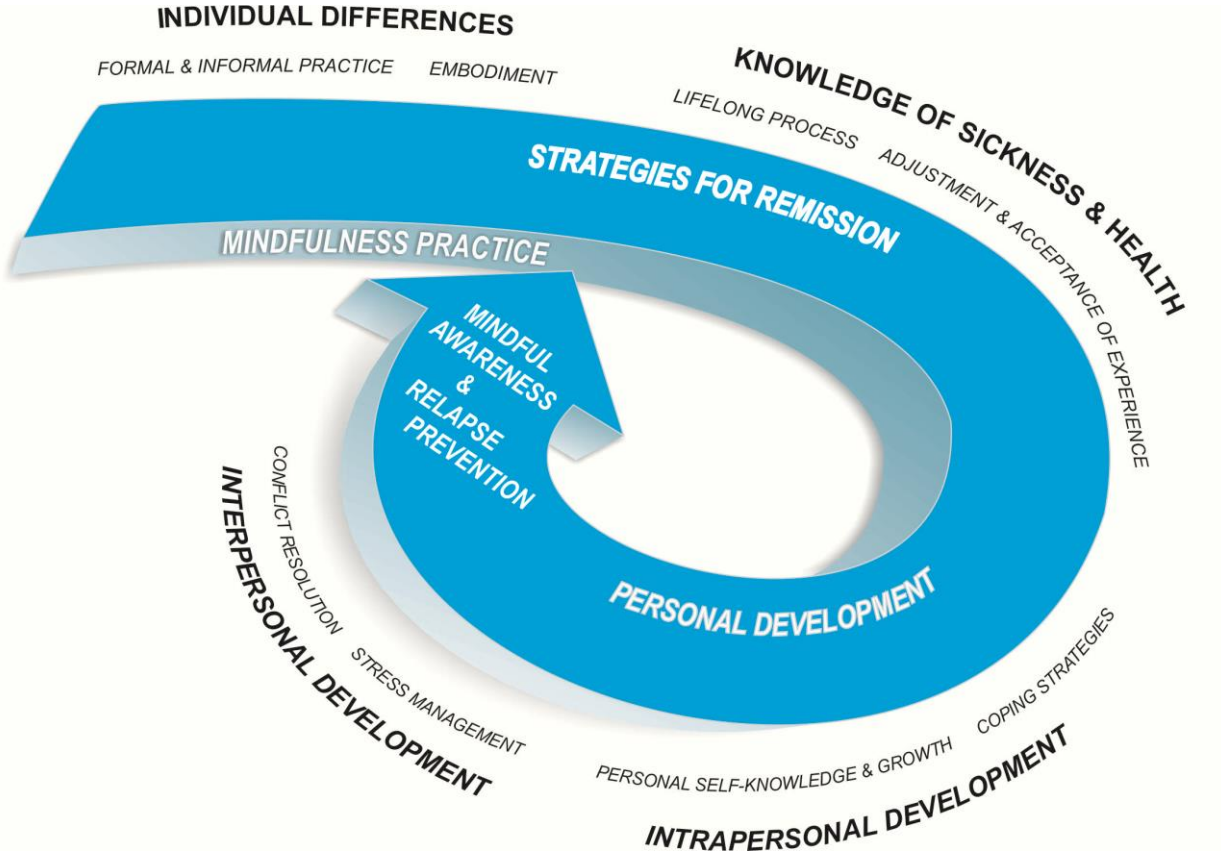


Figure 4. The process of mindful awareness and relapse prevention.

Mindfulness and embodiment

Since Descartes presented his theory of dualism in *Meditationes de prima philosophia* (1641) the mind and the body have been separated in health care. MBIs are one of the first treatments that have gained some acceptance in both the medical and psychological fields and have enabled researchers from both sides to cooperate and develop a new research area. Results from this thesis indicate that mindfulness practice, and more specifically practices that focus on the body and breathing, may have helped participants to tune into their emotional status. Ingvarsson and colleagues (2014) also address the fact that MBCT participants become more aware of the body and its signals and come to understand how the body can serve as a guide to distinguish between healthy and unhealthy behaviours. This supports Michalak and co-workers (2012) regarding the importance of embodiment (acknowledging the body's important role in emotional processes) in relation to preventing relapse to depression and as a potent mechanism of action in MBCT.

Mindfulness: individual and gender differences

Several MBIs target different areas of psychopathology (Gu et al., 2015; Shonin et al., 2015), but they are not adapted to individual differences or individual therapy. Person-oriented approaches classify individuals into subgroups in a sophisticated way that is similar to the groupings people do naturally. Clinicians also use categorical diagnoses and tend to think about their patients as belonging to certain subgroups or categories (AMA, 2013). Hence, although the past decade has shown a rapid increase of MBIs targeting many areas of psychopathology, tailoring specific mindfulness-based practices to individuals based on their mindfulness profiles may be a way to enhance the efficiency of MBIs. Someone whose mindfulness profile shows high observation of mental and emotional events, but low non-reactivity and non-judgement, may benefit most from mindfulness-based practices that cultivate acceptance and non-judging of inner experience (e.g., self-compassion meditation); however, this hypothesis warrants testing. The meta-analysis by Fox et al. (2016) supports the idea that different kinds of meditation practices can be used to target different abilities that individuals aim to cultivate. If future research supports these findings, we could individualize MBIs in a clinical setting to better fit the patients' needs.

As confirmed by the studies in this thesis, there are individual differences in mindfulness levels and profiles. Could there also be gender differences? Previous research (Leong & Zachar, 1999; Mackenzie, Gekoski, & Knox, 2006) has shown that women are more likely to seek professional psychological help than men and have more positive attitudes concerning

psychological openness. Furthermore, it has been consistently noted in religious studies that women are more religious then men (Stark, 2002). If MBIs are considered to have religious influences, it could then follow that they might be more appealing to women than to men. The findings of gender differences in mental health outcomes and levels of mindfulness need to be further examined in a larger RCT study before we can draw any conclusions regarding the results. Meanwhile we should consider that there might be some gender differences in how patients perceive MBCT.

Mindfulness and Inter- and Intra-personal development

Evidence indicates that trait mindfulness has an impact on both inter- and intra-personal levels, and this was one of the talking points during the closing panel discussion at the 2016 International Conference of Mindfulness in Rome. Findings in this thesis show that the participants' QoL improved following MBCT. QoL measures include quality of close relationships – family and friends. Research has shown that trait mindfulness predicts relationship satisfaction, skills in identifying and communicating emotions to one's partner, amount of relationship conflict, negativity, and empathy (Barnes, Brown, Krusemark, Cambell, & Rogge, 2007; Davis & Hayes, 2011; Wachs & Cordova, 2007). Moreover, people with higher trait mindfulness feel less emotional stress in response to relationship conflict and go into conflict discussion with less anger and anxiety (Barnes et al., 2007). Thus, empirical evidence suggests that mindfulness protects against the emotionally stressful effects of relationship conflict, predicts relationship satisfaction, and is positively associated with the ability to express oneself in various social situations (Davis & Hayes, 2011; Dekeyser, Raes, Leijsssen, Leyson, & Dewulf, 2008).

Social isolation and low levels of social support have consistently been associated with higher levels of stress and depression, whereas high levels of social support have been associated with positive outcomes following a wide variety of stressors (Resick, 2001; Southwick, Vythilingam, & Charney, 2005). Decreased social support has also been associated with major depression (Brugha 1995, Paykel, 1994), dysthymia (Oxman & Hull 2001), and seasonal affective disorder (Michalak, Wilkinson, Hood, Dowrick, & Wilkinson, 2003; Michalak, 2004). On the other hand, increased social support has been associated with decreased risk of developing depression, decreased functional impairment in depression (Travis et al., 2004), and greater likelihood of remission of depression (Oxman & Hull 2001, Sayal et al., 2002). Mindfulness seems to help individuals to establish and maintain

relationships. It may also act as a stabilizer of social networks, which in turn work as an important factor in preventing relapse.

Mindfulness and self-knowledge

Carlson (2013) hypothesized that mindfulness training is different from traditional self-focused interventions and can therefore lead to an altered self-knowledge. The findings in this thesis that mindfulness meditation can promote interpersonal development in a clinical population, and that experienced meditators have acquired a high ability to observe and respond to inner and external experiences in a mindful way, support this assumption. Mindfulness training is different from self-focused interventions that involve analysing, interpreting, and explaining what is observed, and can therefore be seen as a "meta" form of self-knowledge. Mindfulness practice teaches people both to both pay more attention to their current experience and at the same time practice non-evaluative observation. Overall, these findings support the idea that enhanced self-knowledge, developed by mindfulness training, is an important ingredient in MBCT for relapse prevention.

Mindfulness: stress management, emotional regulation, and acceptance

Mindfulness has been described as increasing the ability to step out of negative self-judgemental thinking, and increase acceptance of low mood and feelings (Segal et al., 2002). Findings in this thesis regarding the participants' coping strategies converge with this account. The practice seemed to be the foundation of a developmental process that gave the participants the powerful skill of being able to mindfully monitor their mental state and to handle everyday stress and demands in a non-judgemental way. Results in this thesis work well in line with conclusions made by Baer (2009) "that the practice of mindfulness cultivates an adaptive form of self-focused attention that facilitates decentring and defusion […] and improves the ability to engage in constructive, valued behaviour even while experiencing unpleasant thoughts and feelings" (p. 19).

The ability to be less reactive in stressful situation is a common goal among many patients. The findings in this thesis show that non-meditators are more reactive to emotional content (inner and external experiences), whereas experienced meditators have acquired a high ability to be less reactive and non-judgemental. As Baer and co-workers (2006) pointed out, non-reactivity can be seen as a way of operationalizing acceptance. Accepting an experience, such as feeling depressed, non-reactively may include refraining both from self-criticism about having the experience and from impulsive

reactions to the experience. Acceptance has been described as a common trait among survivors of extreme environmental hardship and threats to life (Siebert, 1996), and greater acceptance of emotional, cognitive, and physical experience is thought to be a core change process of MBCT (Segal et al., 2002). Coffey, Hartman and Fredrickson (2010) investigated the relationship between mindfulness, emotional regulation, and well-being by executing a combination of exploratory and confirmatory factor analyses and found that acceptance of one's experience matters more for mental health than present-centred attention. As argued by Linehan (1994) and, Hayes and Feldman (2004) acceptance is not equal to stagnation or "giving up", instead acceptance creates change and could therefore lead to a stabilization of remission. The findings in this thesis suggest that MBCT can help patients to better handle strong emotions and to accept the terms of living with recurrent depression. It may also prevent further relapse, possibly through patients learning an accepting way to deal with their experiences and mental health.

Future research

This thesis addresses the importance of examining culture-specific reactions and culture-specific differences in response to the translated FFMQ. Future research should

- investigate whether the reactions to the items by the Swedish participants are unique and culture-specific, or may be generalized to other cultures;
- investigate how respondents in countries with Buddhism as the state religion, perceive the items in the FFMQ, since previous research has shown low cross-cultural validity of the FFMQ; and
- control for age and gender when studying the effects of meditation practice on self-reported mindfulness since the findings indicate that these are important variables in the usefulness of FFMQ.

Future research should also develop the findings from Study II in a person-oriented approach by

- using a longitudinal design and identifying subgroups' various pros and cons with learning mindfulness skills, as well as the different developmental trajectories of individuals in acquiring mindfulness skills;
- test various versions of mindfulness programmes that are tailor-made for individuals with various kinds of difficulties; and
- analyse the mindfulness profiles of the different clinical subgroups that have been found to benefit the most from MBCT (unstable remission and early trauma).

In light of the results from this thesis, it is important to

- explore how participants use different parts of MBCT – both the mindfulness-based and the cognitive and behavioural interventions – to secure and validate the impacts the different interventions have;
- investigate the role of the body in MBCT and whether some adjustment and improvement in the MBCT programme ought to be made to improve its impact as a relapse intervention; and
- investigate possible gender differences in receptiveness to mindfulness practices and/or whether men and women process the mental events during meditation differently.

CONCLUSIONS & IMPLICATIONS

As a clinician I want to make sure that patients develop skills and acquire tools during therapy to maintain or improve their mental health. As a researcher I want to develop and improve our treatment protocols and make sure that we stay open for challenging ideas and new research. So for me it all boils down to whether MBCT targets the skills the patients need to prevent relapse and whether we can measure what has been accomplished, when the therapy is over, to ensure the quality of the programme.

- FFMQ_SWE is a reliable tool to measure self-reported mindfulness in a Swedish population, and the reduction of the number of items makes the FFMQ_SWE user-friendly, especially in clinical settings.
- Mindfulness is a multidimensional concept and the ability to observe one's emotional and mental processes is an essential dimension of mindfulness.
- Mindfulness is a skill that can change over time and might develop differently in various subgroups.
- Mindfulness practice, both regular/irregular and formal/informal, was, according to the patients, the most effective intervention against relapse.

Implications for clinical practice

- The person-oriented approach can help clinicians to tailor specific mindfulness-based practices to individuals based on their mindfulness profiles, which may be a way to enhance the efficacy and effectiveness of mindfulness-based intervention.
- MBCT conducted in Swedish primary care is effective in preventing relapse into MDD.
- MBCT can be implemented in a primary care setting where patients mainly self-refer and psychiatric comorbidity is accepted as inevitable in the diagnostic evaluation.

REFERENCES

Allen, L. M., Nelson, C. J., Rouhbakhsh, P., Scifres, S. L., Greene, R. L., Kordinak, T. S. … Morse, R. M. (1998). Gender differences in factor structure of the Self-Administered Alcoholism Screening Test. *Journal of Clinical Psychology, 54*, 439-445. doi: 10.1002/(SICI)1097-4679(199806)54:4<439:AID-JCLP6>3.0.CO;2

Allen, M., Bromley, A., Kuyken, W., & Sonnenberg, S. J. (2009). Participants' experiences of mindfulness-based cognitive therapy: 'It changed me in just about every way possible'. *Behavioural and Cognitive Psychotherapy*, *37*, 413-430. doi:10.1017/s135246580999004x

American Psychiatric Association. (2002). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Analayo, B. (2003). *Satipatthana: The direct path to realization*. Birmingham, UK: Windhorse Publications.

Ainsworth B., Marshall, J. E., Meron D., Baldwin, D. S., Chadwick, P., Marcus R.,et al. (2015). Evaluating psychological interventions in a novel experimental human model of anxiety. *Journal of Psychiatric Research, 63*, 117-122. doi.org/10.1016/j.jpsychires.2015.02.001

Baer, R. A. (2003). Mindfulness training as a clinical intervention: A conceptual and empirical review. *Clinical Psychology: Science and Practice, 10*, 125-143. doi: 10.1093/clipsy.bpg015

Baer, R. A. (2009). Self-focused attention and mechanisms of change in mindfulness-based treatment. *Cognitive Behaviour Therapy, 38*, 15-20. doi.10.1080/16506070902980703

Baer, R. A., Smith, G.T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, 13(1), 27-45.

Baer, R. A., Smith, G.T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S, et al. (2008). Construct validity of the five facet mindfulness in meditating and non-meditating samples. *Assessment*, *15*, 329-342.

Barnes, S., Brown, K. W., Krusemark, E., Campbell, W. K., & Rogge, R. D. (2007). The role of mindfulness in romantic relationship satisfaction and responses to relationship stress. *Journal of Marital and Family Therapy, 33*, 482-500. doi:10.1111/j.1752–0606.2007.00033.x

Barnhofer, T., Huntenburg, J. M., Lifshitz, M., Wild, J., Antonova, E., & Margulies, D. S. (2016). How mindfulness training may help to reduce vulnerability for recurrent depression: A neuroscientific perspective. *Clinical Psychological Science, 4*, 328-343. doi: 10.1177/2167702615595036

Bauer, S., Lambert, J. M., & Nielsen, S. L. (2004). Clinical significance methods: A comparison of statistical techniques. *Journal of Personality Assessment, 82*, 60-70.

Baxter, A. J., Scott, K. M., Ferrari, A. J., Norman, R. E., Vos, T., & Whiteford, H. A. (2014). Challenging the myth of an "epidemic" of common mental disorders: trends in the global prevalence of anxiety and depression between 1990 and 2010. *Depression and Anxiety*, 31, 506-16. doi: 10.1002/da.22230

Bergman, L. R. (1998). A pattern-oriented approach to studying individual development: Snapshots and processes. In R. B. Cairns, L. R. Bergman & J. Kagan (Eds.), *Methods and Models for Studying the Individual* (pp. 82–31). Thousand Oaks, CA: Sage Publications.

Bergman, L. R., & El-Khouri, B. M. (1987). EXACON: A Fortran 77 program for the exact analysis of single cells in a contingency table. *Educational and Psychological Measurement, 47*, 155-161. doi:10.1177/0013164487471024

Bergman, L. R., & El-Khouri, B. M. (2002). SLEIPNER. A statistical package for pattern-oriented analyses. Version 2.1. Stockholm: Stockholm University, Department of Psychology. www.psychology.su.se/sleipner.

Bergman, L. R., & Magnusson, D. (1997). A person-oriented approach in research on developmental psychopathology. *Development and Psychopathology, 9*, 291-319. DOI:10.1017/S095457949700206X

Berman, M. G., Misic, B., Buschkuehl, M., Kross, E., Deldin, P. J., Peltier, S., & Jonides, J. (2014). Does resting-state connectivity reflect depressive rumination? A tale of two analyses. *NeuroImage, 103*, 267-279. doi:10.1016/j.neuroimage.2014.09.027

Berman, M. G., Peltier, S., Nee, D. E., Kross, E., Deldin, P. J., & Jonides, J. (2011). Depression, rumination and the default network. *Social Cognitive and Affective Neuroscience, 6*, 548-555. doi:10.1093/scan/nsq080

Bihari, J. L. N., & Mullan, E. G. (2012). Relating mindfully: A qualitative exploration of changes in relationships through mindfulness-based cognitive therapy. *Mindfulness, 5*, 46-59. doi: 10.1007/s12671-012-0146-x

Bieling, P. J., Hawley, L. L., Bloch, R. T. M., Levitan, R. D., Young, L. T., & Segal, Z. V. (2012). Treatment-specific changes in decentering following mindfulness-based cognitive therapy versus antidepressant medication or placebo for prevention of depressive relapse. *Journal of Consulting and Clinical Psychology*, 80, 365-372. doi:10.1037/a0027483

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L. Anderson, N. D., Carmody, J. … Devins, G. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice, 11*, 230-241.

Bohart, A. (1983). Detachment: A variable common to many psychotherapies? Paper presented at the 63rd Annual Convention of the Western Psychological Association, San Francisco, CA.

Bondolfi, G., Jermann, F., Van der Linden, M., Gex-Fabry, M., Bizzini, L., Rouget, B. W., & Bertschy, G. (2010). Depression relapse prophylaxis with mindfulness-based cognitive

therapy: Replication and extension in the Swiss health care system. *Journal of Affective Disorders, 122*, 224-231. doi:10.1016/j.jad.2009.07.007

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77-101. doi:10.1191/1478088706qp063oa

Bravo, A. J., & Boothe, L. G., & Pearson, M. R. (2016). Getting personal with mindfulness: A latent profile analysis. *Mindfulness, 7*, 420-432. doi:10.1007/s12671-015-0459-7

Brefczynski-Lewis, J. A., Lutz, A., Schaefer, H. S., Levinson, D. B., & Davidson, R. J. (2007). Neural correlates of attentional expertise in long-term meditation practitioners. *Proceedings of the National Academy of Science*, 104, 11483-11488.

Brewer, J. A., Worhunsky, P. D., Gray, J. R., Tang, Y. Y., Weber, J., & Kober, H., 2011. Meditation experience is associated with differences in default mode network activity and connectivity. *Proceedings of the National Academy of* Science, 108, 20254-20259.

Brown, D. B., Bravo, A. J., Roos, C. R., & Pearson, M. R. (2015). Five facets of mindfulness and psychological symptoms: Evaluating a psychological model of the mechanism of mindfulness. *Mindfulness*, *6*, 1021–1032. doi:10.1007/s12671-014-0349-4

Brown, K.W., & Cordon, S. (2009). Towards a phenomenological of mindfulness: Subjective experience and emotional correlates. In F. Didonna (Ed.). *Clinical Handbook of Mindfulness* (pp. 59-81). New York: Springer Science + Business Media.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, *84*, 822-848. doi.org/10.1037/0022-3514.84.4.822

Brown, K. W., & Ryan, R. M. (2004). Perils and promise in defining and measuring mindfulness: Observations from experience. *Clinical Psychology: Science and Practice, 11*, 242-248.

Brugha, T. S. (1995). Depression undertreatment: Lost cohorts, lost opportunities? *Psychology & Medicine*, *25*, 3-6.

Buchheld, N., Grossman, P., & Walach, H. (2001). Measuring mindfulness in insight meditation (Vipassana) and meditation-based psychotherapy: The development of the Freiburg Mindfulness Inventory (FMI). *Journal for Meditation and Meditation Research, 1*, 11-34.

Buckner, R. L., Andrews-Hanna, J. R., & Schacter, D. L. (2008). The brain's default network: Anatomy, function, and relevance to disease. *Annals of the New York Academy of Sciences, 1124,* 1-38. doi:10.1196/annals.1440.011

Burgess, P., Pirkis, J., & Coombs, T. (2009). Modelling candidate effectiveness indicators for mental health services. *Australian and New Zealand Journal of Psychiatry*, 43, 531-538. doi: 10.1080/00048670902873656

Byrne, B. M. (2010). *Structural Equation Modeling with Amos – Basic Concepts, Application and Programming* (2nd Ed.). London: Routledge.

Cahn, B. R., & Polich, J., (2006). Meditation states and traits: EEG, ERP, and neuroimaging studies. *Psychological Bulletin, 132*, 180-211.

Cardaciotto, L., Herbert, J. D., Forman, E. M., Moitra, E., & Farrow, V. (2008): The assessment of present-moment awareness and acceptance: The Philadelphia Mindfulness Scale (PHLMS). *Assessment*, *15*, 204-223. doi: 10.1177/1073191107311467

Carlson, E. N. (2013). Overcoming the barriers to self-knowledge: Mindfulness as a path to seeing yourself as you really are. *Perspectives on Psychological Science*, 8, 173-186. doi:10.1177/1745691612462584.

Carlsson, M., & Hamrin, E. (1996). Measurement of quality of life in women with breast cancer. Development of a Life Satisfaction Questionnaire (LSQ-32) and a comparison with the EORTC QLQ-C30. *Quality of Life Research*, *5*, 165-74.

Carlsson, M., Hamrin, E., & Lindqvist, R. (1999). Psychometric assessment of the Life Satisfaction Questionnaire (LSQ) and a comparison of a randomised sample of Swedish women and those suffering from breast cancer. *Quality of Life Research*, *8*, 245-53.

Carson, J. W., Carson, K. M., Gil, K. M., & Baucom, D. H. (2004). Mindfulness-based relationship enhancement. *Behavior Therapy*, *35*, 471-494.

Carmody, J., & Baer, R. (2007). Relationship between mindfulness practice and levels of mindfulness, medical and psychological symptoms and well-being in mindfulness-based stress reduction program. *Journal of Behavioral Medicine*, 31, 23-33.

Carmody, J., Baer, R. A., Lykins, E. B., & Olendzki, N. (2009). An empirical study of the mechanisms of mindfulness in a mindfulness-based stress reduction program. *Journal of Clinical Psychology*, 65, 613-626.

Carmody, J., Reed, G., Kristeller, J., & Merriman, P. (2008). Mindfulness, spirituality, and health-related symptoms. *Journal of Psychosomatic Research, 64*, 393-403.

Carson, J. W., Carson, K.M., Gil, K.M., & Baucom, D.H. (2004). Mindfulness-based relationship enhancement. *Behavior Therapy*, *35*, 471-494.

Carter, O. L., Presti, D. E., Callistemon, C., Ungerer, Y., Liu, G. B., & Pettigrew, J. D. (2005). Meditation alters perceptual rivalry in Tibetan monks. *Current Biology*, 15, 412-413.

Cebolla i Martí, A., & Barrachina, M. T. M. (2009). The effects of mindfulness-based cognitive therapy: A qualitative approach. *Psychology in Spain*, 13, 9-16.

Chadwick, P., Hember, M., Symes, J., Peters, E., Kuipers, E., & Dagnan, D. (2008). Responding mindfully to unpleasant thoughts and images: Reliability and validity of the Southampton mindfulness questionnaire (SMQ). *British Journal of Clinical Psychology*, *47*, 451-455. doi:10.1348/014466508X314891

Christopher, M. S., Charoensuk, S., Brennan, G. D., Neary, T. J., & Pearce, K. L. (2009). Mindfulness in Thailand and the United States: A case of apples versus oranges? *Journal of Clinical Psychology*, 65, 590-612.

Christopher, M. S., Christopher, V., & Charoensuk, S. (2009). Assessing "Western" mindfulness among Thai Teravada Buddhist monks. *Mental Health, Religion & Culture*, 12, 303-314.

Claxton, G. (1987). Meditation in Buddhist psychology. In M. A. West (Ed.), *The Psychology of Meditation*, (pp. 23-38). Oxford: Clarendon Press.

Coffey, K. A., Hartman, M., & Fredrickson, B. L. (2010). Deconstructing mindfulness and constructing mental health: Understanding mindfulness and its mechanisms of action. *Mindfulness*, *1*, 235-253. doi: 10.1007/s12671-010-0033-2

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd Ed.). Hillsdale, NJ: Erlbaum.

Cooper, C., Bebbington, P., King, M., Brugha, T., Meltzer, H., Bhugra, D., & Jenkins, R. (2007). Why people do not take their psychotropic drugs as prescribed: Results of the 2000 National Psychiatric Morbidity Survey. *Acta Psychiatrica Scandinavica*, *116*, 47-53. doi:10.1111/j.1600-0447.2006.00974.x

Coronado-Montoya, S., Levis, A. W., Kwakkenbos, L., Steele, R. J., Turner, E. H., & Thombs, B. D. (2016). Reporting of positive results in randomized controlled trials of mindfulness-based mental health interventions. *PLoS ONE, 11*, 4:e0153220. doi:10.1371/journal.pone.0153220

Davis, D. M. & Hayes, J. A. (2011). What are the benefits of mindfulness? A practice review of psychotherapy-related research. *Psychotherapy American Psychological Association*, *48*, 198-208. doi:10.1037/a0022062

Dekeyser, M., Raes, F., Leijssen, M., Leyson, S., & Dewulf, D. (2008). Mindfulness skills and interpersonal behavior. *Personality and Individual Differences, 44*, 1235-1245. doi:10.1016/j.paid.2007.11.018

Descartes, R. (1998; first published 1641). *Discourse on Method and Meditations on First Philosophy*. (4th Ed.). Indianapolis: Hacket Publishing Company.

Didonna, F. (2009). Introduction: Where new and old paths to dealing with suffering meets. In F. Didionna, (Ed.), *Clinical Handbook of Mindfulness*. (pp. 1-14). New York: Springer.

Dimidjian, S., & Linehan, M. M. (2003). Defining an agenda for future research on the clinical application of mindfulness practice. *Clinical Psychology: Science and Practice, 10,* 166-171.

Drougge, P. (2014). Anteckningar inför en stundande backlash - Mindfulness som medelklassens opium **[**Notes facing an impending backlash - Mindfulness as a middle-class opiate**]**. In K. Plank, (Ed.). *Mindfulness, tradition, tolkning, tillämpning* **[**Mindfulness, tradition, and interpretation**]**, (pp. 203-224). Lund: Nordic Academic Press.

Duncan, L. G., & Bardacke, N. (2010). Mindfulness-based childbirth and education: Promoting family mindfulness during the perinatal period. *Journal of Child and Family Studies*, *19*, 190-202. doi:10.1007/s10826-009-9313-7

Dunning, D., Johnson, K., Ehrlinger, J., & Kruger, J. (2003). Why people fail to recognize their own incompetence. *Current Directions in Psychological Science, 12*, 83–87. doi:10.1111/1467-8721.01235

Dwight-Johnson, M., Sherbourne, C. D., Liao, D., & Wells, K. B. (2000) Treatment preferences among depressed primary care patients. *Journal of General Internal Medicine*, 15, 527-34.

Eklöf, J. (2014). Jakten på en definition – Mindfulness som gränslandsfenomen **[**The quest for a definition – Mindfulness as a borderland phenomenon**]**. In K. Plank (Ed.), *Mindfulness, tradition, tolkning, tillämpning* **[**Mindfulness, tradition and interpretation**]**, (pp. 33-53). Lund: Nordic Academic Press.

Erkut, S. (2010). Developing multiple language versions of instruments for intercultural research. *Child Development Perspective, 4*, 19-24.

Falkenström, F. (2009). Studying mindfulness in experienced meditators: A quasi-experimental approach. *Personality and Individual Differences, 48*, 305-310.

Feldman, G., Hayes, A., Kumar, S., Greeson, J., & Laurenceau, J-P. (2007). Mindfulness and emotion regulation: The development and initial validation of the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R). *Journal of Psychopathological Behaviour Assessment, 29*, 177-190.

Ferrari, A. J., Sumerville, A. J., Baxter, A. J., Norman, R., Patten, S. B., Vos, T., & Whiteford, H.A. (2013.) Global variation in the prevalence and incidence of major depressive disorder: A systematic review of the epidemiological literature. *Psychological Medicine*, 43, 471-481.

Finucane, A., & Mercer, S. W. (2006). An exploratory mixed methods study of the acceptability and effectiveness of Mindfulness-Based Cognitive Therapy for patients with active depression and anxiety in primary care. *BMC Psychiatry, 6*, 1-14. doi:10.1186/1471-244x-6-14.

Fox, K. C., Dixon, M. L., Nijeboer, S., Girn, M., Floman, J. L., Lifshitz, M. … Christoff K. (2016). Functional neuroanatomy of meditation: A review and meta-analysis of 78 functional neuroimaging investigations. *Neuroscience and Biobehavioral Reviews, 65,* 208-228. doi.org/10.1016/j.neubiorev.2016.03.021

Fox, K. C., Nijeboer, S., Dixon, M. L., Floman, J. L., Ellamil, M., Rumak, S. P., & Christoff, K. (2014). Is meditation associated with altered brain structure? A systematic review and meta-analysis of morphometric neuroimaging in meditation practitioners. *Neuroscience & Biobehavioral Reviews, 43*, 48-73. doi:10.1016/j.neubiorev.2014.03.016

Fresco, D. M., Moore, M. T., van Dulmen, M. H., Segal, Z. V., Ma, S. H., & Teasdale J. D. (2007). Initial psychometric properties of the experiences questionnaire: Validation of a self-report measure of decentering. *Behavior Therapy, 38*, 234-246. [PubMed: 17697849]

Germer, G. K. (2005). Mindfulness; What is it? What does it matter? The roots of mindfulness. In G. K. Germer, R. D. Siegel, & P. R. Fulton (Eds.), *Mindfulness and Psychotherapy* (pp. 3-27). New York: Guilford.

Gethin, R. (2011). On some definitions of mindfulness. *Contemporary Buddhism*, *12*, pp. 263-279. doi: 10.1080/14639947.2011.564843

Godfrin, K. A., & van Heeringen, C. (2010) The effects of mindfulness-based cognitive therapy on recurrence of depressive episodes, mental health and quality of life: A randomized controlled study. *Behaviour Research and Therapy, 48,* 738-746. doi:10.1016/j.brat.2010.04.006

Goldberg, S. B., Del Re, A. C., Hoyt, W. T., & Davis, J. M. (2014). The secret ingredient in mindfulness interventions? A case for practice quality over quantity. *Journal of Counseling Psychology, 61,* 491-497. doi.org/10.1037/cou0000032

Goldberg, S. B., Wielgosz, J., Dahl, C., Schuyler, B., MacCoon, D. S., Rosenkranz, M., Lutz, A. … Davidson R. J. (2015). Does the Five Facet Mindfulness Questionnaire measure what we think it does? Construct validity evidence from an active controlled randomized clinical trial. *Psychological Assessment, 12,* 1009-1014. doi.org/10.1037/pas0000233

Goldstein, J. (2002). *One Dharma: The emerging Western Buddhism*. San Francisco: Harper Collins.

Goldstein, J., & Kornfield, J. (1987). *Seeking the heart of wisdom: The path of insight meditation*. Boston: Shambhala Classics.

Goyal, M., Singh, S., Sibinga, E. M., Gould, N. F., Rowland-Seymour, A., Sharma, R., & Haythornthwaite, J. A. (2014). Meditation programs for psychological stress and well-being: A systematic review and metaanalysis. *Journal of the American Medical Association Internal Medicine, 174,* 357-368. doi.org/10.1001/jamainternmed.2013.13018

Greicius, M. D., Krasnow, B., Reiss, A. L., & Menon, V. (2003). Functional connectivity in the resting brain: A network analysis of the default mode hypothesis. *Proceedings of the National Academy of Sciences, 100,* 253-258. doi:10.1073/pnas.0135058100

Grossman, P. (2008). On measuring mindfulness. *Journal of Psychosomatic Research, 64,* 405-408. doi:10.1016/j.jpsychores.2008.02.001.

Grossman, P. (2011). Defining mindfulness by how poorly I think I pay attention during everyday awareness and other intractable problems for psychology's (re)invention of mindfulness: Comment on Brown et al. *Psychological Assessment, 23,* 1034-1040. doi:org/10.1037/a0022713

Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress reduction and health benefits, a meta-analysis. *Journal of Psychosomatics Research, 57,* 35-43.

Gu, J., Strauss, C., Bond, R., & Cavanagh, K. (2015). How do mindfulness-based cognitive therapy and mindfulness-based stress reduction improve mental health and wellbeing? A systematic review and meta-analysis of meditation studies. *Clinical Psychology Review, 37,* 1-12. doi:org/10.1016/j.cpr.2015.01.006.

Gunaratana, B. H. (2002). *Mindfulness in plain English*. Somerville, MA: Wisdom Publications.

Gyatso, T., & Jinpa, T. (1995). *The World of Tibetan Buddhism: An Overview of Its Philosophy and Practice*. Somerville, MA: Wisdom Publications.

Haigh EA, Moore MT, Kashdan TB, & Fresco DM. (2011). Examination of the factor structure and concurrent validity of the Langer Mindfulness/Mindlessness Scale. *Assessment, 18*, 11-26. [PubMed: 20980699]

Hansen, E., Lundh, L. G., Homman, A., & Wångby-Lundh, M. (2009). Measuring mindfulness. Pilot studies with the Swedish versions of the Mindful Attention Awareness Scale (MAAS) and the Kentucky Inventory of Mindfulness Skills (KIMS). *Cognitive Behaviour Therapy, 38*, 2-15.

Hatcher, R. L., & Gillaspy, J. A. (2006). Development and validation of a revised short version of the Working Alliance Inventory. *Psychotherapy Research, 16, 12-25.*

Harvey, P. (1990). *An introduction to Buddhism: Teachings, history, and practices*. Cambridge, U.K., New York: Cambridge University Press.

Hayes, A. M., & Feldman, G. (2004). Clarifying the construct of mindfulness in the context of emotion regulation and the process of change in therapy. *Clinical Psychology: Science and Practice, 11,* 255-262. doi: 10.1093/clipsy.bph080

Hayes, S. (2002). Buddhism and acceptance and commitment therapy. *Cognitive and Behavioral Practice, 9*, 58-66.

Hayes, S. C., Strosahl, K. D, & Wilson, K. G. (1999). *Acceptance and Commitment Therapy*. New York: The Guilford Press.

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (2004). *Acceptance and Commitment Therapy – An experimental approach to behavior change*. New York: Guilford Publications.

Hayes, S. C., & Wilson, K. G. (2004). Operationalizing mindfulness without unnecessary attachments. *Clinical Psychology: Science and Practice*, *11*, 249-254. doi: 10.1093/clipsy.bph079

Heeren, A., & Philippot, P. (2011). Changes in ruminative thinking mediate the clinical benefits of mindfulness: Preliminary findings. *Mindfulness, 2*, 8-13. doi:10.1007/s12671-010-0037-y

Hermann, C. (1997). International experiences with the Hospital Anxiety and Depression Scale – A review of validation data and clinical results. *Journal of Psychosomatic Research, 42*, 17-41.

Hoffman, S. G., Sawyer, A. T., Witt, A. A., & Oh, D. (2010). The effect of mindfulness-based therapy on anxiety and depression: a meta-analytic review. *Journal of Consulting and Clinical Psychology*, *78*, 169-183.

Hölzel, B. K., Carmody, J., Evans, K. C., Hoge, E. A., Dusek, J. A., Morgan, L., & Lazar, S. W. (2010). Stress reduction correlates with structural changes in the amygdala. *Social Cognitive and Affective Neuroscience*, 5, 11–17. doi:10.1093/scan/nsp034

Hölzel, B. K., Carmody, J., Vangel, M., Congleton, C., Yerramsetti, S. M., Gard, T., & Lazar, S. W. (2011). Mindfulness practice leads to increases in regional brain gray matter density. *Psychiatry Research*, *191,* 36-43. doi:10.1016/j.pscychresns.2010.08.006

Hölzel, B. K., Lazar, S. W., Gard, T., Schuman-Olivier, Z., Vago, D. R., & Ott, U. (2011). How does mindfulness meditation work? Proposing mechanisms of action from a

conceptual and neural perspective. *Perspectives on Psychological Science*, 6, 537-559. doi:10.1177/1745691611419671

Hölzel, B. K., Ott, U., Hempel, H., Hackl, A., Wolf, K., Stark, R., & Vaitl, D. (2007). Differential engagement of anterior cingulate and adjacent medial frontal cortex in adept meditators and non-meditators. *Neuroscience Letters, 421*, 11-17. doi:10.1016/j.neulet.2007.04.074

Horvath. A. O., & Greenberg, L. S. (1989). Development and validation of the Working Alliance Inventory. *Journal of Counseling Psychology, 36*, 223-233. doi:22-0167/89/$00.75

Ingvarsson, T., Nordén, T., & Norlander, T. (2014). Mindfulness-based cognitive therapy: A case study on experiences of healthy behaviours by clients in psychiatric care. *Open Journal of Medical Psychology*, 3, 390-402. doi.org/10.4236/oimp.2014.35041

Ives-Deliperi, V. L., Solms, M., & Meintjes, E. M. (2011).The neural substrates of mindfulness: An fMRI investigation. *Social Neuroscience, 6*, 231-242.doi: 10.1080/17470919.2010.513495

Jacobson, N. S, & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology*, *59*, 12-19.

James, W. (1950; original published in 1890). *The Principles of Psychology*. New York: Dover.

Jha, A. P., Krompinger, J., & Baime, M. J. (2007). Mindfulness training modifies subsystems of attention. *Cognitive, Affective, & Behavioral Neuroscience*, *7*, 109-119.

Josefsson, T., & Broberg, A. (2010). Meditators and non-meditators on sustained and executive attentional performance. *Mental Health, Religion & Culture*. 1-19.

Josefsson, T., Lindwall, M., & Broberg, A. (2014). The effects of a short-term mindfulness based intervention on self-reported mindfulness, decentering, executive attention, psychological health, and coping style: Examining unique mindfulness effects and mediators. *Mindfulness*, *5*, 18-35. doi:10.1007/s12671-012-0142-1

Judd, L. L., Akiskal, H. S., Zeller, P. J., Paulus, M., Leon, A. C., Maser, J. D., et al. (2000). Psychosocial disability during the long-term course of unipolar major depressive disorder. *Archives of General Psychiatry*, *57*, 375-380.

Kabat-Zinn, J. (1982). An outpatient program in behavioural medicine for chronic pain patients based on the practice of mindfulness meditation: Theoretical considerations and preliminary results. *General Hospital Psychiatry, 4*, 33-47.

Kabat-Zinn, J. (1990). *Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain and Illness*. New York: Delacorte.

Kabat-Zinn, J. (1995). *Wherever You Go There You Are. Mindfulness Meditation in Everyday Life*. New York: Hyperion.

Kabat-Zinn, J. (2000). Indra's net at work: The mainstreaming of Dharma practice in society. In G. Watson & S. Batchelor (Eds.), *The Psychology of Awakening: Buddhism, Science, and Our Day-to-day Lives* (pp. 225-249). North Beach, ME: Weiser.

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present and future. *Clinical Psychology: Science and Practice*, *10*, 144-156. doi.org/10.1093/clipsy.bsp016

Kabat-Zinn, J. (2004). *Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain and Illness*. London: Piatkus Books.

Kabat-Zinn, J. (2013). *Full catastrophe living. Using the wisdom of your body and mind to face stress, pain and illness* (2nd rev. ed.). New York: Bentham Random House.

Kaplan, W., & Laing, R. (2004). *Priority medicine for Europe and the World.* Geneva: World Health Organization.

Keller, M. B., & Boland, R. J. (1998). Implications of failing to achieve successful long-term maintenance treatment of recurrent unipolar major depression. *Biological Psychiatry, 44,* 348-360.

Keijsers, G. P. J., Schaap, C. P. D. R., Hoogduin, C., Hoogsteyns, B., & de Kemp, E. C. M. (1999). Preliminary results of a new instrument to assess patient motivation for treatment in cognitive-behaviour therapy. *Behavioural and Cognitive Psychotherapy*, *27*, 165-179.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62, 593-602.

Kessler, R. C., McGonagle, K. A., Swartz, M., Blazer, D. G., & Nelson C. B. (1993) Sex and depression in the National Comorbidity Survey I: Lifetime prevalence, chronicity and recurrence. *Journal of Affective Disorders*, *29*, 85-96.

Khoury, B., Lecomte, T., Fortin, G., Masse, M., Therien, P., Bouchard, V., & Hofmann, S. G. (2013). Mindfulness-based therapy: A comprehensive meta-analysis. *Clinical Psychology Review*, 33, 763-771. doi:org/10.1016/j.cpr.2013.05.005

Kiken L. G., Garland, E. L., Bluth, K., Palsson, O. S., & Gaylord, S. A. (2015). From a state to a trait: Trajectories of state mindfulness in meditation during intervention predict changes in trait mindfulness. *Personality and Individual Difference*, *81*, 41-46. doi:10.1016/j.paid.2014.12.044

Kline, P. (1999). *Handbook of Psychological Testing*. (2nd rev. ed.). London: Taylor Francis.

Kline, R. B. (2005). *Principles and Practice of Structural Equation Modeling* (2nd ed). New York: Guilford Press.

Kornfield, J. (1993). The seven factors of enlightenment. In R. Walsh & F. Vaughan (Eds.), *Paths Beyond Ego: The Transpersonal Vision* (pp. 56-59). Los Angeles: Tarcher.

Kristeller, J. L., Baer, R. A., & Quillian-Wolever, R. (2006). Mindfulness-based approaches to eating disorders. In R. A. Baer, *Mindfulness Based Treatment Approaches: A Clinician's Guide to Evidence Base and Applications* (pp. 75-91). San Diego, CA: Academic Press.

Kruger, J. & Dunning. D. (1999). Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology, 77,* 1121-34. doi:10.1037/0022-3514.77.6.1121.

Kuyken, W., Taylor, R. S., Barrett, B., Evans, A., Byford, S., Watkins, E. … Teasdale JD. (2008). Mindfulness-based cognitive therapy to prevent relapse in recurrent depression. *Journal of Consulting and Clinical Psychology, 76,* 966-978.

Kvale, S., & Brinkmann, S. (2009). *InterViews: Learning the Craft of Qualitative Interviewing* (2nd ed.). Los Angeles: Sage Publications.

Lambert, M. J., & Ogles, B. M. (2009). Using clinical significance in psychotherapy outcome research: The need for a common procedure and validity data. *Psychotherapy Research, 19,* 493-501. doi: 10.1080/10503300902849483

Langdon, S., Jones, F. W., Hutton, J., & Holttum, S. (2011). A grounded-theory study of mindfulness practice following mindfulness-based cognitive therapy. *Mindfulness, 2,* 270-281. doi: 10. 1007/s12671-011-0070-5

Lau, M. A., Bishop, S. R., Segal, Z. V., Buis, T., Anderson, N. D., Carlson, L. … Devin, G. (2006). The Toronto Mindfulness Scale: Development and validation. *Journal of Clinical Psychology, 62,* 1445-1467.

Lazar, S. W., Kerr, C. E., Wasserman, R. H., Gray, J. R., Greve, D. N., Treadway, M. T., & Fischl, B. (2005). Meditation experience is associated with increased cortical thickness. *NeuroReport, 16,* 1893-1897.

Leong, F. T. L., & Zachar, P. (1999). Gender and opinions about mental illness as predictors of attitudes toward seeking professional psychological help. *British Journal of Guidance & Counselling, 27,* 123-132. doi:10.1080/03069889908259720

Lilja, J. L., Broberg, M., Norlander, T., & Broberg, A. G. (2015). Mindfulness-based cognitive therapy: Primary care patients' experiences of outcomes in everyday life and relapse prevention. *Psychology, 6,* 464-477. doi:10.4236/psych.2015.64044

Lilja, J. L., Frodi-Lundgren, A., Johansson Hanse, J., Josefsson T., Lundh, L-G., Sköld, C. ... Broberg, A. G.. (2011). Five Facet Mindfulness Questionnaire – reliability and factor structure: A Swedish version. *Cognitive Behaviour Therapy, 40,* 291-303. doi:10.1080/16506073.2011.580367

Lilja, J. L., Lundh, L.-G., Josefsson, T., & Falkenström, F. (2013). Observing as an essential facet of mindfulness: a comparison of FFMQ patterns in meditating and non-meditating individuals. *Mindfulness, 4,* 203-212. doi:10.1007/s12671-012-0111-8.

Linehan, M. M. (1993a). *Cognitive behavioral treatment of borderline personality disorder*. New York: The Guilford Press.

Linehan, M. M. (1993b). *Skills training manual for treating borderline personality disorder*. New York: Guildford.

Linehan, M. M. (1994). Acceptance and change: The central dialectic in psychotherapy. In S.C. Hayes, N. S. Jacobson, V. M. Follette, & M. J. Dougher (Eds.), *Acceptance and change: Content and context in psychotherapy* (pp. 73-86). Reno, NV: Context Press.

Lisspers, J., Nygren, A., & Soederman, E. (1997). Hospital Anxiety and Depression Scale (HAD): Some psychometric data for a Swedish sample. *Acta Psychiatrica Scandinavica, 96,* 281-286.

Luders, E., Thompson, P. M., & Kurth, F., (2015). Larger hippocampal dimensions in meditation practitioners: Differential effects in women and men. *Frontiers in Psychology, 6,* 1-6. doi: 10.3389/fpsyg.2015.00186

Luders, E., Thompson, P. M., Kurth, F., Hong, J. Y., Phillips, O. R., Wang, Y. … Toga, A. W. (2013). Global and regional alterations of hippocampal anatomy in long-term meditation practitioners. *Human Brain Mapping, 34,* 3369-3375.doi:10.1002/ hbm.22153

Lutz, A., & Greischar, L. (2004). Long-term meditators self-induce high-amplitude gamma synchrony during mental practice. *Proceedings of the National Academy of Sciences, 101,* 16369-16373. doi:10.1073/pnas.0407401101

Lutz, A., Slagter, H. A., Dunne, J. D. & Davidson, R. J. (2008). Attention regulation and monitoring in meditation. *Trends in Cognitive Science, 12,* 163-169. doi:10.1016/j.tics.2008.01.005

Ma, S. H., & Teasdale, J. D. (2004). Mindfulness-based cognitive therapy for depression: Replication and exploration of differential relapse prevention effects. *Journal of Consulting and Clinical Psychology*, 72, 31-40. doi:org/10.1037/0022-006X.72.1.31

MacCoon, D. G., Imel, Z. E., Rosenkranz, M. A., Sheftel, J. G., Weng, H. Y., Sullivan, J. C. … Lutz. A/ (2012). The validation of an active control intervention for Mindfulness Based Stress Reduction (MBSR). *Behaviour Research and Therapy, 50,* 3-12. doi: org/10.1016/.brat.2011.10.011

Mackenzie, C. S., Gekoski, W. L., & Knox, V. J. (2006). Age, gender, and the underutilization of mental health services: The influence of help-seeking attitudes. *Aging & Mental Health, 10,* 574-582. doi:10.1080/13607860600641200

Malpass, A., Carel, H., Ridd, M., Shaw, A., Kessler, D., Sharp, D. … Wallond, J.. (2011). Transforming the perceptual situation: a meta-ethnography of qualitative work reporting patients' experiences of mindfulness-based approaches. *Mindfulness, 3,* 60-75. doi: 10.1007/s12671-011-0081-2

Malterud, K. (2001). Qualitative research: Standards, challenges and guidelines. *Lancet, 358,* 483-488. doi.org/10.1016/S0140-6736(01)05627-6

Manna, A., Raffone, A., Perruccia, M. G., Nardo, D., Ferretti, A., Tartaro, A. ... Romani, G. L. (2010). Neural correlates of focused attention and cognitive monitoring in meditation. *Brain Research Bulletin, 82,* 46-56. doi:10.1016/j.brainresbull.2010.03.001

Marchand, W. R. (2014) Neural mechanisms of mindfulness and meditation: Evidence from neuroimaging studies. *World Journal of Radiology*, *6*, 471-479 doi: http://dx.doi.org/10.4329/ wjr.v6.i7.471

Marlatt, G. A., & Kristeller, J. L. (1999). Mindfulness and meditation. In W. R. Miller (Ed.), *Integrating Spirituality into Treatment* (pp. 67–84). Washington, DC: American Psychological Association.

Mason, O., & Hargreaves, I. (2001). A qualitative study of mindfulness-based cognitive therapy for depression. *British Journal of Medical Psychology*, *74*, 197-212. doi: 10.1348/000711201160911

Mason, M. F., Norton, M. I., Van Horn, J. D., Wegner, D. M., Grafton, S. T., & Macrae, C. N. (2007). Wandering minds: The default network and stimulus-independent thought. *Science*, *315*, 393-395. doi:10.1126/science.1131295

Mayberg, H. S. (1997). Limbic-cortical dysregulation: A proposed model of depression. *Journal of Neuropsychiatry and Clinical Neurosciences*, *9*, 471-481.

Meadows, G. N., Shawyer, F., Enticott, J. C., Graham, A. L., Judd, F., Martin, P. R., & Segal, Z. (2014). Mindfulness-based cognitive therapy for recurrent depression: A translational research study with 2-year follow-up. *Australian and New Zealand Journal of Psychiatry*, *48*, 743-755. doi:10.1177/0004867414525841

Michalak, E. E., Tam, E. M., Manjunath, C. V., Yatham, L. N., Levitt, A. J., Levitan, R. D., Lam, R. W. (2004). Hard times and good friends: Negative life events and social support in patients with seasonal and nonseasonal depression. *Canadian Journal of Psychiatry 49*, 408-11.

Michalak, E. E., Wilkinson, C., Hood. K., Dowrick, C., & Wilkinson, G. (2003). Seasonality, negative life events and social support in a community sample. *British Journal of Psychiatry*, *182*, 434-438.

Michalak, J., Burg, J., & Heidenreich, T. (2012). Don't forget your body: Mindfulness, embodiment and the treatment of depression. *Mindfulness, 3,* 190-199. doi: 10.1007/s12671-012-0107-40

Mind & Life Institute. (2016). Mission. Retrieved from https://www.mindandlife.org/mission/

Morone, N. E., Greco, C. M., & Weiner, D. K, (2008). Mindfulness meditation for treatment of chronic low back pain in older adults: A randomized controlled pilot study. *Pain*, *134*, 310-319.

Munshi, K., Eisendrath, S., & Delucchi, K. (2012). Preliminary long-term follow-up of mindfulness-based cognitive therapy-induced remission of depression. *Mindfulness, 4,* 354-361. doi:10.1007/s12671-012-0135-0

National Institute for Clinical Excellence. (2009). Depression in adults: Management and treatment of depression in adults, Clinical Guideline No. 90. Retrieved from https://www.nice.org.uk/guidance/cg90

Nolen-Hoeksema, S. (2000). The role of rumination in depressive disorders and mixed anxiety/depressive symptoms. *Journal of Abnormal Psychology*, *109*, 504-511.

Nolen-Hoeksema, S., Wisco, B. E., & Lyubomirsky, S. (2008). Rethinking rumination. *Perspectives on Psychological Science*, *3*, 400-424.

Norman, G. R., & Streiner, D.L.(1989). *Health measurement scales. A practical guide to their development and use*. New York: Oxford University Press.

Nyklicek, I. (2010). Mindfulness, emotion regulation and well-being. In: Nyclieck, I., Vingerhoets, A., & Zeelenberg, M. (Eds.), *Emotion Regulation and Well-Bein*g (pp. 101-118). New York: Springer Science and Business Media.

Olendzki, A. (2005). The roots of mindfulness. In G. K. Germer, R. D. Siegel, & P. R. Fulton, (Eds.), *Mindfulness and Psychotherapy*, New York: Guilford.

Olendzki, A. (2005). The roots of mindfulness. In G. K. Germer, R. D. Siegel, & P. R. Fulton (Eds.), *Mindfulness and psychotherapy*. New York: Guilford.

Olendzki, A. (2011). The construction of mindfulness. *Contemporary Buddhism*, *12*, 55-70.

Olendzki, A. (2014). From early Buddhist traditions to western psychological science. In A. Ie, C. T. Ngnoumen, & E. J. Langer (Eds.), *Wiley-Blackwell handbook of mindfulness*. West Sussex: John Wiley & Sons.

Oxman, T. E, Hull, J. G. (2001). Social support and treatment response in older depressed primary care patients. *Journal of Gerontology: Psychological Sciences 56B*, 35-45.

Pagnoni, G., & Cekic, M. (2007). Age effect on grey matter volume and attentional performance in Zen meditation. *Neurobiology of Aging*, *28*, 1623-1627. doi:10.1016/j.neurobiolaging.2007.06.008

Pagnoni, G., Cekic, M., & Guo, Y. (2008). "Thinking about not-thinking": Neural correlates of conceptual processing during Zen meditation. *PLoS ONE, 3*, 1-10..doi.org/10.1371/journal.pone.0003083

Park, T., Reilly-Spong, M., & Gross, C. R. (2013). Mindfulness: A systematic review of instruments to measure an emergent patient reported outcome (PRO). *Quality of Life Research*, *22*, 2639-2659. doi: 10.1007/s11136-013-0395-8

Paykel, E. S. (1994). Life events, social support and depression. *Acta Psychiatrica Scandinavia Supplements*, *377*, 50-58.

Pearson, M. R., Brown, D. B., Bravo, A. J., & Witkiewitz, K. (2015). Staying in the moment and finding purpose: The associations of trait mindfulness, decentering, and purpose in life with depressive symptoms, anxiety symptoms, and alcohol-related problems. *Mindfulness*, 6, 645-653. doi:10.1007/s12671-014-0300-8.

Pearson, M. R., Lawless, A. K., Brown, D. B., & Bravo, A. J. (2015). Mindfulness and emotional outcomes: identifying subgroups of college students using latent profile analysis. *Personality and Individual Differences, 76*, 33-38. doi:10.1016/j.paid.2014.11.009.

Pett, M. A., Lackey, N. R., & Sullivan, J. J. (2003). *Making Sense of Factor Analysis: The Use of Factor Analysis for Instrument Development in Health Care Research*. London: SAGE Publications.

Phan, K. L., Wager, T., Taylor, S. F., & Liberzon, I. (2002). Functional neuroanatomy of emotion: A meta-analysis of emotion activation studies in PET and fMRI. *NeuroImage*, *16*, 331-348. doi:10.1006/nimg.2002.1087

Piccinelli, M., & Homen, F. G. (1997). *Gender Differences in the Epidemiology of Affective Disorders and Schizophrenia*. Geneva: World Health Organization.

Piet, J., & Hougaard, E. (2011) The effect of mindfulness-based cognitive therapy for prevention of relapse in recurrent major depressive disorder: A systematic review and meta-analysis. *Clinical Psychology Review*, *31*, 1032-1040.

Plank, K. (2011). *Insikt och Närvaro. Akademiska kontemplationer kring Buddhism, meditation och mindfulness* [Insight and Presence. Academic Contemplations Regarding Buddhism, Meditation and Mindfulness]. Göteborg & Stockholm: Makadam.

Plank, K. (2014). Buddhistiska demoner och kliniska depressioner – Mindfulness som bot och helande **[**Buddhist demons and clinical depression - Mindfulness as a cure and healing**]**. In K. Plank (Ed.). *Mindfulness, tradition, tolkning, tillämpning* **[**Mindfulness, tradition, interpretation, and application**]**, (pp. 55-79). Lund: Nordic Academic Press.

Raes, F., Dewulf, C., Van Heeringen, C., & Williams, J. M. G. (2009). Mindfulness and reduced cognitive reactivity to sad mood: Evidence from a correlational study and a non-randomised waiting list controlled study. *Behaviour Research and Therapy*, 47, 623-627. doi:10.1016/j.brat.2009.03.007

Raichle, M. E., MacLeod, A. M., Snyder, A. Z., Powers, W. J., Gusnard, D. A., & Shulman, G. L. (2001). A default mode of brain function. *Proceedings of the National Academy of Sciences*, *98*, 676-682. doi:10.1073/pnas.98.2.676

Resick, P. A. 2001. *Clinical Psychology: A Modular Course*. Philadelphia, PA: Taylor & Francis

Rosenberg, L. (1998). *Breath by Breath*. Boston: Shambhala.

Safran, J. (1990). Towards a refinement of cognitive therapy in light of interpersonal theory: I. Theory. *Clinical Psychology Review*, *10*, 87-105. doi:10.1016/0272-7358(90)90108-M.

Salzberg, S. (1995). *Lovingkindness. The Revolutionary Art of Happiness*. Boston: Shambhala.

Sayal, K., Checkley, S., Rees, M., Jacobs, C., Harris, T., Papadopoulos, A., & Poon L. (2002). Effects of social support during weekend leave on cortisol and depression ratings: a pilot study. *Journal of Affective Disorders, 71,* 153-157.

Scher, C. D., Ingram, R. E., & Segal, Z. V. (2005). Cognitive reactivity and vulnerability: Empirical evaluation of construct activation and cognitive diatheses in unipolar depression. *Clinical Psychology Review*, 25, 487-510. doi:10.1016/j.cpr.2005.01.005

Schmidt, S. (2011). Mindfulness in east and west – is it the same? In H. Walach, S. Schmidt, & J. Wayne (Eds.), *Neuroscience, Consciousness and Spirituality* (pp. 23-38). New York: Springer.

Schooler, J. W., Mrazek, M. D., Franklin, M. S., Baird, B., Mooneyham, B. W., Zedelius, C., & Broadway, J. M. (2014). The middle way: Finding the balance between mindfulness and mind-wandering. *Psychology of Learning and Motivation*, *60*, 1-33. doi:10.1016/B978-0-12-800090- 8.00001-9

Segal, Z. V., Bieling, P., Young, T., McQueen G., Cooke R., Martin L. … Levitan, R. D. (2010). Antidepressant monotherapy versus sequential pharmacotherapy and mindfulness-based cognitive therapy, or placebo, for relapse prophylaxis in recurrent depression. *Archives of General Psychiatry, 67,* 1256-1264. doi:10.1001/archgenpsychiatry.2010.168.

Segal, Z. V., Kennedy, S., Gemar, M., Hood, K., Pedersen, R., & Buis, T. (2006). Cognitive reactivity to sad mood provocation and the prediction of depressive relapse. *Archives of General Psychiatry*, *63*, 749-755.

Segal, Z. V., Williams, J. M., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression*. *A New Approach to Preventing Relapse*. New York: The Guilford Press.

Segal, Z. V., Williams, J. M., Teasdale, J. D., & Gemar, M. (1996). A cognitive science perspective on kindling and episode sensitization in recurrent affective disorder. *Psychological Medicine,* 26, 371-380.

Segal, Z. V., Williams, J. M. G. & Teasdale, J. D. (2013). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse* (2nd ed.). New York: Guilford Press.

Segal, Z. V., Williams, J. M. G. & Teasdale, J. D. (2014). *Mindfulnessbaserad kognitiv terapi vid depression* [Mindfulness-based cognitive therapy for depression] (2 ed.). Stockholm: Natur & Kultur.

Shahar, B., Britton, W. B., Sbarra, D. A., Figueredo, A. J., & Bootzin, R. R. (2010). Mechanisms of change in mindfulness-based cognitive therapy for depression: Preliminary evidence from a randomized controlled trial. *International Journal of Cognitive Therapy, 3*, 402-418.

Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of mindfulness. *Journal of Clinical Psychology*, *62*, 373–386. doi: 10.1002/jclp.20237

Shapiro, S. L., Oman, D., Thoresen, C. E., Plante, T. G., & Flinders, T. (2008). Cultivating mindfulness: Effects on well-being. *Journal of Clinical Psychology*, *64*, 840-862.

Sharf, R. H. (2014). Mindfulness and mindlessness in early Chan. *Philosophy East & West, 64*, 933-964.doi: 10.1353/pew.2014.0074

Shonin, E., Van Gordon, W., Compare, A., Zangeneh, M., & Griffiths, M. D. (2015). Buddhist-derived loving-kindness and compassion meditation for the treatment of psychopathology: A systematic review. *Mindfulness, 6*, 1161-1180.

Shulman, G. L., Fiez, J. A., Corbetta, M., Buckner, R. L., Miezin, F. M., Raichle, M. E., & Petersen, S. E. (1997). Common blood flow changes across visual tasks: II. Decreases in cerebral cortex. *Journal of Cognitive Neuroscience, 9*, 648-663.

Siebert A. (1996). *The Survivor Personality*. New York: Pedigree Books.

Simon R., & Engström M. (2015). The default mode network as a biomarker for monitoring the therapeutic effects of meditation. *Frontiers of Psychology, 6*, 1-10.

Slagter, H. A., Lutz, A., Greischar, L. L., Francis, A. D., Niewenhuis, S., Davis, J. D., & Davidson, R. J. (2007). Mental training affects distribution of limited brain resources. *PLoS Biology, 5*, 1228-1235.

Sobocki, P., Angst, J., Jönsson, B., & Rehnberg C. (2006). Cost of depression in Europe. *Journal of Mental Health Policy and Economics*, *9*, 87-98.

Southwick, S.M, Vythilingam, M., & Charney, D.S. (2005). The psychobiology of depression and resilience to stress: Implications for prevention and treatment *Annual Review of Clinical Psychology*. 1255-1291. doi: 10.1146/annurev.clinpsy.1.102803.143948

Spitzer, R. L., Williams, J. B., Kroenke, K., Linzer, M., deGruy, F. V., 3rd, Hahn, S. R. … Johnson, J. G. (1994). Utility of a new procedure for diagnosing mental disorder in primary care. The PRIME-MD 1000 Study. *Journal of the American Medical Association, 272*, 1749-1756.

Stark, R. (2002). Physiology and faith: Addressing the universal gender difference in religious commitment. *Journal for the Scientific Study of Religion*, *41*, 495-507. doi: 10.1111/1468-5906.00133

Swift, J. K., Callahan, J. L., & Vollmer, B. M. (2011). Preferences. *Journal of Clinical Psychology*, *67*,155-165.

Tang, Y.-Y., Ma, Y., Wang, J., Fan, Y., Feng, S., Lu, Q. ... Posner, M. I. (2007). Short-term meditation training improves attention and regulation. *Proceedings of the National Academy of Sciences, 104*, 17152-17156.

Tang, Y. Y., Hölzel, B. K., & Posner, M. I. (2015). The neuroscience of mindfulness meditation. *Nature Reviews Neuroscience*, *16*, 2013-225. doi:10.1038/nrn3916

Teasdale, J. D. (1999a). Emotional processing, three modes of mind and the prevention of relapse in depression. *Behaviour Research and Therapy*, *37*(Suppl. 1), S53-S77.

Teasdale, J. D. (1999b). Metacognition, mindfulness and the modification of mood disorders. *Clinical Psychology & Psychotherapy*, *6*, 146-155. doi:10.1002/(SICI)10990879(199905)6:2<146::AID-CPP195>3.0.CO;2-E

Teasdale, J. D., Dritschel, B. H., Taylor, M. J., Proctor, L., Lloyd, C. A., Nimmo-Smith, I., & Baddeley, A. D. (1995). Stimulus-independent thought depends on central executive resources. *Memory & Cognition*, *23*, 551-559. doi:10.3758/BF03197257

Teasdale, J. D., Segal, Z. & Williams, J., & Mark. G. (1995). How does cognitive therapy prevent depressive relapse and why should attentional control (mindfulness) training help? *Behaviour Research and Therapy, 33*, 25-39. doi.org/10.1016/0005-7967(94)E0011-7

Teasdale, J. D., Segal, Z., Williams, J. Mark G., Ridgeway, V. A., Soulsby, J. M., & Lau, M. A. (2000), Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. *Journal of Consulting and Clinical Psychology*, *68*, 615-623. doi.org/10.1037/0022-006X.68.4.615

Thera, N. (1972). *The Power of mindfulness*. San Francisco: Unity.

Thera, N. (1996). *The heart of Buddhist meditation*. San Francisco: Weiser Books.

Thanissaro, B. (2010). *Mahasatipatthana Sutta: the great frame of reference, access to insight*. Retrieved from http://www.accesstoinsight.org

Travis, L. A., Lyness, J. M., Shields, C. G., King, D. A., Cox, C. (2004). Social support, depression, and functional disability in older adult primary-care patients. *American Journal of Geriatric Psychiatry, 12*, 265-227.

Vago, D. R., & Silbersweig, D. A. (2012). Self-awareness, self-regulation, and self-transcedence (S-ART): A framework for understanding the neurobiological mechanisms of mindfulness. *Frontiers in Human Neuroscience, 6,* 1-30.

Valentine, E. R., & Sweet. P. L. G. (1999). Meditation and attention: A comparison of the effects of concentrative and mindfulness meditation on sustained attention. *Mental Health, Religion & Culture, 2,* 59-70.

VassarStats (2009). Statistical computation (Significance of the difference between two correlation coefficients). Retrieved from http://faculty.vassar.edu/lowry/VassarStats.html

Vieten, C., & Astin, J. (2008). Effects of a mindfulness-based intervention during pregnancy on prenatal stress and mood: results of a pilot study. *Archives of Women's Mental Health*, *11,* 67-74.

Wachs, K., & Cordova, J. V. (2007). Mindful relating: Exploring mindfulness and emotion repertoires in intimate relationships. *Journal of Marital and Family Therapy*, *33*, 464-481. doi:10.1111/j.1752– 0606.2007.00032.x

Walach, H., Buchheld, N., Buttenmüller, V., Kleinknecht, N., & Schmidt, S. (2006). Measuring mindfulness—the Freiburg Mindfulness Inventory (FMI). *Personality and Individual Differences*, *40*, 1543-1555.

Wallis, G. (2012). *Elixir of mindfulness. Non+x,2.* Retrieved from http://www.nonplusx.com/issues-I-4/

Watkins, E., & Teasdale, J. D. (2001). Rumination and overgeneral memory in depression: Effects of self-focus and analytic thinking. *Journal of Abnormal Psychology, 110,* 353-357.

Watkins, E., & Teasdale, J. D. (2004). Adaptive and maladaptive self-focus in depression. *Journal of Affective Disorders, 82,* 1-8.

Watson, G. (2008). *Beyond happiness. Deepening the dialog between Buddhism, psychotherapy and mind science*. London: Karnac.

Weersing, V. R. (2005). Benchmarking the effectiveness of psychotherapy: Program evaluation as a component of evidence-based practice. *Journal of the American Academy of Child and Adolescent Psychiatry*, 44, 1058-1062. doi: 10.1097/01.chi.0000172682.71384.80

Whitfield-Gabrieli, S., & Ford, J. M. (2012). Default mode network activity and connectivity in psychopathology. *Annual Review of Clinical Psychology*, *8*, 49-76. doi:10.1146/annurev-clinpsy-032511-143049

Williams, J. M. G., & Kabat-Zinn, J. (2011). Mindfulness: Diverse perspectives on its meaning, origins, and multiple applications at the 78 intersection of science and dharma. *Contemporary Buddhism, 12,* 1-18.

Williams, J. M. G., Crane, C., Barnhofer, T., Brennan, K., Duggan, D. S., Fennell, M. J. V., & Russell, I. T. (2014). Mindfulness-based cognitive therapy for preventing relapse in recurrent depression: A randomized dismantling trial. *Journal of Consulting and Clinical Psychology*, *82*, 275-286. doi:10.1037/a0035036

Wilson, J. (2014). *Mindful America*: *The mutual transformation of Buddhist meditation and American culture*. Oxford: Oxford University Press.

Wishart, D. (1987). *CLUSTAN. User manual. Cluster analysis software*. St. Andrews, UK: Computing Laboratory, University of St. Andrews.

Witkiewitz, K., Marlatt, G. A., & Walker, D. (2005). Mindfulness-based relapse prevention for alcohol and substance use disorders. *Journal of Cognitive Psychotherapy*, *19*, 211-228.

World Health Organizaton (2008). The global burden of disease: 2004 update. Geneva: Author. Retrieved from www.who.int.

Zigmond, A. S., & Snaith, R. P. (1983). The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica, 67*, 361-370.

Zylowska, L., Smalley, S. L., & Schwartz, J. M. (2009). Mindfulness awareness and ADHD. In F. Didonna (Ed.), *Clinical handbook of mindfulness* (pp. 319-338). New York: Springer.

Zylowska, L., Ackerman, D. L., Yang, M. H., Futrell, J. L., Horton, N. L., Hale, T. S. … Smalley, S. L. (2008). Mindfulness meditation training in adults and adolescents with ADHD. A feasibility study. *Journal of Attention Disorder*, *11*, 737-746.

APPENDIX

FFMQ_SWE