

**A critical synthesis of interventions to reduce stigma
attached to mental illness**

K.B. Seroalo

Mini-dissertation submitted in partial fulfilment of the requirements for the degree

Magister Curationis

in Psychiatric Nursing Science

in the

School of Nursing Science

at the

Potchefstroom Campus

of the

North-West University

Supervisor : Prof. M.P. Koen

Co-supervisor : Dr. E. du Plessis

November 2012

DECLARATION BY LANGUAGE EDITOR

CUM LAUDE LANGUAGE SERVICES

BA (Pol Sc), BA Hons (Eng), MA (Eng), TEFL

22 Strydom Street

Tel 082 821 3083

Baillie Park

cmeterblanche@hotmail.com

2531

DECLARATION OF LANGUAGE EDITING

I, Christina Maria Etrechia Terblanche, id nr 771105 0031 082, hereby declare that I have edited the dissertation of Ms KB Seroalo, entitled *A critical synthesis of interventions to reduce stigma attached to mental illness*, without viewing the final product. All payment for language related services have been concluded.

Regards,

CME Terblanche

Director: Cum Laude Language Practitioners (CC)

DECLARATION BY STUDENT

I, Kenetsoe Belina Seroalo declare herewith that the mini-dissertation entitled **A critical synthesis of interventions to reduce stigma attached to mental illness** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete reference, and this work has not been submitted previously for any other degree at any institution.

.....
K.B. Seroalo

.....
Date

ACKNOWLEDGEMENTS

God always wants the best for us, and He is committed to showing us how to follow His specific plan. I thank Him for taking me through this plan. I glorify His Holy Name.

I also thank the following people for their support and encouragement to complete my studies:

- My supervisors, Professor M.P. Koen and Doctor E. du Plessis, thank you for working so hard to guide me, to encourage me and being always supportive;
- Mrs Christien Terblanche for language editing;
- My family in believing in me, thank you for your love, support and motivation;
- My brothers and sisters, thank you for your understanding throughout my studies and for your support and love;
- My colleagues and friends - thank you for being there for me, saying words of wisdom, encouraging me to always see the brighter side of this hard task;
- The management of Witrand Hospital for approval of part time study leave.

ABSTRACT

Several interventions have been developed and implemented to reduce the stigma attached to mental illness. However people who experience mental illness are still stigmatised in the communities in which they live, as well as in the healthcare centres where they receive treatment. The objective of this study was to critically synthesize the best available evidence regarding interventions to reduce stigma attached to mental illness. This study aimed to provide clinical practitioners with accessible information on interventions to reduce stigma attached to mental illness. Systematic review was chosen as a design method to identify primary studies that answer the following research question: What best evidence is available regarding interventions to reduce the stigma attached to mental illness?

A thorough search was done on selected electronic databases: EBSCOhost; Science Direct; Web of knowledge; Scopus; Sabinet; ProQuest; SA Nexus; Cochrane; Google Advance Scholar were searched for primary studies that were published from 2001-2011, including the available 2012 literature and reference lists.

The following key words were used in the search: *Intervention, stigma, program, mental illness, mental disorder, psychiatric patients*. During the selection of studies pre-determined inclusion and exclusion criteria were applied. Seventeen studies (n=17) were included for critical appraisal of methodology and quality using standard instruments from the Critical Appraisal Skills Program (CASP) the John Hopkins Nursing Evidence-Based Practice (JHNEBP) Research Evidence Appraisal Tool and Evidence Analysis Manual; Academy of Nutrition and Dietetics. All seventeen studies (n=17) were identified as evidence that answers the research question.

Extraction of evidence, analysis and synthesis were conducted by means of the evidence class rating and grading of strength prescribed in the Evidence Analysis Manual (EAM, 2012:70). Findings indicated some interventions that reduce the stigma attached to mental illness. Using Web-based approaches and reading printed educational materials, documentary films and anti-stigma films, live and video performances, and humanising and traditional, naturalistic educational methods are effective in reducing stigma attached to mental illness for health professionals because there were no stigmatising attitude and social distance towards individuals with mental disorders. The German WPA (World Psychiatric Association) "Program against stigma and discrimination because of Schizophrenia – Open the doors" is effective in reducing stigma attached to mental illness for the general population. Combining education and video-based contact, in vivo contact and

videotaped education, Active Minds and documentary films are effective in reducing stigma of mental illness for students. The use of puppets, psycho-education and contact (via DVD) and public education programs are effective in reducing stigma attached to mental illness for adolescents.

The research was evaluated, a conclusion was given, limitations were identified and recommendations were formulated for nursing practice, nursing education and nursing research.

Key words: Intervention, program, stigma, mental illness, mental disorder, psychiatric patients

OPSOMMING

Verskeie intervensies is ontwikkel en geïmplementeer om die stigma verbonde aan geestesongesteldhede te verminder. Die persone wat aan geestesongesteldhede ly, ondervind egter nog steeds dat daar aan hulle 'n stigma kleef in die gemeenskap waar hulle bly, asook in die gesondheidsorgsentrum waar hulle behandeling ontvang. Die doel van die studie was om die beste beskikbare voorbeelde van intervensies om stigmatisering van geestesongesteldhede te verminder, krities saam te vat. Die studie poog om toeganklike inligting aan kliniese personeel te verskaf rakende intervensies ten opsigte van die vermindering van stigmatisering van geestesongesteldhede. 'n Sistematiese oorsig is gekies as metode om primêre studies te identifiseer om die volgende navorsingsvraag te beantwoord: Wat is die beste beskikbare voorbeelde van intervensies om die stigma verbonde aan geestesongesteldhede te verminder?

'n Deeglike ondersoek is gedoen op geselekteerde beskikbare elektroniese databasisse. EBSCOhost; Science Direct; Web of knowledge; Scopus; Sabinet; ProQuest; SA Nexus; Cochrane en Google Advanced Scholar is geraadpleeg vir primêre studies wat gepubliseer is tussen 2001 en 2011, asook literatuur van 2012 en die verwysingslyste.

Die volgende sleutelwoorde is gebruik tydens die ondersoek: *Intervention, program, mental illness, mental disorder, and psychiatric patients*. Tydens die seleksie is vooraf bepaalde insluitings- en uitsluitingskriteria toegepas. Sewentien studies (n=17) is ingesluit vir die kritiese evaluering van metodologie en kwaliteit deur die volgende standaard instrumente te gebruik: Critical Appraisal Skills Program (CASP), John Hopkins Nursing Evidence-Based Practice (JHNEBP), Research Evidence Appraisal Tool and Evidence Analysis Manual; Academy of Nutrition and Dietetics. Al sewentien studies (n =17) is geïdentifiseer as bewyslewering wat die navorsingsvraag beantwoord.

Uittreksels is gemaak van die bewyse, analise en opsommings deur middel van 'n groepering en gradering van die sterkte en belangrikheid soos voorgeskryf in "Evidence Analysis Manual" (EAM, 2012:70). Bevindings het aangetoon dat sommige intervensies wel die stigma verbonde aan geestesongesteldhede verminder. Die gebruik van 'n net gebaseerde benadering en die ondersoek van gepubliseerde opvoedkundige materiaal, dokumentêre films en anti-stigma films, lewensgetrou en video, menslike en tradisionele naturalistiese metodes is effektief in die verlaging van stigma verbind tot geestesongesteldhede vir die gesondheidswerker, omdat daar geen stigmatiseringshouding en sosiale afstand tot individue met geestes-afwykings is.

Evaluasie van die Duitse WPV (Wêreld Psigiatriese Vereniging) “Program against stigma and discrimination because of Schizophrenia – Open the doors” is effektief in die verlaging van stigma verbind tot geestesongesteldhede van die algemene bevolking. Die samesmelting van opvoedkunde en video gebaseerde kontak, in vivo kontak en video opgeneemde opvoedkunde, Aktiewe denke en dokumentêre films is effektief in die verlaging van stigma van geestesongesteldhede by studente. Die gebruik van handpoppe, psigo-opvoedkunde en kontak (via DVD) en openbare opvoedkundige programme is effektief in die verlaging van stigma verbind tot geestesongesteldhede van die adolessente.

Die navorsing is geëvalueer, ’n gevolgtrekking is gemaak, beperkinge is geïdentifiseer en aanbevelings is geformuleer vir die verpleegpraktyk, verpleegonderrig en navorsing in verpleging.

Sleutelwoorde: Intervensie, program, stigma, geestesongesteldhede, psigiatriese steuring, psigiatriese pasiënte.

ABBREVIATIONS

ADA	American Dietetic Association
APA	American Psychiatric Association
BESA	Business Ethics South Africa
CASP	Critical Appraisal Skills Programme
CEBS	Centre for Evidence-Cased Conservation Mental Health Centres
CMHC	Community Mental Health Centres
CRD	Centre for Reviews and Dissemination
DSM-IV-TR	Diagnostic and Statistical Manual Disorders, fourth edition (text revision)
EAM	Evidence Analysis Manual
EBP	Evidence-Based Practice
JHNEBP	John Hopkins Nursing Evidence-Based Practice
PICOT	Population, Interventions, Comparative interventions, Outcomes and Time Frame
RCT	Randomised Control Trials
SA	South Africa
WHO	World Health Organisation

TABLE OF CONTENTS

DECLARATION BY LANGUAGE EDITOR	i
DECLARATION BY STUDENT	ii
ACKNOWLEDGEMENTS.....	iii
ABSTRACT	iv
OPSOMMING	vi
ABBREVIATIONS	viii
LIST OF TABLES.....	xiii
LIST OF FIGURES	xiv
CHAPTER 1: INTRODUCTION AND OVERVIEW OF THE STUDY	1
1.1 INTRODUCTION.....	1
1.2 BACKGROUND AND RATIONALE OF THE STUDY	1
1.3 PROBLEM STATEMENT	5
1.4 RESEARCH QUESTION.....	5
1.5 OBJECTIVE OF THIS STUDY	5
1.6 PARADIGMATIC PERSPECTIVE.....	6
1.6.1 Meta-theoretical assumptions.....	6
1.6.1.1 View of man.....	6
1.6.1.2 View of the environment	6
1.6.1.3 View of health	7
1.6.1.4 View of nursing	7
1.6.2 Theoretical assumptions	8
1.6.2.1 Central theoretical statement	8
1.6.2.2 Theoretical definitions	8
1.6.3 Methodological assumptions.....	10
1.7 RESEARCH DESIGN AND METHOD.....	11
1.7.1 Research design	11
1.7.2 Research method.....	11
1.8 RIGOUR.....	12
1.9 ETHICAL CONSIDERATIONS.....	14
1.10 SUMMARY	16

CHAPTER 2: RESEARCH DESIGN AND METHOD	17
2.1 INTRODUCTION.....	17
2.2 RESEARCH DESIGN	17
2.3 RESEARCH METHOD: SYSTEMATIC REVIEW	18
2.4 STEPS OF THE SYSTEMATIC REVIEW.....	19
2.4.1 Step 1: Formulation of a focused review question	19
2.4.2 Step 2: Gathering and classifying the evidence	20
2.4.2.1 Data sources	21
2.4.2.2 Documentation	22
2.4.2.3 Selection of studies to be included.....	22
2.4.3 Step 3: Performing the critical appraisal.....	23
2.4.4 Step 4: Summarising the evidence	24
2.4.5 Step 5: Drafting the concluding statements, limitations and recommendations	24
2.4.5.1 Conclusions	24
2.4.5.2 Limitations	25
2.4.5.3 Recommendations.....	26
2.5 SUMMARY	27
CHAPTER 3: REALISATION AND FINDINGS OF THE SYSTEMATIC REVIEW	28
3.1 INTRODUCTION.....	28
3.2 STEP 1: FORMULATION OF A FOCUSED REVIEW QUESTION.....	28
3.3 STEP 2: GATHERING AND CLASSIFYING THE EVIDENCE	29
3.3.1 Sources	29
3.3.2 Keywords.....	30
3.3.3 Inclusion and exclusion criteria of this study.....	30
3.3.4 Documentation of the search.....	31
3.4 STEP 3: PERFORMING THE CRITICAL APPRAISAL.....	42
3.4.1 Quality assessment	43
3.5 SUMMARY	55
CHAPTER 4: FINDINGS OF THE STUDY	56
4.1 INTRODUCTION.....	56
4.2 SUMMARISING THE EVIDENCE	56
4.2.1 Characteristics of the final sample.....	56

4.2.2	Measurements.....	57
4.2.3	Statistical analysis of the studies	61
4.2.4	Data extraction	64
4.2.5	Analysis strategy	74
4.2.6	Summary of findings	74
4.2.6.1	Finding 1: Web-based approach and reading printed educational materials, documentary film and anti-stigma films, live and video, and humanising and traditional, naturalistic methods are effective in reducing stigma attached to mental illness for health professionals	74
4.2.6.2	Finding 2: Evaluation of the German WPA (World Psychiatric Association) “Program against stigma and discrimination because of Schizophrenia – Open the doors” are effective in reducing stigma attached to mental illness for the general population	77
4.2.6.3	Finding 3: Combining education and video-based contact, in vivo contact and videotaped education, Active Minds and documentary films are effective in reducing stigma of mental illness for students.....	78
4.2.6.4	Finding 4: The use of puppets, psycho-education and contact (via DVD) and public education programs are effective in reducing stigma attached to mental illness for adolescents	79
4.3	SUMMARY	80
CHAPTER 5: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS		81
5.1	INTRODUCTION.....	81
5.2	CONCLUSIONS.....	81
5.3	EVALUATION OF RIGOUR.....	84
5.3.1	Problem-identification stage	84
5.3.2	Literature search stage.....	85
5.3.3	Critical appraisal	85
5.3.4	Data synthesis stage	86
5.3.5	Presentation	86
5.4	LIMITATIONS	86
5.5	RECOMMENDATIONS	87
5.5.1	Recommendations for nursing practice.....	87
5.5.2	Recommendations for nursing education.....	88
5.5.3	Recommendations for research	89
5.6	IN CONCLUSION.....	89
REFERENCES		90
ANNEXURE 1: Critical Appraisal Skills Programme (CASP)		99

ANNEXURE 2: Johns Hopkins Nursing Evidence-Based Practice Research Evidence Appraisal.....	100
ANNEXURE 3: Quality Criteria Checklist: Primary Research	102

LIST OF TABLES

Table 1.1:	Conceptual definitions	9
Table 1.2:	Steps of the systematic review	12
Table 2.1:	Review question in PICOT format	19
Table 3.1:	Databases used in search strategy	29
Table 3.2:	The inclusion and exclusion criteria	30
Table 3.3:	Excluded studies after review with reasons for exclusion	34
Table 3.4:	Unobtainable studies	41
Table 3.5:	Hierarchy and classification of studies EAM	42
Table 3.6:	Adapted quality ratings for methodological quality of studies	43
Table 3.7:	Critical appraisal	45
Table 4.1:	Number of studies extracted	56
Table 4.2:	Measurements used	57
Table 4.3:	Statistical analysis used	61
Table 4.4:	Data extraction	64

LIST OF FIGURES

Flow chart 3.1: Realisation of search strategy	32
---	-----------

CHAPTER 1: INTRODUCTION AND OVERVIEW OF THE STUDY

1.1 INTRODUCTION

Several interventions have been developed and implemented to reduce the stigma attached to mental illness. However, people who experience mental illness are still stigmatised in the communities in which they live, as well as in the healthcare centres where they receive treatment. The aim of this study was to critically synthesize the best available evidence regarding interventions to reduce the stigma attached to mental illness. This study aimed to provide a clear overview of how interventions to reduce stigma attached to mental illness were conducted. The background and rationale of the study, the problem statement, the research question, the objective of the study and the paradigmatic perspective are systematically explained in this chapter. The research design, method, rigour and ethical considerations are briefly mentioned, and explained in more detail in Chapters 2, 3 and 4.

1.2 BACKGROUND AND RATIONALE OF THE STUDY

According to Goffman (cited by Corrigan *et al.* 2005:179) the term stigma is from the Greeks who used it to represent bodily signs indicating something bad about the moral character of the person marked with the stigma. This mark could be obvious (such as the skin colour) or subtle (as in homosexual people or people with mental illness). Furthermore, stigma has been reported in health care conditions other than stigma of mental illness (Weiss & Ramakrishna, 2001:5). Thus both authors stated the following medical conditions that are also stigmatised; tuberculosis, Leprosy, and HIV/AIDS. Falk (2001) cited by Weiss and Ramakrishna (2001:2), also identified homosexual people, single people, prostitutes, African Americans, overweight people, and even successful people, among others in their elaboration of stigma. However mental health care users are still stigmatised in the communities in which they live, as well as in the healthcare centres where they receive treatment. As a result, persons with mental illness experience discrimination, social distancing, exclusion, and

disadvantages with regard to aspects such as housing and employment opportunities (Gaebel & Baumann, 2003:657). This phenomenon creates a barrier to employment and treatment. According to Sartorius and Schulze (2008:1) the stigma attached to mental illness is the main obstacle to better mental healthcare for mental health care users. It influences the quality of life of people who have such illnesses, and also affects their families, their communities and the health service staff that deal with psychiatric disorders. Corrigan *et al.* (2005:185) identify the following barriers to better health for people with mental illness due to stigma: landlords fail to lease; employers fail to hire; healthcare providers withhold some services; criminal justice professionals tend to be unnecessarily coercive and fail to use mental health services; policy makers allocate insufficient resources with an unfriendly interpretation of regulations; and the media perpetuates and disseminates stigmatizing images. These barriers encouraged researchers to investigate more about mental illness stigma from the perspective of people experiencing mental illness. El-Badri and Mellsop (2007:196) state that research conducted in New Zealand on mental illness stigma revealed that participants commented on how they tried to avoid or refused help for fear of further stigmatisation. The following statistics were released: 73% avoided telling others about their mental illness; 50% felt they were shunned or avoided by others when it was revealed that they had a mental illness; 62% noted that they have been treated as less competent by others once their illness was known and 79% had been in situations where they have heard others say unfavourable or offensive things about people with mental illness (El-Badri & Mellsop, 2007:196).

Lundberg *et al.* (2009:516) differentiate between different types of stigma related to mental illness, namely enacted and felt stigma. Enacted stigma refers to mental health care users who experience social rejection and devaluation directly by for instance not obtaining employment, reduced access to housing or interpersonal rejections. Individuals with mental illness may, for example, suffer disparaging remarks at work due to a lack of sympathy and understanding (Ssebunnya *et al.*, 2009:2). Felt stigma, on the other hand, includes the experience of shame of having a mental illness and the fear of encouraging enacted stigma. Mental health care users also experience shame and hopelessness about having mental illness and as a

result they experience negative effects, including discrimination, social distancing, and exclusion (Gaebel & Baumann, 2003:657). In addition, forms of structural and systemic discrimination such as limited allocation of resources to psychiatry also hinder the advances of mental healthcare. All of these issues pose major barriers to the alleviation of the already significant public health burden of mental health (Kapungwe *et al.*, 2010:193). In an attempt to reduce the stigma attached to mental illness, United States leaders sponsored the first White House Conference in 1999 focussing on mental illnesses and mental health issues (Pinto-Foltz & Logsdon, 2009:32). A report was released (Palpant *et al.*, 2006:3) which emphasises the harmful results of stigmatisation of mental illness in terms of creating barriers for people with mental illness seeking treatment (Anon, 2001:1055) and (Greenall, 2006:14). Furthermore, Ross and Goldner (2009:560) confirm that stigma seems to be a barrier to obtaining treatment, even when the primary reasons for the admission of people with mental illness are not related to their pre-existing psychiatric disorders. In addition, stigmatisation and discrimination of those suffering from mental illness hinders the patient's ability to integrate into society and recover from their illness due to frequent personal harassment, social isolation and economic exclusion of people with mental illness (Kapungwe *et al.*, 2010:193).

Kjellin and Östman (2005:7) provide the example that the relatives of people who have attempted suicide had been prevented from having their own companies. Stigma and its consequences thus affect the course of illness for millions of people worldwide. In addition, there have been requests globally to eliminate and prevent mental health stigma (Schachter *et al.*, 2008:2). Sartorius (2002:1472) states that stigma remains the main obstacle to a better life for many people with mental illness. Thus, there is a need for interventions to reduce stigma attached to mental illness.

Interventions have been developed and implemented to eliminate and prevent the stigma attached to mental illness. One such example is described by Evans-Lacko, *et al.* (2010:1), namely the 'Time to Change' project. This was a United States National Social Marketing campaign aimed at reducing stigma and discrimination against people with mental health problems. The key messages of this campaign

were: 'There is something you can do to help', 'Mental illness is one of our last taboos,' and 'Mental illness is far more common than you think'. Another example of stigma intervention is that of the National Alliance on Mental Health, which works to eliminate the stigma associated with mental illness (Sartorius, 2002:1470). The World Psychiatric Association also started an initiative called the "Open the Door" campaign, which is a collaborative, multicentre programme that involves family and people with mental illness (Sartorius, 2002:1470). This outreach programme encourage action to decrease stigma and discrimination, and is driven from the perspective of those experiencing stigma as opposed to being based on established mental health theories that may not have been tested in diverse cultures (Pinto-Foltz & Logsdon, 2009:33). This programme has been adapted by four different countries and is available in nine different languages. In South Africa, the South African Depression and Anxiety Group, South Africa's largest mental health initiative aims at building awareness about mental health, aims to destigmatise mental illness and educate people across the country about mental wellness (Anon, 2007:1).

Therefore, the possibility of reducing stigma through interventions exists. Policy makers and other stakeholders recognise the devastating personal, social and economic consequences of mental illness stigma and are committed to prioritising it as a public health and development issue (Kapungwa *et al.*, 2010:202). Gureje and Alem (2000:479) furthermore state that such policies aim to change the public's negative perception of mental illness and reduced the incidence and prevalence of mental illness. However, most African countries have no mental health policies, programmes or action plans pertaining to reducing stigma. Furthermore, World Health Organisation (WHO, 2004:13) confirms that despite the wide recognition of the importance of national mental health policies, 40% of countries have no mental health policy. Gureje and Alem (2000:479) state that research activities should thus examine such interventions in order to inform mental health policies.

Many primary studies have been conducted regarding interventions to reduce the stigma attached to mental illness, but no systematic review could be found that provided a critical synthesis of interventions to reduce stigma attached to mental

illness. Policy makers thus do not have access to such a critical synthesis of available interventions to enable them to develop valid policies required. However, people who experience mental illness are still stigmatised in the communities in which they live, as well as in the healthcare centres where they receive treatment. Therefore a critical synthesis of best evidence was needed for mental health professionals to use.

1.3 PROBLEM STATEMENT

Mental health care users are still stigmatised in the communities in which they live, as well as in the healthcare centres where they receive treatment. As a result, they experience discrimination, social distancing, exclusion, and are disadvantaged (Gaebel & Baumann, 2003:657). There are interventions to reduce stigma, also in South Africa. It however seems that a lack in relevant policies on such interventions exists. A comprehensive critical synthesis on interventions to reduce stigma attached to mental illness might thus be useful to inform such policies. Such a synthesis could however not be found. There was thus a need to critically synthesise best evidence on interventions to reduce stigma attached to mental illness, so that when healthcare providers have access to this information, barriers to access healthcare and employment due to the stigma attached to mental illness may be reduced.

1.4 RESEARCH QUESTION

Against this background and based on the problem statement, the research question was formulated as follows:

What best available evidence is obtainable regarding interventions to reduce the stigma attached to mental illness?

1.5 OBJECTIVE OF THIS STUDY

The objective of the study was to provide a critical synthesis of the best available evidence regarding interventions to reduce stigma attached to mental illness by means of a systematic review.

1.6 PARADIGMATIC PERSPECTIVE

In the following section the researcher explains the paradigmatic perspective according to the following division:

- meta-theoretical assumptions;
- theoretical assumptions, and
- methodological assumptions.

1.6.1 Meta-theoretical assumptions

Meta-theoretical assumptions are not testable, and deal with the researcher's view of humankind and society. Although these assumptions provide no epistemic findings, they serve as a framework within which theoretical statements are made (Mouton & Marais, 1994:192). The concepts below are interrelated and indicate how the researcher views man, environment, health and nursing.

1.6.1.1 View of man

The researcher believes that our intimacy with God and His highest priority for our lives determines our lives (Life Principles Bible, 2005, Gen. 1:26). The researcher further believes that when something is wrong with mankind, we should seek help from God, because when He created us, He created us in His Likeness. We have the capacity for close, personal fellowship with Him. Man should seek help from God, and should trust God. Trusting God means looking beyond what we see to what God sees. In this research mankind refers specifically to the stigmatised mental health care users.

1.6.1.2 View of the environment

The researcher views the environment of the stigmatised mental health care users as both the external and the internal environment. These environments interact harmoniously with each other as seen in the words in Genesis 1:26 (Life Principles Bible, 2005), namely that it is ever changing, requiring adaptation. In this study, the internal environment of the stigmatised mental health care users is viewed as their

internal physical, spiritual, psychosocial and cognitive dimensions, whereas the external environment is viewed as the external physical and psycho-socio-cultural world. In this study any changes in the environment can affect the life of the mentally ill. In this case the person focus is on negative influences whereby by virtue of their mental illness they are being stigmatised by the communities in which they live. Also for people with mental illness, their external environment (which includes family, a partner and the community) could support them get employment and to be accepted in the community without being stigmatised.

1.6.1.3 View of health

The researcher views health as a person's ability to adapt to the challenges of the surrounding environment, and believes that the changes that occur in humankind are due to their reaction to those stimuli and the degree of wellness that people experience. The researcher agrees with the theory of Leininger that maintains that health is a state of wellbeing that is culturally defined, valued and practiced (Kozier *et al.*, 2012:47). The theory emphasises that health and care are influenced by elements of social structure, such as technology, religious and philosophical factors, kinship and social system. It is universal across cultures, but defined differently by each culture. It includes health systems, healthcare practices, health patterns and health maintenance and promotion. This means that for health maintenance, basic needs such as water, food and clothes must be met (Kozier *et al.*, 2012:47). Higher needs, such as acceptance, should also be met. For this study, this means that for people with mental illness in particular, these needs should be met in order to reduce stigma attached to mental illness.

1.6.1.4 View of nursing

The researcher views nursing as the unique function of the nurse to help clients restore their health by means of giving direct care, performing diagnostic and assessment procedures, consulting with other healthcare professionals about the clients' problems, and teaching about recovery activities. According to the theory of Roy (as cited *in* Kozier *et al.*, 2012:46-47), she focuses on the individual as a

biopsychosocial adaptive system that employs a feedback cycle of input (stimuli), throughput (control processes) and output (behaviours or adaptive responses). Individuals respond to needs in one of the following four modes of which only one will be mentioned: The physiological mode which involves the body's basic physiological needs and ways of adapting with regard to fluids and electrolytes, activity and rest, circulation and oxygen, nutrition and elimination, protection, the senses, and neurologic and endocrine function. As a practice discipline, the scientific body of knowledge of nursing is used to provide an essential service to people; that is, to promote the ability to affect health positively.

For this study, nursing involves interventions to reduce the stigma attached to mental illness, as this is a crucial aspect when it comes to nursing people with mental illness.

1.6.2 Theoretical assumptions

The section on theoretical assumptions includes the central theoretical statements and theoretical definitions of concepts applicable to the study.

1.6.2.1 Central theoretical statement

As mentioned in the background and problem statement, no systematic review could be found concerning interventions to reduce the stigma attached to mental illness. This study is a systematic review that provides a critical synthesis of the existing best evidence concerning interventions to reduce the stigma attached to mental illness. The outcomes of the systematic review will be published to make the information accessible to healthcare workers so that they can use this information in clinical practice and in decision making and policies related interventions to reduce stigma attached to mental illness.

1.6.2.2 Theoretical definitions

Table 1.1 below gives an overview of the theoretical definitions of concepts applicable to this study.

Table 1.1: Conceptual definitions

Stigma	<p>A social attitude towards mental illness that is deeply discrediting and creates a position of social disgrace (Stuart, 2005:22). A social process or related personal experience characterised by exclusion, rejection, blame, or devaluation that results from adverse social judgement about a person or group (Weiss & Ramakrishna (2001:3). The incorrect and appropriate association of mental illness with something disgraceful or shameful (El-Badri & Mellsop 2007:195). In this study stigma refers to attitudes towards mental illness that need an intervention to be reduced.</p> <p>The following conditions were identified as stigmatised: schizophrenia, major depression, anxiety, dementia, bipolar disorder, substance misuse/drug addiction, schizoaffective disorder, eating disorders, post traumatic stress disorder (Kerby <i>et al.</i>, 2008:346; Pitre <i>et al.</i>, 2007:415; Mann & Himelein, 2008:547; Saporito <i>et al.</i>, 2011:10; Luty <i>et al.</i>, 2007:377; Penn <i>et al.</i>, 2003: 388; Gaebel <i>et al.</i>,2008:188; Finkelstein <i>et al.</i>, 2008:206; Markström <i>et al.</i>, 2009:662; Reinke <i>et al.</i>, 2004:381; Chan <i>et al.</i>, 2009:1524; Corrigan <i>et al.</i>, 2006:174; McKinney 2009:287).</p>
Mental illness	<p>The spectrum of cognitions, emotions and behaviours that interferes with interpersonal relationships as well as functions required for work, at home and in school (Overton & Medina, 2008:143). In this study mental illness is a psychiatric condition that need interventions to reduce its stigma attached to it.</p>
Mental disorder	<p>Is conceptualised as a clinically significant behavioural or psychological syndrome or pattern that occurs in an individual and that is associated with present distress (e.g., a painful symptom) or disability (i.e.) impairment in one or more important areas of functioning) or with a significantly increased risk of suffering death, pain, disability, or an important loss of freedom American Psychiatric Association, (APA 2000:xxx; Uys & Middleton, 2010:834).</p> <p>In this study mental disorder and mental illness are terms that will be used interchangeably.</p>
Intervention	<p>A therapeutic or preventative regime, e.g. a drug, an operative procedure, a dietary supplement, an educational leaflet, a test (followed by a treatment), undertaken with the aim of improving health outcomes between two groups, one with the intervention and the other without (e.g. a placebo or another control intervention) (Khan <i>et al.</i>, 2003:127). In this research the researcher searched for the best evidence available of interventions to reduce stigma attached to mental illness.</p>
Effectiveness	<p>The extent to which an intervention produces beneficial outcomes under ordinary day-to-day circumstances having desired results (Khan <i>et al.</i>, 2003:87; Tulloch, 1993:409). In this research, effectiveness means those interventions that yielded effectiveness to reduce stigma attached to mental illness.</p>
Best evidence	<p>Evidence where the best, most appropriate, most suitable methods are used based on theoretical and empirical evidence (Maltby <i>et al.</i>, 2010:360). In this research best evidence refers to the best available evidence of interventions to reduce stigma attached to mental illness.</p>
Mental health	<p>According to WHO (cited by Uys & Middleton, 2010:16), Mental health is 'a state of well-being in which the individual realizes his or her own abilities can cope with the normal stresses of life, can work productively and fruitfully, and is able to make</p>

	a contribution to his or her community'. WHO further explains that mental health, physical health and social functioning are interdependent and that the relationship between these is complex in that for example, social inequalities might lead to stress in the family, and subsequently to family violence; the trauma of family violence might lead to physical and mental disorders.
--	---

1.6.3 Methodological assumptions

In this systematic review the researcher applied the research model of Botes (1989:12). The model provides a holistic perspective on research in nursing and allows for the use of different methodologies. This model indicates three levels of nursing that are interrelated: practice (Level 1), nursing science (Level 2) and paradigmatic perspectives (Level 3).

The first level entails activities that promote the health of the mental health service user. This level forms part of the empirical world from which nursing research problems are derived. The aim of this order involves improving nursing practice by using knowledge to reduce the stigma attached to mental health care users. This study contributes to the first level since nursing practice can be improved in terms of reducing the stigma attached to mental illness as the findings of this study will be made accessible to health practitioners.

The second level of Botes' model is nursing science, which is developed through research and theory generation. This knowledge of nursing that is generated is applied in nursing practice. The aim of the research and the theory is functional by nature, allowing the application of such generated knowledge. The interdependence of research and practice is emphasised. The researcher is as responsible for the nursing practice as the practitioner is responsible for putting the knowledge that is generated by the research into practice in order to confirm that the outcomes can be useful. This study will therefore be made accessible to the health practitioners in order to reduce stigma attached to mental illness.

The third level represents the paradigmatic perspective in nursing, which are the meta-theoretical, theoretical and methodological assumptions. The researcher's

methodological approach is congruent with her meta-theoretical and theoretical assumptions, as stated in previous sections (see paragraph 1.6.1 and 1.6.2).

Botes' model also promotes the functional approach (Botes, 1989:10). This means that the research serves practice and can therefore be utilised in practice. Thus, what the researcher is pursuing, namely to critically synthesise interventions to reduce the stigma attached to mental illness, was not conducted merely for the sake of research, but with the aim of serving nursing practice. The results will therefore be made available for health professionals and can be used in clinical practice.

1.7 RESEARCH DESIGN AND METHOD

1.7.1 Research design

Choosing an appropriate research design is crucially important to the success of the researcher's study (Bordens & Abbott, 2008:97). The research design for this study is explorative and descriptive in nature and aims at exploring and describing the identified best available scientific evidence regarding interventions to reduce the stigma attached to mental illness by means of a systematic review (Centre for Reviews and Dissemination (CRD, 2009:48).

1.7.2 Research method

The research method for this study involved a systematic review. Petticrew (2003:756) explains the systematic review as a review that strives to comprehensively identify, track down, and appraise all literature on a certain topic (also known as a systematic literature review). Systematic review involves the application of scientific strategies in ways that limit bias by performing a critical appraisal and synthesising all relevant studies that address a specific clinical question (Akobeng, 2005:845). Systematic reviews aim to provide balanced summaries of published and unpublished literature on a specific issue. This has the benefit of presenting evidence for scientific decision making, because such reviews use a systematic/rigorous method to obtain best available evidence (Badr, 2007:79). In this study all relevant literature was

critically synthesised by means of a systematic review to uncover the best available evidence regarding interventions to reduce the stigma attached to mental illness.

According to CRD (2009:v) systematic reviews are increasingly needed by health practitioners and decision makers so that they can make use of the latest research and information about best practices. Furthermore, O'Mathuna, Fineout-Overholt and Kent (2008:102) confirm that systematic reviews inform clinicians of the best evidence available to make decisions that impact on (health) outcomes. In this study, the purpose of conducting this systematic review is to make the knowledge regarding the best available interventions to reduce stigma attached to mental illness available to the health professionals to be used in clinical practice. The researcher therefore used the steps of the systematic review process as tabulated in Table 1.2.

Table 1.2: Steps of the systematic review (American Dietetic Association (ADA) 2008)

1	Formulating a focussed review question.
2	Gathering and classifying the evidence, which include identifying (by searching literature and selecting studies to be included) relevant studies for inclusion (sampling procedure).
3	Performing critical appraisal.
4	Summarising the evidence (which includes data extraction and data analysis).
5	Drafting the concluding statements (including conclusions, limitations and recommendations).

A more detailed overview of the methodology and realisation in accordance with the steps of this study is provided in Chapter 2 and Chapter 3.

1.8 RIGOUR

Rigour is a way to strive for excellence in research and entails discipline, scrupulous adherence to detail and strict accuracy (Burns & Grove, 2005:33; Gerrish & Lacey, 2006:539) and that the strength of the research design in terms of ensuring that all procedures have been followed scrupulously, that all possible confounding factors have been eliminated, and that the user can be confident that the conclusions are

dependable (Gerrish & Lacey 2006:28). Example, if the twenty clinic nurses are said not be stigmatizing the *mental-health service users* without measuring the level of stigma the results will not be valid. These measurements must also be consistent within the study.

According to Akobeng (2005:845), the need for rigour in a systematic review means that there should be a formal process for its conduct. There are several questions guiding the reader through the process of critical appraisal of a systematic review and they are grouped as validity of the review process, results and applicability of the results (Akobeng, 2005:845). Having interpreted the results of the review, the researcher evaluated whether the results can be applied to the mental health care users (applicability) with the following questions: Are the results applicable to the study? According to O'Mathuna *et al.* (2008:106) it is of paramount importance to determine whether or not the findings from a systematic review are applicable to the patient population under study because this is the appraisal finale, in that here the consumers evaluate the value of the research as excellent or mediocre for patients in their care by asking the following relevant questions:

- Are the patients similar to the patients included in the original studies? Before deciding whether the effectiveness of the intervention shown by the review apply to mental health care users, the researcher determined whether these patients are similar to those included in the inclusion criteria of the study.
- Are the interventions feasible in the setting? Burns and Grove (2005:81) explain that the feasibility of the study is determined by examining the time and money commitment; the researcher's expertise; availability of subjects, facility, and equipment; cooperation of others; and the study's ethical considerations, which will also lead to quality of the study. Thus when the clinician is looking at the results of the study he/she must consider the feasibility of applying them in the environment in which he /she is working (Abalos *et al.*, 2001:10).
- Have all the critically relevant results been taken into consideration? All the clinically important outcomes were considered, including risks and benefits of the interventions.

- Do the benefits outweigh the potential harm? (O'Mathuna *et al.*, 2008:106; Abalos *et al.*, 2001:9; WHO, 2001). This question is important as public health interventions have an impact on large groups of populations and it has to be assured that the benefit outweighs any potential harm (Khan *et al.*, 2003:87). The purpose for selected investigation must be ethical, which means that the participants' rights and the rights of others in the settings must be protected (Burns & Grove, 2005:83). In this study the researcher did not use participants as sample in the study (see inclusion and exclusion criteria in 2.2.4.4) but used relevant literature.

Furthermore there are factors that have been identified that may be used as an index of quality and one such factor is an audit. To enable an audit the purpose of the systematic review should be explicit, and the methods used should be described in sufficient detail to allow the study to be replicated. However, because of the nature of interpretive research, it should be recognised that the synthesis is an interpretation, and that replication would not necessarily result in identical findings (Webb & Roe, 2007:69). The researcher reported all decisions involved in the transformation of data to the theoretical schema. This ensured that the report is in sufficient detail to allow a second researcher, using the original data and the decision trial, to arrive at conclusions similar to those of the original researcher.

1.9 ETHICAL CONSIDERATIONS

Burns and Grove (2005:83) explain that the purpose selected for investigation must be ethical, which means that the participants' rights and the rights of others in the settings are protected by adhering to the Nuremberg Code and the Declaration of Helsinki (Burns & Grove, 2005:177).

In this study the researcher did not use participants as sample therefore the consent form was not necessary (Vergnes *et al.*, 772). However, high quality and competent research was conducted by following strict measures as indicated below:

- Integrity was held through stating both supporting and opposing points of view found in the data.
- Plagiarism was avoided by acknowledging sources as well as those who contributed guidance or assistance (Brink, 2006:5-6).
- All studies included in this research were critically appraised by use of quality checklist and were ethically approved (Vergnes *et al.*, 2010: 773).
- In this research comparison of studies on different places and time was not done since the study focus on intervention to reduce stigma attached to mental illness (Vergnes *et al.*, 2010:772).

The researcher observed the code of conduct and ethics as stated in the Manual for postgraduate studies (2010:48). It reads as follows:

- "As a student, I will maintain the highest standard of honesty and integrity in obtaining relevant study materials, doing assignments, writing tests and examinations and in presenting my academic and non-academic achievements to any other person(s) throughout my life."
- "(We commit ourselves) To uphold human dignity in all our activities, undertaken to develop the full potential of others and of ourselves, requiring that we practise and promote accuracy, honesty, truthfulness, trustworthiness and loyalty towards the University and its entire people."

The study was submitted to the Postgraduate and Research Committee of the School of Nursing Science at Potchefstroom Campus of North West University for approval and consent before the study was conducted. The consequences of the research for the field of study in particular and for society in general were considered (Brink, 2006:30).

Furthermore, the resources were managed honestly. Finally, high standards were maintained concerning planning, implementing and reporting on the research (Brink, 2006:30). Thus the research results obtained from the systematic review will be shared with other scientists and the public in an understandable way. Therefore this

study will be submitted for publication in a journal in the relevant research field.

1.10 SUMMARY

This chapter provided an overview of the way in which the systematic review on interventions to reduce stigma attached to mental illness was conducted to answer the research question stated. The background and rationale showed that people with mental illness are still stigmatised, and that there is a need for a critical synthesis of best evidence on interventions to reduce stigma related to mental illness. This is followed by a discussion of the paradigmatic perspective of the research. The research design and method, rigour, and the ethical considerations of the study were then outlined. The researcher will provide an overview of the systematic review as a research method in Chapter 2.

CHAPTER 2: RESEARCH DESIGN AND METHOD

2.1 INTRODUCTION

The research method selected for this research was a systematic review of the interventions to reduce stigma attached to mental illness.

This chapter discusses the following: the research design and method and the five steps of the systematic review. Finally a summary is provided.

2.2 RESEARCH DESIGN

The research design guides the researcher in planning and implementing the study in a way that is most likely to achieve the intended goal (Burns & Grove, 2005:211; Creswell, 2009:3). Simply stated, the research design is a set of logical steps taken by the researcher to answer the research question (Brink, 2006:92). The research designer needs to go into some detail about the methods and procedure to be used (Bak, 2004:25). The research design in this study was explorative and descriptive in nature and aimed at exploring and describing the identified best available scientific evidence regarding interventions to reduce stigma attached to mental illness (CRD, 2009:48). According to Burns and Grove (2005:3) a descriptive design involves identifying and understanding the nature phenomena and the relationships among them. An explorative design involves examining the data descriptively to become as familiar as possible with the nature of the data and search for hidden structures and models (Burns & Grove, 2005:736).

Therefore choosing an appropriate research design is crucially important to the success of the study because the decisions that the researcher makes at this stage of the research process will determine the quality of the conclusions that the researcher can draw from the research results (Bordens & Abbott, 2008:97). In this study a systematic review was used as a method.

2.3 RESEARCH METHOD: SYSTEMATIC REVIEW

In this study, systematic review was chosen because it allows an objective appraisal of the evidence and may thus contribute to resolving uncertainty and discrepancies in original research, reviews and editorials. Systematic reviews are also valuable in identifying questions to be addressed in future studies (Egger, *et al.* 2001:23). According to Khan, *et al.* (2003:1) a systematic review is research that identifies relevant studies, appraises their quality and summarizes their results using a scientific method. In addition, the explicit methods used in systematic reviews limit bias and improve reliability and accuracy of conclusions (Akobeng, 2005:845). These advantages make a systematic review the ideal choice of method for the aims of this study.

According to Whitemore and Knafl (2005:546-547) a systematic review can include different types of reviews such as:

- integrative reviews that allows for the inclusion of diverse methodologies including experimental and non-experimental research in order to more fully understand a phenomenon of concern;
- systematic reviews that combine the evidence of multiple studies regarding a specific clinical problem to inform clinical practice the method of choice for evidence-based practice initiatives;
- meta-analyses that combines the evidence of multiple primary studies by employing statistical methods, thus enhancing the objectivity and validity of findings; and
- qualitative reviews that can take the descriptive synthesis form in which published studies are described using techniques such as narratives summary and tabulation, generally without seeking to reinterpret the findings and interpretive synthesis, in which data from published studies are synthesised and reinterpreted (Webb & Roe, 2007:63).

Healthcare researchers may wish to conduct reviews for the following reasons:

- supporting evidence-based practice;
- personal professional development;
- informing clinical policy publishing in a peer-reviewed journal;
- writing an introduction to a research thesis;
- preparing a presentation at a conference;
- a technical report; and
- an invited commentary (Khan *et al.*, 2003:4).

In this study a systematic review was conducted for the purpose of informing clinical practice on current interventions available to reduce the stigma attached to mental illness.

2.4 STEPS OF THE SYSTEMATIC REVIEW

According to Wright *et al.* (2007:24) the steps of performing a systematic review are reasonably straight-forward and can be performed by many researchers. The progress of the review should be carefully documented to ensure that it is easy to scrutinize and audit Department for International Development (DFID, 2011:2). The specific steps within the systematic reviews is outlined in Chapter 1 (see Table 1.2) and clearly explained in the following paragraphs.

2.4.1 Step 1: Formulation of a focused review question

The first step in performing a systematic review is to formulate a primary research question. The review question for this study is formulated according to the PICOT format, namely:

- Population;
- Intervention;
- Comparison;
- Outcome; and
- Time frame (adapted from ADA, 2008:6).

According to O'Mathuna *et al.* (2008:102), this format helps the researcher to be as concise and focused as possible. This format was applied in this study as outlined in Table 2.1.

Table 2.1: Review question in PICOT format

Population	Intervention	Comparison	Outcome	Time frame
Studies related to stigma attached to mental health care users DSM-IV-TR conditions	Interventions which aim to reduce stigma as a barrier to access to resources in the community, such as employment and healthcare	Not applicable	Reduced stigma attached to mental illness	Studies between 2001 - 2012

The review question for this study was thus:

What best evidence is available regarding effective interventions to reduce stigma attached to mental illness?

2.4.2 Step 2: Gathering and classifying the evidence

Higgins and Green (2008:97) argue that systematic reviews require a thorough, objective and reproducible search of sources in order to identify as many relevant studies as possible. Such a comprehensive search helps to minimise bias and assists in identifying all the best available evidence relevant for the researcher's review question. Prior to commencing the review, a search of databases was thus conducted to ensure that no systematic review has previously been undertaken on interventions to reduce stigma attached to mental illness. If this was found the researcher would have adapted to the results it offered. If this was not found, the researcher then continued to conduct a systematic review.

Searches of health related bibliographic databases are generally the easiest and least time consuming way to identify an initial set of relevant reports of studies (Higgins &

Green, 2008:98). This was done, as well as a second extensive search has extended to other relevant databases using all identified keywords and index terms. According to Crowther and Cook (2007:496) relevant search strategies that are non-specific will generate long lists of articles. In contrast, excessively specific search strategies are prone to missing papers of importance. The results of the search strategy was thus supplemented by a manual review of the reference sections of relevant papers, contact with content experts and a review of other resources likely to contain additional studies missed by the initial review (Crowther & Cook, 2007:493).

2.4.2.1 Data sources

Data that will be used for the search can be obtained from a variety of sources such as electronic databases, including ProQuest, Ebscohost, ScienceDirect, SA-Nexus, Web of Knowledge, Scopus, Google and Cochrane Library. After identifying studies using the electronic databases, the bibliographies of individual studies should be reviewed to identify additional relevant studies. Hand searching was also done and is explained by Higgins and Green (2008:107) that it involves a manual page by page examination of the entire contents of a journal issue or conference proceedings to identify all eligible reports. In addition, hand searches of pertinent journals for the question should also be undertaken by scanning through the journals that are not electronically available (Wright *et al.*, 2007:25) and to pick up additional references and publications that are too recent to appear on electronic indexes. These further sources will then be followed up and authors whose names appear may be contacted to check whether any unpublished material is available (Webb & Roe, 2007:258). Furthermore, a grey literature search must be identified (for example, abstracts and presentations) that is relevant to the research topic to compensate for inaccurate databases (Simpson *et al.*, 2010:2). In addition, professional librarians have to be consulted to search reference lists and bibliographies of chosen articles for additional studies. The research will include all studies published from January 2001 until December 2011. Available relevant studies dated 2012 will also be included in the study.

2.4.2.2 Documentation

According to Higgins and Green (2008:144) the search needs to be documented in detail throughout the process to ensure that it can be reported correctly in the review, to the extent that all the searches of all the databases are reproducible. A detailed overview of the methodology and realisation in accordance with the steps of study is provided in this chapter and Chapter 3.

2.4.2.3 Selection of studies to be included

Inclusion and exclusion criteria will be used to determine whether studies should be included or excluded. The concept of inclusion and exclusion of data in a systematic review provides a basis on which the reviewer draws valid and reliable conclusions regarding the effect of intervention for the disorder under consideration (Meline, 2006:26). Furthermore Brink (2006:124) states that it is critical that the researcher carefully defines and describes the population, and specifically stipulates criteria for inclusion. However, Burns and Grove (2005:343) state that a study might have inclusion or exclusion criteria or might have both and explains inclusion criteria as those characteristics that a subject or element must possess to be part of the target population and exclusion criteria as those characteristics that can cause a person or element to be excluded from the target population. Thus, the researcher included the criteria for this study as follows:

- Population: mental health care users both male and female
- Setting: Healthcare institutions, out-patient departments, or community
- Language: All papers written in English or other languages translated into English
- Study designs: All primary studies that discuss critical interventions to reduce the stigma attached to mental illness. RCTs, non-randomised intervention studies, case studies, cross-sectional studies, case reports and qualitative studies will be included.

Publications include: Scientific journal articles (international and national)

international and local theses and dissertations, conference abstracts and grey literature. A time frame can be chosen as it includes studies regarding a specific time period. For this study only studies will be included from the time period 2001-2011. Studies that were relevant and include 2012 were also included in the study.

Exclusion criteria might include patients with medical conditions, duplicates and studies before the set time period. These can be excluded to ensure a high quality and relevant systematic review. All studies identified are critically appraised as described in step 3.

2.4.3 Step 3: Performing the critical appraisal

After relevant studies were identified each study was critically appraised. Critical appraisal is the process of carefully and systematically examining research to judge its trustworthiness, and its value and relevance in a particular context (Burls, 2009:1). Critical appraisal is thus the last step of sampling in the systematic review and should be an accurate and true reflection of the best available evidence. According to Abalos *et al.* (2001) critical appraisal includes the following: evaluation of the validity of the study, interpretation of the results of the study, and applicability of the results of the study in clinical practice. The first step for the critical appraisal in this case is to establish studies' methodological quality to determine the validity of the results by using standard checklists Critical Appraisal Skills Program (CASP, 2006:41).

There are certain issues that need to be considered when appraising the report of a systematic review using critical appraisal tools. For example, according to the CASP tool three important questions are:

- Is the study valid?
- What are the results?
- Will the results help locally?

At least two reviewers should independently assess the quality of the included studies to minimise the risk of selection bias (CASP, 2006:41). After conducting the critical appraisal, the research evidence is summarised as explained in step 4.

2.4.4 Step 4: Summarising the evidence

Standardised data extraction forms provide consistency in the systematic review, potentially reducing bias and improving validity and reliability (CRD, 2009:28). Data extraction is the process through which researchers obtain necessary information about study characteristics and findings relevant to review questions from the included studies. The requirements from data extraction vary from review to review. The researcher must carefully consider exactly what type of information is needed for the effective interventions to reduce stigma attached to mental illness (Brink, 2006:141). For example, according to ADA (2008:51-52) high quality studies (high score) will carry more weight in the evidence summary than medium quality studies.

According to the Centre for Evidence-Based Conservation (2009:12), the report on the data extraction serves as information on reviews and is helpful in compiling the conclusion. The research question determines the how and what of the data that will be extracted and the type of studies that are accessible. Extraction of the data must be analysed (CRD, 2009:29).

Data analysis and synthesis is a process of uniting and summarising the outcomes of interest from the studies that are included in the systematic review, and to determine what effective measures will be used. The aims of data analysis are to understand the various constitutive elements of one's data through an inspection of the relationships between concepts, constructs or variables, and to see whether there are any patterns or trends that can be identified or isolated, or to establish themes in the data (Mouton, 2001:108). The summary of the evidence serve as the basis for the next step of drafting the conclusion statements, limitations and recommendations as explained in step 5.

2.4.5 Step 5: Drafting the concluding statements, limitations and recommendations

2.4.5.1 Conclusions

The final step in the systematic review is the writing of the concluding statements.

According to CRD (2009:82), concluding statements should summarise the evidence and draw out the implications for healthcare because they have the potential to present a comprehensive understanding of problems relevant to healthcare and policy. Concluding statements can be worded to show how they are derived from the evidence (CRD, 2009:82; Whitemore & Knaf, 2005:552).

2.4.5.2 Limitations

Limitations include the weaknesses of the study, including for instance concepts that are not clearly defined in the development of the study framework and methodological limitations. It also concerns the weakness in the study design, sampling, and measurement (Burns & Grove, 2005:40).

Reporting standards, standards for conducting reviews, and the beginning of bodies of evidence on review methods and indicators of study quality are becoming available in public health. However, there is still a shortage since these are based primarily at the Centres for Disease Control and Prevention, and training in the methods of systematic review and meta-analysis is lacking. Resources for conducting reviews are not yet available on a scale that can attract public health scientists (Mullen & Ramirez, 2006:96) and this can contribute to limitation of the study.

Systematic reviews can show a variety of weaknesses in the preparation phase. This means a less than thorough literature search may miss important studies, which may affect conclusions (Wright *et al.*, 2007:27).

In this study, in step 5, recommendations were made according to the quality of the findings of included studies which can add substantially to the available evidence for clinical decision making. Therefore, a critical search for biases is required to adequately assess the studies (Wright *et al.*, 2007:27). O'Mathuna *et al.* (2008:105) as well as Higgins and Green (2008:298) contend that an important problem that systematic reviews must address is reporting bias as different biases can lead to underestimation or overestimation of the true intervention effect. The researchers thus explained as follows:

Studies that report significant results favouring the test intervention compared to studies with non-significant results have been found to be more likely to be published, (publication bias), more likely to be published quickly, (time lag bias), more likely to be published in English (language bias), more likely to be published more than once, (multiple publication bias) and more likely to be cited by others (citation bias). Further, outcome reporting bias includes selective reporting of some outcomes but not others, depending on the nature and direction of the results.

Furthermore these potential biases must be taken into account in appraising the review. Example, systematic reviews must be critically appraised for their value to practice; know how to move from the appraisal to using findings in practice and evaluate the outcomes of the use of study findings (O'Mathuna *et al.*, 2008:102) by using a check list for detailed assessment (Khan *et al.*, 2003:35). In this study, during the search process, all studies included were searched from languages to prevent bias.

2.4.5.3 Recommendations

According to Centre for Reviews and Dissemination (CRD, 2009:82), recommendations for practice are made in guidelines, formulated from a variety of sources of information in addition to review findings. Furthermore schemes are available for grading practice recommendations according to the strength of the evidence that supports them. Grading recommendations is important even when reviews are rigorously conducted, thus taking into account factors making recommendation durable (Khan *et al.*, 2003:67). However it is important to differentiate between recommendations that are based on strong versus weak evidence, which in turn depends on a number of factors including study design, the number of studies, population size, or study quality and recommendations should be made regarding future studies (Wright *et al.*, 2007:23). Systematic review reports should aim to provide the information required to implement any of the systems if used. Systematic reviews may reveal that one particular intervention is more effective, but it may for instance involve a procedure that causes a patient extreme anxiety, which renders it unsuitable for use. Economic factors may also need to be

taken into consideration, especially in situations where extremely expensive interventions are considered. In addition, patients' values, ethics, and spiritual beliefs should be considered, especially when decisions are made close to the end of a patient's life. All these considerations and agencies are involved when systematic reviews are made available to practitioners. In conclusion, interventions to reduce stigma attached to mental illness will be used to make sure that the best available evidence is provided for clinical decision making in order to obtain the best patient outcomes in the following manner:

Researchers must produce research that can be synthesised, attending to excellent methodology and the prior work conducted.

Educators must prepare healthcare professionals who:

- critically appraise systematic reviews for their value to practice
- know how to move from appraisal to using findings in practice
- evaluate the outcomes of the use of the study findings.

Clinicians must be persistent in their commitment to blending the best evidence available with their expertise and judgement and patient preferences and values when making a clinical decision. Combining these endeavours will contribute to bringing about the best possible healthcare outcomes (O'Mathuna *et al.*, 2008:107; Akobeng, 2005:848).

In this study recommendations for nursing practice, education and research were formulated as discussed in Chapter 5.

2.5 SUMMARY

This chapter presented an overview of the systematic review methodology. The systematic review was defined and an explanation of the method chosen for this review was provided. Steps followed in the systematic review as outlined in Table 1.2 were discussed. Chapter 3 will provide a detailed account of the realisation and findings of the systematic review.

CHAPTER 3: REALISATION AND FINDINGS OF THE SYSTEMATIC REVIEW

3.1 INTRODUCTION

This chapter provides an overview of the systematic review conducted according to the first three of the five steps of systematic review, namely:

- Step 1: formulation of the focused review question;
- Step 2: gathering and classifying the evidence;
- Step 3: performing a critical appraisal

The results of the critical appraisal are also discussed.

3.2 STEP 1: FORMULATION OF A FOCUSED REVIEW QUESTION

The review question guided the systematic review. For the purposes of this study, the review question was formulated according to the PICOT format, which is as follows:

- Population: Studies related to stigma attached to mental health care users.
- Interventions: Interventions that aim to reduce stigma as a barrier to access to resources in the community, such as employment and healthcare.
- Comparison: Not applicable.
- Outcome: Reduce stigma attached to mental illness.
- Time frame: 2001 – 2012.

The review question for this study was consequently stated as follows:

- What best evidence is available regarding interventions to reduce stigma attached to mental illness?

The step that followed the formulation of the focused review question was gathering and classifying the evidence.

3.3 STEP 2: GATHERING AND CLASSIFYING THE EVIDENCE

The aim of this step of the research was to search for all studies relevant to the research question. All information was obtained by using a structured search strategy, including sources, keywords, inclusion and exclusion criteria and documentation of the search.

3.3.1 Sources

Different electronic databases were searched to identify relevant studies relating to interventions aimed at reducing the stigma attached to mental illness (published and unpublished). Relevant studies were located by using electronic databases and hand search as outlined in Table 3.1:

Table 3:1: Databases used in search strategy

Database/Platform	Subdivision
SA-Nexus (NRF)	Completed and current research in South Africa.
ProQuest	International theses and dissertations.
EBSCOhost	International journals on health science - primary sources.
ScienceDirect	International systematic reviews on health science - primary studies.
Web of Knowledge	International journals on health science – primary studies
Cochrane Library	International systematic reviews and clinical trials in health science.
Sabinet: ISAP	South African journals and Publications – primary studies.
Google	Grey literature such as conference proceedings, discussion papers, report booklets and unpublished research theses.
Hand search	Hand search of pertinent journals that are not electronically available.
Scopus	International journals on health – primary studies.

3.3.2 Keywords

The following key words were used in the search:

Interventions, program, mental illness, mental disorder, psychiatric, and stigma. The keywords were used in the category of 'All' or 'Title, Abstract' or 'Author-supplied Abstract' or 'keywords' in order to ensure that no relevant data were missed.

3.3.3 Inclusion and exclusion criteria of this study

Inclusion and exclusion criteria were determined to make certain that the boundaries of the review question are clearly defined. The aim of the search was to include all the studies relevant to the research question. These inclusion and exclusion criteria are summarised in Table 3.2.

Table 3.2: The inclusion and exclusion criteria

Inclusion Criteria	Exclusion criteria	Rationale
Studies related to stigma attached to mental health care users DSM-IV-TR conditions	Primary studies of patients diagnosed only with a medical condition, and not with a mental illness	To direct review and focus on the review question
Setting: Community healthcare centres, outpatient departments, employment and hospital		To include all possible settings where mental health care users might be found
Condition of the patients: Mental health care users	Patients with only medical conditions	To direct the review question and focus to the study
Outcome: Reduced stigma attached to mental illness		To direct the review question and focus to the study
Study design: Explorative and descriptive RCTs, non-randomised intervention and quasi-experimental studies	Studies that do not address the review question. Studies where the exploration of interventions did not focus on reduction of stigma attached to mental illness, secondary research and non-research documents.	To identify the most relevant research and high quality studies

Inclusion Criteria	Exclusion criteria	Rationale
<p>Publication included: Conference proceedings/Grey literature, discussion papers, report booklets and unpublished research theses</p>		
<p>Time limit: Studies published from 2001 to 2012</p>	Studies published before 2001	To identify the most recently published studies

3.3.4 Documentation of the search

In this study, studies that appeared to meet the inclusion criteria were selected after reading the abstracts. Full papers were retrieved to thoroughly assess relevance. The articles were retrieved from the databases, using keywords. The internet and library loan service were used to obtain all possibly relevant articles. An experienced librarian at the North-West University was also contacted for a specific search strategy in Nexus (National Electronic Database of Research Titles). The study review and selection was first done by the researcher and then by a second person who has experience with systematic review, in order to ensure rigour. No discrepancies were found. Accurate record keeping was maintained throughout the process for audit purposes. Studies identified, excluded and included are tabulated in Flow chart 3.1.

Flow chart 3.1: Realisation of search strategy

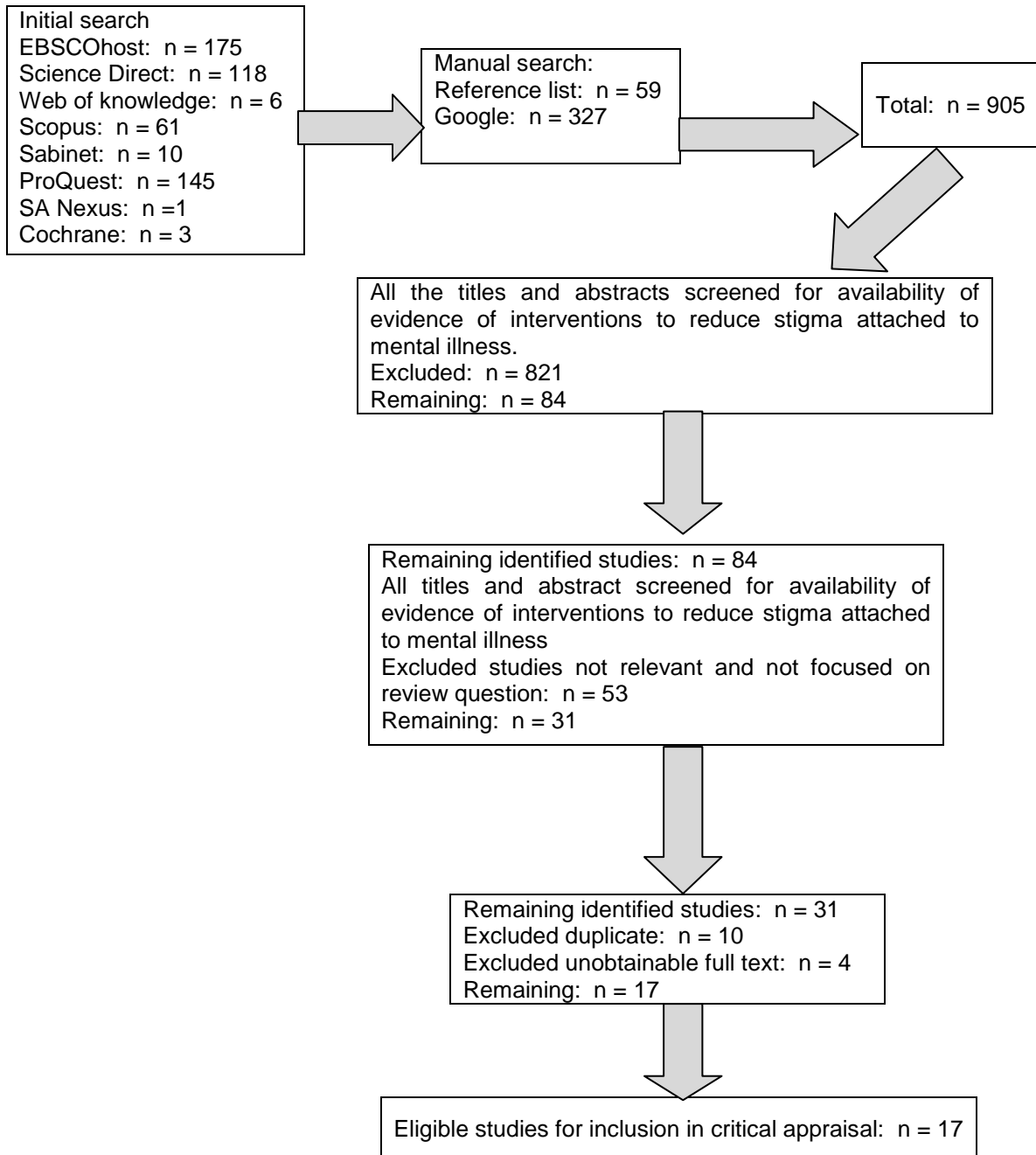


Table 3.3 shows the studies excluded after reviewing the abstracts and titles according to the databases used. All the articles that could not be obtained are stated in Table 3.4.

Table 3.3: Excluded studies after review with reasons for exclusion (n = 53)

	Authors and journal details	Title	Design	Rationale
1	Alexander, L.A. & Link, B.G. 2003. Journal of Mental Health, 12(3)271-289.	The impact of contact on stigmatizing attitudes towards people with mental illness	Quantitative design	Not focused on the research question
2	Arboleda-Florez, J. & Sartorius, N. 2008. Canadian Journal of Psychiatry, 55(9):213.	Understanding the stigma of mental illness: theory and interventions	Book review	Not a primary study
3	Blignault, I. <i>et al.</i> 2009. Health Promotion Journal of Australia, 20(3)227-233.	Using a multifaceted community intervention	Qualitative design	Not focused to the research question
4	Boysen, G.A. 2011. The Journal of Social Psychology, 15(3):274-291.	Biological explanations and stigmatizing attitudes: using essentialism and perceived dangerousness to predict anti-stigma intervention	Quantitative design	Not focused on the study
5	Burns, T. <i>et al.</i> 2007. The Lancet Articles, 370:1146-1150.	The effectiveness of supported employment for people with severe mental illness: a randomised controlled trial	Quantitative design	Outcome not according to inclusion criteria
6	Corrigan, P.W. <i>et al.</i> 2001. Psychiatric Bulletin, 27(2)187-195.	Three Strategies for Changing Attributions about severe mental illness	Quantitative design	Not focused on the research question
7	Corrigan, P.W. <i>et al.</i> 2002. Schizophrenia Bulletin, 28(2)293-309.	Challenging two mental illness stigma: Personal responsibility and dangerousness	Quantitative design	Not focused on the research question
8	Corrigan, P.W. <i>et al.</i> 2004. Psychiatry Services, 55(5):577-580.	Implications of educating the public on mental illness, violence, and stigma	Quantitative design	Outcome not according to inclusion criteria
9	Corrigan, P.W. <i>et al.</i> 2009. Community Mental Health Journal, 27:187-195.	Changing stigmatising perceptions and recollections about mental illness: The effects of NAMI's In Our Own Voice	Quantitative design	Not focused on the research question
10	Corrigan, P.W. 2010. Journal of Community Psychology, 38(3):259-275.	Self-stigma and coming out about one's mental illness.	Quantitative design	Not focused on research question

	Authors and journal details	Title	Design	Rationale
11	Corrigan, P.W. & Shapiro, J.R. 2010. <i>Clinical Psychology Review</i> , 30:907-922.	Measuring the impact of programs that challenge the public stigma of mental illness.	Quantitative design	Not focused on research question
12	Corrigan, P.W. <i>et al.</i> 2011. <i>Psychiatry Research</i> , 189(2011)339-343.	Examining a progressive model of self-stigma and its impact on people with serious mental illness	Quantitative design	Not focused on research question
13	Corrigan, P.W. <i>et al.</i> 2011. <i>Psychiatric Research</i> , 189:339-343.	Examining a progressive model of self-stigma and its impact on people with serious mental illness	Quantitative design	Not focused on research question
14	Crisp, A. <i>et al.</i> 2005. <i>World Psychiatry</i> , 4(2):106-113.	Stigmatising of people with mental illnesses follow-up study within the changing minds campaign of the: a royal college of psychiatrists	Quantitative design	Not focused on research question
15	Esser, V. <i>et al.</i> 2006. <i>Journal of Mental Health in teenagers</i> , 15(2) 243-250.	Using a school-based intervention to challenge stigmatising attitudes and promote mental health in teenagers	Quantitative design	Not focused on research question
16	Estroff, S.E. <i>et al.</i> 2004. <i>Schizophrenia Bulletin</i> , 30(3):493-509.	From stigma to discrimination: An analysis of community efforts to reduce the negative consequences of having a psychiatric disorder and label	Quantitative design	Not focused on research question
17	Finkestein, M.D. <i>et al.</i> 2007. <i>Amia</i> , 245-248.	Comparison of long term results of computer-assisted anti-stigma education and reading anti-stigma educational materials	Quantitative design	Symposium proceedings
18	Hocking, B. 2003. <i>The Medical Journal of Australia</i> , 178(9):47-48.	Reducing mental illness stigma and discrimination – everybody's business	Supplement	Not a primary study
19	Kakuma, R. <i>et al.</i> 2010. <i>African Journal of Psychiatry</i> , 13:116-124.	Mental Health Stigma: What is being done to raise awareness an	Quantitative and Qualitative design	Not focused on research question
20	Kapungwe, A. <i>et al.</i> 2010. <i>African Journal of Psychiatry</i> , 13:192-203.	Mental illness – Stigma and discrimination in Zambia	Qualitative design	No outcome according to inclusion criteria

	Authors and journal details	Title	Design	Rationale
21	Knifton, L. <i>et al.</i> 2008. <i>Soc. Psychiatry Psychiatr Epidemiol</i> 2010(45):497-504.	Community conversation: addressing mental health stigma with ethnic minority communities	Quantitative design	Workshop
22	Lauber, C. 2008. <i>Epidemiologia e psichiatria sociale</i> ,17:(1):10-13.	Stigma and discrimination against people with mental illness: a critical appraisal	Editorial	Workshop
23	Lauber, C. <i>et al.</i> 2006. <i>Acta Psychiatrica Scandinavica</i> , 113(429):51-59.	Do mental health professionals stigmatize their patients?	Quantitative design	Not focused on the topic
24	Liggins, J. <i>et al.</i> 2005. <i>General Hospital Psychiatry</i> , 27,359-364.	Stigma towards the mentally ill in the general hospitals	Quantitative design	Not focused on the research question
25	Lincoln, T.M. <i>et al.</i> 2008. <i>Schizophrenia Bulletin</i> 34 (5):984-994.	Can anti-stigma campaigns be improved? A test of the impact of Biogenic VS psychosocial causal explanations on implicit and explicit attitudes to Schizophrenia	Quantitative design	Participants paid for participating
26	Link, B.G. <i>et al.</i> 2001. <i>Psychiatric Services</i> , 52(12):1621-1626).	Stigma as a barrier to recovery. The consequences of stigma for the self-esteem of people with mental illnesses	Quantitative design	Not focused on the study topic
27	Link, B.G. <i>et al.</i> 2004. <i>Schizophrenia Bulletin</i> , 30(3):511-541.	Measuring mental illness stigma	Systematic Review	Not a primary study
28	Mann, C.E. & Himelein, M.J. 2004. <i>Psychiatric services</i> , 55:185-187.	Factors associated with stigmatization of persons with mental illness	Quantitative design	Not focused on the research question
29	Mojtabai, R. 2009. <i>Social Psychiatry and Psychiatric Epidemiology</i> .	Mental illness stigma and willingness to seek mental healthcare in the European Union	Quantitative design	Not focused on the research question
30	Mueller, B. <i>et al.</i> 2005. <i>Social Science & Medicine</i> , 62(2006):39-49.	Social support modifies perceived stigmatisation in the first years of mental illness: A longitudinal approach	Quantitative design	Not focused on the research topic

	Authors and journal details	Title	Design	Rationale
31	Mukharjee, R. <i>et al.</i> 2002. <i>Psychiatric Bulletin</i> , 26:178-181.	The stigmatisation of psychiatric illness the attitude of medical students and doctors in a London teaching hospital	Quantitative design	Not focused on the research topic
32	Myers, J.A. <i>et al.</i> 2009. <i>African Journal of Psychiatry</i> : 218-222.	Stigma, treatment beliefs, and substance abuse treatment use in historically disadvantaged communities	Qualitative design	Not focused on the research topic
33	Nordt, C. <i>et al.</i> 2006. <i>Schizophrenia Bulletin</i> , 32(4):709-714.	Attitudes of mental health professionals toward people with schizophrenia and major depression	Quantitative design	Not focused on the research question
34	Penn, D.L. & Couture, S.M. 2002. <i>Department of psychology</i> , 20-21.	Strategies for reducing stigma toward persons with mental illness	Commentaries	Not a primary study
35	Perlick, D.A. <i>et al.</i> 2011. <i>Psychiatric services</i> , 62 (12) 1456-1462.	In Our Own Voice – Family companion: Reducing self stigma of family members of persons with serious mental illness	Quantitative design	Workshop
36	Pinfold, V. <i>et al.</i> 2005. <i>World Psychiatry</i> , 4:S1 48-52.	Working with young people: the impact of mental health awareness programmes in schools in the UK and Canada	Quantitative design	Not focused on the research question
37	Pinfold, V. <i>et al.</i> 2003. <i>Soc. Psychiatry Psychiatr Epidemiol</i> 38:337-344.	Reducing psychiatric stigma and discrimination. Evaluating an educational intervention with the police	Quantitative design	Workshop
38	Psarra, V. <i>et al.</i> 2008. <i>International Journal of Law and Psychiatry</i> , 31:77-85.	Greek police officers' attitudes towards the mentally ill	Qualitative design	Not focused on the study
39	Reavley, N.J. & Jorm, A.F. 2011. <i>The royal Australian and New Zealand College of Psychiatry</i> , 45:1033-1039.	Young people's stigmatising attitudes towards people with mental disorders: findings from an Australian national survey	Quantitative design	Not focused on the research question
40	Reavely, N.J. Jorm, A.F. 2012. <i>Psychiatry Research</i> , xxx 2012 xxx	Stigmatising attitudes towards people with mental disorders: changes in Australia over 8 years	Quantitative design	Not focused on the research question

	Authors and journal details	Title	Design	Rationale
41	Ritsher, J.B. <i>et al.</i> 2003. <i>Psychiatric Research</i> .	Internalised stigma of mental illness: psychometric properties of a new measure qualitative	Quantitative design	Not focused on the research question
42	Ritterfeld, U. & Jin, S.A. 2006. <i>Journal of Health Psychology</i> , 11(2):247-267.	Addressing media stigma for people experiencing mental illness using an entertainment-education strategy	Quantitative design	Not focused on the research question
43	Rusch, L.C. <i>et al.</i> 2008. <i>American Journal of Psychiatric Rehabilitation</i> , 11:373-389.	The Impact of In Our Own Voice	Quantitative design	Not focused on the research question
44	Seo, M. & Kim, H.L. 2010. <i>Asian Nursing Research</i> , 4(2):90-101.	Effectiveness of an education program to reduce negative attitudes towards persons with mental illness using online media	Quantitative design	Not focused on the research question
45	Struening, E.L. <i>et al.</i> 2001. <i>Psychiatric service</i> , 52(12):1633-1638.	Stigma as a barrier to recovery; The extent to which caregivers believe most people devalue consumers and their families	Qualitative design	Not focused on the study
46	Tanaka, G. <i>et al.</i> 2003. <i>Psychiatry and Neurosciences</i> , 57:595-602.	Effects of an educational program on public attitudes towards mental illness	Quantitative design	Not focused on the research question
47	Thomson, A.H. <i>et al.</i> 2002. <i>Soc Psychiatr Epidemiol</i> , 37:475-482.	Attitudes about schizophrenia from the pilot site of the WPA world wide campaign against the stigma of schizophrenia	Quantitative design	Not focused on the research question
48	Thornicroft, G. <i>et al.</i> 2007. <i>British Journal of Psychiatry</i> , 190:192-193.	Stigma: ignorance, prejudice or discrimination?	Editorial	Editorial
49	Warner, R. 2005. <i>Psychiatric Services</i> , 56(5):570-575.	Local projects of the world psychiatric association programme	Quantitative design	Not focused on the research topic
50	Watson, A.C. <i>et al.</i> 2004. <i>Schizophrenia Bulletin</i> , 30(3):563-572.	Changing Middle Scholars' attitudes about mental illness through education	Quantitative design	Not focused on the research topic

	Authors and journal details	Title	Design	Rationale
51	Weiss, M.G. <i>et al.</i> 2001. <i>Anthropology & Medicine</i> , 8 (1):71-87.	Psychiatric stigma across cultures: local validation in Bangalore and London	Qualitative design	Not focused on the research topic
52	Yang, L.H. <i>et al.</i> 2007. <i>Social science & medicine</i> , 64:1524-1535.	Culture and stigma: Adding moral experience to stigma theory	Qualitative design	Not focused on the research topic
53	Yoshil, H. 2011. <i>Research article</i> , 11:323-331.	Effect of an education program on improving knowledge of schizophrenia among parents of junior high school students in Japan	Quantitative design	Not focused on the research question

Duplicate studies n = 10				
	Authors and journal details	Title	Design	Rationale
1	Blignaut, I. <i>et al.</i> 2009. Health promotion journal of Australia, 20(3):227-233.	Using a multifaceted community intervention to reduce stigma about mental illness in an Australian Macedonian community	Quantitative design	Duplicate
2	Chan, J.N.Y. <i>et al.</i> 2009. Social Sciences & Medicine, 68:1521-1526.	Combining education and video-based contact to reduce stigma of mental illness: "The same or not the same" anti-stigma program for secondary schools in Hong Kong	Quantitative design	Duplicate
3	Finkelstein, J. <i>et al.</i> 2007. Patient Education and Counselling, 71(2)204-214.	Randomised study of different anti-stigma media	Quantitative design	Duplicate
4	Pinfold, V. <i>et al.</i> 2003. Soc Psychiatr Epidemiol, 38:337-344.	Reducing psychiatric stigma and discrimination Evaluating an educational intervention with the police force in England	Quantitative design	Duplicate
5	Ritsher, J.B. <i>et al.</i> 2003. Psychiatry Research, 121:31-49.	Mental illness internalised Stigma psychometric properties of a new measure	Quantitative design	Duplicate
6	Spagnolo, A.B. <i>et al.</i> 2008. Psychiatry Rehabilitation Journal, 31(3)186-193.	Reducing stigma by meeting and learning from people with mental illness	Quantitative design	Duplicate
7	Struening, E.L. <i>et al.</i> 2001. Psychiatric Services, 52(12):1633-1638.	The extent to which caregivers believe most people devalue consumers and their families	Quantitative design	Duplicate
8	Warner, R. 2005. Psychiatric Services, 56(5)570-575.	Local projects of the World Psychiatric Association Programme to reduce stigma and discrimination	Quantitative design	Duplicate
9	Watson, A.C. <i>et al.</i> 2004. Schizophrenia Bulletin, (30)3:563-572.	Changing middle schoolers' attitudes about mental illness through education	Quantitative design	Duplicate
10	Weiss, M.G. 2001. Anthropology &	Psychiatric stigma across cultures: local	Quantitative design	Duplicate

	Medicine, 8(1):71-87.	validation in Bangalore and London		
--	-----------------------	------------------------------------	--	--

Table 3.4: Unobtainable studies (n = 4)

No	Reference	Reason
1	Petrus, N. & Chan, K. 2011. Attitudes towards people with mental illness. Effects of a training program for secondary school students. <i>International Journal of Adolescent Medicine and Health</i> , 23.	Expensive to purchase, costs = 30,00E /42.00 dollars
2	Link, B.G., Struening, E.L., Neese-todd, S., Asmussen, S., Phelan, J.C. 2002. On describing and seeking to change the experience of stigma. <i>Psychiatric Rehabilitation Skills</i>	Not obtainable via interlibrary loan
3	Malo, H.A. 2004. Stigma and public education about mental illness. <i>Psychiatric Services</i> , 55(7).	Expensive to purchase the article
4	Graf, J.M.A., Lauber, C., Nordt, C., Ruesch, P., Meyer, P.C. & Rossler, W. 2004. Perceived stigmatisation of mentally ill people and its population consequences for the Quality of life in a Swiss population. <i>Journal of Nervous & Mental Disease</i> , 192(8):542-547.	Unable to purchase the article

3.4 STEP 3: PERFORMING THE CRITICAL APPRAISAL

According to Gerrish and Lacey (2006:108) critical appraisal is defined as the process of assessing and interpreting evidence by systematically considering the validity of its results and its relevance. All the articles in this study were critically appraised to find out whether they answer the review question and meet the inclusion criteria. The evidence class rating recommended by the Evidence Analysis Manual (EAM, 2012:55) to enhance the rigour of the study was used to analyse the primary studies selected for this review.

According to the EAM (2012:30) studies are classified according to categories of primary studies and study reports (see Table 3.5). The studies are also classified according to the type of research that is, by study design. EAM (2012:55) classification that distinguishes between studies and reports gives an initial picture of the type of studies and level of evidence available and helps organise the articles for the next step of the critical appraisal EAM (2012:30). These study designs are organised into a hierarchy based on the ability of the design to test causal relationships. This method has been adapted to comply with the current study as

displayed in Table 3.5.

Table 3.5: Hierarchy and classification of studies EAM (2012:30)

Primary Reports		Secondary Reports	
A	Randomised Controlled Trial Cluster Randomised Trial Randomised crossover trial	M	Meta-analysis or Systematic review Decision analysis Cost-benefit analysis Cost effectiveness study
B	Prospective Cohort study Retrospective Cohort study		
C	Non-randomized Control Trial Non-randomised Crossover Trial Case control study Time series Study Diagnostic, Validity or Reliability Study	R	Narrative review (Review article) Consensus statement Consensus report
D	Non-Control Trial Case Study or Case Series Other descriptive Study Cross-sectional study Trent Study Before- and after study	X	Medical opinion

3.4.1 Quality assessment

According to Abalos (2001:1), the first step for the critical appraisal of a review is to establish its methodological quality in order to determine the validity of the results. If the review was not conducted with methodological rigour, it is unlikely that the results reflect the truth and therefore they should not be taken into account, or they should be considered, but bearing in mind that the intrinsic errors may distort the results.

The interpretation of the results of the review is of utmost importance. Once the methodological quality of the review is evaluated and conclusion is reached that reading the results is worthwhile, the results are interpreted and the reader evaluates whether they can be applied to the relevant patient, for example mental health care users who are stigmatised because of their illness. In this study, all primary studies

selected for critical appraisal were evaluated for methodology and quality using standard checklists from the Critical Appraisal Skills Program see Annexure 1 on page 93 which is an Evidence-Based Health Care appraisal tool, and the John Hopkins Nursing Evidence-Based Practice (JHNEBP) appraisal tool (Newhouse *et al.*, 2007:206) see annexure 2 in page 94. The JHNEBP tool was used to appraise quasi-experimental studies and non-experimental studies. The CASP tool was used to appraise randomised control trials (RCTs) and John Hopkins Nursing Evidence-Based Practice (JHNEBP) for quasi-experimental studies and non-experimental studies. The scoring was then adapted by the researcher for inclusion and exclusion purposes after the appraisal for both the CASP and JHNEBP tools. Table 3.6 displays the quality ratings. These checklists were used in this research as they were used by previous researchers and were found to be effective (Ten Ham & Steenkamp 2009). Therefore they were not piloted.

Table 3.6: Adapted quality ratings for methodological quality of studies (adapted from EAM, 2012:43; CASP, 2006 and JHNEBP, 2007:206)

Description in words	EAM quality rating	CASP score quality rating	JHNEBP
HIGH	(+)	≥8/10	≥5/6
MEDIUM/NEUTRAL	(Ø)	≥5/10 to <8/10	3/6 to 4/6
LOW	(-)	≥1/10 to <5/10	1/6 to 2/6

The included studies were evaluated for reliability, validity, and credibility according to the appropriate criteria of the Criteria of the Critical Appraisal Skills Program (CASP) to determine whether the findings can be considered as good, medium or low evidence (CASP, 2006:17). The studies included in this review were from medium to high quality and obtained a quality rating between <5/10 to ≥8/10. The researcher appraised the material for a second time in order to promote consistency of quality ratings of studies to be included for evidence analysis, and to compare quality ratings.

The studies were appraised on the basis of recommended criteria by the (EAM 2012:55) by using a quality checklist for primary studies. See Annexure 3. A second reviewer independently appraised the selected studies for methodological quality and for inclusion in or exclusion from the systematic review. The checklists were completed and filed for audit purposes.

The research studies that were included after critical appraisal served as the final sample for the next step: extracting data and drafting a summary of all relevant studies.

Table 3.7 indicates 17 studies that were critically appraised using standard checklists from the Critical Appraisal Skills Program (CASP), the John Hopkins Nursing Evidence-Based Practice appraisal tool (Newhouse *et al.*, 2007:206) and EAM (2012:55).

Table 3.7: Critical appraisal (n = 17)

Randomised control trials (n = 12)						
	Reference	Settings and sample size	Intervention	Adherence Measure	Data Analysis	Rigour
1	Bayar <i>et al.</i> (2009:226-230) Reducing mental illness stigma in mental health professionals using a web-based approach	<u>Setting:</u> Turkey <u>Sample:</u> 205 psychiatrists and residents in a psychiatric ward	Web-based mental disorder stigma education program <u>Control group:</u> Education that is not web-based <u>Follow up:</u> Not indicated (one time intervention)	Self-reporting questionnaire Measures Social distance scale Likert scale	Mann-Whitney <i>U</i> test Chi-square test Cronbach's alpha	Instrument used: CASP RCT A clearly focused question was stated. An appropriate design was applied and a sample was allocated into a control and study group. The data collection was clearly stated. The results were precisely and clearly presented. Follow-up was not done. Blinding was not done. Overall the study was well planned, executed and reported Class A EAM = (+) positive CASP 6/10 Relevant to the study Decision: Included
2	Chan <i>et al.</i> (2009:1521-1526) Combining education and video-based contact to reduce stigma of mental illness: "The same or not the same" anti-stigma program for secondary schools in Hong Kong	<u>Setting</u> Secondary schools Hong Kong <u>Sample</u> 255 grade 9 students, ages ranging between 13 to 18	Intervention Education followed by video based contact (Education-video), Video based contact followed by education (Video Education) condition. <u>Control group:</u> Education video <u>Follow-up:</u> 1 month	Questionnaires Measures: Public Stigma scale, Social Distance Scale and Knowledge Test	Analyses were conducted using Analysis of covariance (ANCOVA) and Statistical Package for the Social Sciences (SPSS) 15.0 for windows Chi-square	Instrument used: CASP, RCT. A clearly focussed question was stated. An appropriate design was applied. All participants were accounted for in the conclusion. Blinding was not used. The data collection was done and the results were precise and clearly presented. All outcomes were considered. Follow-up was done and adverse events reported. Control group not feasible Class A EAM= (+) positive CASP 8/10 Relevant to the study Decision: Included

Randomised control trials (n = 12)						
	Reference	Settings and sample size	Intervention	Adherence Measure	Data Analysis	Rigour
3	Corrigan <i>et al.</i> (2007:171-181) Will filmed presentations of education and contact diminish mental illness stigma?	<u>Setting:</u> Community college Chicago area. <u>Sample</u> 244 people	<u>Intervention</u> Education contact video taped <u>Control group:</u> Education video <u>Follow up:</u> One week	Attribution Questionnaire	<ul style="list-style-type: none"> • SPSS • ANOVAs • Chi Square 	Instrument used: CASP RCT A clearly focused question was asked. An appropriate design was applied. Samples were allocated in control and study groups. The data collection was clearly stated. The results were precisely and clearly presented. Follow up was not done. Blinding was not done. Overall the study was well-planned, well executed and reported. Class A EAM = (+) positive CASP = 8/10 Relevant to the study Decision: Included
4	Finkelstein <i>et al.</i> (2008:204-214) Randomised study of different anti-stigma media	<u>Setting</u> Herzen Russian State Pedagogic University (St Petersburg), School of special University <u>Sampling</u> 193 graduates students	<u>Intervention</u> Computer-mediated intervention and printed educational materials <u>Control group:</u> Conventional intervention Follow-up: 6 months	Community attitudes toward mentally ill (CAMI), and Psychiatric knowledge survey (PKS) questionnaire Bogardus scale of social distance (BSSD) Cronbach alpha of the scale Likert scale	Intent to treat: Not done Chi-square ANOVA or t-test	Instrument used: CASP RCT. A clearly focused question was stated. An appropriate design was applied and samples were allocated into control and study groups. The data collection was clearly stated. No blinding done. Follow-up was done. All participants who entered were accounted for in conclusion. Over all the study was well planned, executed and reported. Class A EAM = (+) positive CASP = 8/10 Relevant to the study. Decision: Included

Randomised control trials (n = 12)						
	Reference	Settings and sample size	Intervention	Adherence Measure	Data Analysis	Rigour
5	Kerby <i>et al.</i> (2008:345-349) Anti-stigma films and medical students' attitudes towards mental illness and psychiatry	<u>Setting</u> Non-statutory mental health organisations in Nottingham. <u>Sample:</u> 46 Participants were 4 th year medical undergraduates	<u>Interventions</u> Two anti-stigma films were used. The first film was "A human experience" 15 minutes long. The second film was "A day in the mind of ...". It is 12 minutes long. <u>Control intervention:</u> The control film was a 25 minutes documentary unrelated to mental illness or psychiatry and matched for visual format <u>Follow-up:</u> 8 weeks	Self-report questionnaires Attitudes toward serious mental illness scale Likert scale Social distance scale	Analysed on intention to treat basis with Mann-Whitney <i>U</i> -tests and <i>t</i> -test used for parametric data. Bonferroni method <i>A Friedman test Post hoc Wilcoxon matched -pairs test</i>	The instrument used was CASP RCT. A clear statement of the aims of the research was included. An appropriate design was applied, and the sample was allocated into a control and study group. The data collection was clearly stated. The results were precisely and clearly presented. Follow-up was done and all participants who entered were accounted for in the conclusion. Blinding done: a single mask. The study was well planned, executed and reported a high rating. Class: A EAM = (+) positive CASP 7/10 Relevant to the study Decision: Included
6	Luty <i>et al.</i> (2007:377-381) Effectivity of changing minds campaign fact sheets in reducing stigmatised attitudes towards mental illness	<u>Setting:</u> Royal College of Psychiatrist Britain <u>Sample:</u> 158	<u>Intervention</u> Factsheets developed from the 'Changing Minds' campaign <u>Control group:</u> Received same factsheet but answered either schizophrenia or alcohol <u>Follow-up:</u> Immediate results	The Attitudes to mental illness questionnaire (AMIQ) Likert-scale Pearson's correlation coefficient, Cronbach's alpha	Data analyses AMIQ Non-parametric (Mann-Whitney) StatsDirect version 2.4.3	Instrument used: CASP. RCT. A clearly focused question was stated. An appropriate design was applied, and the sample was allocated in control and study group. The results were precisely and clearly presented. Follow-up was not done and all participants that entered were accounted for in conclusion. Blinding not done. Class: A EAM = (+) Positive CASP 6/10 Decision: Included

Randomised control trials (n = 12)						
	Reference	Settings and sample size	Intervention	Adherence Measure	Data Analysis	Rigour
7	Mann and Himelein (2008:545-551) Putting the person back into psychopathology: an intervention to reduce mental illness stigma in the classroom	<u>Setting</u> Small public university in the southeast. <u>Sample:</u> 53 students	<u>Intervention: study 1</u> Humanising instruction <u>Control group:</u> Traditional instruction (diagnostic approach) <u>Follow-up:</u> Not done	Cronbach's alpha Stigma scale	Diagnostic Statistical Manual of Mental Disorders Text Revision (DSM-1V-TR) Criteria	Instrument used: CASP RCT A clearly focused question was asked. An appropriate design was applied. Samples were allocated into a control and study group. No blinding done. No follow-up. The two studies were well planned, executed and reported Class A EAM : (+) positive CASP = 8/10 Relevant to the study Decision: Included
8	Penn <i>et al.</i> (2003:383-391) The effects of a documentary film about schizophrenia on psychiatric stigma	<u>Setting:</u> University of North Carolina-Chapel Hill <u>Sample</u> 163 Undergraduates	<u>Interventions group</u> Participants who viewed documentary films <u>Control group:</u> Seeing a documentary about non-psychiatric population <u>Follow-up:</u> Not specified	Social distance scale (SDS) Dangerousness scale (DS) Affect scale Attributions scale Standard deviation (SD) Rosenberg self-esteem scale (RSES) Marlowe-Crowne social desirability scale (MCCS) Protestant Ethic scale (PES) Contact (with mental illness) scale Film Rating Form(FRF)	Positive and negative affect scale (PANAS) Multivariate analyses of variance (MANOVAs) ANOVA (Analyses of variance) Chi-square analyses Cronbach's Tukey post hoc	Instrument used: CASP, RCT. A clearly focused question was stated. An appropriate design was applied, and the sample was allocated into a control and study group. The data collection was clearly stated. The results were precisely and clearly presented. Blinding was done. Overall the study was well planned, executed and reported. High quality rating: EAM = (+) positive Class A EAM = (+) positive CASP = 8/10 Relevant to the study Decision: Included
9	Pinto-Foltz <i>et al.</i> (2011:2011-2019)	<u>Setting</u> Two public high	<u>Intervention:</u> In our own voice	"In Our Voice" knowledge	Intent-to-treat analysis Statistical Package for the	Instrument used: RCT Three focused questions were clearly

Randomised control trials (n = 12)						
	Reference	Settings and sample size	Intervention	Adherence Measure	Data Analysis	Rigour
	Feasibility, acceptability, and initial efficacy of a knowledge-contact program to reduce mental illness stigma and improve mental health literacy in adolescents	schools in southern urban area of the United States <u>Sample size</u> 156 female adolescents grade "9" and grade "10". 95 in the intervention group. 61 in the control group.	<u>Control group:</u> No intervention <u>Follow-up:</u> 8 weeks	measure was used to assess mental health literacy. Respondents rated items on a 1-7 Likert-type scale. Cronbach's alpha was used. Revised attribution questionnaire	Social Sciences 17.0 (SPSS) was used for statistical analysis. Alpha level was used for statistical significance Chi-square test	stated. Appropriate design of non-blinded cluster randomised trial was applied. The data collection was clearly stated. Triangulation was used. The results were precisely and clearly presented. Class: A EAM = (+) positive CASP = 7/10 Relevant to the study Decision: Included
10	Pitre <i>et al.</i> (2007:415-429) The use of puppets with elementary school children in reducing stigmatizing attitudes towards mental illness	<u>Setting</u> Primary School <u>Sample:</u> 46 students Children in grades 3 & 6	<u>Intervention</u> Puppets program <u>Control group:</u> Education without program <u>Follow up:</u> Not done	Opinion about Mental illness scale (OMI) Graphics used	Re-factored, <i>t-tests</i> Statistical Package for Social Sciences (SPSS) A Windows package with easy to follow pull-down menus which is used as a package for storage of data and has more comprehensive and flexible statistical analysis and data management facilities. Can read Excel files example data from questionnaires are analysed using statistical analysis software such as SPSS (Gerrish & Lacey, 2006:436)	Instrument used: CASP RCT A clearly focused question was asked. An appropriate design for the children was applied and samples were indicated in the control and study group. No blinding was applied. No follow-up done. Class: A EAM = (+) positive CASP: 7/10 Relevant to the study Decision: Included

Randomised control trials (n = 12)						
	Reference	Settings and sample size	Intervention	Adherence Measure	Data Analysis	Rigour
11	Reinke <i>et al.</i> (2004:377-389) Examining two aspects of contact on the stigma of mental illness	<u>Setting:</u> America <u>Sample:</u> 164 community college students	<u>Intervention:</u> (a) In vivo contact that moderately disconfirms the stereotypes (b) Videotaped contact with moderate disconfirmation of the stereotypes (c) videotaped contact with high disconfirmation (d) videotaped contact with little or no disconfirmation <u>Control group:</u> A no-stigma change control group <u>Follow-up:</u> 1 week	Questionnaire Social distance scale (SDS)	Analysis of variance (ANOVA) tests for differences between means determines whether the samples under consideration were drawn from the same population and thus have the same population mean. ANOVA is usually calculated by computer although is not difficult to calculate by hand with small group (Burns & Grove, 2005:529)	Instrument used: CASP RCT A clearly focused question was stated. An appropriate design was applied, and samples were allocated into control and study groups. The data collection was clearly stated. Blinding not done. The results were precisely and clearly presented. Follow-up was done and all participants who entered were accounted for in conclusion. Overall the study was well planned, executed and reported. Class A EAM = (+) positive CASP: 7/10 Relevant to the study Decision: Included
12	Saporito <i>et al.</i> (2011:9-12) Reducing stigma towards seeking mental health treatment among adolescents	<u>Setting</u> Central Virginia <u>Sample:</u> Public high school students 159	<u>Intervention</u> Psycho-education and contact (via DVD) <u>Control group:</u> Education about tobacco <u>Follow-up:</u> Not specific	Positive and negative scale (PANAS); Community attitude toward the mentally ill (CAMI) Attitudes toward seeking professional psychological help (ATSPPH) Social restrictiveness scale; Im-	Analysis of variances (ANOVAs); Multivariate analysis of covariance (MANCOVA)	Instrument used: CASP, RCT. A clearly focused question was stated. The sample was allocated into a control and study group. The data collection was clearly stated. Overall the study was well planned executed and reported. High quality rating Class A EAM =(+) positive CASP =8/10 Relevant to the study Decision : Included

Randomised control trials (n = 12)						
	Reference	Settings and sample size	Intervention	Adherence Measure	Data Analysis	Rigour
				<p>Implicit Bias Measure; Cronbach's implicit association test (IAT) T tests</p>		
Quasi-experimental research n=4						
	Reference	Settings and sample size	Intervention	Adherence Measure	Data Analysis	Rigour
1	<p>Faigin & Stein (2008:594-606) Comparing the effects of live and video-taped theatrical performance in decreasing stigmatization of people with serious mental illness</p>	<p><u>Setting</u> Bowling Green State University <u>Sampling</u>: 303 undergraduate psychology students</p>	<p><u>Intervention</u> Live, scripted theatrical (direct contact) and video-taped presentation of the same theatrical (indirect contact) <u>Control group</u>: No-presentation group <u>Follow-up</u>: One month</p>	<p>Self-report questionnaire Measures Community Attitudes Towards the Mentally ill (CAMI) scale Likert-type scale Behavioural Intention scale for students (BISS) Marlowe-Crowne social Desirability scale (MCS-8) Presentation Rating Form (PRF)</p>	<p>MANCOVA and Analysis of Covariance (ANCOVA) ANOVA tests</p>	<p>Instrument used: JHNEBP A clearly focused question was stated. An appropriate design was applied. Data collection was clearly stated. The results were precise and clearly presented. Overall the study was well planned, executed and reported. Class: D JHNEBP = 5/6 EAM = (+) positive Strength of evidence Level = III Relevant to the study Decision: Included</p>
2	<p>Gaebel <i>et al.</i> (2008:184-193) Evaluation of the German WPA "Program against stigma and dis-</p>	<p><u>Setting</u>: In 6 German cities. Dusseldorf and Munich are the experimental</p>	<p><u>Intervention</u>: German Open the Door antistigma-program <u>Follow-up</u>:</p>	<p>Fully Structured interviews and questionnaire Six item scale (the total sum</p>	<p>Data were analysed using chi-square-tests, analyses of variance and <i>t-test</i>. Potential predictors of social distance</p>	<p>Instrument used: JHNEBP. A clearly focus question was stated. An appropriate design was used and sample was allocated into a control and study group. Data collection was clearly stated. Overall study was well</p>

Randomised control trials (n = 12)						
	Reference	Settings and sample size	Intervention	Adherence Measure	Data Analysis	Rigour
	crimination because of schizophrenia – “Open the Doors”: Results from re-representative telephone surveys before and after three years of anti-stigma interventions	Berlin, Essen. <u>Sampling:</u> 7225 general practitioners and teachers who frequently are in contact with young people	3 years	score and the subscales TRANS and CLOSE)		planned, executed and reported. Class: D EAM = (+) positive JHNEBP = 5/6 Strength of evidence Level = III Relevant to the study Decision: Included
3	Markström <i>et al.</i> (2009:660-665). Attitudes towards mental illness among healthcare students at Swedish Universities	<u>Setting:</u> Swedish Universities <u>Sample</u> 1001 students from six universities	<u>Intervention group:</u> Naturalistic anti-stigma interventions that consists of theoretical programmes (nursing, occupational therapy and medicine) <u>Follow-up:</u> Five weeks	Self-report of fear and behavioural Intentions towards mentally ill (FABI) questionnaire Level of Familiarity Questionnaire Swedish version of the attitudes to persons with mental illness questionnaire ("Changing minds")	Spearman correlations used to investigate associations between variables. Mann-Whitney U-test used to analyze differences between groups. Statistical software package used was SPSS 14.0.	Instrument used: JHNEBP clearly focused question was stated. An appropriate design was applied, it was not supplemented with qualitative data. The data collection was clearly stated. The results were precisely and clearly presented. Class: D EAM = (+) positive JHNEBP = 5/6 Strength of evidence Level = III Relevant to the study Decision: Included

Randomised control trials (n = 12)						
	Reference	Settings and sample size	Intervention	Adherence Measure	Data Analysis	Rigour
4	Spagnolo <i>et al.</i> (2008:186-193) Reducing stigma by meeting and learning from people with mental illness	<u>Setting</u> Four different high schools located in New Jersey countries (Hudson, Somerset, and Ocean). <u>Sampling</u> 277 students (adolescents)	<u>Intervention</u> Public education program about mental illness <u>Follow-up:</u> One hour	Attribution Questionnaire-Short Form for children Likert scale	Independent Sample t-test	Instrument used: JHNEBP A clearly focused question was stated. An appropriate design was applied Data collection was clearly stated. The results were precise and clearly presented. No control group and no follow up. Class: D EAM = (+) positive JHNEBP = 5/6 Strength of evidence Level - III Relevant to the study Decision: Included

Non-experimental research n=1						
	Reference	Settings and sample size	Intervention	Adherence Measure	Data Analysis	Rigour
1	McKinney (2009:281-303) Initial evaluation of active minds: a student organization dedicated to reducing the stigma of mental illness	<u>Setting</u> 50 under-graduate classes at a university <u>Sampling</u> 136 students	<u>Intervention:</u> Student involved in Active Minds programs Control group: Student who are not involved in Active Minds programs <u>Follow-up:</u> 8 weeks	General Attribution Questionnaire Likert scale	ANOVAs Chi square (Fishers exact test) Cronbach's alpha	Instrument used: JHNEBP A clearly focused question was stated. An appropriate design was applied. Data collection was clearly stated. The results were precise and clearly presented. Overall the study was well planned, executed and reported. Class: D EAM = (+) positive JHNEBP = 5/6 Strength of Evidence = III Relevant to the study Decision: Included

3.5 SUMMARY

Chapter 3 offered a detailed account of the realisation of this study, divided into steps 1 to 3 of the systematic review. Chapter 4 will discuss data extraction and drafting of all relevant studies with data analysis (steps 4 and 5 of the systematic review).

CHAPTER 4: FINDINGS OF THE STUDY

4.1 INTRODUCTION

This chapter provides an overview of the findings of the study as found during the 4th of the five steps of the systematic review namely:

- Step 4: data extraction and synthesis

4.2 SUMMARISING THE EVIDENCE

The summary of the evidence entails summarising the characteristics of the samples in the study, measurements used, statistical analysis, data extraction analysing strategy and summary of the findings. This forms step 4 of the systematic review.

STEP 4: DATA EXTRACTION AND SYNTHESIS

According to Mouton (2001:108) data analysis and synthesis is the process of uniting and summarising the outcomes of interest from the studies that are included in the systematic review, and to determine what effective measures will be used.

In this step, the characteristics of the included studies, measurements and statistical analysis are explained before details on data extraction and data analysis are provided.

4.2.1 Characteristics of the final sample

Seventeen studies have been extracted from RCTs, Quasi-experimental studies and a non-experimental study (see Table 4.1).

Table 4.1: Number of studies extracted from RCTs, Quasi-experimental study and non-experimental studies = 17

RCTs sample n = 12	Quasi – experimental n = 4	Non-experimental 1
Evidence analysis grading: Grade 1: good/strong evidence n = 5	Evidence analysis grading: Grade 1 good/strong evidence n = 3	
Grade 11: fair/medium evidence n = 7	Grade 11: fair/medium evidence n = 1	Grade 11: fair/medium evidence n = 1
Total n = 12	Total n = 4	Total n = 1

In these studies different measures and statistical analysis were used, as explained in Tables 4.2 and 4.3.

4.2.2 Measurements

Different measurements were frequently used by different researchers to assess the stigma related to mental illness (see Table 4.2).

Table 4.2: Measurements used

Measurement	Type/definitions	Uses
Secrecy scale (a five-item Likert scale)	Secrecy scale measures comparable internal consistency	Assesses concealment of mental illness Measurement in reliability for scales to measure comparable internal consistency
Attitudes toward seeking professional psychological help (ATSPPH)	A 10 - item shortened version of the original 29 item scale. the shortened 10-items version has adequate psychometric properties	Short form; assess general attitudes toward seeking professional psychological help (as opposed to personal intentions to seek help) (Mann & Himelein, 2008:545-551; McKinney, 2009:281-301; Saporito <i>et al.</i> , 2011:9-21; Pinto-Foltz <i>et al.</i> , 2011:2011-2019)
Questionnaire used	A printed self-report form designed to elicit information that can be obtained through written responses of the subject (Burns & Grove, 2005:748)	A popular approach to the collection and analysis of data (method of measurement) (Corrigan <i>et al.</i> , 2007:171-181)
Social distance scale	Comprises of seven questions that refer to potential interactions with a hypothetical individual with mental illness. The participant is asked to rate each item on a 4-point Likert scale (0 = definitely unwilling to 3 = definitely willing)	A behavioural intention to distance oneself from persons with schizophrenia was assessed by adapting the scale
Positive and Negative Affect scale (PANAS)	20 mood-related adjectives (e.g. "irritable", "proud") that are related on 5-point Likert scales (for the extent to which the adjective reflects the participant's current mood) ranging from 1 ("very slightly or not at all") to 5 ("extremely") (Penn <i>et al.</i> , 2003:385)	Measures pre and post- positive affect as well as pre- and post- negative affect
Dangerousness scale (DS)	Comprises of eight items that tap beliefs about whether persons with mental illness are likely to be a danger to others (Penn, <i>et al</i> 2003:385)	Comprises eight items that tap beliefs about whether persons with mental illness are likely to be a danger to others

Measurement	Type/definitions	Uses
Affect scale	Comprises of ten opposite pairs of adjectives pertaining to emotions (e.g. "calm-nervous") The participant rates each adjective pair with respect to how he or she would react to interacting with someone with a mental illness on a 7-point scale, with neutral being the midpoint (Penn, <i>et al.</i> , 2003:385)	The subject has to rate his or her emotional reactions to persons with mental illness
Public stigma scale	Scale that measures the stigmatising attitudes of individuals towards people with schizophrenia in terms of three components: affective (e.g. "People with Schizophrenia are repulsive"), cognitive (e.g. " people with schizophrenia are a burden to society"), and behavioural (e.g. "when you meet someone with schizophrenia, it is best to avoid him/her") (Chan <i>et al.</i> , 2009:1523)	Measures the stigmatising attitudes of individuals towards people with schizophrenia in terms of three components: affective, cognitive and behavioural Reinke <i>et al.</i> , 2004:377-389; Chan <i>et al.</i> , 2009:1521-1526; Gaebel <i>et al.</i> , 2008:184-193; Penn <i>et al.</i> , 2003:383-391)
Community Attitudes towards the Mentally Ill (CAMI)	A 40-item self-report instrument (Faigin & Stein, 2008:597)	Self-report instrument designed to measure the level of public's attitudes toward people with mental illness
Behavioural Intentions scale for Students (BISS)	Is a 7-item measure designed for the present research to assess students' willingness to engage in future contact with persons with mental illness. The measure is scored using a 5-point Likert-type scale from 1 = strongly agree to 5 = strongly disagree (Faigin & Stein, 2008:597)	Measure designed for the present research to assess students' willingness to engage in future contact with persons with mental illness (Faigin & Stein, 2008: 594-606)
Presenting Rating Form (PRF)	6-item scale used to assess the participants' affective response to theatrical performance	Use to assess the participants' affective response to the theatrical performance (Penn <i>et al.</i> , 2003; Faigin & Stein 2008:594-606)
Semantic differential scale	Assess explicit attitudes on a 7-point semantic differential scale towards 'mentally ill people' (1 = 'Bad' to 7 = 'Good')	Measures attitude of pre-intervention mentally ill people as well as pre intervention mental health treatment
Implicit Association test (IAT)	Was developed for administration via computer, but has also been adapted for paper-pencil format. The task requires participants to categorize words as quickly as	Measures association strength between concepts and attributes (Saporito <i>et al.</i> , 2011:9-21)

Measurement	Type/definitions	Uses
	possible into superordinate categories. Originally, the IAT was designed as a relative task, meaning that two target categories are compared for each task: the target category of interest and a contrasting target category (e.g. comparing 'mentally ill people' to physically ill people'. (Saporito <i>et al.</i> , 2011:12)	
Rosenberg Self-Esteem scale (RSES)	A scale that disguise the purpose of the study and has a good internal reliability	Scales relate to stigma; to disguise the purpose of the study
Marlowe-Crowne Social Desirability scale (MCS-8)	Is an 8-item scale measuring social desirability of responses. A higher overall scores indicate a greater tendency to respond in a socially desirable way (Faigin & Stein, 2008:598)	Ask participants to indicate, answering "yes" or "no" whether they have ever had contact with a person with mental illness
The protestant Ethic scale (PES)	To disguise the purpose of the study the PES and the RSES were chosen as they relate to stigma and/or response biases. PES is a scale with a good internal reliability	These scales had good internal reliability, with a range of in alpha from 0.58 (PES) to 0.87 (RSES)
Attributions scale	A scale that measures attributions regarding schizophrenia. Each question is rated on a 7-point Likert scale (Penn <i>et al.</i> , 2003:385-386)	To measure attributions regarding schizophrenia
Level-of-Contact Report	A 12-item scale that measures prior level of contact with mental illness	Measures prior level of contact with mental illness (Penn <i>et al.</i> , 2003:383-391; Faigin & Stein, 2008)
Bogardus Social Distance scale	A widely used proxy measure of attitudes related to mental illness originally developed by Bogardus (Reinke <i>et al.</i> , 2004:381)	Measures mainly emotional and partly behavioural component of stigma (Reinke <i>et al.</i> , 2004:377-389)
Fear and behavioural intentions towards mentally ill (FABI)	Questionnaire/instrument that includes ten items with a specific five-point response scale for each question (Markström <i>et al.</i> , 2009:662)	Self report inventory questionnaire (Markström <i>et al.</i> , 2009:660-665)

In this study, the statistics that were mostly used are the following:

4.2.3 Statistical analysis of the studies

Statistical analysis includes different instruments used to measure effectiveness of interventions that reduce stigma attached to mental illness. The measures that were frequently used are shown in Table 4.3. The main aim of statistical analysis is to use the information from a sample to draw conclusions (make inferences) about the population interested (Gerrish & Lacey, 2006:454). Once the data have been collected, they need to be assembled and organised in such a way that conclusions can be drawn from them (Gerrish & Lacey, 2006:27), therefore all the experimental studies that have been included for evidence analysis used statistical analysis to draw conclusions. See Table 4.3 for statistical analysis used in these studies.

Table 4.3: Statistical analysis used

Analysis	Uses and References
Intention-to-treat analysis (ITT)	'Intention to treat' principle is utilised in analysis of clinical trials to account for patients who have not adhered to the allocated management strategy because of non-compliance, premature death, withdrawal from the study, loss of follow-up, or other reasons (Finkelstein <i>et al.</i> , 2008:204-214)
t tests (one-tailed) for paired samples	For analysing pre- and post-test factor scores on the re-factored Opinions about mental illness (OMI) (Pitre <i>et al.</i> , 2007:415-429; Spagnolo <i>et al.</i> , 2008:186-193; Saporito <i>et al.</i> , 2011:9-21)
Pearson's correlation coefficient Spearman's test	Measure that is commonly used to control for violation of assumptions that must be met to use Pearson's equation Used to investigate associations between variables (Luty <i>et al.</i> , 2007:377-381)
Statistical Package for the Social Sciences (SPSS 17.0)	Was used for statistical analysis Pinto-Foltz <i>et al.</i> (2011:2011-2019)
Multivariate analysis of covariance (MANCOVA) Analysis of covariance (ANCOVA)	To assess stigma in the four indicators of stigma related mental health attitudes: explicit attitudes towards treatment (ATSPPH), explicit attitudes towards mental illness (CAMI), implicit attitudes towards seeking treatment (IAT-Treatment), and implicit attitudes towards mentally ill persons (IAT-Mentally ill People). To examine the effect on intervention condition on each outcome variable at post-test controlling for the corresponding scores at pre-test and school. Chan <i>et al.</i> (2009:1521-1526)
Multivariate analysis of variance (MANOVA)	Penn <i>et al.</i> (2003:387); Saporito <i>et al.</i> (2011:15) To evaluate whether participants' mood changes and film rating scores entered separately as covariates. Results were all unchanged
Friedman test post-hoc Wilcoxon matched-pairs test	Kerby <i>et al.</i> (2008:347) Non-parametric test used with matched samples or in repeated measures to determine differences between samples/which time points the significant differences were located. The tests showed that: general attitudes

Analysis	Uses and References
	<p>to serious mental illness as measured by the Attitudes Towards Serious Mental Illness Scale Perceived dangerousness, measured by the Dangerousness scale Social distance, measured by the Social Distance Scale Attitudes to psychiatry, measured by the Attitudes to Psychiatry Scale</p>
<p>Mann-Whitney <i>u</i>-test T-tests, Chi-square test and ANOVAS</p> <p>Bonferroni-adjusted pair-wise comparisons</p>	<p>Bayer <i>et al.</i> (2009:228), Chan <i>et al.</i> (2009:1524); Corrigan <i>et al.</i> (2007:173-178); Faigin & Stein (2008:597-598); Finkelstein <i>et al.</i> (2008:206-210); Luty <i>et al.</i> (2007:378); Pinto-Foltz <i>et al.</i> (2011:2011); Pitre <i>et al.</i> (2007:424); Reike <i>et al.</i> (2004:382-384); Spagnolo <i>et al.</i> (2008:190) tests used by the researchers to analyse differences between groups and to compare the proportions involved showed less stigmatising attitudes on the social distance scale. This study, by relying solely on the Internet, was able to show some efficacy. There was also positive change in pity, power, avoidance, segregation and coercion</p> <p>Were further used to examine the effect of intervention condition on each outcome revealed that the participants in the education-video group had significantly less stigmatising attitudes towards people with Schizophrenia than their counterparts in the education group</p> <p>Tests results showed: effectiveness in three Stigma reduction interventions: stigmatising attitudes, social distance, and knowledge about schizophrenia</p>
<p>The mean, median and inter-quartile range tests</p>	<p>Mann & Himelein (2008:547-548) were also used for ratings tests. Values that were used includes $p = 0.05$ and $p = 0.01$</p>
<p>Multivariate analysis of covariance (MANCOVA)</p> <p>Positive and negative affect schedule (PANAS)</p> <p>Community Attitude toward the mentally ill (CAMI)</p>	<p>Two sets: one examining tolerance attitudes Using Benevolence and Community Mental Measure assessing the affect</p> <p>Health Ideology scales of the CAMI and one examining intolerance attitudes (Authoritarianism and Social Restrictiveness scales of scales of CAMI) (Saporito <i>et al.</i>, 2011:9-21; Finkelstein <i>et al.</i>, 2008:204-214; Faigin & Stein, 2008:594-606)</p>
<p>Transient social relation (TRANS), Closer and binding social relations (CLOSE)</p>	<p>Gaebel <i>et al.</i> (2008:188)</p> <p>To identify potential predictors of social distance (the total sum-score and the sub-scales TRANS and CLOSE)</p>

4.2.4 Data extraction

Data extraction followed immediately after the critical appraisal. The data extraction elements of each study involved the focus of the study and the findings relevant to this systematic review. The characteristics and findings of the selected studies were extracted and presented. All data extracted were graded on the strength of their evidence supporting the conclusion or recommendations of the study (Evidence Analysis Manual, 2012:70).

The evidence was graded as follows (Evidence Analysis Manual, 2012:70):

"Grade I: Good: Indicates evidence from studies of strong design, answering the questions addressed. The results are both clinically important and consistent with minor exceptions at most, and free of serious doubts about generalisability, bias, and flaws in research design."

"Grade II: Fair: The evidence consists of results from studies of strong design answering the question addressed, but there is uncertainty attached to the conclusion because of inconsistencies in the results from different studies or because of doubts about generalisability, bias, research design flaws, or adequacy of sample size."

"Grade III: Limited: The evidence consists of results from a limited number of studies of weak design for answering the questions addressed. Evidence from studies of strong design is either unavailable because no studies of strong design have been conducted or because the studies that have been conducted are inconclusive due to a lack in generalisability, bias, design laws, or inadequate sample sizes."

"Grade IV: Expert opinion only: The support of the conclusion consists solely on the statement of informed medical commentators based on their clinical experience, unsubstantiated by the results of any research studies."

"Grade V: Not assignable: There is no evidence available that directly supports or

refutes the conclusion."

Table 4.4 outlines the data extraction step as applied in this systematic review.

Table 4.4: Data extraction (n = 17)

Evidence summary: Randomised control trials =12				
No	Reference	Focus of the study	Bottom-line findings	Findings relevant to this study Evidence Grading for conclusion and recommendation
1	Bayer <i>et al.</i> (2009:226-230). Reducing mental illness stigma in mental health professionals using a web-based approach	To investigate the efficacy of a web-based mental disorder stigma education program for mental health professionals	The study provides the first evidence for a feasible and effective strategy to combat stigmatization among health professionals A single intervention showed some efficacy The study indicates that the internet may be a powerful outreach tool in disseminating anti-stigmatisation information since this study, by relying solely on the internet, was able to show some efficacy	The findings suggest that anti-stigma campaigns via the internet might be effective in reducing stigma against individuals with mental disorders among healthcare professionals, namely psychiatrists The study also showed that well-planned and delivered information may have some effect on stigmatising attitudes at least on the measure of social distance investigated in this study Evidence grading: Grade I
2	Chan <i>et al.</i> (2009:1521-1526) Combining education and video-based contact to reduce stigma of mental illness: "The same or Not the same" anti-stigma program for secondary schools in Hong-Kong	To examine the effects of three versions of school based stigma reduction programs against mental illness: education, education followed by video (education video) Video based contact followed by education (video-education) for Secondary school students	Participants (university students) in the education video showed a significantly greater reduction in stigmatizing attitudes at post-test, in social distance at both post-test and follow-up, and an increase in knowledge at follow-up	Based on the results of this study, a training kit of "The same or Not the same" anti-stigma program using the education-video approach has been produced to provide a set of handy educational materials for teachers in over 600 secondary schools in Hong Kong. This intervention was able to reduce the stigma attached to mental illness among students Evidence grading: Grade I

Evidence summary: Randomised control trials =12				
No	Reference	Focus of the study	Bottom-line findings	Findings relevant to this study Evidence Grading for conclusion and recommendation
3	Corrigan <i>et al.</i> (2006:171-181)	To examine the impact of two versions of anti-stigma programs: education and contact presented on videotape	The strength of this study is that contact seemed to have positive effects on the behavioural component of stigma. One goal of the study was to examine the effect of contact when provided as a videotape. Combined these findings suggest that education has an immediate effect on blame and responsibility that endures over time. Contact (contact with individuals with mental illness) seems to have a broader impact on stigma change	Findings from this study suggest that the filmed version of contact led to greater stigma improvement compared to education Evidence grading: Grade II
4	Finkelstein <i>et al.</i> (2008:204-214) Randomized study of different anti-stigma media	To assess if computer-assisted anti-stigma interventions can be effective in reducing the level of psychiatric stigma in a sample of special education university students	Both computer-assisted instruction and reading of printed educational materials are effective tools for reducing the level of psychiatric stigma and increasing the knowledge about depressive disorders	A computer mediated intervention has the potential for educating graduates students about mental disease and for reducing psychiatric stigma. This intervention had a beneficial effect on changing stigmatizing attitudes Evidence grading: Grade I
5	Kerby <i>et al.</i> (345-349) Anti-stigma films and medical students' attitudes towards mental illness and psychiatry: randomised control trial	To explore the feasibility of a randomised control trial of the effects of two anti-stigma films on medical students' attitudes to serious mental illness and psychiatry	It may be possible to conduct a substantive trial of the effects of the intervention films on a larger cohort of medical students and the films may be effective in reducing stigmatising attitudes among medical students	Interventions films significantly improved general attitudes to serious mental illness and social distance, with a trend towards reducing perceived dangerousness Evidence grading: Grade II

Evidence summary: Randomised control trials =12				
No	Reference	Focus of the study	Bottom-line findings	Findings relevant to this study Evidence Grading for conclusion and recommendation
6	Lusty <i>et al.</i> (2007:377-381) Effectiveness of Changing Minds campaign fact sheets in reducing stigmatised attitudes towards mental illness	To assess the effects of fact sheets developed from the Changing Minds campaign regarding stigmatised attitudes of members of the general public towards those with two mental disorders, schizophrenia and alcoholism	A better strategy to reduce the stigma associated with mental disorders would be to present positive images. For example, by reporting success stories of recovery and presenting images of sufferers returning to work rather than people in florid states of dishevelment or in-patients who are acutely disturbed	Didactic fact sheets produced for the Changing Minds campaign were largely ineffective at changing stigmatised attitudes towards schizophrenia and alcoholism Evidence grading: Grade II
7	Mann & Hamelin (2007:545-551) Putting the person back into psychopathology: an intervention to reduce mental illness stigma in the classroom	To compare the effectiveness of two methods of teaching psychopathology in reducing stigma toward mental illness. A first person narrative approach was contrasted with traditional diagnosis-centered education	The findings are that first-person narratives may play an integral role in decreasing stigma. These findings require replication in diverse settings and populations and incorporating other methods of assessing stigma would further strengthen the results	The results suggest that the traditional method of teaching psychopathology in introductory classes with a focus on symptoms and diagnosis, did not improve participants stigma towards mental illness. In contrast, the humanising approach resulted in significant greater comfort towards individuals with bipolar disorder and schizophrenia Evidence grading: Grade I
8	Penn <i>et al.</i> (2003:383-391) The effects of a documentary film about schizophrenia on psychiatric stigma	The study examined whether viewing a documentary that depicts individuals with schizophrenia can reduce psychiatric stigma	The findings showed that documentary about schizophrenia resulted in more benign attributions about schizophrenia (e.g., less likely to blame individuals with schizophrenia for the disorder) but did not change general attitudes about schizophrenia (e.g., perceived dangerousness) This finding has potentially important	Findings indicated that a documentary about schizophrenia influenced participants' attributions about schizophrenia, but affected neither general attitudes about the illness nor behavioural intentions to participate in a focus group with persons with schizophrenia Evidence grading Grade: II

Evidence summary: Randomised control trials =12				
No	Reference	Focus of the study	Bottom-line findings	Findings relevant to this study Evidence Grading for conclusion and recommendation
			implications for reducing discrimination towards persons with severe mental illness, as attributions are thought to be important mediators of stigmatizations in general	
9	Pitre <i>et al.</i> (2007:413-429) The use of puppets with elementary school children in reducing stigmatising attitudes towards mental illness	To evaluate the effectiveness of a puppet program to reduce stigmatizing attitudes in grades 3-6 students	Scores for the children exposed to the puppet plays improved significantly on three of the six factors of the OMI, including separatism, restrictiveness and stigmatisation	Findings are that following the intervention the children believed that people with mental illness were less distinct, less of a threat and less shameful, without the need to keep them at a safe distance, restrict their activities and hide their mental illness Evidence grade: Grade II
10	Pinto-Foltz <i>et al.</i> (2011-2019) Feasibility, acceptability, and initial efficacy of a knowledge-contact program to reduce mental illness stigma and improve mental health literacy in adolescents	To determine the initial acceptability, feasibility, and efficacy of an existing community-based intervention, In Our Own Voice	Although there was an increase in mental health literacy at four weeks, there was no reduction in mental illness stigma, and participants scored the In Our Own Voice presenters' stories and behaviours as inconsistent with previous stories they heard about mental illness; presenters may have disconfirmed participants' stereotypes about mental illness, but this was not reflected by a decrease in mental illness stigma	Findings support the acceptability and feasibility of the intervention for adolescents who enrolled in the study. Findings to support the efficacy of In Our Own Voice to reduce stigma and improve mental health literacy are mixed. The intervention did improve mental health literacy at 4 and 8 weeks follow-up Evidence grade: Grade I
11	Reinke <i>et al.</i> (2004:377-389) Examining two	To extend some of the earlier research that showed that contact with mental illness yields significant	Findings are that contact yields significant change in attitudes about mental illness, in this study social	Findings of this study indicates that both videotaped and in vivo contact led to significant change in social

Evidence summary: Randomised control trials =12				
No	Reference	Focus of the study	Bottom-line findings	Findings relevant to this study Evidence Grading for conclusion and recommendation
	aspects of contact on the stigma of mental illness	change in stigmatising attitudes by examining two questions; what is the impact of different formats of contact (in vivo and videotaped), and how does contact vary by level of disconfirmation?	distance. In this study participants were younger and had less education than participants in other studies	distance Evidence grade: Grade II
12	Saporino <i>et al.</i> (2011:9-21) Reducing stigma toward seeking mental health treatment among adolescents	To examine the effectiveness of an intervention to reduce explicit and implicit stigma-relevant attitudes toward mental illness and treatment seeking and behavioural indicators of willingness to seek treatment among adolescents	A brief intervention using a (DVD) and contact was effective in reducing stigma toward mental illness	Findings of the study suggest the stigmatism intervention was effective at reducing explicit, but not implicit stigma relevant attitudes. Participants receiving the experimental intervention reported less explicit stigma toward treatment and greater openness to personally seek treatment if they had also reported prior mental health treatment Evidence grade: Grade II

Quasi experimental = 4				
No	Reference	Focus of the study	Bottom-line findings	Findings relevant to this study Evidence Grading for conclusion and recommendation
1	Faigin and Stein (2008:594-606) Comparing the effects of live and video-taped theatrical performances in decreasing stigmatization of people with serious mental illness	To longitudinally examine the relative effects of live or video-taped theatrical presentations on undergraduates' affective response, intolerant attitudes and intentions to interact with people with serious mental illness	The live presentation group showed the greatest initial decrease in stigmatising attitudes and increase in behavioural intentions. The live presentation group reported a significantly greater affective response than the video group. Both groups were significantly different from the no-presentation group on measures of attitudes and behavioural intentions one month following the presentations	Findings of this study demonstrated the relative merits of both live and video-taped presentations for decreasing stigmatisation of people with serious mental illness Evidence grade: Grade I
2	Gaebel <i>et al.</i> (2007:184-193) Evaluation of the German WPA "Program against stigma and discrimination because of schizophrenia – Open the Doors": Results from representative telephone surveys before and after three years of anti-stigma interventions	To evaluate the German Open the Doors anti-stigma-program in a quasi-experimental design	This is the first study that examines possible effects of anti-stigma programs in psychiatry on a national level in a control design. A telephone survey was conducted in six German cities. Stereotypes, beliefs and attitudes about schizophrenia and social distance (distance between different groups of society towards people with schizophrenia, and the knowledge of anti-stigma projects were assessed)	Overall, social distance decreased significantly between 2001 and 2004. At the city level, this effect was only significant in those cities where anti-stigma projects were implemented although the observed attitude changes were small Evidence grade: Grade I

Quasi experimental = 4				
No	Reference	Focus of the study	Bottom-line findings	Findings relevant to this study Evidence Grading for conclusion and recommendation
3	<p>Markström <i>et al.</i> (2009:660-665)</p> <p>Attitudes towards mental illness among health-care students at Swedish universities. A follow-up study after completed clinical placement</p>	To examine the changes in attitudes towards mental illness after theoretical education and clinical placement among students from university programmes preparing for different kinds of health professions	The findings are that the attitudes toward mental illness in general had changed in a less stigmatising direction after the clinical placement. On the other hand attitudes towards specific mental illness did not show any major changes	<p>The results showed less stigmatising attitudes towards mental illness in general after the clinical placement. The students had high familiarity with mental illness. A majority of students reported experiences of having relatives, friends, or colleagues with a severe mental illness, or an experience of working with persons suffering from mental illness</p> <p>Although the present study was longitudinal, it cannot be firmly concluded that the attitude changes were a specific result of the selected naturalistic interventions, since no control groups were available</p> <p>Evidence grading: Grade II</p>
4	<p>Spagnolo <i>et al.</i> (2007:186-193)</p> <p>Reducing stigma by meeting and learning from people with mental illness</p>	To examine the effects of a public education program developed in a large part by consumers of mental health services, on the attitudes of high school students toward people with mental illness	The current study confirms that when the three effective approaches to decreasing stigma (i.e., presenting accurate information about mental illness and the real possibility of recovery, including consumers in the development and facilitation of the presentation, and sharing personal stories of recovery) are incorporated into a presentation, stigmatising attitudes are decreased	<p>Findings from this study indicate that at 1-hour informational session developed and facilitated by consumers of mental health services significantly affects the attitudes of adolescents toward people with major mental illnesses</p> <p>Evidence grading: Grade I</p>

Quasi experimental = 4				
No	Reference	Focus of the study	Bottom-line findings	Findings relevant to this study Evidence Grading for conclusion and recommendation
Non-Experimental design 1				
1	McKinney (2009:281-301) Initial evaluation of active minds: A student organisation dedicated to reducing the stigma of mental illness	To examine whether a new student organisation, Active Minds, aimed at increasing awareness of mental illness and reducing stigma had an impact on students' stigma and willingness to seek psychological help	The study investigated whether the events held by the student organisation Active Minds on campus had an impact on two variables: (a) stigma as measured by a scale developed by the Chicago Consortium for Stigma Research and, (b) attitudes towards seeking mental health services scale revised by MacKenzie (2004) as cited in McKinney <i>et al</i> , (2009:281-301)	Students involved in the organisation showed a significant reduction in stigma if they had a history of mental illness in their families. The program's partial success is viewed in terms of empowerment and recovery. The peer support provided through Active Minds may help change people's negative attitudes about mental illness and encourage students to help one another in coping with their diagnosis Evidence grading: Grade I

4.2.5 Analysis strategy

In this review, primary studies of randomised control trials, quasi-experimental studies and a non-experimental study were included. A thematic analysis procedure was used as an appropriate strategy (Webb & Roe, 2007:167). According to Maltby *et al.* (2010:146) thematic analysis is a more in-depth method of understanding and representing qualitative data than content analysis sometimes is.

The themes were grouped together to try to see whether essentially they shared similar properties in the assumptions and perceptions (Maltby *et al.*, 2010:149). In this study topics related to interventions used to reduce stigma attached to mental illness could be clustered together as follows:

4.2.6 Summary of findings

Findings regarding the studies will now be summarised according to the review question as stated below:

What best evidence is available regarding interventions to reduce stigma attached to mental illness?

This review question will now be answered using the themes of each study topic related to interventions used to reduce stigma attached to mental illness in the following categories of participants: professionals/clinical, general population, students, adolescents, including children.

Best evidence showed the following:

4.2.6.1 Finding 1: Web-based approach and reading printed educational materials, documentary film and anti-stigma films, live and video, and humanising and traditional, naturalistic methods are effective in reducing stigma attached to mental illness for health professionals

A web-based approach and/or computer assisted education were effective to reduce stigma attached to mental illness in mental health professionals. The internet may be a powerful outreach tool in disseminating anti-stigmatisation

information to mental health professionals such as psychiatrists and psychiatric residents since, by relying solely on the internet, was able to show some efficacy to reduce stigma. Participants were recruited over the internet. The experimental group received an informative e-mail that contained a general account of “stigma” before they were asked to respond to an internet questionnaire that aimed at predicting their stigmatising attitudes towards individuals with mental disorders. The internet has shown to some effect on stigmatising attitudes and social distance (Bayer *et al.*, 2009:226-230). Furthermore, computer-assisted education and the reading of printed educational materials were used with special education teachers who work with children and learning disabilities intellectual disabilities and /or other mental health problems and who can also specialise in teaching children with speech and hearing disorder. The intervention proved to be an effective tool for reducing the level of stigma towards psychiatric disorder immediately after intervention. However, after six months the effect of the conventional education (reading material) decreased substantially (Finkelstein *et al.*, 2008:204-214).

The effects of a documentary film and Anti-stigma films about schizophrenia on psychiatric stigma resulted in more benign attributions about Schizophrenia (e.g. less likely to blame individuals with schizophrenia for the disorder), and a significant improvement in general attitudes towards reducing perceived dangerousness. The intervention tested whether general attitudes changed in the intervention group and whether the film changed specific attitudes concerning social distance, perceived dangerousness. Involved in the intervention were three professionals (a teacher/researcher and a mental health act commissioner and a psychiatrist). All were hospitalised. They discussed their experiences after being diagnosed with serious mental illness; psychosis; Schizophrenia and severe depression and their experiences of ‘stigma’ and discrimination. The film was named “Human Experience”. A second film was named “A Day in the Mind” made by service users. It was a non-statutory organisation providing practical and emotional support for people experiencing mental distress and living in the community. The film conveyed to the viewer the first-hand experience of being diagnosed with a serious mental illness. These two interventions have proven to be effective in reducing mental health stigma (Kerby *et al.*, 2008:345-349). This

finding has potentially important implications for reducing discrimination towards persons with severe mental illness. For example it was hypothesized that the Schizophrenia film would be associated with more positive attitudes towards persons with Schizophrenia and a greater willingness to interact with them. The hypothesis was not supported, but the general pattern of means for the attitudinal measures was in the expected direction; participants who viewed the Schizophrenia film generally desired less social distance, had less negative affective reactions, and perceived persons with Schizophrenia as less dangerous (Penn *et al.*, 2003:383-391).

Further, two versions of anti-stigma programs were examined namely education and contact presented on a videotape. Findings suggest that watching the contact videotape showed significant improvement in attitudes with respect to pity, empowerment, and a reduction in coercion, and segregation (Corrigan *et al.*, 2007:171-181).

Two further intervention methods were used to reduce stigma attached to mental illness. An experimental class emphasised the first person and this intervention was named the humanising approach; while the traditional method/instruction was called the diagnostic approach. The humanising approach classroom read first person narratives by authors with depression, Schizophrenia, and Bipolar Disorder. In the diagnostic condition students learned DSM-IV criteria directly, and read excerpts written by clinicians rather than patients. The traditional approach failed to reduce stigma towards mental illness. The humanising approach proved to reduce stigma attached to mental illness toward individuals with Bipolar Disorder and Schizophrenia (Mann & Himelein, 2008:545-551).

Furthermore, naturalistic anti-stigma interventions such as encouraging personal encounters included into university programs can influence attitudes in a de-stigmatising direction, possibly due to personal encounters with real persons suffering from mental illness. The participants were nurses; occupational therapists; physiotherapists; psychologists; public health workers; physicians and social workers (Markström *et al.*, 2009:660-665). Live and video-taped presentations demonstrates a decrease in stigmatising of people with serious mental illness. The study highlights the utility of video presentations that focus on

stigma, as both live and video presentations were found to increase students' reports of tolerance towards people with mental illness. However, it may be that live performances in the classroom can have a stronger affective impact on students compared with video presentations. Educational interventions that use theatrical presentations by actors living with psychiatric disabilities can allow individuals to be viewed as respected performers and educators (Faigin & Stein, 2008:594-607).

4.2.6.2 Finding 2: Evaluation of the German WPA (World Psychiatric Association) programme showed that the programme was effective. “Program against stigma and discrimination because of Schizophrenia – Open the doors” are effective in reducing stigma attached to mental illness for the general population

The evaluation of the German WPA program against stigma and discrimination because of schizophrenia, named “Open the Doors” anti-stigma interventions has proven to be effective in reducing stigma attached to mental illness. Example, overall social distance decreased significantly between 2001 and 2004. At the city level, this effect was only significant in those cities where anti-stigma projects were implemented. A telephonic survey was conducted in six cities in German. The participants were teachers who are frequently in contact with young people who are at risk of developing a first manifestation of schizophrenia. The “Open the Doors” anti-stigma program provided a reduction in stigma attached to mental illness on a national level (Gaebel *et al.*, 2008:184-193).

In contradiction to the German program, the effect of fact sheets from the Royal College of Psychiatrists' Changing Minds anti-stigma campaign fact sheet for reducing stigmatised attitudes of members of the general public towards those with mental illness indicated that the campaign was largely ineffective at changing stigmatised attitudes towards schizophrenia and alcoholism. The study presented a vignette of an imaginary person with mental illness which might not be an accurate representation of real-life experience. It is possible that the three page fact sheets (long information) that were used in the pilot study had no effect on stigmatising attitudes to a hypothetical individual with alcoholism and it seems that participants had not read them (Luty *et al.*, 2007:377-381). Further research

needs to be done on the “Changing Minds” anti-stigma campaign fact sheets for reducing stigma towards mental illness for general population.

4.2.6.3 Finding 3: Combining education and video-based contact, *in vivo* contact and videotaped education, Active Minds and documentary films are effective in reducing stigma of mental illness for students

Three anti-stigma programs were examined namely, education, education followed by video-base (education-video) and video followed by education (video-base-education). Grade 9 students were assigned to the program and it was proven that adding video-base contact to education could significantly improve effectiveness in stigma reduction. Findings showed that there was a significantly greater reduction in stigmatising attitudes in social distance and an increase in knowledge (Chan *et al.*, 2009:1521-1526).

In examining two aspect of contact on stigma towards mental illness (in vivo contact and videotaped contact), both methods of contact showed significant change in stigmatising attitudes, in this case social distance in vivo contact condition was a presentation by an individual with schizoaffective disorder who discussed his 20 years history of psychiatric symptoms; suicide attempts, multiple hospitalisation and long recovery periods, who has now made a satisfactory lives, independently works and reports a satisfactory quality of life. The videotape condition was a verbatim video of presenter of in vivo focusing on the symptoms and negative impact of schizoaffective disorder has had on his life. The in vivo and the video tape were effective in reducing mental health stigma (Reinke *et al.*, 2004:377-389).

Initial evaluation of Active Minds: a student organisation dedicated to reducing the stigma of mental illness proved the effectiveness of the ‘Active Minds programme to reduce stigma attached to mental illness amongst students. Students who have needs related to mental illness could be helped by the ‘Active Minds’ program if they are active in “Active Minds”. Active Minds offer to students: Improvements in pharmacology have allowed many students opportunities to pursue higher education than in the past; some litigation against schools not meeting the needs of college students (neglect of addressing suicidal students needs seen to be

intensifying the concern in this area; can help with a nation policy; the movement allows support from people to attend higher education today; because of the Active Minds activities, some schools are adopting the approach; the mentally ill in the campus have peer mentors thus creating a learning environment (McKinney, 2009:281-301). Further the effects of a documentary film about Schizophrenia on psychiatric stigma program showed that viewing a documentary about Schizophrenia resulted in attributions that ascribed less blame and responsibility to individuals for their mental illness, and a view of Schizophrenia as being more likely to change (Penn *et al.*, 2003:383-391). Furthermore, Corrigan *et al.* (2007:171-181) suggest that the filmed version of contact led to greater stigma improvement compared to education on intervention done on college students. Intervention films significantly improved general attitudes to serious mental illness.

4.2.6.4 Finding 4: The use of puppets, psycho-education and contact (via DVD) and public education programs are effective in reducing stigma attached to mental illness for adolescents

According to Pitre *et al.* (2007:415-429) the use of puppets with elementary school children in reducing stigmatising attitudes towards mental illness showed that the use of puppetry as an anti-stigma program reduced mental illness stigma and improved literacy in adolescents “significantly on three of the six factors of the Opinions about mental illness (OMI), including, separatism, restrictiveness and stigmatisation”. The intervention also showed that the children believed that people with mental illness were less distinct, less of a threat, and less shameful, without the need to keep them at a safe distance, restrict their activities and hide their mental illness.

The further reduction in stigma towards seeking mental health treatment among adolescents suggest that the stigma intervention was effective at reducing explicit stigma. The study examined the effectiveness of an educational intervention aimed at reducing negative attitudes towards mental illness and mental health seeking or treatment and reported openness in and interest in treatment. Psycho-education and contact (via DVD) was effective in reducing explicit stigma in adolescents (Saporito *et al.*, 2011:9-21). Reducing stigma by meeting and learning from people with mental illness proved that if accurate information about

mental illness and the real possibility of recovery (including consumers in the development and facilitation of the presentation, and sharing personal stories of recovery) are incorporated into a presentation, stigmatising attitudes are decreased (Spagnolo *et al.*, 2008:186-193).

Feasibility Acceptability and initial efficacy of a knowledge-contact program known as In “Our Own Voice” was also used as one of the interventions in reducing mental illness stigma and improving mental health literacy in adolescents. In “Our Own Voice” is a knowledge-contact intervention that provides knowledge about mental illness to improve mental health literacy and facilitates intergroup contact with persons with mental illness as a means to reduce mental illness stigma. However, “In Our Own Voice” improved mental health literacy, but did not improve stigma reduction (Pinto-Folitz, 2011:2011-2019). Therefore, further research is needed on “In Our Own Voice” as an intervention to reduce stigma attached to mental illness for adolescents.

4.3 SUMMARY

In this chapter, relevant and scientifically valid information of evidence was combined into a brief, coherent, and easy to read summary of data extraction and data synthesis according to the steps of a systematic review (EAM, 2012:63). The findings of each study was summarised as they relate to the question that the author is trying to answer, which is: What best evidence is available regarding interventions to reduce stigma attached to mental illness?

The final chapter includes the conclusions, limitations and recommendations for clinical practice and research.

CHAPTER 5: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This final chapter discusses the concluding statements regarding the interventions to reduce stigma attached to mental illness, evaluation of rigour, discussion of limitations, recommendations for research, education and clinical practice.

5.2 CONCLUSIONS

All the primary studies that met the review criteria have been identified. The discussion in Chapter 4 suggested that there is evidence on interventions that can reduce mental illness stigma. The researcher drew her conclusion for the evidence gathered from the findings of the relevant identified studies to answer the research question, which is as follows:

- What best evidence of intervention is there to reduce stigma attached to mental illness?

The conclusions are based on the interpretations of themes from identified studies examples and interventions on different categories.

Concluding statement 1

It seems that a web-based approach and computer assisted education had a positive effect on reduce stigma attached to mental illness by healthcare professionals because there were no stigmatising attitudes and social distance towards individuals with mental disorders.

Furthermore, it was evident that documentary films, and video-tapes reduced stigma due to the humanising effects of these films, leading to increased pity, empowerment, less coercion, and less segregation.

The positive effect at humanising interventions was further evident from using naturalistic anti-stigma interventions efforts, such as encouraging personal encounters with mental health care users and making use of live and video-taped presentations, demonstrates a decrease in stigmatising of people with serious

mental illness.

Conclusion statement 2

The evaluation of the German WPA program against stigma and discrimination because of Schizophrenia named "Open the doors" has proven to be effective in reducing the stigma attached to mental illness. Findings of a telephonic survey indicated that the "Open the Doors" anti-stigma program provided a reduction in stigma attached to mental illness on a national level. However, a significant reduction in social distance changes between the survey cities was only found in those cities where anti-stigma projects have taken place. It is suggested that there is a need to separate direct effects of anti-stigma interventions from more general, indirect influence on social distance.

In contradiction to the above, the effectiveness of the "Changing Minds" anti-stigma campaign fact sheet in reducing stigmatised attitudes towards mental illness indicated that the campaign was ineffective at changing stigmatised attitudes towards Schizophrenia and Alcoholism. The participants were asked to read either photocopies of a three-page fact sheet produced for the Royal College of Psychiatrists' Changing Minds campaign "Drugs and alcohol – Whose Problem is it Anyway?" or a three-page information sheet from the British Diabetes Association. The three-page fact sheets that were used in the pilot study had no effect on stigmatised attitudes to a hypothetical individual with alcoholism and it was apparent that participants had not read them. The "Changing Minds" campaign fact sheets describe the negative consequences of a mental illness. The substance misuse fact sheet contains an image of a destitute person that may reinforce the negative impression. More research needs to be done on the "Changing Minds" anti-stigma campaign fact sheets in reducing stigma towards mental illness for general population.

Conclusion statement 3

Contact yields a significant change in stigmatising attitudes about mental illness (the vivo contact and videotaped contact) both methods of contact showed significant change in stigmatising attitudes, in this case social distance. An initial evaluation of Active Minds, a student organisation dedicated to reducing the

stigma of mental illness, proved the effectiveness of the “Active Minds” programme to reduce stigma attached to mental illness amongst students. Furthermore, the effects of a documentary film about Schizophrenia in a psychiatric stigma program showed that viewing a documentary about Schizophrenia resulted in attributions that ascribed less blame and responsibility to individuals for their mental illness, and a view of Schizophrenia as being more likely to change. Furthermore, the filmed version of contact led to greater stigma improvement compared to education on intervention done on college students. Intervention films significantly improved general attitudes to serious mental illness.

Conclusion statement 4

The use of puppets with elementary school children in reducing stigmatising attitudes towards mental illness showed that use of puppetry as an anti-stigma program reduced mental illness stigma and improved literacy in adolescents “significantly on three of the six factors of the Opinions about mental illness (OMI), including, separatism, restrictiveness and stigmatisation”.

The further reduction in the stigma towards seeking mental health treatment among adolescents suggests that the stigma intervention was effective at reducing explicit stigma. Reducing stigma by meeting and learning from people with mental illness proved that if accurate information about mental illness and the real possibility of recovery, (including consumers in the development and facilitation of the presentation, and sharing personal stories of recovery) are incorporated into a presentation, stigmatising attitudes are decreased.

Feasibility Acceptability and the initial efficacy of a knowledge-contact program known as “In Our Own Voice” has also been used as one of the interventions in reducing mental illness stigma and improve mental health literacy in adolescents. The “Our Own Voice” program is a knowledge-contact intervention that provides knowledge about mental illness to improve mental health literacy and facilitates intergroup contact with persons with mental illness as a means to reduce mental illness stigma. However, the “In Our Own Voice” program improved mental health literacy, but did not improve stigma reduction. Therefore, further research is needed on “In Our Own Voice” as an intervention to reduce the stigma attached to

mental illness for adolescents.

5.3 EVALUATION OF RIGOUR

Systematic reviews are scientific studies that use scientifically rigorous methods. Rigour refers to the strength of the research design in terms of ensuring that all procedures have been followed scrupulously, that all possible confounding factors have been eliminated, and that the user can be confident that the conclusions are dependable (Gerrish & Lacey 2007:28). According to Whitemore and Knaf (2005:548-552) rigour can be increased in systematic reviews by motivating all research decisions during the different stages of the review namely the problem-identification stage, the literature search stage, the critical appraisal stage, the data synthesis stage and the presentation.

5.3.1 Problem-identification stage

The problem statement and purpose of this systematic review were clearly stated and supported by literature review in Chapter 1. The review question for this study was formulated according to the PICOT format, namely:

Population;
Intervention;
Comparison;
Outcome; and
Time frame (adapted from EAM, 2012) (see Table 2.1)

Table 1.1 offered a systematic classification of terminology. The model of Botes (2009:12) was used. A systematic review was chosen and was used to answer a review question as stated in paragraph 1.4. The ideal systematic review is one in which all the relevant studies have been identified before their results could influence decisions about their inclusion. This would overcome the problem of publication bias and of other biases where prior knowledge of the results of a study might influence the reviewer's decision on whether it should be included in her review (Webb & Roe, 2007:4).

Since scientifically rigorous methods are used in this systematic review to summarise the best current information, conclusions derived from the systematic

review are considered as high-quality evidence. The information obtained can be used to inform clinical practice and in making decisions regarding interventions to reduce stigma attached to mental illness.

5.3.2 Literature search stage

The literature search was conducted to identify all the best available evidence relevant to the research question. A comprehensive search was used as it is important to ensure that all the relevant studies are identified and to minimise selection bias (Akobeng, 2005:847). In order to retrieve a set of studies on a topic, several different sources were searched to identify relevant studies relating to interventions on stigma reduction. The multiple sources that were used in this study included electronic databases, grey literature and manual searches to reduce public bias (Egger *et al.*, 2001:81). The researcher covered all literature written in English concerning interventions to reduce stigma attached to mental illness. The researcher also consulted with the librarian who is experienced to assist with a literature search that could not be retrieved in the Ferdinand Postma Library at North-West University in Potchefstroom.

5.3.3 Critical appraisal

In this stage, all relevant selected articles for critical appraisal were critically evaluated to find out whether they answer the review question and meet the inclusion criteria. The evidence of primary studies selected for this review were analysed in accordance to the evidence class rating recommended by the Evidence Analysis Manual (EAM 2012:77) (see Table 3.5).

The primary studies selected for critical appraisal were appraised for methodology and quality using standard checklists. Objectively structured instruments were used to reduce the researcher's bias. The instruments used during the Critical Appraisal Skills Program (CASP) and the John Hopkins Nursing Evidence-Based Practice research evidence appraisal tool (JHNEP) (Newhouse *et al.*, 2007:206).

All checklists used were chosen based on their ability to fit the design of the included studies. They were all validated and tested for reliability and have all been utilised in previous research studies. The critical appraisal process was

conducted by both the reviewer and an independent reviewer under the supervision of experienced researchers to prevent inconsistency that can come from a lack of skill on the part of the reviewers to critically assess and interpret the studies/design. It was important that there should be two study reviewers in order to ensure that only studies that contain high quality evidence would be included (see paragraph 3.4). To ensure transparency and repeatability, the entire search strategy was documented (including decisions concerning including/excluding data and reasons) as indicated in flow chart (see paragraph 3.3, Table 3.3 and Flow Chart 3.1) in Chapter 3.

5.3.4 Data synthesis stage

The data analysis was thoroughly discussed, thematic analysis procedure was employed (see paragraph 4.2.4). All primary studies included randomised control trials, quasi experimental studies and non-experimental studies.

5.3.5 Presentation

The conclusions, recommendations and limitations of the study are well presented in Chapter 5. The outcome of the study will be submitted for publication in a peer-review journal. The entire systematic review was presented as transparently as possible. The applicable tables and flow charts were used appropriately.

5.4 LIMITATIONS

The following limitations were identified:

Different interventions to reduce the stigma attached to mental illness were identified, but more studies looked at effective interventions on schizophrenia and fewer on affective disorders e.g., bipolar mood disorders or depression and drug abuse, therefore the study cannot generalise the findings to all psychiatric conditions.

While the findings of studies provided new insights in terms of stigma reduction research, several limitations were noted in studies that had students as participants namely: It was not always feasible or ethical to include a no

intervention control group as the schools expected their students to receive something from their participation.

The study was conducted on studies presenting with both high and neutral quality ratings, a mixture of class A and class D evidence. Generalisation of the study is limited to specific settings and not all findings can be generalised to the wider population.

Blinding was not done during the search on the critical appraisal step, as there was no conflict of interest. This could be a limitation with regard to the validity of the appraisal.

The North-West University electronic database was the only one used. This is a limitation as relevant data may have been omitted. Other universities could have more or different databases.

Selection bias was minimised by obtaining abstracts and hard copies of articles (where applicable). It was not always possible to obtain a full text of a publication. This also was a limitation as a full text gives all the details the researcher need. Unobtainable studies are outlined in Table 3.4.

5.5 RECOMMENDATIONS

The findings of this systematic review helps to provide recommendations for nursing practice, nursing education and nursing research on best available evidence on interventions to reduce stigma attached to mental illness. The mental health care users are stigmatised due to their illness, therefore implanting these findings will help change attitudes and increase knowledge about mental illness, thus reducing mental health stigma and enable these patients to take their medications without fear of being stigmatised.

The following recommendations are made:

5.5.1 Recommendations for nursing practice

Psychiatric nurses should aim to reduce stigma among healthcare professionals by encouraging:

- the use of web-based and computer assisted programmes for education on mental illness.
- humanising approaches in learning about mental health care users, e.g. the use of first person narratives.
- psychiatric nurses should use interventions to reduce stigma amongst the general population, such as “Fighting stigma and discrimination because of schizophrenia namely; Open the door campaign”.
- the use of programs similar to “Active Minds”, a student organisation dedicated to reduce stigma of mental illness and “In our own voice” for the purpose of contact and humanising approaches.
- the use of documentary films that depicts individuals with schizophrenia, to reduce psychiatric stigma e.g. viewing a documentary about schizophrenia has the potential for reducing discrimination toward persons with severe mental illness.
- the use of a brief educational intervention among adolescents to reduce negative attitudes towards mental health treatment and use puppets with elementary school children in reducing stigmatising attitudes towards mental illness.

Psychiatric nurses should inform, educate, and equip healthcare professionals with the above mentioned skills to safely and effectively reduce that mental health stigma in hospitals, clinics, and in all sectors of the community.

Knowledge on interventions to reduce stigma attached to mental illness should be made available to the nursing practice to be able to improve attitudes and willingness towards seeking mental health treatment in a population with largely unmet mental health treatment needs.

5.5.2 Recommendations for nursing education

This latest available evidence on interventions to reduce stigma attached to mental illness can be included in nursing curriculums to inform, educate and equip nurses

with special skills to safely and effectively execute nursing care in hospitals and community healthcare centres.

5.5.3 Recommendations for research

Thus, didactic fact sheets produced for the “Changing Minds” campaign were largely ineffective in changing stigmatised attitudes towards Schizophrenia and Alcoholism. The three page black and white fact sheets used were perhaps too long for the general public to read and absorb long information sheets. Further research on presenting positive images of sufferers is needed as well.

The stigma reduction program “In Our Own Voice” did not reduce mental illness stigma, but improved mental health literacy. Further research on “In Our Own Voice” intervention program is needed.

Further research on intervention programs to reduce stigma attached to mental illness is needed in all different settings, including rural areas.

5.6 IN CONCLUSION

Psychiatric stigma and discrimination is an international problem. Targeted program interventions on their own may not produce substantial change, but they may complement one another (Pinfold *et al.*, 2003:343). In this study, available intervention programs that seemed to reduce stigma attached to mental illness were discussed based on the research question and research objective.

The objective of the review was to critically synthesise the best available evidence on interventions to reduce stigma attached to mental illness. This objective was realised by conducting a systematic review. The findings of the systematic review were used to draw conclusion and formulate recommendations for nursing practice, nursing education and research.

REFERENCES

Abalos, E., Carroli, G., Mackey, M.E. & Bergel, E. 2001. Critical appraisal of systematic reviews reproductive Health Library (4) Geneva, The World Health Organisation. 2001. WHO, RHR/01.6).

Academy of Nutrition and Dietetic. 2012. Research and Strategic Business Development Evidence analysis manual. www.eatright.org 104.

Akobeng, A.K. 2005. Understanding systematic reviews and meta-analysis. *Archives of Disease in Childhood*, 90:845-848.

American Dietetic Association. 2008. *Evidence analysis manual: Steps in the ADA Evidence analysis process*. Chicago: Science Affairs and Research, American Dietetic Association. 6.

American Psychiatric Association, (APA) 2000. see Diagnostic and Statistical Manual of Mental Disorders. Fourth Edition. Text Revision.

Anon. 2007. *Harmonious living-Mental illness in South Africa still shameful*. The South African Depression Anxiety Group. (SADAG) Available from: <http://webcache.googleusercontent.com/search?q=CACHE:PwDHvw0ZWeSj:www.risingchl>. Accessed: 8 Oct. 2007.

Badr, E. 2007. *Making use of systematic reviews*. Sudanese Journal of Public Health, 2(2):79-80.

Bak, N. 2004. *Completing your thesis: A practical guide*. Cape Town: Van Schaik.

Bayar, M.H., Poyraz, B.C., Poyrus, C.A. & Arikan, M.K. 2009. Reducing mental illness stigma in mental health professionals using a web-based approach. *Isr J Psychiatry Relat Sci*, 46(3):226-230.

Bible. 2005. Life principles Bible. New King James version. Dallas: Thomas Nelson. 26 p.

Bordens, K.S. & Abbott, B.B. 2008. *Research Design and Methods*. McGraw-Hill: New York.

Botes, A.C. 1989. *A model for research in nursing*. Johannesburg: Rand Afrikaans University.

Botes, A.C. 1989. *A model for the practice of research in nursing*. Available from Website: www.yps-publishing.co.uk. p. 10.

Brink, H. 2006. *Fundamentals of research methodology for health care professionals*. 2nd ed. Revised by Van der Walt C and Van Rensburg G. Cape Town: Juta. 30-92 p.

Bulgarian Executive Search Association (s.a.) Interanal rules of the Bulgarian Executive Search Association.

Burls, A. 2009. What is critical appraisal? *Evidence-based medicine*. www.whatisseries.co.uk 1 p.

Burns, N. & Grove, S.K. 2005. *The practice of nursing research: Conduct, critique and utilization*. 5th ed. USA: Saunders. 33, 629, 211 p.

Center for Evidence Based Conservation. 2009. Guidelines for systematic review in conservation and environment. Bangor, Gweth: Bangor University. <http://www.cebc.bangor.ac.uk/documents/reviewguidelinesversion3.0finalpdf>.
Date of access: 14 May 2009.

Centre for Reviews and Dissemination. 2009. Systematic reviews: CRD's guidance for undertaking reviews in health care. York: University of York. 281 p.

Chan, J.Y.N., Mak, W.W.S. & Law, L.S.C. 2009. Combining education and video-based contact to reduce stigma of mental illness: "The same or not the same"

anti-stigma program for secondary schools in Hong Kong. *Social science and medicine*, 68:1521-1526.

Corrigan, P.W., Kerr, A., & Knudsen, L. 2005. The stigma of mental illness: Explanatory models and methods for change. *Applied and Preventive Psychology*, 11:179-190.

Corrigan, P.W., Larson, J., Sells, M., Niessen, N & Watson, A.C. 2007. Will films presentations of education and contact diminish mental illness stigma? *Community mental health journal*, 43(2):171-181. Doi:10.1007/s10597-006-9061-8

Creswell, J.W. 2009. Research design. Quantitative, qualitative, and mixed methods approaches. 3rd ed. USA: SAGE.

Critical Appraisal Skills Programme (CASP). 2006. 10 Questions to help you make sense of evidence. Public Health Resource Unit, England.

Crowther, M.A., Cook, D.J. 2007. *Trials* and tribulations of systematic reviews and meta-analyses. *American Society of Haematology*, Ontario.

DFID Systematic Reviews 2010-2011. What is systematic review: 3ie site for management of DFID Systematic Reviews.

Diagnostic and Statistical Manual for Mental Disorder-DSM-1V-TR. ICD-10. 2005. *International statistical classification of disease and related health problems*. 4th ed. American Psychiatric Association. Washington DC. 21 p.

Egger, M., Smith, G.D. & Altman, D.G. 2001. Systematic Reviews in Health Care. Meta-analysis in context. BMJ Publishing: London. 23 p.

EI – Badri, S. & Mellsop, G. 2007. Stigma and quality of life as experienced by people with mental illness. *Australasian Psychiatry*, 15(3):195-200.

Evans-Lacko, S., London, J., Little, K., Henderson, C., & Thornicroft, G. 2010. Evaluation of a brief anti-stigma campaign in Cambridge: do short-term campaigns

work? *BioMed Central Public Health*, 10:339.

Evidence Analysis Manual (EAM) see Academy of Nutrition and Dietetic. 2012.

Faigin, D.A. & Stein, C.H. 2008. Comparing the effects of live and video-taped theatrical performance in decreasing stigmatisation of people with serious mental illness. *Journal of mental health*, 17(6):594-606.

Finkelstein, J., Lapshin, O. & Wasserman, E. 2008. Randomised study of different anti-stigma media. 71:204-214.

Gaebel, W. & Baumann, A.E. 2003. Interventions to reduce the stigma associated with severe mental illness: Experiences from the Open the Doors Program in Germany. *Canadian Journal Psychiatry*, 48(10):657-662.

Gaebel, W., Zäske, H., Baumann, A.E., Klosterkötter, J., Maier, W., Dekker, P. & Möller, Hans-Jürgen. 2008. Evaluation of the German WPA “Program against stigma and discrimination because of schizophrenia – Open the Doors”: Results from representative telephone surveys before and after three years of antistigma interventions. *Schizophrenia research*, 98:184-193.

Gerrish, K. & Lacey, A. 2007. *The Research process in nursing*. 5th ed. Blackwell.

Greenall, P. 2006. The barriers to patient-driven treatment in mental health. Why patients may choose to follow their own path. *Patient-driven in mental health*. 19(1):14.

Gureje, O. & Alem, A. 2010. Mental health policy development in Africa. *Bulletin of the World Health Organisation*. 78(4):2000.

Higgins, J.P.T. & Green, S. (editors).2008. *Cochrane handbook for Systematic Reviews of interventions Version*. The Cochrane collaboration. Available from www.cochrane-handbook.org. England: Wiley & Sons. 84-99 p.

- Kapungwe, A., Cooper, S., Mwanza, J., Mwape, L., Sikwese, R., Lund, C. & Flisher, A.J. 2010. Mental illness-stigma and discrimination in Zambia. *African Journal of Psychiatry*, 13:193-202.
- Kerby, J., Calton, T., Dimambro, B., Flood, C. & Glazebrook, C. 2008. Anti-stigma films and medical students' attitudes towards mental illness and psychiatry: randomised control trial. *Psychiatric bulletin*, 32:345-349.
- Khan, S.H., Kunz, R., Kleijnen, J. & Antes, G. 2003. Systematic reviews to support evidence-based medicine: how to review and apply findings healthcare research. London. Royal Society. 4 p.
- Kjellin, L., & Östman, M. 2005. Relatives of psychiatric inpatients – Do physical violence and suicide attempts of patients influence family burden and participation in care? *Nord Journal of Psychiatry*, 59(1):7-11.
- Kozier, B., Erb, G., Berman, A.J., Snyder, S.J. 2012. Fundamentals of nursing. 9th ed. New Jersey: Prentice-Hall. 46-47 p.
- Lundberg, B., Bjorkman, T., Hansson, L. & Wentz, E. 2009. Are stigma experiences among persons with mental illness related to perceptions of self-esteem, empowerment and sense of coherence? *J Psychiatr Ment Health Nurs*, 16(6):516-522. doi: 10.1111/j.1365-2850.2009.01418.x
- Luty, J., Umoh, O., Sessay, M. & Sarkhel, A. 2007. Effectiveness of changing minds campaign factsheets in reducing stigmatised attitudes towards mental illness. *Psychiatric bulletin*, 31:377-381.
- Maltby, J., Williams, G., McGarry, J. & Day, L. 2010. Research methods for nursing and healthcare. London: Pearson Education Ltd.
- Mann, C.E. & Himelein, M.J. 2008. Putting the person back into psychopathology: an intervention to reduce mental illness stigma in the classroom. *Soc Psychiatr Epidemiol*, 43:545-551.

Markström, U., Gyllensten, A.L., Bejerholm, U., Björkman, T., Brunt, D., Hansson, L., Leufstadius, C., Sandlund, M., Svensson, B., Östman, M. & Eklund, M. 2009. Attitudes towards mental illness among health care students at Swedish universities – A follow-up study after completed clinical placement. *Nurse education today*, 29:660-665.

McKinney, K.G. 2009. Initial evaluation of 'Active Minds: A student organisation dedicated to reducing the stigma of mental illness. *Journal of college student psychotherapy*, 23:281-301.

Meline, T. 2006. Selecting studies for Systematic Review: inclusion and excluding criteria. *Contemporary issues in communication science and disorders*, 33(6):21-27.

Mouton, J. 2001. *How to succeed in your Master's & Doctoral Studies*. A South African guide and resource book. Van Schaik: Pretoria. 108 p.

Mouton, J. & Marais, H.C. 1994. Basic concepts in the methodology of the social sciences. Pretoria: Human sciences Research Council. 269 p.

Mullen, P.D. & Ramirez, G. 2006. The promise and Pitfall of systematic reviews. *Center for Health Promotion and Prevention Research, School of public health*, 27:81-102.

Newhouse, R.P., Dearholt, S.L., Poe, S.S., Pugh, L.C. & Whithe, K.M. 2007. *John Hopkins Nursing Evidence-Based: Model And guidelines*; Indianapolis: SIGMA Theta Tau International. 206 p.

NWU (North-West University). 2010. Manual for Postgraduate Studies. <http://www.nwu.ac.za/sites/default/files/files/library/documenta/manualpostgrad.pdf>
Date of access: 10 Oct. 2011.

O'Mathuna, D.P., Fineout-Overholt, E. & Kent, B. 2008. *How systematic reviews can foster evidence-based clinical decisions: Part 11*. 2nd quarter. *World views on Evidence-Based Nursing*, 102.

Overton, S.L., & Medina, S.L. 2008. The stigma of mental illness. *Journal of Counselling Association*, 86:143-150.

Palpant, R.G., Steimnitz, R., Bornemann, T.H. & Hawkins, K. 2006. The Carter Center mental health program: Addressing the public health crisis in the field of mental health through policy change and stigma reduction. *Preventing Chronic Diseases Public Health Research, Practice and Policy*, 3(2):A62.

Penn, D.L., Chamberlin, C. & Mueser, K.T. 2003. The effects of a documentary film about schizophrenia on psychiatric stigma. *Schizophrenia bulletin*, 29(2):383-391.

Perlick, D.A., Nelson, A.H., Mattias, K., Selzer, M.B.A. & Kalvin, C. 2011. In Our Own Voice - Family Companion: Reducing self-stigma of family members with serious mental illness. *Psychiatric services*, 62(12):1456-1462.

Petticrew, M. 2003. Why certain systematic reviews reach uncertain conclusions. *British Medical Journal*, (326):756-758.

Pinfold, V., Thornicroft, G., Huxley, P. & Farmer, P. 2005. Active ingredients in anti-stigma programmes in mental health. *International Review of Psychiatry*, 17(2):123-131.

Pinto-Foltz, M.D. & Logsdon, M.C. 2009. Reducing stigma related to mental disorders: Initiatives, interventions, and recommendations for nursing. *Archives of Psychiatric Nursing*, 23(1):32-40.

Pinto-Foltz, M.D., Logsdon, M.C. & Myers, J.A. 2011. Feasibility, acceptability, and initial efficacy of a knowledge-content program to reduce mental illness stigma and improve mental health literacy in adolescents. *Social science and medicine*, 72:2011-2019.

Pitre, N., Stewart, S., Adams, S., Bedard, T. & Landry, S. 2007. The use of puppets with elementary school children in reducing stigmatising attitudes towards mental illness. *Journal of mental health*, 16(3):415-429.

Reinke, R.R., Corrigan, P.W., Leonhard, C., Lundin, R.K. & Kubiak, M.A. 2004. Examining two aspects of contact on the stigma of mental illness. *Journal of social and clinical psychology*, 23(3):377-389.

Ross, C.A. & Goldner, E.M. 2009. *Stigma, negative attitudes and discrimination towards mental illness within the nursing profession: A review of the literature. Journal of Psychiatric and Mental Health Nursing*, 6: 558-567.

Saporito, M.J., Ryan, C., Bethany, B.A. & Teachman, A. 2011. Reducing stigma toward seeking mental health treatment among adolescents. *Stigma research and action*, 2(1)9-21.

Sartorius, N. 2002. Latrogenic stigma of mental illness. Begin with behaviour and attitudes of medical professionals, especially psychiatrists. *British Medical Journal*, 324:1470-1471.

Sartorius, N. & Schultze, H. 2008. Reducing the stigma of mental illness. A report from global association. *Cambridge Journal*, p1.

Schachter, H.M., Girardi, A., Ly, M., Lacroix, D., Lumb, A.B., Van Berkomp, J. & Gill, R. 2008. Child and adolescent psychiatry and mental health. Effects of school base interventions on mental health stigmatisation: A systematic review. *Biomed Central*, 10(1186):1753-2000, Jul. Available from <http://www.capmh.com/content/2/1/18>. Date of access: 21 July 2008.

Simpson, F., Sweetman, E.A. & Doig, G.S. 2010. A Systematic review of techniques and interventions for improving adherence to inclusion and exclusion criteria during enrolment into randomised controlled trials. *Trials*, 11(1):17.

Spagnolo, A.B., Murphy, A.A. & Librera, L.A. 2008. Reducing stigma by meeting and learning from people with mental illness. *Psychiatric rehabilitation journal*, 31(3):186-193.

Ssebunnya, J., Kgozi, F., Lund, C., Kizza, D. & Okello, E. 2009. Stake holder perceptions of mental health stigma and poverty in Uganda. *BioMedical Council*

International Health and Human Rights, doi:10.1186/1472-698X-9-5. Available from: <http://www.biomedcentral.com>. Date accessed: 31 March 2009.

Stuart, H. 2005. Fighting stigma and discrimination is fighting for mental health. *Mental Health Reform in the 21st Century*, 31:S22-S28.

The Lancet. 2001. Reducing the stigma of mental illness. (editorial). *The Lancet*, 357(9262), 1055.

Uys, L. & Middleton, L. 2010. Mental health nursing. A South African perspective. Cape Town. Juta.

Van der Walt, E. 2006. *Quoting sources*. Ferdinand Postma Library: Potchefstroom. 5-6 p.

Webb, C. & Roe, B. 2007. Reviewing research evidence for nursing practice: Systematic reviews. Australia. Blackwell.

Weiss, M.G. & Ramakrishna, J. 2001. Intervention: Research on reducing stigma. Bangalore, India. 3p.

Whittemore, R. & Knafl, K. 2005. The integrative review: updated methodology. *Journal of Advanced Nursing*, 52(5):546-553.

World Health Organisation, 2004. Mental Health Policy, plans and programmes. WHO: Singapore.

Wright, R.W., Brand, R.A., Dunn, W. & Spindler, K.P. 2007. How to write a systematic review. *Clinical orthopaedics and related research*, 455:23-26.

Screening Questions

1. Did the study ask a clearly-focused question? Yes Can't tell No

Consider if the question is 'focused' in terms of:

- the population studied
- the intervention given
- the outcomes considered

2. Was this a randomised controlled trial (RCT) and was it appropriately so? Yes Can't tell No

Consider:

- why this study was carried out as an RCT
- if this was the right research approach for the question being asked

Is it worth continuing?

Detailed Questions

3. Were participants appropriately allocated to intervention and control groups? Yes Can't tell No

Consider:

- how participants were allocated to intervention and control groups. Was the process truly random?
- whether the method of allocation was described. Was a method used to balance the randomization, e.g. stratification?
- how the randomization schedule was generated and how a participant was allocated to a study group
- if the groups were well balanced. Are any differences between the groups at entry to the trial reported?
- if there were differences reported that might have explained any outcome(s) (confounding)

ANNEXURE 2: Johns Hopkins Nursing Evidence-Based Practice Research Evidence Appraisal

Appendix F: Johns Hopkins Nursing Evidence-Based Practice Research Evidence Appraisal 207

Johns Hopkins Nursing Evidence-Based Practice Research Evidence Appraisal

Strength of Evidence

Level I (Strong)

EXPERIMENTAL STUDY (RANDOMIZED CONTROLLED TRIAL OR RCT)

- Study participants (subjects) are randomly assigned to either a treatment (TX) or control (non-treatment) group
- May be:
 - Blind: subject does not know which TX subject is receiving
 - Double-blind: neither subject nor investigator knows which TX subject is receiving
 - Non-blind: both subject and investigator know which TX subject is receiving; used when it is felt that the knowledge of treatment is unimportant

META-ANALYSIS OF RCTS

- Quantitatively synthesizes and analyzes results of multiple primary studies addressing a similar research question
- Statistically pools results from independent but combinable studies
- Summary statistic (effect size) is expressed in terms of direction (positive, negative, or zero) and magnitude (high, medium, small)

Level II

QUASI-EXPERIMENTAL STUDY

- Always includes manipulation of an independent variable
- Lacks either random assignment or control group
- Findings must be considered in light of threats to validity (particularly selection)

Level III

NON-EXPERIMENTAL STUDY

- No manipulation of the independent variable
- Can be descriptive, comparative, or relational
- Often uses secondary data
- Findings must be considered in light of threats to validity (particularly selection, lack of severity or co-morbidity adjustment)

QUALITATIVE STUDY

- Explorative in nature, such as interviews, observations, or focus groups
- Starting point for studies of questions for which little research currently exists
- Sample sizes are usually small and study results are used to design stronger studies that are more objective and quantifiable

META-SYNTHESIS

- Research technique that critically analyzes and synthesizes findings from qualitative research
- Identifies key concepts and metaphors and determines their relationships to each other
- Aim is not to produce a summary statistic, but rather to interpret and translate findings

Quality of Evidence (Scientific Evidence)

- A **High**: consistent results, sufficient sample size, adequate control, and definitive conclusions; consistent recommendations based on extensive literature review that includes thoughtful reference to scientific evidence
- B **Good**: reasonably consistent results, sufficient sample size, some control, and fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence
- C **Low/Major flaw**: little evidence with inconsistent results, insufficient sample size, conclusions cannot be drawn

© The Johns Hopkins Hospital/The Johns Hopkins University

Johns Hopkins Nursing Evidence-Based Practice Research Evidence Appraisal

Evidence Level: _____

ARTICLE TITLE:				NUMBER:	
AUTHOR(S):				DATE:	
JOURNAL:					
SETTING:			SAMPLE (COMPOSITION/SIZE)		
<input type="checkbox"/> Experimental	<input type="checkbox"/> Meta-analysis	<input type="checkbox"/> Quasi-experimental	<input type="checkbox"/> Non-experimental	<input type="checkbox"/> Qualitative	<input type="checkbox"/> Meta-synthesis
Does this study apply to the population targeted by my practice question?				<input type="checkbox"/> Yes	<input type="checkbox"/> No
If the answer is No, STOP here (unless there are similar characteristics).					
Strength of Study Design					
<ul style="list-style-type: none"> • Was sample size adequate and appropriate? • Were study participants randomized? • Was there an intervention? • Was there a control group? • If there was more than one group, were groups equally treated, except for the intervention? • Was there adequate description of the data collection methods? 				<input type="checkbox"/> Yes	<input type="checkbox"/> No
				<input type="checkbox"/> Yes	<input type="checkbox"/> No
				<input type="checkbox"/> Yes	<input type="checkbox"/> No
				<input type="checkbox"/> Yes	<input type="checkbox"/> No
				<input type="checkbox"/> Yes	<input type="checkbox"/> No
				<input type="checkbox"/> Yes	<input type="checkbox"/> No
Study Results					
<ul style="list-style-type: none"> • Were results clearly presented? • Was an interpretation/analysis provided? 				<input type="checkbox"/> Yes	<input type="checkbox"/> No
				<input type="checkbox"/> Yes	<input type="checkbox"/> No
Study Conclusions					
<ul style="list-style-type: none"> • Were conclusions based on clearly presented results? • Were study limitations identified and discussed? 				<input type="checkbox"/> Yes	<input type="checkbox"/> No
				<input type="checkbox"/> Yes	<input type="checkbox"/> No
PERTINENT STUDY FINDINGS AND RECOMMENDATIONS					
Will the results help in caring for my patients?				<input type="checkbox"/> Yes	<input type="checkbox"/> No

Evidence Rating (scales on back)

Strength of Evidence	
Quality of Evidence (check one)	<input type="checkbox"/> High (A) <input type="checkbox"/> Good (B) <input type="checkbox"/> Low/Major flaw (C)

ANNEXURE 3: Quality Criteria Checklist: Primary Research

APPENDICES

Appendix 8: Quality Criteria Checklist: Primary Research

Symbols Used

- + **Positive:** Indicates that the report has clearly addressed issues of inclusion/exclusion, bias, generalizability, and data collection and analysis.
- **Negative:** Indicates that these issues have not been adequately addressed.
- ∅ **Neutral:** Indicates that the report is neither exceptionally strong nor exceptionally weak.

Quality Criteria Checklist: Primary Research

RELEVANCE QUESTIONS		Yes	No	Unclear	N/A
1.	Would implementing the studied intervention or procedure (if found successful) result in improved outcomes for the patients/clients/population group? (NA for some Epi studies)				
2.	Did the authors study an outcome (dependent variable) or topic that the patients/clients/population group would care about?				
3.	Is the focus of the intervention or procedure (independent variable) or topic of study a common issue of concern to dietetics practice?				
4.	Is the intervention or procedure feasible? (NA for some epidemiological studies)				
<i>If the answers to all of the above relevance questions are "Yes," the report is eligible for designation with a plus (+) on the Evidence Quality Worksheet, depending on answers to the following validity questions.</i>					
VALIDITY QUESTIONS		Yes	No	Unclear	N/A
1.	Was the <u>research question</u> clearly stated?				
1.1	Was the specific intervention(s) or procedure (independent variable(s)) identified?				
1.2	Was the outcome(s) (dependent variable(s)) clearly indicated?				
1.3	Were the target population and setting specified?				
2.	Was the <u>selection</u> of study subjects/patients free from bias?				
2.1	Were inclusion/exclusion criteria specified (e.g., risk, point in disease progression, diagnostic or prognosis criteria), and with sufficient detail and without omitting criteria critical to the study?				
2.2	Were criteria applied equally to all study groups?				
2.3	Were health, demographics, and other characteristics of subjects described?				
2.4	Were the subjects/patients a representative sample of the relevant population?				
3.	Were <u>study groups</u> comparable?				
3.1	Was the method of assigning subjects/patients to groups described and unbiased? (Method of randomization identified if RCT)				
3.2	Were distribution of disease status, prognostic factors, and other factors (e.g., demographics) similar across study groups at baseline?				
3.3	Were concurrent controls used? (Concurrent preferred over historical controls.)				
3.4	If cohort study or cross-sectional study, were groups comparable on important confounding factors and/or were preexisting differences accounted for by using appropriate adjustments in statistical analysis?				
3.5	If case control study, were potential confounding factors comparable for cases and controls? (If case series or trial with subjects serving as own control, this criterion is not applicable. Criterion may not be applicable in some cross-sectional studies.)				
3.6	If diagnostic test, was there an independent blind comparison with an appropriate reference standard (e.g., "gold standard")?				
4.	Was method of handling <u>withdrawals</u> described?				
4.1	Were follow up methods described and the same for all groups?				
4.2	Was the number, characteristics of withdrawals (i.e., dropouts, lost to follow up, attrition rate) and/or response rate (cross-sectional studies) described for each group? (Follow up goal for a strong study is 80%.)				
4.3	Were all enrolled subjects/patients (in the original sample) accounted for?				
4.4	Were reasons for withdrawals similar across groups?				

APPENDICES

4.5	If diagnostic test, was decision to perform reference test not dependent on results of test under study?				
5.	Was <u>blinding</u> used to prevent introduction of bias?	Yes	No	Unclear	N/A
5.1	In intervention study, were subjects, clinicians/practitioners, and investigators blinded to treatment group, as appropriate?				
5.2	Were data collectors blinded for outcomes assessment? (If outcome is measured using an objective test, such as a lab value, this criterion is assumed to be met.)				
5.3	In cohort study or cross-sectional study, were measurements of outcomes and risk factors blinded?				
5.4	In case control study, was case definition explicit and case ascertainment not influenced by exposure status?				
5.5	In diagnostic study, were test results blinded to patient history and other test results?				
6.	Were <u>intervention/therapeutic regimens/exposure factor or procedure and any comparison(s)</u> described in detail? Were <u>intervening factors</u> described?	Yes	No	Unclear	N/A
6.1	In RCT or other intervention trial, were protocols described for all regimens studied?				
6.2	In observational study, were interventions, study settings, and clinicians/provider described?				
6.3	Was the intensity and duration of the intervention or exposure factor sufficient to produce a meaningful effect?				
6.4	Was the amount of exposure and, if relevant, subject/patient compliance measured?				
6.5	Were co-interventions (e.g., ancillary treatments, other therapies) described?				
6.6	Were extra or unplanned treatments described?				
6.7	Was the information for 6.4, 6.5, and 6.6 assessed the same way for all groups?				
6.8	In diagnostic study, were details of test administration and replication sufficient?				
7.	Were <u>outcomes</u> clearly defined and the <u>measurements valid and reliable</u>?	Yes	No	Unclear	N/A
7.1	Were primary and secondary endpoints described and relevant to the question?				
7.2	Were nutrition measures appropriate to question and outcomes of concern?				
7.3	Was the period of follow-up long enough for important outcome(s) to occur?				
7.4	Were the observations and measurements based on standard, valid, and reliable data collection instruments/tests/procedures?				
7.5	Was the measurement of effect at an appropriate level of precision?				
7.6	Were other factors accounted for (measured) that could affect outcomes?				
7.7	Were the measurements conducted consistently across groups?				
8.	Was the <u>statistical analysis</u> appropriate for the study design and type of outcome indicators?	Yes	No	Unclear	N/A
8.1	Were statistical analyses adequately described the results reported appropriately?				
8.2	Were correct statistical tests used and assumptions of test not violated?				
8.3	Were statistics reported with levels of significance and/or confidence intervals?				
8.4	Was "intent to treat" analysis of outcomes done (and as appropriate, was there an analysis of outcomes for those maximally exposed or a dose-response analysis)?				
8.5	Were adequate adjustments made for effects of confounding factors that might have affected the outcomes (e.g., multivariate analyses)?				
8.6	Was clinical significance as well as statistical significance reported?				
8.7	If negative findings, was a power calculation reported to address type 2 error?				
9.	Are <u>conclusions supported by results</u> with biases and limitations taken into consideration?	Yes	No	Unclear	N/A
9.1	Is there a discussion of findings?				
9.2	Are biases and study limitations identified and discussed?				
10.	Is bias due to study's <u>funding or sponsorship</u> unlikely?	Yes	No	Unclear	N/A
10.1	Were sources of funding and investigators' affiliations described?				
10.2	Was there no apparent conflict of interest?				
MINUS/NEGATIVE (-)					
<i>If most (six or more) of the answers to the above validity questions are "No," the report should be designated with a minus (-) symbol on the Evidence Worksheet.</i>					

APPENDICES

NEUTRAL (∅)

If the answers to validity criteria questions 2, 3, 6, and 7 do not indicate that the study is exceptionally strong, the report should be designated with a neutral (∅) symbol on the Evidence Worksheet.

PLUS/POSITIVE (+)

If most of the answers to the above validity questions are "Yes" (including criteria 2, 3, 6, 7 and at least one additional "Yes"), the report should be designated with a plus symbol (+) on the Evidence Worksheet.