

A systematic review of best practices for abortion care

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ABSTRACT

An abortion, be it induced or spontaneous, can be a traumatic experience in the life of a woman and her family. Women can use abortion as a method of family planning or to end an unwanted pregnancy. On the contrary there are women who wish to have children of their own, but experience spontaneous abortion or recurrent abortion. When women go through an abortion they may experience different dimensions of side effects and symptoms. The women may experience physical symptoms such as blood loss, pain and sepsis as well as psychological symptoms such as despair, depression and grief. Studies indicate that women who have abortions do not receive the care that they require and are in need of high quality care. There is a need for a systematic synthesis of the best available evidence regarding interventions for nursing practitioners. This can be used to inform practice.

This research study aim to critically review and synthesise best available evidence regarding the best nursing practices for women who have an abortion. This was done by conducting a thorough step-by-step systematic review with the following objectives: to critically review available research evidence on abortion care and to synthesise best practices for abortion care provided by nurses. This study can provide nursing practitioners with the necessary information about the best available evidence regarding abortion care provided by nurses. The information can be used to increase and improve the nursing practitioner's knowledge and to promote and enhance future questions and research.

Through the step-by-step use of the systematic review after a thorough search and screening of potentially relevant studies on nurses providing abortion care according to the inclusion and exclusion criteria, the critical appraisal and data extraction of nine final relevant studies could be used for data analysis and synthesis. Conclusion statements were drawn and later combined and synthesised, graded and evaluated to provide the current best available evidence. The research was evaluated, limitations identified and recommendations made for nursing practice, nursing education and nursing research.

The overall conclusion that can be drawn is there is not enough sufficient evidence to demonstrate that abortion care such as contraceptive counselling and/or psychological follow-up care provided by nurses and/or midwives before and after an induced or

spontaneous abortion is sufficient and effective in reducing recurrent abortions, reducing despair, depression and grief and improving psychological consequences and increasing contraceptive usage. More research must be done on abortion nursing care.

Key words: *abortion, post-abortion, abortion care, abortion nursing care, termination of pregnancy, induced abortion, spontaneous abortion, miscarriage, post-abortion care, miscarriage care, and miscarriage nursing care, nurses*

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CHAPTER 1

OVERVIEW

1.1 INTRODUCTION

Women often do not receive optimal nursing care when they have an abortion. The aim of this study was to systematically review and synthesise best available evidence regarding the best nursing practices for women who have an abortion. Abortion in this context refers to various types of abortions: spontaneous abortion (miscarriage), induced abortion, incomplete abortion and recurrent abortions. Furthermore when referring to care provided by nurses, all the different stages of abortion are taken into consideration, thus referring to care provided pre-abortion, mid-abortion and post-abortion. Although much research has been published in the field of abortion, no systematic reviews regarding best practices for abortion care have been published to inform nursing practice. A synthesis of best available evidence can be used to inform practice in a context where nurses and midwives do not readily have access to research evidence and research databases. In this study abortion care refers to the specific care provided by nurses to women who intend to, or are having, or who already have had an abortion.

1.2 BACKGROUND AND RATIONALE FOR THE STUDY

An abortion is a traumatic event in the life of a woman. Women who have had an abortion can experience physical symptoms and complications - such as: cervical lacerations, uterine atony and bleeding, mechanical injury to the vaginal, cervical or uterine area, uterine perforation, sepsis, infected retained conception products, organ failure, shock, localised peritonitis – all associated with pain and potentially death (Gebreselassie *et al.*, 2010:6-15; Racek *et al.*, 2010:286-290). Women can also experience psychological consequences of an abortion. Anxiety, depression before and after the abortion, fear of the unknown and feelings of rejection and judgement by their peer group and partner are common. Self-blame, internal conflict, helplessness and guilt can also cause stress (Allanson & Astbury, 2001:146-151; Bradshaw & Slade, 2003:929-958; Poggenpoel & Myburgh, 2002:734-739; 2006:3-9; Speckhard & Rue,

1992:95-119; Steinberg & Finer, 2011:72-82). As a result, different dimensions of pain such as physical, psychological, spiritual and social pain contribute to the trauma. All these complications can happen regardless of the primary cause of abortion, emphasising the need for optimal nursing care. Abortion care that is safe and holistic is the right of all women who have lost a pregnancy - induced or spontaneous.

South Africa has one of the most liberalised legislation frameworks regarding termination of pregnancy in the world. After the election of a new government in South Africa in 1994, the “Abortion and Sterilisation Act” (1975) was replaced with the “Choice on Termination of Pregnancy Act” (93 of 1996). After 1996 adjustments and name changes were made to the “Choice on Termination of Pregnancy Act” (38 of 2004) and the “Choice of Termination of Pregnancy Act” (1 of 2008). The new act legalised abortion under several circumstances and resulted in an increase in the availability of abortion services (Varkey, 2000:87) and a 52% decrease in the incidence of infection resulting from abortion (Jewkes *et al.*, 2005:355-359).

In contrast to South Africa's legal acceptance of abortion, some countries, for instance Latin America do not legally allow abortion, even to save the life of the mother. Therefore in countries where abortion is not legalised, women often make use of unsafe abortion practices and when they experience complications or difficulties, they are often treated with disdain and disrespect (Jewkes *et al.*, 2005: 355-359; Maforah *et al.*, 1997:79-82; Rees *et al.*, 1997:432-437).

Even in South Africa where legislation provide for safe abortion care, evidence indicates poor or inadequate quality of nursing care pre- and post-abortion (Harries *et al.*, 2009:296; Jewkes *et al.*, 2005:355-359; Rees *et al.*, 1997:432-437; Smit *et al.*, 2009:40). A high mortality and morbidity will persist if women do not receive optimal post-abortion care (Maforah *et al.*, 1997:79-82; Piet-Pelon, 1999:199; Rees *et al.*, 1997:432-437). Although these studies were not done in the last ten years, not a lot of recent studies could be found.

Problems identified are a lack of physical care such as not providing the women with sufficient pain relief measures and a bedpan after surgery, a lack of counselling, and a lack of communication, information and explanations (Cuisinier *et al.*, 1993:167; De León *et al.*, 2006:190; Fleuren *et al.*, 1998:214-217; Nguyễn *et al.*, 2007:175-177; Paton *et al.*, 1999:306; Simmons *et al.*, 2006:1936-1939; Smit *et al.*, 2009:40; Steele & Chiarotti, 2004:42-43; Tsartsara & Johnson, 2002:60-61; Wong *et al.*, 2003:702). Another deficiency in the care of women who have had an abortion is follow-up services after the abortion, which are perceived to be too

quick and “business like” (Cuisinier *et al.*, 1993:167), while some hospitals do not provide such services at all (Tsartsara & Johnson, 2002:61-62).

Furthermore the negative attitudes of some nurses towards patients who have had an abortion (Harries *et al.*, 2009:296) and lack of awareness of how women experience the loss of pregnancy (Poggenpoel & Myburgh, 2006:3-9) may contribute to poor quality care. In addition, a lack of sensitive care, too little understanding and impersonal attitudes towards the women is perceived to be a problem (Cuisinier *et al.*, 1993:166; Fleuren *et al.*, 1998:214-217; Paton *et al.*, 1999:305; Simmons *et al.*, 2006:1942; Walker, 1995:819). Respect for the patients’ privacy and dignity was also found to be lacking (De León *et al.*, 2006:193; Fleuren *et al.*, 1998:217; Harries *et al.*, 2009:296; Nguyễn *et al.*, 2007:176; Steele & Chiarotti, 2004:42; Washbourne & Cox, 2002:21).

In addition to the problems faced by women who undergo abortion, studies indicate that nurses experience the care of women who had an induced abortion as challenging and stigmatising (Harries *et al.*, 2009:296; Mokgethi *et al.*, 2006:32-39). For instance, South African nurses providing abortion care in the North-West and in the Western Cape Provinces perceived that they were treated unfairly by their colleagues and they had conflicting relationships, because of a lack of support from their colleagues, families or friends (Harries *et al.*, 2009:296; Mokgethi *et al.*, 2006:32-39; Smit *et al.*, 2009:40). Nurses experience conflicting values and consequently conflicting emotions due to their own religious beliefs, values, norms (such as when she is pro-life regarding an induced abortion) and cultural backgrounds (Harries *et al.*, 2009:296; Mokgethi *et al.*, 2006:32-39).

Nurses participating in a number of studies reported that they do not have enough time to give the essential care and that women wait too long before receiving care (Bacidore *et al.*, 2009:732; De León *et al.*, 2006:191; Fleuren *et al.*, 1998:217; Gallo *et al.*, 2004:220-221; Harries *et al.*, 2009:296; Mayi-Tsonga *et al.*, 2009:68-69; Murphy & Merrell, 2009:1587; Paton *et al.*, 1999:308; Prettyman & Cordle, 1992:99; Washbourne & Cox, 2002:21). In a study by Smit *et al.* (2009:40) in the Western Cape in South Africa, the nurses providing abortion care who participated in the study reported that they did not receive financial, professional or academic support and no support from the authorities providing abortion care services.

In conclusion, nurses in South Africa may face a lot of barriers when delivering abortion care, such as a deficiency in support and are often isolated if they do choose to work in abortion

services and therefore they need support from their managers and colleagues. It is not only South Africa's nurses who need support; nurses in Shandong and Hong Kong also wish for greater support from co-workers and improvement in communication skills and training (Chan *et al.*, 2009:2344-2354).

Research evidence indicates the importance of evidence-based best practices that should be implemented to promote quality patient care. Healthcare professionals often do not have much time for reading and often do not have access to the latest research findings at the bedside (Evans & Pearson, 2001:594; Hallas & Melnyk, 2003:47-48). Knowledge translation becomes a tool for packaging high quality research in such a manner that practitioners can read and understand it. A systematic review is the first step in synthesising high-quality evidence and translates research evidence in a reader-friendly format. The systematic review may be used to develop best practice guidelines. These guidelines may overcome the gap between research evidence, practice and policy.

In a preliminary literature review, no systematic review of studies regarding best practices for abortion care provided by nurses was found. There are several guidelines for abortion care like the guidelines of the Royal College of Nursing (RCN, 2008:1), the American Holistic Nurses Association (Hanley *et al.*, 2010:271-273) and other guidelines developed in the United States for nurses and other healthcare professionals regarding Post-Abortion Care (Bajracharya, 2002:1-175). However it remains unclear whether the guidelines were based on the best available evidence. From the scope literature search lots of diverse practices on nursing abortion care was found, but not a lot on specific nursing care practices, therefore the decision was made to do a broader search.

1.3 PROBLEM STATEMENT

Women may experience abortion as a crisis and often suffer from physical complications as well as feelings of anxiety and depression (Bradshaw & Slade, 2003:929-958; Gebreselassie *et al.*, 2010:6-15; Poggenpoel & Myburgh, 2002:734-739; 2006:3-9; Racek *et al.*, 2010:286-290). Unfortunately, studies indicate that these women often do not receive the care that they need (Bacidore *et al.*, 2009:732; Harries *et al.*, 2009:296; Mayi-Tsonga *et al.*, 2009:68-69; Murphy & Merrell, 2009:1587; Nguyễn *et al.*, 2007:175-177; Smit *et al.*, 2009:40). In view of the complications and lack of optimal care of women who have an abortion and a lack of guidelines

based on evidence, there is a need for a systematic synthesis of the best available evidence regarding interventions that can be used to inform practice. Therefore the current study critically reviewed available research evidence and synthesised best nursing practices for abortion care.

1.4 RESEARCH QUESTION

The central research question this study sought to address was:

What nursing care interventions lead to increased patient satisfaction, decreased mortality and morbidity rates, increased nursing staff satisfaction and prevention of complications for women who have an abortion?

1.5 RESEARCH OBJECTIVES

The aim of the study is to systematically appraise evidence of best practices in abortion care, which will be reached through the following objectives:

1. To critically review available research evidence on abortion care provided by nurses;
2. To synthesise best practices for abortion care provided by nurses.

1.6 PARADIGMATIC PERSPECTIVE

A researcher's paradigmatic perspective plays a cardinal role in the design and implementation of a research study and therefore needs to be stated explicitly. This research study falls within the social sciences realm, which is defined by Mouton and Marais (1988:7) as "a collaborative human activity in which social reality is studied objectively with the aim of gaining a valid understanding of it". The following dimensions shaping social sciences research, the epistemological dimension and the methodological dimension, will be discussed briefly as applicable to the current research study.

1.6.1 Epistemological dimension

The researcher aims to search for “true” knowledge in the social reality. The source of “true” knowledge in this study was obtained from scientifically sound studies (Mouton, 1996:28), thus for this research to be “true” and valid research, not only clinical trials were included but other research studies were included as well, such as systematic reviews to name only one. Within the epistemological dimension the researcher aims to generate or summarise the best available evidence for abortion care, thus utilising evidence-based nursing care. Evidence-based healthcare is central to the concept that clinical decisions should be based on the best available scientific evidence, with recognition of patient preferences and the context of the healthcare (Pearson *et al.*, 2005:207).

Thus this study acknowledges that there are many different forms of evidence and therefore good evidence is not only seen in clinical trials, but in other methodologically sound studies as well.

1.6.2 Methodological dimension

The current research was not done within a pre-determined framework, but scientific methods of inquiry were implemented to study the reality. Specific scientific methods of inquiry were implemented to study abortion care to analyse and summarise the best available evidence for abortion care (Mouton & Marais, 1988:15). This was done by following the steps of a systematic review. According to Pearson *et al.* (2005:211) systematic reviews thoroughly search, identify and encapsulate existing evidence in order to answer a research question. Focus is placed on the methodological quality of studies or the credibility of opinions and the text. As a result systematic reviews are currently in the highest position of the hierarchies of evidence (Pearson *et al.*, 2005:211). Therefore the study aims to produce valid, truthful and reliable results (Mouton & Marais, 1988:15). A systematic review was chosen to generate and gather the most valid results. To best answer the research question a systematic review was used, because it included a review of all studies and not only clinical trials.

1.7 CONCEPT CLARIFICATION

Abortion: expulsion of an embryo or foetus prior to the stage of viability (20 weeks’ gestation or foetal weight <500g) from the uterus. It can be spontaneous due to natural causes or it can be

induced artificially or therapeutically. Abortion differs from premature birth which is infants born after the stage of viability, but before 37 weeks gestation (Stedman's medical dictionary, 2000:4). The gestational age at which a foetus is considered viable differs as resources and expertise available debates if an immature foetus, of for example 22 weeks gestation, can survive or not. For this study abortion will be the termination of a pregnancy before the foetus is viable, not taking into account how many weeks gestation the pregnancy was.

Induced abortion: abortion done on purpose with drugs or by some mechanical actions (Stedman's medical dictionary, 2000:4).

Midwife: someone who is qualified to practice midwifery, having specialised training in obstetrics and child care (Stedman's medical dictionary, 2000:1118).

Miscarriage: spontaneous expulsion of a human foetus before it is viable and especially between the 12th and 28th weeks of gestation (Merriam-Webster's Medical Dictionary, 2013).

Missed abortion: abortion in which the foetus dies *in utero* but the product of conception is retained *in utero* for two months or longer (Stedman's medical dictionary, 2000:4).

Nurse: someone who is educated in the scientific basis of nursing under defined standards of education and is concerned with the diagnosis and treatment of human responses to actual or potential health problems (Stedman's medical dictionary, 2000:1244). For this study the term nurse will include the midwife.

Recurrent abortion: loss of three or more sequential pregnancies before 20 weeks of gestation (Stedman's medical dictionary, 2000:4).

Spontaneous abortion/miscarriage: abortion that has not been artificially induced (Stedman's medical dictionary, 2000:4).

Therapeutic abortion: induced abortion performed when the mother's physical or mental health is an indication or to prevent the birth of a deformed child or a child that was conceived during rape (Stedman's medical dictionary, 2002:4).

Threatened abortion: abortion that is characterised by cramp-like pains and a slight show of blood that may or may not be followed by the expulsion of the foetus from the uterus during the first 20 weeks of pregnancy (Stedman's medical dictionary, 2000:4).

1.8 RESEARCH DESIGN AND METHODS

The research design and methods will be discussed in the following section.

1.8.1 Study design

In this study an explorative, descriptive research design was used. A systematic review of research studies (consisting of seven steps according to Melnyk and Fineout-Overholt (2005:116-117) and American Dietetic Association (ADA, 2008:6-65)) was conducted to summarise evidence on the specific topic through identifying, appraising and synthesising the studies to best answer the research question.

1.8.2 Method: Systematic review

A systematic review was used as study method and will be discussed according to seven steps. A systematic review can be used to identify all the relevant methodologically sound studies that address a certain topic (Cullum *et al.*, 2008:14) - in this study, nursing abortion care. The steps of the systematic review will be discussed in-depth in Chapters 2 and 3.

The steps of a systematic review according to Melnyk and Fineout-Overholt (2005:116-117) and ADA (2008:6-65) is outlined in Table 1.1:

Table 1.1 The steps of a systematic review

Step 1:	Identification and formulation of the clear focussed review question
Step 2:	Generating a search strategy, comprehensive identification and review studies' relevance
Step 3:	Executing the search and selecting the relevant studies
Step 4:	Performing the critical appraisal and evaluating the methodological quality of selected studies

Step 5:	Data extraction and summary of all relevant studies
Step 6:	Synthesising the findings
Step 7:	Formulating the conclusion statements

1.8.2.1 Identification and formulation of the clear focussed review question (Step 1)

The review question directs the search to answer the research question and contains the core variables of the study namely the population/patient(s), the intervention and the outcome(s). No comparison and/or control was used for the purpose of this study (ADA, 2008:1-88; Melnyk & Fineout-Overholt, 2005:30; The Joanna Briggs Institute For Evidence Based Nursing and Midwifery (JBI), 2001:2-3; Kitchenham, 2004:1-28).

1.8.2.2 Generating a search strategy, comprehensive identification and review studies' relevance (Step 2)

The search strategy consists of the selection of search words, proposed sources of studies such as databases and manual search as well as formulation of inclusion and exclusion criteria (ADA, 2008:16; Burns & Grove, 2005:345; Centre for Reviews and Disseminations (CRD), 2009:9-12; Greenhalgh, 1997:243; JBI, 2001:1-6; Kitchenham, 2004:1-28).

1.8.2.3 Executing the search and selecting the relevant studies (Step 3)

To select the studies which should be included in the systematic review the researcher used the inclusion and exclusion criteria based on the research question to evaluate the studies' relevance. Firstly titles and abstracts of the studies were screened for duplicates and relevance. Remaining studies were re-examined according to the inclusion and exclusion criteria. Fulltext articles were obtained of studies that appeared to be applicable and screened again for relevance. A final list of studies was compiled for critical appraisal (ADA, 2008:1-88; Critical Appraisal Skills Programme (CASP), 2006a; JBI, 2001:1-6; Kitchenham, 2004:1-28).

1.8.2.4 Performing the critical appraisal and evaluating the methodological quality of selected studies (Step 4)

The researcher and the co-reviewer appraised the quality of the remaining studies with relevant critical appraisal tools (ADA, 2008:1-88; CASP, 2006a; JBI, 2001:1-6; Kitchenham, 2004:1-28).

1.8.2.5 Data extraction and summary of all relevant studies (Step 5)

The final sample of studies is those that were found to be of good quality. A data extracting table was drafted based on the information needed to answer the review question. The table was used to ensure that all relevant data would be collected (ADA, 2008:1-88; JBI, 2001:1-6; Kitchenham, 2004:1-28).

1.8.2.6 Synthesising the findings (Step 6)

Findings from the individual studies were then synthesised according to themes to summarise the best nursing care of women who have an abortion (ADA, 2008:1-88; JBI, 2001:1-6; Kitchenham, 2004:1-28).

1.8.2.7 Formulating the conclusion statements (Step 7)

The conclusion statements were written according to themes and topics identified in the previous step (ADA, 2008:1-88).

For this systematic review to be true research, the researcher ensured rigour was applied. The next section will delineate with the measures which ensured rigour.

1.9 MEASURES TO ENSURE RIGOUR

Research has to comply with the epistemological standard or the standard of validity to be truthful (Rossouw, 2005:176). The same rigour principles apply to a systematic review as for a primary research study. This systematic review was systematic and methods were pre-planned, recorded and documented in a systematic review protocol. The pre-planned protocol ensured that this research was conducted with the same rigour as all other valid research. The review protocol fully described each step in a detailed manner in this review process and reduced

researcher bias, for example preventing the researcher from selecting primary studies driven by his or her expectations (JBI, 2001:2; Kitchenham, 2004:4).

A librarian was consulted to ensure a comprehensive search, which covered all the possible sources and information on the topic of interest, in this case abortion care. To ensure a high degree of sensitivity, grey literature such as unpublished studies, conference proceedings, other studies' reference lists and higher degree dissertations were included. The selection criteria were formulated during the planning of the systematic review in the protocol, to prevent bias. To limit language bias non-English studies with an English abstract were included in the selection criteria. The selection criteria with pre-decided inclusion and exclusion criteria protected this study from investigator bias, thus preventing the researcher from choosing, unconsciously or consciously, studies on the basis of their results (JBI, 2001:3; Kitchenham, 2004:7-9).

During the critical appraisal both rigorously executed primary studies as well as other rigorous research review studies were included, thus ensuring that the research results were valid and rigorous. The quality of the primary studies was evaluated according to the extent to which the study minimises bias and maximises internal and external validity. The studies were critically appraised using criteria such as allocation bias, performance bias, attrition bias and detection bias by means of relevant critical appraisal tools (JBI, 2001:3-5; Kitchenham, 2004:10).

For data collection, data extraction tools were used, to ensure that all the relevant data were extracted, to summarise the findings of the studies relevant, and to enable synthesis. It allowed the accuracy of data to be checked and it served as a record of the data. Study findings were reported as completely as possible and were reported and presented in a way that minimised bias and was understandable (JBI, 2001:3-5; Kitchenham, 2004:10).

Throughout the whole process, a co-reviewer was used in different stages. The co-reviewer was used with the first screening process of titles and abstracts for relevance, secondly with the screening of fulltext articles according to inclusion and exclusion criteria, as well as performing the critical appraisal and checking the data-extraction process. Two experienced supervisors reviewed the entire process of the systematic review to ensure rigour as recommended by Kitchenham (2004:7).

For the systematic review to be transparent and replicable, the research was documented in detail. Furthermore the research was documented as it occurred and changes were noted and

justified, because it was an ongoing process. Lastly the unfiltered results of the search were saved, so that it can be retained for possible re-analysis later (Kitchenham, 2004:9). According to Burns and Grove (2005:612) audit ability is part of ensuring rigour and could be implemented.

Under the next heading the ethical considerations of this research study will be discussed.

1.10 ETHICAL CONSIDERATIONS

In this systematic review, there were no participants as a sample for the study, as reports of research studies and qualitative and quantitative studies were the unit of analysis. In this study the researcher accepted the responsibility to conduct high quality and competent research. The researcher complied with conducting the systematic review in an ethical manner by following the guidelines in Brink *et al.* (2006:30-41) and Burns and Grove (2005:203-212):

In this study the researcher was:

- accurate and integrative by strictly adhering to the ethical principles by keeping a detailed record of the review and report the research findings in an unbiased manner for audit purposes;
- honest, by avoiding fabrication, falsification and plagiarism, by including the correct and full bibliographic details in the list of references as well as referring correctly and giving credit in the text to the authors and study material used. The researcher diligently complied with the North-West University's (NWU) policy on plagiarism and intellectual property;
- respectful towards the community by following the fundamental ethical principles of protecting the scientific knowledge collected, having respect for the information sources and databases and handling all information with responsibility.

In addition the researcher:

- used sound scientific data sources that are traceable, accessible and relevant for audit purposes, keeping a well-documented record of all the databases searched and used

as well as the search results and inclusion and exclusion criteria of the studies searched and used;

- checked if original studies were done ethically through critical appraisal
- used resources effectively, by planning the research and conducting the research properly and ensured permission was given to do the research, to prevent wasting money and time;
- used valid and reliable as well as protected internet resources to ensure honesty and accuracy;
- used critical appraisal tools from the public domain and recognition was given (Brink *et al.*, 2006:30-41; Burns & Grove, 2005:203-212).

The North-West University's Manual of Postgraduate Studies (NWU, 2010) was used as a guide for ethical research and for the code of conduct regarding plagiarism.

1.11 SUMMARY

In this chapter an overview of the study is provided. The background and rationale for the study are provided, the problem statement as well as the research question with its objectives are stated. Evidence reveals women experience abortion as traumatic and the care given is often not optimal. This study critically reviewed and synthesised current literature to identify best available evidence to inform nursing practices. The paradigmatic perspectives, clarification of terminology, research design and method were then discussed. The rigour and ethical considerations were discussed last. In the following chapter the systematic review as research design and method will be discussed.

CHAPTER 2

RESEARCH METHOD: SYSTEMATIC REVIEW

2.1 INTRODUCTION

In this study the systematic review method was used to critically review and synthesise best available evidence on abortion care, which was used to describe best nursing care practices. This study followed a descriptive, explorative design. In this chapter the method of the systematic review will be explained. An overview of the realisation of the first four steps will be provided namely: Identification and formulation of a clear focussed review question (Step 1); generating a search strategy, comprehensive identification and review of studies' relevance (Step 2); executing the search and selecting the relevant studies (Step 3); and performing the critical appraisal and evaluating the methodological quality of selected studies (Step 4). The last three steps will be discussed in the next two chapters, namely: extracting data and drafting a summary of all relevant studies (Step 5); synthesising the findings (Step 6) and formulating the conclusion statements (Step 7).

2.2 SYSTEMATIC REVIEW AS RESEARCH METHOD

The motivation for the use of a systematic review as research method was discussed throughout Chapter one in sections 1.1, 1.2, 1.3 and 1.8. A systematic review comprises of seven steps. These steps ensure a structured, systematic, detailed, comprehensive, rigorous search process, using rigorous methods and tools to select, critically appraise, summarise and communicate the best available evidence. The researcher identifies implications of opposing results as well as implications and contribution of the results to nursing practice and research (Burns & Grove, 2005:28, 619-620; Melnyk & Fineout-Overholt, 2005:115, 207). If findings with opposing results were identified, for example one study identified counselling improves nursing care and another study identifies counselling does not improve nursing care, both studies' findings were studied and included for discussion in Chapter 3.

2.3 STEPS OF THE SYSTEMATIC REVIEW

The steps of the systematic review (see Figure 2.1) will be discussed in the following section.

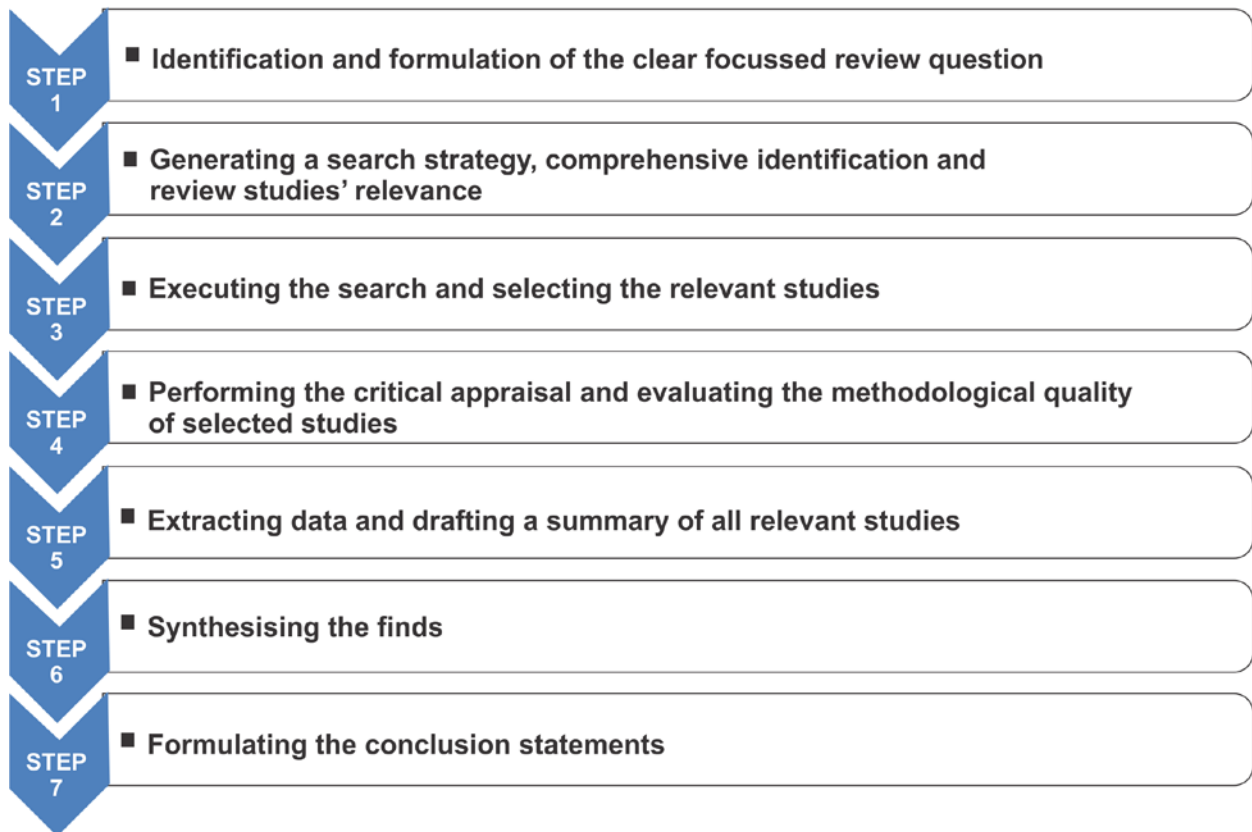


Figure 2.1 Seven steps of the systematic review (ADA, 2008:1-88; Kitchenham, 2004:1-28; Melnyk & Fineout-Overholt, 2005:207).

2.3.1 Identification and formulation of the clear focussed review question (Step 1)

A well-formulated review question focus is used to guide the systematic review. The variables of interest necessary to formulate a review question are abbreviated as PICO (ADA, 2008:16; Cullum *et al.*, 2008:18-23; Melnyk & Fineout-Overholt, 2005:30). The elements of the review question are outlined in Table 2.1

Table 2.1 Elements of the review question according to the acronym PICO

ELEMENTS OF ACRONYM	ELEMENTS OF REVIEW QUESTION
P - Population of interest	Women who have or have had an abortion
I – Intervention of interest	Nursing care practices
C – Comparison intervention	Not applicable
O – Outcome of interest	Increased patient satisfaction, decreased mortality and morbidity rates, increased nursing staff satisfaction and prevention of complications

The review question was: What nursing care interventions lead to increased patient satisfaction, decreased mortality and morbidity rates, increased nursing staff satisfaction and prevention of complications for women who have an abortion?

2.3.2 Generating a search strategy, comprehensive identification and review of studies' relevance (Step 2)

In the second step of the systematic review the researcher developed a protocol that was followed as a predetermined pathway to limit bias. In this step both published and unpublished primary studies related to the research question were searched for in multiple databases. Inclusion and exclusion criteria were determined as recommended by ADA (2008:1-88); Kitchenham (2004:1-28) and Melnyk and Fineout-Overholt (2005:116). A search strategy that consisted of search words, databases and inclusion and exclusion criteria, was formulated with the help of experts and an experienced librarian.

Search words

To start with the search strategy, specific key words were used to search for the research articles or research-related information applicable to the review question. The four core variables of the acronym PICO (as explained in step 1) guided the formulation of the search words. The words used for the variables as well as their synonyms were used as search words.

Main search words included: *abortion, post-abortion, abortion care, abortion nursing care, termination of pregnancy, induced abortion, spontaneous abortion, miscarriage, post-abortion care, miscarriage care, miscarriage nursing care, nursing, nurses, nursing care, comprehensive care, post-abortion care provided by nurses, comprehensive nursing care, nursing management, nursing treatment, evidence-based and evidence-based nursing care, nurses.*

Search words were combined and mixed and matched to find the best results for the specific databases and to ensure all areas of the literature could be reached and explored. Where applicable, the search words were used in different categories to ensure that no data was missed. The following categories were used: *All or Title, Abstract or Author-Supplied Abstract or Keywords.*

Databases

To identify and include all relevant search studies, different databases and catalogues were searched as well as unpublished literature as grey literature. Multiple sources were searched to increase possibility that all relevant studies were included and to increase the sensitivity of the selection of all relevant studies applicable. Table 2.2 outline the databases used:

Table 2.2 Databases used in search strategy

ELECTRONIC DATABASES AND SEARCH ENGINES	TYPE OF LITERATURE INCLUDED
<p><i>International:</i></p> <p>EBSCOhost: Academic Search Premier, CINAHL with full text, Health Source: Nursing Academic edition, MasterFILE Premier, MEDLINE, PsychINFO with Full text, PsycARTICLES, HealthSource – Consumer Edition, eBook Collection, E-Journals and SocINDEX</p> <p>ScienceDirect</p> <p>JSTOR</p> <p>PUBMED</p> <p>Nursing@Ovid</p>	<p>Journal articles</p>

ELECTRONIC DATABASES AND SEARCH ENGINES	TYPE OF LITERATURE INCLUDED
<i>National:</i> SAPublications, Sabinet (Cement and Concrete, Current & Completed Research, FS Articlefirst, FS WorldCat, ISAP by the National Library of South Africa, Kovsidex, NDLTD (theses and dissertations), North-West University Catalogue, SA Media, SAePublications, SA Cat, SANB, Subsidie, UCTD, SA Theses (including Navtech and UCTD)	South African journals and publications
ProQuest – <i>International database</i>	Research reports such as theses and dissertations
Nexus – <i>National database</i>	Completed and current research in South Africa – including dissertations and theses
Google Scholar – <i>International search engine</i>	Journal articles and grey literature, for example conference proceedings, discussion papers, report booklets and unpublished research theses
Google – <i>International search engine</i>	Journal articles and grey literature, for example conference proceedings, discussion papers, report booklets and unpublished research theses
Cochrane Library – <i>International database</i>	Systematic reviews of studies and clinical trails
Scopus – <i>International database</i>	Abstracts of journals, dissertations and theses, citations – peer-reviewed

These databases were purposely chosen on grounds of accessibility, appropriateness and comprehensiveness in identifying as many studies as possible in the area of interest.

Manual search

The local library of the university was visited to include any hardcopies of journals which might not have been found on the internet. The reference lists of key studies were also searched to identify any studies missed during the search of the databases.

Inclusion and exclusion criteria

For the research to be comprehensive but specific and to exclude research material not applicable, selection criteria were formulated to retrieve only studies relevant to the research question, therefore increasing the specificity of the search. The selection criteria consist of inclusion and exclusion criteria, which was used to prevent investigator bias (ADA, 2008:16; Burns & Grove, 2005:345; CRD, 2009:9-12; Greenhalgh, 1997:243, JBI, 2001:1-6; Kitchenham, 2004:1-28) and are outlined in the next section.

In this study as many studies as possible relating to the research question were searched for. All qualitative and quantitative primary research studies in any language with an English abstract were included. Grey literature and unpublished studies such as conference proceedings and higher degree dissertations were also sought.

The inclusion criteria for studies are as follows:

1. All studies on women who had an abortion:
 - Legal or illegal abortions.
 - Pregnancy via artificial insemination, in-vitro fertilisation or via any other means.
 - Pregnancy via normal planned or non-planned sexual intercourse.
 - Pregnancy via rape.
 - Repeated spontaneous or repeatedly induced abortions.
 - Spontaneous or induced abortion.

2. Studies on women of all age groups, cultures, social status, race and language groups.
3. Studies on women receiving abortion care provided by nurses in any setting.
4. Studies published between January 2000 and September 2012 – to obtain recent evidence.
5. Studies on direct patient care interventions by nurses who provide abortion care.

The exclusion criteria for studies are as follows:

1. Research reports in non-English languages with no English abstract available.
2. Duplicate reports of the same study.
3. Non-research reports, letters and commentaries.
4. Studies focussing on medical procedures only.
5. Studies not related to nursing practices.
6. Studies not related to abortion.
7. Studies focusing on the perceptions and experiences of women who have had an abortion.

Role of the librarian and the interlibrary loan facility

An experienced librarian at the Ferdinand Postma Library of the North-West University (NWU) was consulted during the search strategy for advice on the use of the correct databases as well as using the correct search words for the different databases. The interlibrary loan facility was used to retrieve documents not obtainable from the local university's library.

Documentation of the search

The whole search process was accurately documented and recorded to allow for others to follow the process and for audit purposes.

2.3.3 Executing the search and selecting the relevant studies (Step 3)

The search process was done at four different levels to increase the specificity and sensitivity of the search. The search initiated with a scoping search which was done by searching broadly through the literature, exploring the literature by looking at different types of databases such as Google Scholar (see Appendix A). The purpose of the scoping search was to see if the literature contained any valuable studies applicable to the research question.

After the initial search, the formal search was commenced. At the first level, the titles and abstracts of the studies selected in the initial search were screened for duplicates and their relevance to the review question. All the apparently relevant studies and the initial screening process were recorded for audit purposes. A second reviewer also screened the titles and abstracts and a list was compiled based on consensus between the researcher and the second reviewer.

At the second level abstracts of remaining studies which could possibly be included were re-assessed according to the inclusion and exclusion criteria. It enabled the researcher to select all relevant studies applicable to the review question. After the second effort to select all relevant studies, fulltexts were obtained of studies that were possibly applicable. The third level was when these fulltext studies were thoroughly assessed according to the inclusion and exclusion criteria, to gain a final list of studies found to be relevant to the research question. At the fourth level, the final list of studies was compiled for critical appraisal of the applicability and rigour that was the next step (Step 4) of the systematic review (ADA, 2008:1-88; CASP, 2006a; JBI, 2001:1-6; Kitchenham, 2004:1-28).

Figure 2.2 provides a framework in the form of a flowchart of the realisation of the search strategy according to the four different levels. The different databases searched and the number of studies and articles found in the initial search for each database are provided in Appendix A.

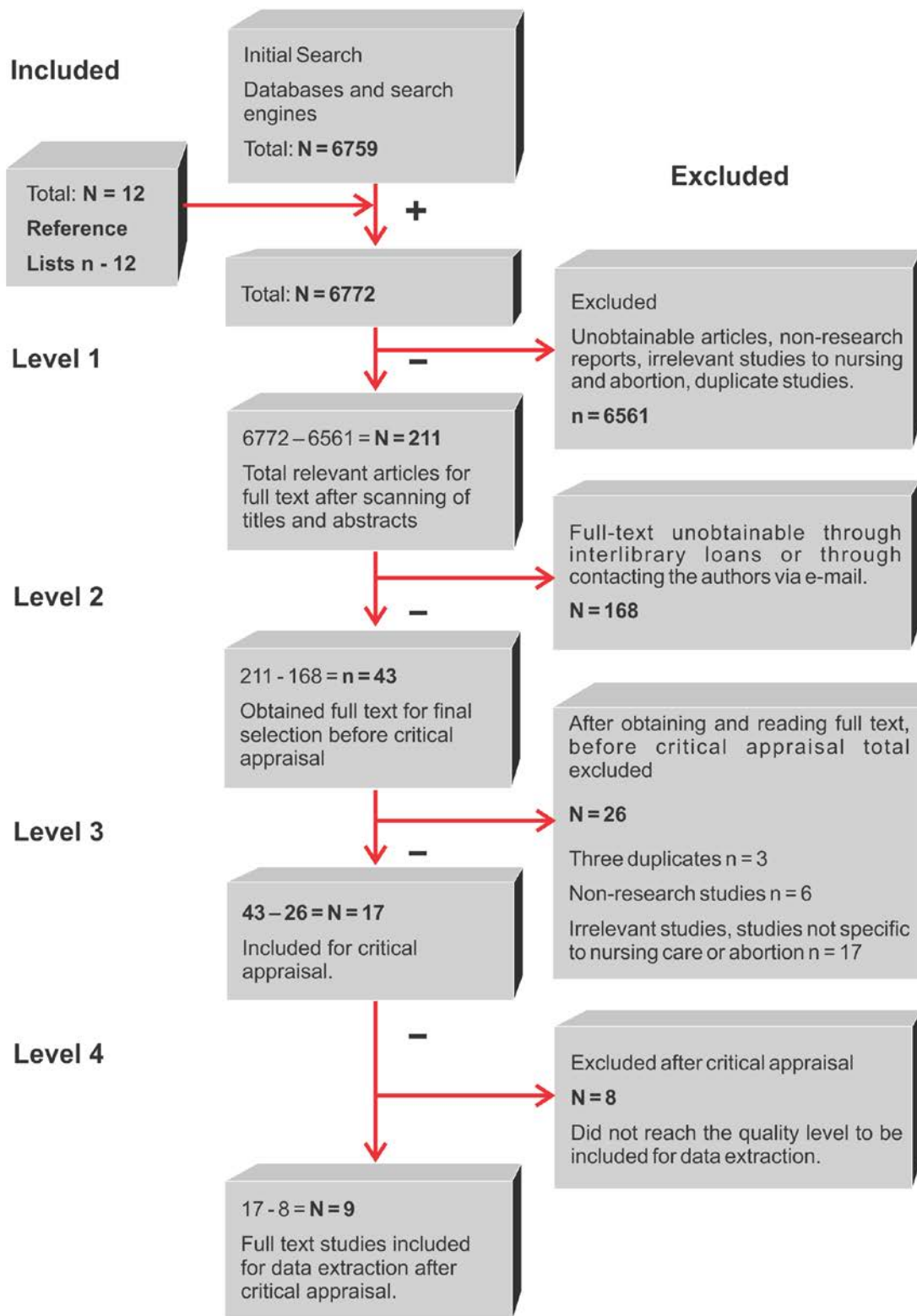


Figure 2.2 Flowchart of realisation of the search strategy at levels 1, 2, 3 and 4 according to CRD (2009:26).

After the third level, the researcher excluded 26 articles. Appendix B provides a detailed description of the studies excluded. To ensure the search remained rigorous, the search was kept up to date throughout the entire study. The different databases were searched continually for new uploaded studies which could be applicable.

2.3.4 Performing the critical appraisal and evaluating the methodological quality of selected studies (Step 4)

There are two reasons why studies were excluded during critical appraisal. Either the study did not meet the relevant cut off point of the instrument used, or it had a serious defect such as for example ethical considerations not met. Relevant critical appraisal instruments for each study design were used to assess the quality and validity of the methodology of the 17 studies which remained. These instruments were chosen because they provide a systematic and objective rating of the methodological quality of primary research studies and review studies (ADA, 2008:42). Moreover the instruments have a good face and content validity. In addition to the above mentioned reasons, these types of instruments were suitable for most of the study designs and are available free of charge.

The following instruments were used as critical appraisal tools (see Appendix C):

- Critical appraisal tool for reviews - Critical Appraisal Skills Programme (CASP, 2006d)
- Critical appraisal tool for RCT's (CASP, 2006c)
- Critical appraisal tool for cohort studies (CASP, 2004)
- Critical appraisal tool for case control studies (CASP, 2006b)
- The critical appraisal guidelines for single case study research (Atkins & Sampson, 2002:107)
- Critical appraisal tool for qualitative research studies (CASP, 2006e)
- Evaluation tool for mixed method studies (Long *et al.*, 2002)
- The John Hopkins nursing evidence-based practice (JHNEBP) research evidence appraisal tool (Newhouse *et al.*, 2007:206)

The assessments were recorded on a sheet of quality ratings. A table was used to record the information related to the relevant studies included for the critical appraisal by indicating the author(s), title, instrument(s), rigour, ethical considerations, reference(s), study design(s), sample(s), data collection(s) and analysis method and the comments made by the researcher (ADA, 2008:1-88; CASP, 2006a; JBI, 2001:1-6; Kitchenham, 2004:1-28).

The reviewer and a co-reviewer independently conducted a critical appraisal of the selected studies and consensus was reached regarding the different critical appraisal (CA) mark allocations. Throughout the critical appraisal, studies with the same research design were grouped together and arranged alphabetically. Studies were included with a score of 8/10 and above when CASP tools were used or marks could be converted to a mark out of 10. This score was used to ensure only high quality research studies were to be included. When the JHNEBP tool was used the study was included if the quality of evidence was high (A) or good (B) and excluded if it was low (C) (see Appendix C for critical appraisal tools). For other types of studies, for example the mixed studies, the total marks of the appraisal tools were adjusted according to the relevant items for each study as some questions (items) were not applicable. See Appendix D for detailed description of critical appraisals done on 17 studies.

The last steps of the systematic review will be discussed in detail in Chapter 3, namely: Data extraction and summary of all relevant studies (Step 5); Synthesising the findings (Step 6) and Formulating the conclusion statements (Step 7).

2.4 SUMMARY

Chapter two provides an overview of the methodology of the systematic review used in this particular study and the realisation and findings. A clear definition of a systematic review is provided and the first four structured steps that should be followed systematically are explained. The next chapter will continue to discuss and explain how this systematic review was executed, explaining the last three steps of the systematic review.

CHAPTER 3

REALISATION AND FINDINGS OF THE STUDY

3.1 INTRODUCTION

Chapter three provides an overview of the last three steps of the systematic review, which consists of data extraction and summary of all relevant studies (Step 5); synthesising the findings (Step 6) and formulating the conclusion statements (Step 7).

3.2 DATA EXTRACTION AND SUMMARY OF ALL RELEVANT STUDIES (STEP 5)

After critical appraisal of 17 studies, nine studies were judged to be of good methodological quality and were used for data extraction (see Appendix E). The characteristics of the included studies will be discussed first followed by the detail of the findings of the studies.

3.2.1 Description of characteristics of the studies included

The studies that qualified as methodologically adequate had different research designs. There were one systematic review (Murphy *et al.*, 2012:1-30), four randomised clinical control trials (Adolfsson *et al.*, 2006:330-335; Bender & Geirsson, 2004:481-487; Johnson, 2009:1-90; Swanson *et al.*, 2009:1245-1257) two non-experimental studies (David *et al.*, 2007:83-94; Rowsell *et al.*, 2001:33-45) and two mixed design studies (Curley, 2011:1-278; Schwandt, 2009:1-203). Only one of the three different study methods used in Schwandt (2009:1-203) was used for the purpose of this research. The method chosen was a randomised non-inferiority study (Schwandt, 2009:1-203).

The focus of the studies included focussed on care provided by nurses for women experiencing induced as well as spontaneous abortions. The randomised clinical control trial of Bender and

Geirsson (2004:481-487), the non-experimental study of David *et al.*, (2007:83-94) and the two mixed design studies of Curley (2011:1-278) and Schwandt (2009:1-203) focussed on nursing care of patients who underwent induced abortion. Three randomised clinical control trials (Adolfsson *et al.*, 2006:330-335; Johnson, 2009:1-90; Swanson *et al.*, 2009:1245-1257), one non-experimental study (Rowell *et al.*, 2001:33-45) and the systematic review of Murphy *et al.* (2012:1-30) focussed on nursing care of patients with spontaneous abortion.

Studies of nursing care of women who had induced abortions (Bender & Geirsson, 2004:481-487; Curley, 2011:1-278; David *et al.*, 2007:83-94; Schwandt, 2009:1-203) researched four types of interventions: 1) an intervention which consisted of pre-abortion counselling to increase post-abortion contraceptive use; 2) an intervention consisting of post-abortion family-planning counselling to decrease induced abortion rates in future; 3) an intervention which consisted of post-abortion treatment and healing interventions to decrease psychological distress; and 4) an intervention which consisted of post-abortion individual and group family planning counselling to increase intent to use family planning and to increase knowledge of family planning methods post-abortion. The study done by Curley (2011:1-278) proposed a model of post-abortion treatment and healing interventions, which has not been tested, therefore the effectiveness thereof could not be determined.

Four of the studies focusing on spontaneous abortion care provided by nurses, tested an intervention (Adolfsson *et al.*, 2006:330-335; Johnson, 2009:1-90; Rowell *et al.*, 2001:33-45; Swanson *et al.*, 2009:1245-1257). The study of Adolfssen *et al.* (2006:1-30) compared an intervention group (group 1) to a comparison group (group 2). The intervention group received a one-hour counselling session with a specific midwife who focused on the women's experiences and apply Swanson's caring theory. The comparison group received a thirty minute visit to any one of five midwives with the focus on the women's general health and complications. In the study of Johnson (2009:1-90) the intervention consisted of a bereavement "package" which included support follow-up care and information such as support groups to decrease levels of despair. Another intervention tested for its effectiveness was two pre-pregnancy counselling sessions with a midwife for women who have recurrent spontaneous abortions (Rowell *et al.*, 2001:33-45). The study done by Swanson *et al.* (2009:1245-1257) tested an intervention which consisted of three couple-focussed interventions on women and men's resolution of depression and grief during the first year after miscarriage.

Of the five studies focusing on nursing care provided to women who had spontaneous abortions, the systematic review of Murphy *et al.* (2012:1-30) did not test an intervention, but assessed the effectiveness of studies on post-abortion follow-up care by a midwife, nurse or psychologist to improve the psychological well-being of women after a miscarriage. Studies focusing on nursing care of women who had spontaneous abortions (Adolfsson *et al.*, 2006:330-335; Johnson, 2009:1-90; Murphy *et al.*, 2012:1-30; Rowsell *et al.*, 2001:33-45; Swanson *et al.*, 2009:1245-1257) investigated interventions to limit psychological impact, despair and depression. No studies could be found addressing physical aspects of nursing care (see Appendix F for a detailed description of all the studies included for data extraction).

3.2.2 Designing the data extraction tool

Findings relevant to the research question were selected and extracted from individual studies and drafted in table format, which made comparison between studies easier (ADA, 2008:52). A data extraction tool was designed to ensure that all relevant data was to be collected, to allow the accuracy of the data to be checked and to serve as a record for the extracted data. The following standard information was drafted: Title(s), author(s), journal(s), publication details, study's focus, study's conclusion(s) and columns with each study's findings related to the review question (see Appendix E).

3.2.3 Framework used to determine value

The findings were first classified according to the six forms of care of Enkin *et al.* (2000:485).

The interventions were classified into these six forms of care, which are as follows:

- 1) beneficial forms of care;
- 2) forms of care that are likely to be beneficial;
- 3) forms of care with a trade-off between beneficial and adverse effects;
- 4) forms of care of unknown effectiveness;
- 5) forms of care that are unlikely to be beneficial;

6) forms of care that are likely to be ineffective or harmful.

3.3 SYNTHESISING THE FINDINGS (STEP 6)

A thematic analysis and synthesis was done by combining and comparing the findings of the 9 final studies, to look for similarities and differences and identifying consistent or inconsistent results among the studies (ADA, 2008:1-88; JBI, 2001:1-6; Kitchenham, 2004:1-28).

From the data extraction tool, shared themes and sub-themes could be identified. In the following section conclusions were drawn using the data extraction tables' last column's information on the final findings relevant to this study. Two main themes could be identified, namely nursing care in the case of induced abortion and nursing care in the case of spontaneous abortion. These two themes could not be combined due to too many differences in the nature of the nursing care for these two types of abortions. The nursing care of patients with induced abortions focuses more on reducing follow-up induced abortion rates in the future and increasing contraceptive use, whereas the nursing care of spontaneous abortions focuses on the psychological aspects.

The following themes and sub-themes could be identified:

Table 3.1 Identified themes and sub-themes

THEMES	SUB-THEMES
Nursing care interventions for women who have induced abortion(s)	Pre-abortion and post-abortion family-planning counselling
	Post-abortion model of treatment and healing
Nursing care interventions for women who have spontaneous abortion(s)	Pre-pregnancy counselling
	Post-abortion bereavement intervention
	Post-abortion counselling

3.3.1 Nursing care interventions for women who have induced abortions

3.3.1.1 Pre-abortion and post-abortion family-planning counselling

The use of family-planning counselling for women who went for an induced abortion was ineffective in increasing post-abortion contraception use and ineffective in decreasing repeated induced abortions (Bender & Geirsson, 2004:481, 485-487; David *et al.*, 2007:90-92). According to Bender and Geirsson (2004:484-486) the control group's results was 86%, and the intervention group 85%, there was no noteworthy difference in contraceptive use post-abortion. According to David *et al.* (2007:86-92) there was an increase from 25% to 40% in women who wanted abortions. These two studies used family-planning counselling as an intervention and focused on the same outcomes: (1) contraception use post-abortion and (2) repeated abortion rates. The only difference between the studies was the time the intervention was executed; Bender and Geirsson (2004:481, 485-487) used counselling pre-abortion and David *et al.* (2007:90-92) used counselling post-abortion. A third study concluded that the use of individual and group family planning counselling post-abortion is effective (group one's (individual counselling) intent to use contraception increased from 82% to 86%, group two's (group counselling) from 87% to 90% and an increase in knowledge of family planning from a mean number of 2 to 6) in increasing intent to use contraception and to increase knowledge of family planning post-abortion (Schwandt, 2009:109-110).

3.3.1.2 Post-abortion model of treatment and healing

The use of a post-abortion treatment and healing model to reduce psychological distress in women who had an induced abortion was of unknown effectiveness as the study developed a model for post-abortion treatment and healing interventions which has not yet been tested in practice (Curley, 2011:178-180).

3.3.2 Nursing care interventions for women who have spontaneous abortions

3.3.2.1 Pre-pregnancy counselling

The use of pre-pregnancy counselling of women who had a previous spontaneous abortion was ineffective for reducing the psychological impact of recurrent spontaneous abortions (Rowsell *et al.*, 2001:33, 41-44).

3.3.2.2 Post-abortion bereavement intervention

The use of a post-abortion specific bereavement intervention based on guidelines for medical professionals was effective (significant difference $t=4.80$, $p=.000$ between the two groups' levels of despair) in lowering the levels of despair in women who had spontaneous abortions before twenty weeks' pregnancy (Johnson, 2009:54-56).

3.3.2.3 Post-abortion counselling

The use of a series of three one hour post-abortion counselling sessions by nurses was effective ($BO_{NC} \vee control = 7.9$, $p=0.89$, $Mdn=-0.7$) in reducing grief and depression in women after a spontaneous abortion compared to receiving no treatment (Swanson *et al.*, 2009:1245, 1254). Contrarily the use of a one hour post-abortion counselling session by a midwife was not effective in reducing grief and despair in women who had spontaneous abortions before twenty three weeks gestation (Adolfsson *et al.*, 2006:334). However the combined findings of studies on follow-up care post-abortion such as counselling sessions with a midwife, nurse or psychologist, found these interventions did not provide enough evidence to be effective in improving the well-being of women after a spontaneous abortion (Murphy *et al.*, 2012:1, 2).

3.4 FORMULATING THE CONCLUSION STATEMENTS (STEP 7)

Two types of conclusions statements were formulated. Firstly key conclusion statements based on the synthesised findings from all the included studies were formulated and then graded according to the strength of evidence upon which the key conclusion statements were based. Secondly a conclusion statement to answer the review question was formulated.

3.4.1 Key conclusion statements

After conclusions were drawn from each theme and/or sub-theme, key conclusion statements were formulated (ADA, 2008:1-88; Coetzee, 2010:131-244; JBI, 2001:1-6; Kitchenham, 2004:1-28). This was done by combining all the finding statements with supporting evidence together and clearly identifying what the results informed the researcher. The researcher tried to formulate the conclusion statements as clearly and concisely as possible (ADA, 2008:59).

The following key conclusion statements were formulated:

1. Pre- and post-abortion care provided by nurses such as contraceptive counselling, did not increase contraceptive use or reduce induced abortion rates (Bender & Geirsson, 2004:481-487; David *et al.*, 2007:83-94).
2. Post-abortion care such as individual and group family planning counselling, did increase the intent to use contraception and knowledge of family planning methods post-abortion (Schwandt, 2009:109-110).
3. Nursing interventions related to induced abortion care such as information, counselling and pregnancy prevention session, are of unknown effectiveness and might not generate positive results (Curley, 2011:1-278).
4. Pre-pregnancy counselling of women who have recurrent spontaneous abortions was not effective in reducing psychological distress (Rowell *et al.*, 2001:33-45).
5. Post-abortion care provided by nurses for women who have spontaneous abortions such as a comprehensive bereavement intervention and nursing counselling sessions can be effective in reducing psychological consequences such as despair, grief and depression (Johnson, 2009:1-90; Swanson *et al.*, 2009:1245-1257).
6. Post-abortion care provided by nurses and/or midwives for women who have spontaneous abortions, such as different counselling sessions is ineffective in improving and reducing psychological consequences, such as despair, grief and depression (Adolfsson *et al.*, 2006:330-335; Murphy *et al.*, 2012:1-30).

3.4.2 Grading of the strength of the key conclusion statements

The strength of the evidence for the conclusion statements was graded according to the ADA - system (ADA, 2008:61). See Appendix F for conclusion grading system.

Briefly the following grading was used:

- Grade I – good/strong
- Grade II – fair
- Grade III – limited/weak
- Grade IV – expert opinion only
- Grade V – grade not assignable

3.4.2.1 Grading of conclusion statements regarding induced abortion care provided by nurses

- a) Conclusion 1: Pre- and post-abortion care provided by nurses such as contraceptive counselling, did not increase contraceptive use or reduce induced abortion rates (Bender & Geirsson, 2004:481-487; David *et al.*, 2007:83-94).**

Grade II – fair

Grading was based on the doubt about generalisability and bias in the studies. A post-randomisation inequality existed in the two study groups in terms of age, level of education and parity. Other possible variables, such as a change in service provision before the study commenced could have affected the study's results (Bender & Geirsson, 2004:486). In the study of David *et al.* (2007:92), the findings were based on invalidated reports of the women's experiences which could be biased; there was a lack of evidence on provider-client interactions; and lastly, the structured questionnaire provided limited opportunities for open-ended responses from the participants.

- b) Conclusion 2: Post-abortion care such as individual and group family planning counselling, did increase the intent to use contraception and knowledge of family planning methods post-abortion (Schwandt, 2009:109-110).**

Grade II – fair

The sample was collected from two different study sites and had quite a few differences in their socio-demographic data, which makes the generalisability of the findings from such a sample less. The study did not include gynaecology patients under the age of 18 years and only included gynaecology patients that were admitted to a private hospital for complications, thus reducing the generalisability of the findings further. The possibility for misclassification bias (classifying women into having a spontaneous abortion instead of an induced abortion) could further influence the findings as well as generalisability. Another limitation could be that the use of contraception post-abortion could not be measured after the family counselling, due to nurses at the hospital who refused to provide contraception early after the procedure. The findings could have been strengthened if nurses could have provided women with the appropriate contraceptive methods (Schwandt, 2009:129-132).

- c) Conclusion 3: Nursing interventions related to induced abortion care such as information, counselling and pregnancy prevention session, are of unknown effectiveness and might not generate positive results (Curley, 2011:1-278).**

Grade V – grade not assignable

The proposed post-abortion model of treatment and healing developed by Curley (2011:133,182) has not yet been tested, thus a grade could not be allocated. The study's development of the proposed model was graded as a grade II, fair due to the generalisability of the study's findings, the size of the sample as well as other possible variables which could have influenced the study's results. Self-selection in this case could have introduced bias in the study. Women were included in the study if they opted for treatment after abortion. Other variables could have influenced the results such as the incidence of pre-existing psychopathology and other factors, which were not detected which could have contributed to abortion stress. A larger sample size also might have contributed to more power in the analysis.

3.4.2.2 Grading of conclusion statements regarding spontaneous abortion care provided by nurses

- a) **Conclusion 4: Pre-pregnancy counselling of women who have recurrent spontaneous abortions was not effective in reducing psychological distress (Rowsell *et al.*, 2001:33-45).**

Grade II - fair

Grading was based on the doubt of the generalisability of the study sample. The study used a sample of women who chose to attend the pre-pregnancy counselling clinic (PPCC) and were referred to the PPCC. Therefore it was not possible to generalise the findings to all women experiencing recurrent miscarriage (Rowsell *et al.*, 2001:41).

- b) **Conclusion 5: Post-abortion care provided by nurses for women who have spontaneous abortions such as a comprehensive bereavement intervention and nursing counselling sessions can be effective in reducing psychological consequences, such as despair, grief and depression (Johnson, 2009:1-90; Swanson *et al.*, 2009:1245-1257).**

Grade II – fair

Because only one study site was used in this study of Johnson (2009:12), the findings could not be generalised to other settings. The follow-up process was only after two weeks, which could have influenced the general presentation of the grief process and limited the effects of the interventions (Johnson, 2009:12). There were also limits to the generalisability of the findings in Swanson *et al.* (2009:1255). The sample largely had Caucasian couples who volunteered to participate, who were also English literate and receptive to advertisements. The couples who left the study had higher grief related emotions scores than those who had stayed behind. Furthermore the study did not report if a menu of different treatment options was offered to the couples and how it could have influenced the study results.

- c) **Conclusion 6: Post-abortion care provided by nurses and/or midwives for women who have spontaneous abortions such as different counselling sessions is ineffective in improving and reducing psychological consequences, such as despair, grief and depression (Adolfsson *et al.*, 2006:330-335; Murphy *et al.*, 2012:1-30).**

Grade II – fair

Adolfsson's study used one study site, therefore the findings could not be generalised to other settings. There was risk of selection bias with the allocation concealment as the envelopes were sealed but it was not made clear if the envelopes were transparent or translucent. Risk for performance bias and detection bias exist because although the clinicians and the assessors were blinded, the participants were not blinded, even though they were asked not to talk about their care during the study to the other participants. There was risk of attrition bias due to 28 participants not completing the first or second questionnaire and the reasons thereof were not stated. It was not clear if the different groups were similar at the beginning of the study. It was also not clear if the study had to be stopped early on or not (Adolfsson *et al.*, 2006:330-335). In the systematic review of Murphy *et al.* (2012:13) studies could have been missed which could have contributed to the findings, as the review only included RCT's.

As a result of the grading of the evidence, it could be concluded that the general grading of the conclusion statements were fair, grade II, as all except one received the same grading.

3.4.3 Conclusion statement to answer the review question

The "bottom line" conclusion statement was formulated, to answer the review question.

The review question was: *What nursing care interventions lead to increased patient satisfaction, decreased mortality and morbidity rates, increased nursing staff satisfaction and prevention of complications for women who have an abortion?*

The review question could only be answered partially because the studies that remained after the rigorous search and critical appraisal process did not address all of the outcomes foreseen.

3.5 SUMMARY

The last steps of the systematic review are discussed in this chapter, the data extraction and a summary of all the relevant studies (step 5), synthesis of the findings (step 6) and lastly, the formulation of conclusion statements (step 7). The realisation of the data extraction and synthesis of the findings is discussed and a description of the final sample is given. A summary of the findings is provided and conclusion statements are drawn up regarding the two main themes, induced and spontaneous abortion care provided by nurses. In Chapter 4 the final conclusion statement, limitations and recommendations will be made.

CHAPTER 4

FINAL CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

4.1 INTRODUCTION

In this last chapter the final conclusion about the best available evidence in nursing abortion care was made. As described in Chapter 1 (see 1.6) the feature of the social reality studied was abortion care provided by nurses, identifying the best available evidence (truth) by means of a systematic review. The evaluation of the research study with regard to rigour as well as the discussion of identified limitations will be provided. Recommendations will be made for research, nursing practice and education.

4.2 FINAL CONCLUSION

In Chapter 1 the central research question this study wanted to answer was:

What nursing care interventions lead to increased patient satisfaction, decreased mortality and morbidity rates, increased nursing staff satisfaction and prevention of complications for women who have an abortion?

For the final conclusion all data collected in the study was taken into consideration. There is limited high quality research evidence available regarding abortion care provided by nurses. With the limited amount of available research evidence the following conclusion can be drawn to answer the research question:

Interventions and contraceptive counselling related to induced abortion care provided by nurses can be effective, ineffective and/or of unknown effectiveness. Post-abortion individual or group contraceptive counselling did increase post-abortion intent to use contraception and knowledge

regarding family planning methods. Pre- and post-abortion contraceptive counselling did not have the desired outcome of reducing repeated induced abortions in women. Other interventions related to induced abortions were of unknown effectiveness.

Pre-pregnancy nursing counselling related to recurrent spontaneous abortion care provided by nurses is not effective. Pre-pregnancy counselling did not have the desired outcome of reducing the psychological consequences resulting from recurrent spontaneous abortions in women. Post-abortion nursing counselling sessions and a comprehensive bereavement package intervention related to spontaneous abortion care provided by nurses is effective in reducing psychological consequences, such as despair, grief and depression in women.

The focus of the nursing interventions differs as a result of whether the women had a spontaneous or induced abortion. With induced abortions the focus is on the prevention of future pregnancies and abortions, whereas with spontaneous abortions the focus is on the psychological consequences and care. Therefore there is a lack of nursing research in physical nursing care, although such information is present in medical studies.

With the final update of the search, a Cochrane systematic review was found on the psychological care of women following a miscarriage (Murphy *et al.*, 2012:1-30) and a study on the integration of post-abortion care with the focus on the role of township medical officers and midwives in Myanmar (Htay *et al.*, 2003:27-36). The study done by Htay *et al.* (2003:27-36) was considered but was excluded due to not concerning direct patient care interventions according to the inclusion criteria. Two other studies were found in the reference list of Murphy *et al.* (2012:1-30) and the full text was sought. One of the two studies that was done on psychological morbidity after miscarriage by Lok Hung in 2006, could not be traced through the North West University's database system and no proper reference could be found to refer to the study in the reference list. The other study of the two was done by Nikčević *et al.* (2007:283-290) and was not nursing specific, therefore it was excluded. The rest of the studies were not included because they were outdated according to the inclusion and exclusion criteria of the present review (Murphy *et al.*, 2012:1-30). As the systematic review of Murphy *et al.* (2012:1030) addressed psychological care, it did not only focus on nursing care, but on care provided by a psychologist as well. The review only looked at the psychological consequences, psychological abortion care and on women who had had a spontaneous abortion. There was still no systematic review found on nursing interventions pre- and post-abortion both spontaneous and induced.

The review question could thus not be answered due to a lack of sound evidence with regard to nursing care interventions which should lead to increased patient satisfaction, decreased mortality and morbidity rates, increased nursing staff satisfaction and prevention of complications for women who have an abortion.

4.3 EVALUATION OF RIGOUR

The rigour of this study was assessed by using the framework of Whitemore and Knafel (2005:548-552) according to the problem identification stage, the literature search stage, the data evaluation stage, the data analysis stage, and the presentation stage.

4.3.1 Problem identification stage

Via the preliminary literature search, a clear researchable problem was identified with a clear review purpose which provided this systematic review with boundaries and a focus. The appropriate sampling frame was also determined (Whitemore & Knafel, 2005:548).

4.3.2 Literature search stage

The search was clearly described and thoroughly documented. Different types of literature were included to ensure a higher degree of sensitivity and to reduce publication bias. Grey literature such as unpublished studies, conference proceedings, other studies' reference lists and higher degree dissertations were all included. A broad and comprehensive search was done by compiling clear inclusion and exclusion criteria and using a combination of key search words in a variety of sources.

This systematic review was pre-planned in a systematic review protocol, which ensured this research was conducted with the same rigour as all other research. This assisted in preventing the researcher from selecting primary studies driven by his/her expectations. The selection criteria was also included in the pre-planned review protocol and protected this study from investigator bias, by ensuring the researcher did not choose studies on the bases of their results (JBI, 2001:2; Kitchenham, 2004:4). An experienced librarian in the field was consulted to ensure an all-inclusive search, to identify all the potential sources.

Authors of studies which were not available through general means were contacted to retrieve the studies although this strategy was not successful. To reduce language bias, non-English studies with an English abstract were included in the selection criteria (JBI, 2001:3; Kitchenham, 2004:7-9; Whitemore & Knaf, 2005:548-549). A co-reviewer reviewed the screening process of the titles and abstracts for relevance as well as the screening of full text articles according to the inclusion and exclusion criteria.

4.3.3 Data evaluation stage

The data evaluation stage as used by Whitemore and Knaf (2005:549) is similar to the critical appraisal stage used in this study. To ensure the research results are valid and rigorous both rigorous primary studies as well as other rigorous research review studies are included. Primary studies' quality was evaluated on the degree to which the study minimises bias and maximises internal and external validity. Critical appraisal was done by using criteria such as allocation bias, performance bias, attrition bias and detection bias (JBI, 2001:3-5; Kitchenham, 2004:10).

Each study design's methodology was assessed for quality and validity with the relevant critical appraisal instrument. These instruments were chosen on the basis of their systematic and objective rating of the methodological quality of primary research and review studies (ADA, 2008:42). These instruments also have good face and content validity. In addition, the instruments suited most of the study designs. A experienced co-reviewer was also used during the critical appraisal process. The whole process of the systematic review was reviewed by two experienced supervisors to ensure rigour as recommended by Kitchenham (2004:7). To ensure transparency and replicability of the systematic review, the whole research process is documented in detail.

Furthermore the research was recorded as it was updated and changes were made and justified. Lastly for possible re-analysis, the unfiltered results of the search were saved (Kitchenham, 2004:9). According to Burns and Grove (2005:612) audit ability was used to ensure rigour (Whitemore & Knaf, 2005:549-550).

4.3.4 Data synthesis stage

Before data was synthesised, the relevant findings of the selected studies were recorded on data extraction tables to ensure extraction of all relevant data, to summarise the findings of the

studies, and to enable synthesis. The data's accuracy was checked in the extraction tables which serve as a record of the extracted data. A co-reviewer was used while checking the data-extraction process. Although data extraction was not done by two reviewers independently the process was done under supervision and consultation. Findings of the study are reported as completely as possible and reported and presented in a way that minimises bias and ensure understanding (JBI, 2001:3-5; Kitchenham, 2004:10).

After the data extraction process, relevant data was synthesised in themes and sub-themes, allowing comparisons to be made. Conclusions were drawn from main identified themes, which derived from the evidence (Whittemore & Knafel, 2005:550-551).

4.3.5 Presentation

A separate chapter is used to write the final conclusion, describe the limitations of the study and make recommendations for future research.

4.4 LIMITATIONS

The following limitations were identified:

- With the search strategy, only electronic databases subscribed to by the North-West University were used. This could be considered a limitation, due to other databases which are not subscribed to by the library of the North-West University. However, an attempt to overcome this limitation was made by searching Google and using other multiple sources, such as unpublished studies, interlibrary loans, manual searches and contacting authors. Although the authors were contacted via e-mail, no responses were received.
- Although the selection of key words was done with great consideration, it is possible that relevant studies were missed.
- This systematic review was not conducted in a team as it is done for a Master's dissertation, a co-coder was used at certain stages of the search and critical appraisal and the review was done under supervision of two study supervisors.

- It was not always possible to obtain abstracts and the relevant hardcopies of studies. The reasons thereof were documented.
- In this study the findings of systematic reviews and primary research studies were synthesised together, therefore certain results could have been reported twice. Even though this research study combined the findings of systematic reviews and primary studies, it did not increase or decrease the amount of themes or sub-themes thus not influencing the final results.
- The review question was broad, if the review question was more specific it would have maybe yielded more specific results. A broader review question was used because little research was found during the preliminary search on specific topics, such as physical post-abortion nursing care.

4.5 RECOMMENDATIONS

The following recommendations are provided for further research, nursing practice and nursing education.

4.5.1 Recommendations for further research

- Research is needed to identify physical nursing care interventions for women who have an abortion. The women's satisfaction with pre- and post-abortion nursing care interventions as an outcome should be explored and described in future research. Research is available on the physical care for women who have an abortion in medical studies, but not in nursing care studies.
- Research is needed where nursing interventions that are being evaluated are better described. Research is available on nursing interventions to improve abortion care provided by nurses, but is not sufficiently described.
- Follow-up research is needed on existing research studies. Existing research needs to be evaluated in practice.
- Research needs to be done on nursing specific care. There is a lack of nursing-specific care regarding abortion care.
- Research needs to be done regarding best practices in nursing care for women who have an abortion.

- Research is needed on nursing care interventions which should lead to increased patient satisfaction, decreased mortality and morbidity rates, increased nursing staff satisfaction and the prevention of complications for women who have an abortion.

4.5.2 Recommendations for nursing practice

- Clinical practitioners should keep up to date with the best available evidence regarding nursing abortion care. This should ensure an increase in quality of care provided by nurses of women who have an abortion.
- Guidelines and protocols should be based on best available evidence.
- Clinical practitioners should implement available guidelines and strategies in practice.
- Evidence such as individual and group counselling post-abortion regarding contraceptive use and bereavement should be implemented in nursing practice.

4.5.3 Recommendations for nursing education

- Basic and advanced training programmes of nurses and midwives should include abortion care provided by nurses.
- Nurses and midwives should be trained on how to research, appraise and synthesise the best available evidence in order for them to base their practice on it.
- Evidence such as individual and group counselling post-abortion regarding contraceptive use and bereavement should be included in nursing education.

4.6 SUMMARY

This systematic review answered the research question. There was not sufficient evidence to demonstrate that specific abortion care provided by nurses such as contraceptive counselling is effective pre- and post-abortion. Further rigorous research should be done to evaluate well described interventions. The physical care and the women's satisfaction with pre- and post-abortion nursing care interventions as an outcome should be explored and described in future research.

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APPENDICES

APPENDIX A:

DATABASE INITIAL SEARCH

DATABASE AND SEARCH ENGINE:	RESULTS:
ScienceDirect	n=135
EBSCOhost	n=4358
Sabinet	n=158
Nexus	n=45
ProQuest	n=1106
Cochrane	n=0
SaePublication	n=0
<i>PubMed</i>	<i>n=366</i>
JSTOR	n=124
Nursing@Ovid	n=445
Scopus	n=0
Google Scholar	n=19
Google	n=3
Total	N=6759

APPENDIX B

DETAILED DESCRIPTION OF STUDIES EXCLUDED AFTER LEVEL 3

STUDIES EXCLUDED:	REASONS FOR EXCLUSION:
<p>1. Hess, R.F. 2004. Dimensions of women's long-term postabortion experience. <i>The American journal of maternal/child nursing</i>, 29(3):193-198.</p> <p>2. Johnson, O., Langford, R.W. 2010. Proof of life: a protocol for pregnant women who experience pre-20-week perinatal loss. <i>Critical care nursing quarterly</i>, 33(3):204-11.</p>	<p>For both of the studies: duplicate of the same study – found both studies in the article and dissertation format, chose the dissertation as full text to critical appraise. Excluded article written about the same study.</p>
<p>3. Murphy, F. & Merrell, J. 2009. Negotiating the transition: caring for women through the experience of early miscarriage. <i>Journal of clinical nursing</i>, 18(11):1583-1591.</p>	<p>Duplicate of same study written in article format, but published in two different journals in different years with different titles. The main author is the same for both studies, but the second author differs. The second author of the article chosen is Philpin, S. The title of the article chosen was “Early miscarriage as 'matter out of place': an ethnographic study of nursing practice in a hospital gynaecological unit”. Selected the most applicable and detailed study of the two.</p>

STUDIES EXCLUDED:	REASONS FOR EXCLUSION:
<p>4. Dattilio, F.M. & Jongsma, A.E. 2010. Practice planners: the family therapy treatment planner. 2nd ed. Hoboken, NJ: John Wiley & Sons.</p> <p>5. Taylor, D., Hwang, A.C. & Stewart, F.H. 2004. Care for women choosing medication abortion. <i>Nurse practitioner</i>, (29)10:65-70.</p> <p>6. Jaffe, J. & Diamond, M. O. 2011. Reproductive trauma: psychotherapy with infertility and pregnancy loss clients. Washington, DC: American Psychological Association.</p> <p>7. Covington, S.N. & Burns, L.H., eds. 2006. Infertility counseling: a comprehensive handbook for clinicians. 2nd ed. New York, US: Cambridge University Press.</p> <p>8. Ainsworth-Smith, I. 2007. Early pregnancy loss. Psychological challenges in obstetrics and gynecology: the clinical management, edited by J. Cockburn & M.E. Pawson. New York, US: Springer Science and Business Media.</p> <p>9. Kruse, B., Poppema, S., Creinin, M.D. & Paul, M. 2000. Management of side effects and complications in medical abortion. <i>American journal of obstetric and gynecology</i>, 183(2):S65-S75.</p>	<p>Not primary research study – editorials, discussions, newspapers, editors letters, conference meetings, etc.</p>

STUDIES EXCLUDED:	REASONS FOR EXCLUSION:
<p>10. Lyengar, K. & Lyengar, S.D. 2009. Emergency obstetric care and referral: experience of two midwife-led health centres in rural Rajasthan, India. <i>Reproductive health matters</i>, 17(33):9-20.</p> <p>11. Fleuren, M., van der Meulen, M. & Wijkel, D. 2000. Do patients matter? Contribution of patient and care provider characteristics to the adherence of general practitioners and midwives to the Dutch national guidelines on imminent miscarriage. <i>Quality health care</i>, 9(2):106-10.</p> <p>12. Dehlendorf, C., Diedrich, J., Drey, E., Postone, A. & Steinauer, J. 2010. Preferences for decision-making about contraception and general health care among reproductive age women at an abortion clinic. <i>Patient education & counseling</i>, 81(3):343-8.</p> <p>13. Harris, D.L. 2010. The experience of spontaneous pregnancy loss in infertile women who have conceived through assisted reproduction technology. <i>Human reproduction</i>, 25(3):714-720.</p> <p>14. Freda, M.C., Devine, K.S. & Semelsberger, C. 2003. The lived experience of miscarriage after infertility. <i>The American journal of maternal/child nursing</i>, 28(1):16-23.</p> <p>15. Coleman, R.L. 2006. Women's preferences for information and complication seriousness ratings related to elective medical procedures. <i>Journal of medical ethics</i>, 32:435-438.</p>	<p>Studies not specific to nursing care or abortion.</p>

STUDIES EXCLUDED:	REASONS FOR EXCLUSION:
<p>16. Cartwright, P. & Read, S. 2005. Working with practitioners to develop training in peri-natal loss and bereavement: evaluating three workshops. <i>Nurse education in practice</i>, 5(5):266-273.</p> <p>17. Nakano, Y., Oshima, M., Sugiura-Ogasawara, M., Aoki, K., Kitamura, T. & Furukawa, T.A. 2004. Psychosocial predictors of successful delivery after unexplained recurrent spontaneous abortions: a cohort study. <i>Acta Psychiatrica Scandinavica</i>, 109:440-446.</p> <p>18. Ganatra, B., Kalyanwala, S., Elul, B., Coyaji, K. & Tewari, S. 2010. Understanding women's experiences with medical abortion: in-depth interviews with women in two Indian clinics. <i>Global public health: an international journal for research, policy and practice</i>, 5(4):335-347.</p> <p>19. Fountain, T.M. 2007. The effects of beliefs and coping on emotional response to surgical abortion. Minneapolis: Walden University. (Dissertation – PhD).</p> <p>20. Billings, D.L., Crane, B.B., Benson, J., Solo, J. & Fetters, T. 2007. Scaling-up a public health innovation: a comparative study of post-abortion care in Bolivia and Mexico. <i>Social science & medicine</i>, 64(11):2210-2222.</p>	

STUDIES EXCLUDED:	REASONS FOR EXCLUSION:
<p>21. Upadhyay, UD., Cockrill, K. & Freedman, LR. 2010. Informing abortion counseling: an examination of evidence-based practices used in emotional care for other stigmatized and sensitive health issues. <i>Patient education & counseling</i>, 81(3):415-21.</p> <p>22. Trybulski, J.T. 2001. Women's long term responses to elective pregnancy termination: a phenomenological study. Chesnut Hill, Massachusetts: Boston College. (Dissertation – PhD).</p> <p>23. Boulind, M. & Edwards, D. 2010. The assessment and treatment of post-abortion syndrome: a systematic case study from southern Africa. <i>Journal of psychology in Africa</i>, 18(4):539-548.</p> <p>24. Conry, J. & Prinsloo, C. 2008. Mothers' access to supportive hospital services after the loss of a baby through stillbirth or neonatal death. <i>Health SA gesondheid</i>, 13(2):14-24.</p> <p>25. Hillowe-Donahue, C.A. 2006. Maternal bereavement following late stillbirth: an exploratory study of the influence of socio-demographic factors and health care practices on the grief patterns of women experiencing 3rd trimester pregnancy loss. New York: Stoney Brook University. (Dissertation – PhD.).</p>	
<p>26. Kjelsvik, M. & Gjengeda, E. 2011. First-time pregnant women's experience of the decision making process related to completing or terminating pregnancy – a phenomenological study. <i>Scandinavian journal of caring sciences</i>, 25(1):169–175.</p>	<p>Have not made the decision yet to have an abortion; focus different.</p>

APPENDIX C

CRITICAL APPRAISAL TOOLS

C – 1 CRITICAL APPRAISAL TOOL FOR REVIEWS (CASP, 2006D)

Critical Appraisal Skills Programme (CASP)

making sense of evidence

10 questions to help you make sense of reviews

How to use this appraisal tool

Three broad issues need to be considered when appraising the report of a systematic review:

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

The 10 questions on the following pages are designed to help you think about these issues systematically.

The first two questions are screening questions and can be answered quickly. If the answer to both is “yes”, it is worth proceeding with the remaining questions.

You are asked to record a “yes”, “no” or “can’t tell” to most of the questions. A number of italicised prompts are given after each question.

These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

The 10 questions are adapted from Oxman AD, Cook DJ, Guyatt GH, Users' guides to the medical literature. VI. How to use an overview. JAMA 1994; 272 (17): 1367-1371

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Screening Questions

1. Did the review 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 or exposure
- the outcomes considered

2. Did the review include the right type of study? Yes Can't tell No

Consider if the included studies:

- address the review's question
- have an appropriate study design

Is it worth continuing?

Detailed Questions

3. Did the reviewers try to identify all relevant studies? Yes Can't tell No

Consider:

- which bibliographic databases were used
- if there was follow-up from reference lists
- if there was personal contact with experts
- if the reviewers searched for unpublished studies
- if the reviewers searched for non-English-language studies

4. Did the reviewers assess the quality of the included studies? Yes Can't tell No

Consider:

- if a clear, pre-determined strategy was used to determine which studies were included. Look for:
 - a scoring system
 - more than one assessor

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.....

5. If the results of the studies have been combined, was it reasonable to do so?

Yes Can't tell No

Consider whether:

- the results of each study are clearly displayed*
- the results were similar from study to study (look for tests of heterogeneity)*
- the reasons for any variations in results are discussed*

.....

6. How are the results presented and what is the main result?

Consider:

- how the results are expressed (e.g. odds ratio, relative risk, etc.)*
- how large this size of result is and how meaningful it is*
- how you would sum up the bottom-line result of the review in one sentence*

.....

7. How precise are these results?

Consider:

- if a confidence interval were reported. Would your decision about whether or not to use this intervention be the same at the upper confidence limit as at the lower confidence limit?*
- if a p-value is reported where confidence intervals are unavailable*

.....

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.....
8. Can the results be applied to the local population?

Yes Can't tell No

Consider whether:

- the population sample covered by the review could be different from your population in ways that would produce different results*
- your local setting differs much from that of the review*
- you can provide the same intervention in your setting*

.....
9. Were all important outcomes considered?

Yes Can't tell No

Consider outcomes from the point of view of the:

- individual*
- policy makers and professionals*
- family/carers*
- wider community*

.....
10. Should policy or practice change as a result of the evidence contained in this review?

Yes Can't tell No

Consider:

- whether any benefit reported outweighs any harm and/or cost. If this information is not reported can it be filled in from elsewhere?*

CRITICAL APPRAISAL SKILLS PROGRAMME (CASP): Making Sense of Evidence

10 Questions to Help You Make Sense of Randomised Controlled Trials

How to Use This Appraisal Tool

- Three broad issues need to be considered when appraising the report of a randomised controlled trial:
 - Is the trial valid?
 - What are the results?
 - Will the results help locally?
- The 10 questions on the following pages are designed to help you think about these issues systematically.
- The first two questions are screening questions and can be answered quickly. If the answer to both is "yes", it is worth proceeding with the remaining questions.
- You are asked to record a "yes", "no" or "can't tell" to most of the questions.
- A number of hints are given after each question. These are designed to remind you why the question is important. There may not be time in the small groups to answer them all in detail!

A. Are the results of the study valid?

Screening Questions

1. Did the study ask a clearly-focused question?

Yes Can't Tell No

HINT: 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

HINT: 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

HINT: 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)

4. Were participants, staff and study personnel 'blind' to participants' study group?

Yes Can't Tell No

HINT: Consider:

- the fact that blinding is not always possible
- if every effort was made to achieve blinding
- if you think it matters in this study
- the fact that we are looking for 'observer bias'

5. Were all of the participants who entered the trial accounted for at its conclusion?

Yes Can't Tell No

HINT: Consider:

- if any intervention-group participants got a control-group option or vice versa
- if all participants were followed up in each study group (was there loss-to-follow-up?)
- if all the participants' outcomes were analysed by the groups to which they were originally allocated (intention-to-treat analysis)
- what additional information would you liked to have seen to make you feel better about this

6. Were the participants in all groups followed up and data collected in the same way?

Yes Can't Tell No

HINT: Consider:

- if, for example, they were reviewed at the same time intervals and if they received the same amount of attention from researchers and health workers. Any differences may introduce performance bias.

7. Did the study have enough participants to minimise the play of chance?

- Yes Can't Tell No

HINT: Consider:

if there is a power calculation. This will estimate how many participants are needed to be reasonably sure of finding something important (if it really exists and for a given level of uncertainty about the final result).

B. What are the results?

8. How are the results presented and what is the main result?

HINT: Consider:

- o if, for example, the results are presented as a proportion of people experiencing an outcome, such as risks, or as a measurement, such as mean or median differences, or as survival curves and hazards
- o how large this size of result is and how meaningful it is
- o how you would sum up the bottom-line result of the trial in one sentence

9. How precise are these results?

HINT: Consider:

- o if the result is precise enough to make a decision
- o if a confidence interval were reported. Would your decision about whether or not to use this intervention be the same at the upper confidence limit as at the lower confidence limit?
- o if a p-value is reported where confidence intervals are unavailable

10. Were all important outcomes considered so the results can be applied?

- Yes Can't Tell No

HINT: Consider whether:

- o the people included in the trial could be different from your population in ways that would produce different results
- o your local setting differs much from that of the trial
- o you can provide the same treatment in your setting
- o Consider outcomes from the point of view of the:
 - o individual
 - o policy maker and professionals
 - o family/carers – wider community
- o Consider whether:
 - o any benefit reported outweighs any harm and/or cost. If this information is not reported can it be filled in from elsewhere?
 - o policy or practice should change as a result of the evidence contained in this trial

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CRITICAL APPRAISAL SKILLS PROGRAMME (CASP): Making Sense of Evidence

12 Questions to Help You Make Sense of a Cohort Study

General Comments

- Three broad issues need to be considered when appraising a cohort study.
 - Are the results of the study valid?
 - What are the results?
 - Will the results help locally?
- The 12 questions on the following pages are designed to help you think about these issues systematically.
- The first two questions are screening questions and can be answered quickly. If the answer to those two is "yes", it is worth proceeding with the remaining questions.
- There is a fair degree of overlap between several of the questions.
- You are asked to record a "yes", "no" or "can't tell" to most of the questions.
- A number of hints are given after each question. These are designed to remind you why the question is important. There may not be time in the small groups to answer them all in detail!

A. Are the results of the study valid?

Screening Questions

1. Did the study address a clearly focused issue?

Yes Can't Tell No

HINT: A question can be focused in terms of:

- the population studied
- the risk factors studied
- the outcomes considered
- is it clear whether the study tried to detect a beneficial or harmful effect?

2. Did the authors use an appropriate method to answer their question?

Yes Can't Tell No

HINT: Consider

- Is a cohort study a good way of answering the question under the circumstances?
- Did it address the study question?

Is it worth continuing?

Detailed Questions

3. Was the cohort recruited in an acceptable way?

Yes Can't Tell No

HINT: We are looking for selection bias which might compromise the generalisability of the findings:

- Was the cohort representative of a defined population?
- Was there something special about the cohort?
- Was everybody included who should have been included?

4. Was the exposure accurately measured to minimize bias?

Yes Can't Tell No

HINT: We are looking for measurement or classification bias:

- Did they use subjective or objective measurements?
- Do the measures truly reflect what you want them to (have they been validated)?
- Were all the subjects classified into exposure groups using the same procedure?

5. Was the outcome accurately measured to minimize bias?

Yes Can't Tell No

HINT: We are looking for measurement or classification bias:

- Did they use subjective or objective measurements?
- Do the measures truly reflect what you want them to (have they been validated)?
- Has a reliable system been established for detecting all the cases (for measuring disease occurrence)?
- Were the measurement methods similar in the different groups?
- Were the subjects and/or the outcome assessor blinded to exposure (does this matter)?

6. A. Have the authors identified all important confounding factors?

Yes Can't Tell No

List the ones you think might be important, that the authors missed.

6. B. Have they taken account of the confounding factors in the design and/or analysis?

Yes Can't Tell No

HINT:

Look for restriction in design, and techniques eg modelling, stratified-, regression-, or sensitivity analysis to correct, control or adjust for confounding factors

C – 4 CRITICAL APPRAISAL TOOL FOR CASE CONTROL STUDIES (CASP, 2006B)

Critical Appraisal Skills Programme (CASP)

making sense of evidence

11 questions to help you make sense of a case control study

How to use this appraisal tool

Three broad issues need to be considered when appraising a case control study:

- **Are the results of the study valid?**
- **What are the results?**
- **Will the results help locally?**

The 11 questions on the following pages are designed to help you think about these issues systematically.

The first two questions are screening questions and can be answered quickly. If the answer to both is “yes”, it is worth proceeding with the remaining questions.

There is a fair degree of overlap between several of the questions.

You are asked to record a “yes”, “no” or “can’t tell” to most of the questions.

A number of italicised prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

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A/ Are the results of the study valid?

Screening Questions

1. Did the study address a clearly focused Issue? Yes Can't tell No

A question can be focused in terms of:

- the population studied
- the risk factors studied
- whether the study tried to detect a beneficial or harmful effect?

-
2. Did the authors use an appropriate Method to answer their question? Yes Can't tell No

Consider:

- is a case control study an appropriate way of answering the question under the circumstances? (is the outcome rare or harmful?)
- did it address the study question?

Is it worth continuing?

Detailed Questions

3. Were the cases recruited in an acceptable way? Yes Can't tell No

HINT: We are looking for selection bias which might compromise the validity of the findings:

- Are the cases defined precisely?
- Were the cases representative of a defined population (geographically and/or temporally)?
- Was there an established reliable system for selecting all the cases?
- Are they incident or prevalent?
- Is there something special about the cases?
- Is the time frame of the study relevant to the disease/exposure?
- Was there a sufficient number of cases selected?
- Was there a power calculation?

.....
4. Were the controls selected in an acceptable way?

Yes Can't tell No

HINT: We are looking for selection bias which might compromise the generalisability of the findings:

- Were the controls representative of a defined population (geographically and/or temporally)?
- Was there something special about the controls?
- Was the non-response high? Could non-respondents be different in any way?
- Are they matched, population based or randomly selected?
- Was there a sufficient number of controls selected?

.....
5. Was the exposure accurately measured to minimise bias?

Yes Can't tell No

HINT: We are looking for measurement, recall or classification bias:

- Was the exposure clearly defined and accurately measured?
- Did the authors use subjective or objective measurements?
- Do the measures truly reflect what they are supposed to measure? (have they been validated?)
- Were the measurement methods similar in cases and controls?
- Did the study incorporate blinding where feasible?
- Is the temporal relation correct? (does the exposure of interest precede the outcome?)

.....

6. A. What confounding factors have the authors accounted for?

List the other ones you think might be important, that the authors missed
(genetic, environmental and socio-economic)

B. Have the authors taken account of the potential confounding factors in the design and/or in their analysis?

Yes Can't tell No

HINT: Look for restriction in design, and techniques, e.g. modeling, stratified-, regression-, or sensitivity analysis to correct, control or adjust for confounding factors.

B/ What are the results?

.....

7. What are the results of this study?

Consider:

- What are the bottom line results?
- Is the analysis appropriate to the design?
- How strong is the association between exposure and outcome (look at the odds ratio)?
- Are the results adjusted for confounding and might confounding still explain the association?
- Has adjustment made a big difference to The OR ??

.....

8. How precise are the results?

How precise is the estimate of risk?

Consider:

- Size of the P-value
- Size of the confidence intervals
- Have the authors considered all the important variables?
- How was the effect of subjects refusing to participate evaluated?

.....
9. Do you believe the results? Yes No

Consider:

- *Big effect is hard to ignore!*
- *Can it be due to chance, bias or confounding?*
- *Are the design and methods of this study sufficiently flawed to make the results unreliable?*
- *Consider Bradford Hills criteria (e.g. time sequence, dose-response gradient, strength, biological plausibility)*

Is it worth continuing?

C/ Will the results help me locally?

.....
10. Can the results be applied to the local population? Yes Can't tell No

Consider whether:

- *The subjects covered in the study could be sufficiently different from your population to cause concern.*
- *Your local setting is likely to differ much from that of the study.*
- *Can you estimate the local benefits and harms?*

.....
11. Do the results of this study fit with other available evidence? Yes Can't tell No

HINT: Consider all the available evidence from RCTs, systematic reviews, cohort studies and case-control studies as well for consistency.

One observational study rarely provides sufficiently robust evidence to recommend changes to clinical practice or within health policy decision making. However, for certain questions observational studies provide the only evidence. Recommendations from observational studies are always stronger when supported by other evidence.

C – 5 THE CRITICAL APPRAISAL GUIDELINES FOR SINGLE CASE STUDY RESEARCH (ATKINS & SAMPSON, 2002:107)

The case study should be reported in a useful and accessible form to academics and practitioners which may require the generation of more than one type of paper depending on the intended audience.

6. CRITICAL APPRAISAL GUIDELINES

The guidelines described above were initially created to support the work described in Sampson and Atkins (2002). However, it was clear that an appraisal checklist could be extrapolated from them, as McKay and Marshall (2000) had done for action research. Consequently, an initial checklist was created and then refined following comparison with McKay and Marshall's (2000) work. A number of the criteria were, unsurprisingly, similar although there were certain aspects specific to the final presentation of the research that we had not explicitly addressed. The final checklist is illustrated at Table 3 and those criteria taken directly from Marshall and McKay are denoted by an asterisk.

Element	Evaluation criteria
Way of thinking	<ol style="list-style-type: none"> 1. Is a credible argument given for why a case study is appropriate? 2. Are the philosophical stance and perspective of the authors stated? 3. Is there evidence that any bias is taken into account when performing data analysis?
Way of controlling	<ol style="list-style-type: none"> 4. Have the criteria for analysis been confirmed by an independent researcher? 5. Have any opportunities for various forms of triangulation been exploited? 6. Is the research process auditable? 7. Has relevant literature been used to support the selection of an appropriate theoretical framework to guide the research? 8. Does the study use appropriate theory to support the findings. 9. Does the study describe how the conclusions were arrived at and how they are justified by the results? 10. Are assertions / conclusions made well grounded in the data?
Way of working	<ol style="list-style-type: none"> 11. Are the criteria used to select the appropriate case and participants clearly described? 12. Does the study provide a clearly formulated question describing an important IS issue? 13. Are the approaches and techniques for data collection and analysis described in detail? 14. Is the conceptual framework for the research explicitly described?
Way of supporting	<ol style="list-style-type: none"> 15. Does the study describe an orderly process for the collection of data? 16. Does the study describe and employ a systematic way to analyse the data? 17. Is the history and context of the research clearly described?
Way of communicating	<ol style="list-style-type: none"> 18. Are the aims and objectives of the study clearly stated? 19. Are limitations to the study acknowledged and described? 20. Does the study suggest if and how the findings might be transferable to other settings? 21. Is sufficient detail given to allow readers to evaluate the potential transferability of the research to other contexts? 22. Does the report identify questions or issues for future research? 23. Is the presentation of the research appropriate to the intended audience? 24. *Could this research potentially make a contribution to the work of IS practitioners? 25. *Does the research provide new insights into some aspect of IS work? 26. *Is the research presented in such a way that there is evidence of logical rigour throughout the study? 27. *Does the study place the findings in the context of IS practice? 28. *Does the study place the findings in the context of IS research? 29. *Is the research process open to scrutiny?

Table 3 Critical Appraisal Guidelines for Single Case Studies

This checklist was subsequently used to assist in establishing the credibility of over a hundred published single case studies in both academic and research journals as part of a pilot study to trial the use of a 'systematic review of evidence' methodology for Information Systems research (Wheeler 2000). The results of this trial will be the subject of a future paper.

C – 6 CRITICAL APPRAISAL TOOL FOR QUALITATIVE RESEARCH STUDIES (CASP, 2006E)

Critical Appraisal Skills Programme (CASP)

making sense of evidence

10 questions to help you make sense of qualitative research

This assessment tool has been developed for those unfamiliar with qualitative research and its theoretical perspectives. This tool presents a number of questions that deal very broadly with some of the principles or assumptions that characterise qualitative research. It is *not a definitive guide* and extensive further reading is recommended.

How to use this appraisal tool

Three broad issues need to be considered when appraising the report of qualitative research:

- **Rigour:** has a thorough and appropriate approach been applied to key research methods in the study?
- **Credibility:** are the findings well presented and meaningful?
- **Relevance:** how useful are the findings to you and your organisation?

The 10 questions on the following pages are designed to help you think about these issues systematically.

The first two questions are screening questions and can be answered quickly. If the answer to both is “yes”, it is worth proceeding with the remaining questions.

A number of italicised prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

The 10 questions have been developed by the national CASP collaboration for qualitative methodologies.

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Screening Questions

1. Was there a clear statement of the aims of the research?

Yes

No

Consider:

- what the goal of the research was
 - why it is important
 - its relevance
-

2. Is a qualitative methodology appropriate?

Yes

No

Consider:

- if the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants
-

Is it worth continuing?

Detailed questions

Appropriate research design

3. Was the research design appropriate to address the aims of the research?

Write comments here

Consider:

- if the researcher has justified the research design (e.g. have they discussed how they decided which methods to use?)
-

Sampling

4. Was the recruitment strategy appropriate to the aims of the research?

Write comments here

Consider:

- if the researcher has explained how the participants were selected
 - if they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study
 - if there are any discussions around recruitment (e.g. why some people chose not to take part)
-

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.....
Data collection

5. Were the data collected in a way that addressed the research issue?

Write comments here

Consider:

- if the setting for data collection was justified
- if it is clear how data were collected (e.g. focus group, semi-structured interview etc)
- if the researcher has justified the methods chosen
- if the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews were conducted, did they use a topic guide?)
- if methods were modified during the study. If so, has the researcher explained how and why?
- if the form of data is clear (e.g. tape recordings, video material, notes etc)
- if the researcher has discussed saturation of data

.....
Reflexivity (research partnership relations/recognition of researcher bias)

6. Has the relationship between researcher and participants been adequately considered?

Write comments here

Consider whether it is clear:

- if the researcher critically examined their own role, potential bias and influence during:
 - formulation of research questions
 - data collection, including sample recruitment and choice of location
- how the researcher responded to events during the study and whether they considered the implications of any changes in the research design

.....
Ethical Issues

7. Have ethical issues been taken into consideration?

Write comments here

Consider:

- if there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained
- if the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)
- if approval has been sought from the ethics committee

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.....
Data Analysis

8. Was the data analysis sufficiently rigorous?

Write comments here

Consider:

- if there is an in-depth description of the analysis process
- if thematic analysis is used. If so, is it clear how the categories/themes were derived from the data?
- whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process
- if sufficient data are presented to support the findings
- to what extent contradictory data are taken into account
- whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation

.....
Findings

9. Is there a clear statement of findings?

Write comments here

Consider:

- if the findings are explicit
- if there is adequate discussion of the evidence both for and against the researcher's arguments
- if the researcher has discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst.)
- if the findings are discussed in relation to the original research questions

.....
Value of the research

10. How valuable is the research?

Write comments here

Consider:

- if the researcher discusses the contribution the study makes to existing knowledge or understanding (e.g. do they consider the findings in relation to current practice or policy, or relevant research-based literature?)
- if they identify new areas where research is necessary
- if the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used

.....
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**C – 7 EVALUATION TOOL FOR MIXED METHOD STUDIES
(LONG ET AL., 2002)**

Evaluative Tool for Mixed Method Studies

Evaluation Tool for 'Mixed Methods' Study Designs

The 'mixed method' evaluation tool was developed from the evaluation tools for 'quantitative' and 'qualitative' studies,ⁱ themselves created within the context of a project exploring the feasibility of undertaking systematic reviews of research literature on effectiveness and outcomes in social care. The 'mixed method' tool draws on appropriate questions from the quantitative and qualitative evaluation tools. It provides a template of key questions to assist in the critical appraisal of studies using more than one method.ⁱⁱ

Review Area	Key Questions
(1) STUDY EVALUATIVE OVERVIEW	
Bibliographic Details	<ul style="list-style-type: none"> • Author, title, source (publisher and place of publication), year
Purpose	<ul style="list-style-type: none"> • What are the aims of this paper? • If the paper is part of a wider study, what are its aims?
Key Findings	<ul style="list-style-type: none"> • What are the key findings?
Evaluative Summary	<ul style="list-style-type: none"> • What are the strengths and weaknesses of the study and theory, policy and practice implications?
(2) STUDY AND CONTEXT (SETTING, SAMPLE AND OUTCOME MEASUREMENT)	
The Study	<ul style="list-style-type: none"> • What type of study is this? • What was the intervention? • What was the comparison intervention? • Is there sufficient detail given of the nature of the intervention and the comparison intervention? • What is the relationship of the study to the area of the topic review?
Context: (1) Setting	<ul style="list-style-type: none"> • Within what geographical and care setting is the study carried out? • What is the rationale for choosing this setting? • Is the setting appropriate and/or sufficiently specific for examination of the research question? • Is sufficient detail given about the setting? • Over what time period is the study conducted?
Context II: Sample	<ul style="list-style-type: none"> • What was the source population? • What were the inclusion criteria? • What were the exclusion criteria? • How was the sample (events, persons, times and settings) selected? (For example, theoretically informed, purposive, convenience, chosen to explore contrasts) • Is the sample (informants, settings and events) appropriate to the aims of the study? • If there was more than one group of subjects, how many groups were there, and how many people were in each group? • Is the achieved sample size sufficient for the study aims and to warrant the conclusions drawn? • What are the key characteristics of the sample (events, persons, times and settings)?
Context III: Outcome Measurement	<ul style="list-style-type: none"> • What outcome criteria were used in the study? • Whose perspectives are addressed (professional, service, user, carer)? • Is there sufficient breadth (e.g. contrast of two or more perspective) and depth (e.g. insight into a single perspective)?

Evaluative Tool for Mixed Method Studies
Prof Andrew Long (2005), School of Healthcare, University of Leeds

1

Review Area	Key Questions
(3) ETHICS	
Ethics	<ul style="list-style-type: none"> • Was Ethical Committee approval obtained? • Was informed consent obtained from participants of the study? • How have ethical issues been adequately addressed?
(4) GROUP COMPARABILITY	
Comparable Groups	<ul style="list-style-type: none"> • If there was more than one group was analysed, were the groups comparable before the intervention? In what respects were they comparable and in what were they not? • How were important confounding variables controlled (e.g. matching, randomisation, or in the analysis stage)? • Was this control adequate to justify the author's conclusions? • Were there other important confounding variables controlled for in the study design or analyses and what were they? • Did the authors take these into account in their interpretation of the findings?
(5) QUALITATIVE DATA COLLECTION AND ANALYSIS	
Data Collection Methods	<ul style="list-style-type: none"> • What data collection methods were used in the study? (Provide insight into: data collected, appropriateness and availability for independent analysis) • Is the process of fieldwork adequately described? (For example, account of how the data were elicited; type and range of questions; interview guide; length and timing of observation work; note taking)
Data Analysis	<ul style="list-style-type: none"> • How were the data analysed? • How adequate is the description of the data analysis? (For example, to allow reproduction; steps taken to guard against selectivity) • Is adequate evidence provided to support the analysis? (For example, includes original / raw data extracts; evidence of iterative analysis; representative evidence presented; efforts to establish validity - searching for negative evidence, use of multiple sources, data triangulation); reliability / consistency (over researchers, time and settings; checking back with informants over interpretation) • Are the findings interpreted within the context of other studies and theory?
Researcher's Potential Bias	<ul style="list-style-type: none"> • What was the researcher's role? (For example, interviewer, participant observer) • Are the researcher's own position, assumptions and possible biases outlined? (Indicate how these could affect the study, in particular, the analysis and interpretation of the data)

Review Area	Key Questions
(6) POLICY AND PRACTICE IMPLICATIONS	
Implications	<ul style="list-style-type: none"> To what setting are the study findings generalisable? (For example, is the setting typical or representative of care settings and in what respects? If the setting is atypical, will this present a stronger or weaker test of the hypothesis?) To what population are the study's findings generalisable? Is the conclusion justified given the conduct of the study (For example, sampling procedure; measures of outcome used and results achieved?) What are the implications for policy? What are the implications for service practice?
(7) OTHER COMMENTS	
Other comments	<ul style="list-style-type: none"> What was the total number of references used in the study? Are there any other noteworthy features of the study? List other study references
Reviewer	<ul style="list-style-type: none"> Name of reviewer Review date

ⁱ Long AF, Godfrey M, Randall T, Brettle AJ and Grant MJ (2002) *Developing Evidence Based Social Care Policy and Practice. Part 3: Feasibility of Undertaking Systematic Reviews in Social Care*. Leeds: Nuffield Institute for Health.

ⁱⁱ This tool was developed while the lead author was at the Health Care Practice R&D Unit (HCPDRU) at the University of Salford. It has since been slightly modified.

C – 8 THE JOHN HOPKINS NURSING EVIDENCE-BASED PRACTICE (JHNEBP) RESEARCH EVIDENCE APPRAISAL TOOL (NEWHOUSE ET AL., 2007: 206)

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

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)	

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

APPENDIX D

CRITICAL APPRAISAL TABLE – QUALITY CONTROL

n:17

The critical appraisal (CA) cut off mark was 8 out of 10 to ensure only rigorous studies were included. A comparable score was allocated by the co-reviewer. Of the two scores allocated, a discrepancy greater than two (20%) necessitated a re-evaluation and discussion until consensus was reached, which determined inclusion or exclusion for data extraction purposes. Adaption of scores to a mark out of ten was done for the CA results which did not have a score out of 10 (except for the John Hopkins nursing evidence-based practice (JHNEBP) tool) and was done as follows:

Scores were converted to percentages and divided by ten:

Example: $8/25 \times 10/1 = 3,2$ which gives a final score of 3,2 out of 10.

The JHNEBP tool used a specific scoring system, which was shortly discussed in chapter 2 (see Appendix E for the full JHNEBP tool and scoring system). A study with a high (A) quality of evidence and a good (B) quality of evidence was included and a low (C) quality of evidence was excluded.

CRITICAL APPRAISAL MARK ALLOCATION

SYSTEMATIC REVIEWS – N:2

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
<p>Murphy, F.A., Lipp, A. & Powles, D.L. 2012. Follow-up for improving psychological well-being for women after miscarriage (review). <i>The Cochrane library</i>, 3:1-30.</p>	<p>Systematic review: Cochrane Database of Systematic Reviews.</p> <p>Setting: Not applicable.</p>	<p>Sample: Randomised Control Trail (RCT) studies on follow-up interventions on the psychological well-being of women after a miscarriage.</p> <p>Data collection: Cochrane Pregnancy and Childbirth Group's Trials Register, other reference lists of retrieved studies, contacted professional and lay organisations, no language restrictions were applied to the search.</p>	<p>Instrument used: Critical Appraisal Skills Programme (CASP) systematic review tool.</p> <p>Asked a clearly-focused question, study tried to include all relevant RCT's. Quality of all included studies was assessed. Study results combined and clearly represented and can be applied to the local population. All important outcomes were considered.</p> <p>CA = 9/10</p>

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
		Data analysis: Titles and abstracts screened and retrieved relevant trials according to specified criteria. Data extracted via review authors and accuracy checked. Checked for duplicates, contacted authors if data were missing or if only the abstract could be obtained. Disagreements were resolved by discussions.	Included
Therault, L.A. 2005. Toward cultural competence when caring for Muslim women and their families: application to pregnancy loss. Manitoba: University of Manitoba. (Thesis – Masters Degree in Nursing).	Systematic review. Setting: Not applicable.	Sample: Literature on Muslim customs	Instrument used: CASP systematic review tool.

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
	Setting: Not applicable.	<p>Data collection: Medline, CINAHL, Bison catalogue, World Wide Web and ISSA.</p> <p>Data analysis: Not clear.</p>	<p>Asked a clearly-focused question. It was not clear if the study tried to include all relevant studies, not clear if quality of all included studies were assessed. Study results combined and clearly represented and can be applied to the local population. All important outcomes considered.</p> <p>CA = 7/10</p> <p>Excluded</p>

RANDOMISED CLINICAL CONTROL TRIALS (RCT) – N:4

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
<p>Adolfsson, A., Berterö, C. & Larsson, P.G. 2006. Effect of a structured follow-up visit to a midwife on women with early miscarriage: a randomized study. <i>Acta Obstetrica et Gynecologica</i>, 85(3):330-335.</p>	<p>Randomised Clinical Control Trial (RCT) – Comparing two different follow-up visits to a midwife.</p> <p>Setting: Gynaecologic clinic in Sweden</p>	<p>Sample: 88 Women who experienced an early miscarriage. 43 Were in the intervention group , 45 were in the control group.</p> <p>Data collection: Structured conversation with structured questionnaires, Peri-natal grief scale (PGS) Swedish short version and the Likert scale.</p>	<p>Instrument used: CASP RCT study tool.</p> <p>Clear focused research question, appropriate design used and an intervention and control group used. Appropriate allocation done into intervention and control groups, participants were randomised into blocks of 10, using sealed envelopes, the groups were balanced and there was statistically no difference between the groups. There was no blinding to the researcher or the staff.</p>

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
		<p>Data analysis: SPSS program 11.1 version, p values of < 0,05, student's <i>t</i>-test and Mann-Whitney <i>U</i>-test.</p>	<p>Not all of the participants completed the second questionnaire and the reasons thereof were not given. Data collection well described, the Perinatal grief scale (PGS) Swedish short version were used at the follow-up visit to the midwife and at the postal follow-up at 3 months later (4 months after the miscarriage). Power analysis was done, according to statistics before recruitment. No statistical difference, the sample size was too small for statistical calculation.</p> <p>CA = 8/10</p> <p>Included</p>

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
<p>Bender, S.S. & Geirsson, R.Y. 2004. Effectiveness of pre-abortion counselling on post abortion contraceptive use. <i>Contraception</i>, 69(6):481-487.</p>	<p>RCT - Pre-abortion counselling and contraceptive use post-abortion.</p> <p>Setting: Abortion clinic at Landspítali University Hospital in Reykjavik.</p>	<p>Sample: Women seeking a termination of their first trimester pregnancy. 148 Women in intervention group and 128 women in control group.</p> <p>Data collection: Structured questions and open-ended questions.</p>	<p>Instrument used: CASP RCT study tool.</p> <p>Study had a clear focused research question. An appropriate design was applied and an appropriate allocation of participants into the intervention and control groups was done. Participants were randomly allocated by random number tables. Blinding was not sufficient, as the study personnel were not blinded to the participants' group, but the participants were blinded.</p>

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
		Data analysis: SPSS version 11.	<p>All participants who entered the trial were accounted for at its conclusion. All groups received the same interview questions, interview guide and follow-up interview. No power calculation was done. There was no difference in the results between the groups, which were presented in tables and paragraphs. Results were precise and all outcomes considered for results to be applied.</p> <p>CA = 8/10</p> <p>Included</p>

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
<p>Johnson, O.P. 2009. The impact of bereavement intervention on levels of grief in pregnant women who experience pre-twenty week loss. : Denton: Langford, Rae School: Texas Woman's University School. (Dissertation - Ph.D.).</p>	<p>RCT – A secondary peri-natal bereavement intervention</p> <p>Setting: Obstetrical emergency centre and OB-Gyn clinic (Obstetrical – Gynaecological clinic) in a large metropolis in the South-western United States.</p>	<p>Sample: 40 Low income women who had experienced complete abortions at 12-19 weeks and 6 days (less than 55gms) gestation, who received care in a country hospital obstetrical emergency room. The women were divided evenly into the intervention and control group (20 in the intervention group and 20 in the control group).</p> <p>Data collection: Demographic data forms and Peri-natal Grief Scale.</p>	<p>Instrument used: CASP RCT study tool.</p> <p>Clear statement of aims, the impact of secondary bereavement intervention on levels of grief in women. Appropriate RCT, but cannot tell if participants were appropriately allocated to intervention and control groups. Reported that it was randomised, but did not explain the method. Blinding not described sufficiently, researchers not blinded to</p>

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
			<p>groups. Reasons given why participants were not participating. All groups followed up and data collected in same way, each participant received the same package of questionnaires. Enough participants to minimise play of chance, power calculations done. Results presented in tables and descriptions given, overall grief shows no differences between groups. Lower scores of despair in experimental group. Results precise, different calculations done and all-important outcomes considered so that results can be applied.</p>

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
		Data analysis: Factor analysis, SPSS 15.0, descriptive statistics, two-tailed <i>t</i> -test for independent groups with an alpha of 0.05.	CA = 8/10 Included
Swanson, K.M., Chen, Hsien-Tzu Graham, J. Christopher Wojnar, Danuta M. Petras, Anthippy. 2009. Resolution of depression and grief during the first year after miscarriage: a randomized controlled clinical trial of couples-focused interventions. <i>Journal of women's health</i> , 18(8):1245-1257.	RCT - Three couples-focused interventions, nurse caring (NC), self-caring (SC) and combined caring (CC).	Sample: 341 Parents who had experienced a miscarriage, who were divided into different groups, a nurse caring (NC) (three counselling sessions) group, a self-caring (SC) (three video and workbook modules) group, a combined caring (CC) (one counselling session plus three SC modules) group, or a control (no treatment) group.	Instrument used: CASP RCT study tool.

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
	Setting: Washington.	<p>Data collection: Interventions, based on Swanson's Caring Theory and Meaning of Miscarriage Model.</p> <p>Data analysis: Differences in rates of recovery were estimated via multilevel modelling conducted in a Bayesian framework.</p>	<p>Clear focused question, RCT appropriate study design, appropriate allocation into intervention and control groups via block randomisation, two members used. Blinding not discussed, dropouts accounted for, no reason given. All groups followed up and data collected in the same way. Power calculation done, results statistically discussed, represented in tables, compared. No significant difference. Results precise and all important outcomes considered for results to be applied.</p> <p>CA = 9/10</p> <p>Included</p>

QUASI-EXPERIMENTAL STUDIES – N:1

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
<p>Weiselberg, C.A. 2010. Use of nurse practitioner counselling on postoperative appointment compliance. New Jersey: Fairleigh Dickinson University. (Dissertation – PhD.).</p>	<p>Quasi-experimental - intervention study. Pre- and post operative care, e.g. counselling.</p> <p>Setting: New York</p>	<p>Sample: Women between the ages of 16-25, who have a low income and who had an elective abortion.</p> <p>Data collection: Not clear. Patient forms and instruments used to implement interventions.</p>	<p>Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) tool.</p> <p>Study applies to population targeted by practice question, appropriate sample, specific clinic, no control group, adequate description of data collection. Results clearly presented, interpretation/analysis identified and discussed. Correlation could not be shown clearly as other factors were not considered. Conclusions based on clearly presented results, study limitations not identified and discussed.</p>

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
		Data analysis: Pearson's Chi Square X2, Simple Interactive Statistical Analysis Program.	CA = Low Level III (C) Excluded

NON-EXPERIMENTAL STUDIES – N:2

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
David, P. H., Reichenbach, L., Savelieva, I., Vartapetova, N. & Potemkina, R. 2007. Women's reproductive health needs in Russia: what can we learn from an intervention to improve post-abortion care. <i>Health policy and planning</i> , 22:83–94.	Non-experimental - Focus only on the family planning interventions in this specific study.	Sample: 489 Abortion clients in 2000, 559 in 2002 and 527 in 2003.	Instrument used: JHNEBP tool.

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
	<p>Setting: Perm and Berezniki and Veliky Novgorod.</p> <p>Project worked in 20 health care sites.</p>	<p>Data collection: Pre- and post-intervention surveys, questionnaires, interviews and fieldwork.</p> <p>Data analysis: Computer data files, the All-Russian Centre for Public Opinion and Market Research (VCIOM) and SPSS statistical analysis package.</p>	<p>Study apply to population targeted by practice question, sample size adequate, intervention mentioned, only one group, pre- and post-test only. Not an adequate description of data collection methods. Results were clearly presented and interpretation /analysis clearly provided. Conclusions based on clearly presented results and study limitations identified and discussed.</p> <p>CA = Good Level III (B)</p> <p>Included</p>

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
<p>Rowell, E., Jongman, G., Kilby, M., Kirch-meier, R. & Orford, J. 2001. The psychological impact of recurrent miscarriage, and the role of counselling at a pre-pregnancy counselling clinic. <i>Journal of Reproductive and Infant Psychology</i>, 19(1):33-45.</p>	<p>Non-experimental - cross-sectional - Pre-pregnancy counselling clinic (PPCC).</p> <p>Setting: Pre-counselling clinic at Birmingham Women's Hospital.</p>	<p>Sample: 37 Women referred to the PPCC who had two or more miscarriages.</p> <p>Data collection: Questionnaires at three time points. Hospital Anxiety and Depression Scale (HADS) and the Impact of Event Scale used (IES).</p>	<p>Instrument used: JHNEBP tool.</p> <p>Study applies to population targeted by practice question, appropriate sample, intervention pre-pregnancy counselling clinic, one pre- and post-test only, no control group, explained why no control group and adequate description of data collection. Results clearly presented, interpretation/analysis identified and discussed. Conclusions based on clearly presented results, study limitations clearly identified and discussed.</p>

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
		<p>Data analysis: Cronbach's alpha, factor analysis, test-retest reliability, correlations indicated, hypothesis 1 tested by using the participants' HADS and IES scores and compare it with the norms of those measures, hypotheses 2 and 3 tested by using repeated measures analyses of variance, <i>t</i>-tests used, Bonferroni correction used, <i>t</i> must be at least 2.5 to be significant, hypothesis 4 tested via two-factor mixed analyses of variance.</p>	<p>CA = Good Level II (B) Included</p>

QUALITATIVE STUDIES – N:5

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
<p>Dickson-Tetteh, K. & Billings, D.L. 2002. Abortion care services provided by registered midwives in South Africa. <i>International family planning perspectives</i>, 28(3)144-150.</p>	<p>Qualitative – Regarding abortion care and contraceptive counselling.</p> <p>Setting: 27 Public health care facilities in South Africa's nine provinces.</p>	<p>Sample: 8 Public primary health care facilities, 13 secondary care health facilities and 6 tertiary care health facilities. 42 Midwives providing abortion care.</p> <p>Data collection: Observations, counselling sessions, facility records, patients' charts and interviews.</p>	<p>Instrument used: CASP qualitative study tool.</p> <p>Clear statement of aims of research, methodology appropriate and research design appropriate to address aims. Purposive recruitment, used many different facilities and random patient charts, but how it was chosen was not discussed. Data collection could have been better described, observation, reviewing and interviews. Reflexivity not discussed, ethical issues considered and data analysis not sufficiently discussed. Clear statement of findings.</p>

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
		Data analysis: Not clear. Not sufficiently described.	CA = 7/10 Excluded
Jacobs, J. & Harvey, J. 2000. Evaluation of an Australian miscarriage support programme. <i>British journal of nursing</i> , 9(1):22-6	Qualitative – Regarding Miscarriage Support Programme of Care (MSPC). Setting: Gynaecology inpatient services in an Australian public hospital.	Sample: Women who requested follow-up contact after abortion. 85 Women received Miscarriage Support Programme of Care (MSPC) package, 49 women requested a follow-up telephone call and 24 were successfully contacted again. Data-collection: Structured set of questions asked with telephone interview. Open-ended questions used.	Instrument used: CASP qualitative study tool. Clear statement of aims and appropriate methodology. Research design appropriate to address aims, via qualitative method, telephone survey. Recruitment, convenient, per telephone, all who requested follow-up. Data collection addressed research aims, reflexivity not discussed, not clear if ethical issues were taken into consideration and analysis not sufficiently described. Clear statement of findings.

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
		Data analysis: EXCEL database, simple thematic analysis, coding and latent content analysis used.	CA = 7/10 Excluded
Mariutti, M.G., de Almeida, A.M. & Panobianco, M.S. 2007. Nursing care according to women in abortion situations. <i>Revista Latino-Americana de Enfermagem</i> , 15(1):20-26.	Qualitative – Regarding technical care, procedures and support. Setting: Public hospital in São Paulo State.	Sample: 13 Women in abortion situations who were hospitalised for at least 20 hours. Data collection: Interviews.	Instrument used: CASP qualitative study tool. Clear statement of aim, study aimed to understand how women experience the nursing care they receive. Methodology appropriate, describing experiences. Appropriate research design and sampling not well described. Data collection, initial research questions the same, setting not described, recording not described. Reflexivity not described, ethical approval sought, consent asked from participants.

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
		Data analysis: Qualitative content and thematic analysis.	Data analysis not well described, findings stated in themes, described using narratives, with literature control. CA = 7/10 Excluded
Modiba, L. 2008. A support programme for mothers with peri-natal loss in South Africa. <i>British Journal of Midwifery</i> , 16(4):246-251.	Qualitative - exploratory, descriptive and contextual in nature – regarding a support group and an in-patient support system. Setting: A hospital in Gauteng province, South Africa.	Sample: Mothers with peri-natal loss and health care workers in a maternity section. Data collection: Not clear.	Instrument used: CASP qualitative study tool. Aims clearly stated and the purpose of the study was to develop and describe a support programme. Uncertain if methodology and research design was appropriate, not clearly described. Sampling not discussed and data collection not discussed, think semi-structured interviews were used, but no clear description given. Reflexivity not properly discussed, but did say who the researcher was and her role.

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
		Data analysis: Not clear and no good description given. Phase III used concept analysis.	Ethical issues and data analysis not discussed. Clear statement of findings and research. Study could have been of great value if the research process was more clearly described and if it was known if the research was ethical. CA = 5/10 Excluded
Nguyễn, H.K.H., Martin, P., Chinh, N.Q. & Cong, D.D. 2010. Guiding change: provider voices in youth pre-abortion counselling in urban Vietnam. <i>Culture, health & sexuality</i> , 12(1):55-71.	Qualitative – Regarding pre-abortion counselling.	Sample: 13 Health care providers who work in counselling, management and programme-planning.	Instrument used: CASP qualitative study tool.

AUTHORS/ TITLE/ BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
	Setting: Ho Chi Minh City, Vietnam, Ho Chi Minh City Maternal Child Health/Family Planning Centre.	<p>Data collection: Semi-structured interviews.</p> <p>Data analysis: Inductive thematic analysis, coding</p>	<p>Clear statement of aims, qualitative methodology appropriate, research design appropriate to address the aims of the research, interviews. Recruitment strategy appropriate to the aims of the research, using maximum variation sampling. Data collected in a way that addressed the research issue, interviews semi-structured, obtaining rich data. Reflexivity not discussed, ethical issues not discussed, data analysis not sufficiently described, thematic analysis. Clear statement of findings, research on a neglected topic with new insights, but ethical considerations not clear.</p> <p>CA = 7/10</p> <p>Excluded</p>

MIXED DESIGN – N:3

AUTHORS/ TITLE/BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
<p>Curley, M. 2011. Psychological distress after abortion among university students: developing an intervention. Montreal: McGill University. (Thesis – PhD.).</p>	<p>Systematic review/ Cross-sectional, ex-post facto cross sectional design, to compare psychological outcome among three groups - Preferred psychological intervention after abortion. The Post Abortion Treatment and Healing intervention used. Seven sections used in intervention.</p>	<p>First section: Sample: Studies worldwide from 1955 to present which recognise psychological stress reactions to legally induced voluntary abortion. MEDLINE, PUBMED, PSYCHINFO, PILOTS, CINAHL, BIOSIS, the Cochrane Collaboration, Web of Science, reference lists, bibliographies, United Nations data and professional practice guidelines were the databases sought.</p>	<p>First section: Systematic review – Instrument used: CASP systematic review tool. Clear focused review question, review included the correct type of studies via inclusion criteria. All relevant studies were identified via different key words, mesh terms, manual searches, different data bases, reference lists and unpublished studies. Quality of studies included, assessed and results combined reasonably. Results presented according to level of evidence, ratios, odds and tables. The results were not very precise and United States statistics were used, but international studies were included, which may be applicable to South Africa. All the important outcomes were considered. Last point on critical appraisal tool not applicable.</p>

AUTHORS/ TITLE/BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
	<p>Setting: Two university student health services within Canada and the United States.</p>	<p>Data collection: From 2009 to July 2010. The Guidelines for Meta-Analyses and Systematic Review of Observational Studies in Epidemiology, MOOSE.</p> <p>Data analysis: Rates of suicide, death, depression and anxiety disorders after abortion. Objective measures, such as maternal mortality rates, psychiatric hospitalisation rates and the diagnostic criteria from the Diagnostic and Statistical Manual of Mental Disorders-IV Text Revision and the International Classification of Mental and Behavioural Disorders,</p>	<p>Second section: Non-experimental – Instrument used: Johns Hopkins Nursing Evidence-Based Practice Research Evidence Appraisal (JHNEBP) tool. Study applies to population targeted by practice question, sample size adequate and appropriate, but could have been randomised, does not make it clear why the data could not be randomised. Data collection methods clearly described, results clearly presented and interpretations/analysis clearly provided. Conclusions based on clearly presented results and study limitations identified and discussed.</p> <p>Third section: Non-experimental – Instrument used: JHNEBP tool. Study applies to population targeted by practice question, sample size adequate and appropriate, data collection methods clearly described, results clearly presented and interpretations/analysis clearly provided.</p>

AUTHORS/ TITLE/BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
		<p>Tenth Edition were used. If data were not described as odds ratios, the Peto Odds Ratio Calculation for unmatched cases and controls were used as odds ratios analysis.</p> <p>Second section: Sample: 151 Students divided within three groups. Group one 48 students, group two 41 students and group three 62 control students.</p> <p>Data collection: Questionnaires, interviews, standard psychological instruments, The Beck Depression Inventory instrument, The State-Trait Anxiety Inventory instrument, The Impact of Event Scale, the Peri-natal Grief Scale, the Brief Symptom Inventory scale and The Reproductive History Questionnaire.</p>	<p>Conclusions based on clearly presented results and study limitations identified and discussed.</p> <p>CA = First section 8/9, second section = High Level III (A), third section = High Level III (A).</p>

AUTHORS/ TITLE/BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
		<p>Data analysis: Descriptive statistics, MANCOVA, multivariate normality and homogeneity of variance according to the recommendations of Tabachnick and Fidell (1996) used. Test for outliers conducted, Statistical Package for the Sciences Version 17.0 used, Chi-Square Test for nominal data and a Kruskal-Wallis rank test for ordinal data. ANOVA and T-tests.</p> <p>Third section: Sample: 45 Participants from group one. The rest of sample already described in part two of the study.</p> <p>Data collection: Post Abortion Intervention Questionnaire.</p>	<p>CA adaption score first section: 8,8/10</p> <p>Included</p>

AUTHORS/ TITLE/BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
<p>Nguyễn, M.H., Gammeltoft, T. & Rasch, V. 2007. Situation analysis of quality of abortion care in the main maternity hospital in Hải Phòng, Viet Nam. <i>Reproductive Health Matters</i>, 15(29):172-182.</p>	<p>Mixed design - Comprehensive Abortion Project.</p>	<p>Data analysis: Exploratory Factor Analysis (EFA), factors rank ordered, descriptive statistics and frequency distributions. PAWS SPSS version 17.0 Principal Components Program.</p> <p>Sample: 748 Women pre- and post-abortion, 20 women immediately post-abortion, 7 health care staff and 100 participant observations.</p>	<p>Instrument used: Mixed design tool.</p>

AUTHORS/ TITLE/BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
	<p>Setting: Phu-Sa_n Hospital.</p>	<p>Data collection: Three-part structured survey, in-depth interviews, informal interviews, observations.</p> <p>Data analysis: Qualitative, quantitative situation analysis used. Epi Data 3.0 from Danish Society of Public Health, Denmark. Statistical Package for the Social Sciences (SPSS 13.0) used for statistical analysis.</p>	<p>Study aim clear and focussed, study explored interaction between providers and women seeking abortion and how cultural values influenced the quality of care. Qualitative and quantitative situation analysis used. Women seeking abortion services sought, no comparison used. Purpose of improvement of counselling post-abortion. Purposive sampling, all women seeking services. Ethics not well discussed. Surveys, structured questionnaires and interviews used in data collection. Process of fieldwork not well discussed. Data analysis not well discussed. Researcher's potential bias not discussed. Implications cannot be generalized to other hospitals than the one specific hospital.</p> <p>CA = 7/12</p>

AUTHORS/ TITLE/BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
			CA adaption score: 5,8/10 Excluded
Schwandt, H.M. 2009. Abortion, unmet need, and family planning service provision among gynecology patients in Ghana. Baltimore, Maryland: The Johns Hopkins University. (Dissertation – PhD.).	Mixed design – a qualitative study, a randomised control trial and a randomised noninferiority study.	Sample: Post abortion patients, male partners, family planning nurses, obstetricians /gynaecologists and baseline data collected on women with pregnancy- related complications.	Instrument used: Mixed method tool.

AUTHORS/ TITLE/BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
	<p>For the purpose of this study, focus was on the randomised noninferiority study (see Appendix E).</p>	<p>Data collection: In-depth interviews, face-to-face interviews, close ended questions in a questionnaire and focus groups discussions.</p>	<p>Purpose explained, to explore pathways to unsafe abortion, identify correlations with women with induced abortion and evaluate effectiveness of family planning counselling. Key findings described and evaluative summary given of implications, weaknesses and strengths. Appropriate study design used, mixed method. Intervention described, group or individual counselling at one stage, none at other stages, setting academic hospitals in Ghana. Sample criteria given, sampling well described and purposive sampling used. Sample size sufficient, qualitative, size does not need to be big and sample characteristics well described. Outcome measurement was qualitatively done, addressed patients and partners. Ethical considerations were met by the institutional review board, but were not clearly and sufficiently described and discussed in the dissertation, Group comparability appropriately done. Data collection in-depth and focus groups interviews, data analysis not well discussed, researcher's potential bias discussed, implications discussed, not to be generalised.</p>

AUTHORS/ TITLE/BIBLIOGRAPHIC INFORMATION	TYPE OF STUDY DESIGN AND SETTING	RESEARCH METHODS	RIGOUR AND CRITICAL APPRAISAL RESULT
	Setting: Academic hospitals in Ghana.	Data analysis: Thematic content analysis, themes, coding, categories, Microsoft Excel version 3.0, STATA version 9.0 for analysis, Chi-square and Fisher's Exact tests used, Student's <i>t</i> -tests used, multinomial logistic regression and multiple variable logistic regression used.	CA = 10/12 CA adaption score: 8,3/10 Included

APPENDIX E

DATA EXTRACTION TABLE

n:9

STUDIES ON INDUCED ABORTIONS – N:4

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
1. Bender, S.S. & Geirsson, R.Y. 2004. Effectiveness of pre-abortion counselling on post abortion contraceptive use. <i>Contraception</i> , 69(6):481-487.	The effect of pre-abortion counselling was evaluated and the use of contraceptive post-abortion described.	The following outcomes were measured in the control and intervention group:	There was no noteworthy difference in the use of contraceptives post induced abortion between the intervention groups who received detailed counselling in comparison to the control group who received routine information. Therefore detailed pre-abortion counselling was ineffective in increasing contraceptive use post-abortion and reducing repeated abortion rates

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
	<p>Specific interventions:</p> <p><u>Intervention group:</u> Women received standard contraceptive information and leaflets from a social worker and a physician with supplementary information from a nurse who is specifically qualified in family-planning.</p> <p><u>Control group:</u> Women received standard contraceptive information and leaflets from a social worker and a physician. They received routine care from a nurse or midwife who had no particular training in family planning or contraceptive counselling.</p> <p>Routine care included consultation regarding contraceptive methods and basic information in conjunction with leaflets and the prescription.</p>	<ol style="list-style-type: none"> 1. If contraceptive was used after an abortion and the types of contraceptive methods used. 2. The reason for choosing a certain method and for how long they were planning to use the method. 3. Knowledge regarding the use of emergency contraception and when their fertility will return after an abortion. <p>The control group and intervention group's results were compared for differences with the use of χ^2 tests. There was no noteworthy difference (86%, 85%), in contraceptive use after abortion. between the two groups</p> <p>Causes of concern, which could have had an effect on the results, were the background differences between the two groups.</p>	<p>(Bender & Geirsson, 2004:484-486).</p> <p>.</p> <p>According to Enkin <i>et al.</i> (2000:485) this form of care can be known as a form of care that is unlikely to be beneficial.</p>

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
	<p>The intervention intended to increase women's awareness about their contraceptive actions; it further concentrated on the women's contraceptive behaviour/methods throughout the previous years. The women's contraceptive past was charted on a line. The different types of contraceptives the women were using were also charted with the women's childbirths. If the women were not using contraceptives, it was further investigated.</p> <p>Future strategy of the women to make use of contraception was also investigated. Contraceptive methods in connection with each person's contraceptive technique, history and requirements were supplied in counselling. Information regarding the return of each individual woman's</p>	<p>The intervention group had younger, less educated women with fewer children in comparison to the control group. A sample correction error favouring younger and single women could have contributed to the differences in the two groups. Furthermore the use of post abortion contraceptives was higher in women who did not have a previous abortion in comparison to women who had previous abortions.</p> <p>In general the women of both groups were less likely to use contraception if they had a previous abortion. Oral contraceptives and injectable contraceptives were mainly chosen by both groups. Women choose a certain method, because of their previous views on the effectiveness and convenience of that specific type of method. Both groups had a majority of women who could not stipulate their plans of contraceptive use (Bender & Geirsson, 2004:484-486).</p>	

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
	<p>fertility after an abortion was provided as well as general and emergency contraceptive use. Printed information regarding the contraceptive method the women were planning to use, was also provided (Bender & Geirsson, 2004:482-484).</p>		
<p>2. Curley, M. 2011. Psychological distress after abortion among university students: developing an intervention. Montreal: McGill University. (Thesis – PhD.).</p>	<p>The development of a proposed framework to ascertain and treat psychological distress after a legal, induced, voluntary abortion for university students.</p> <p>Specific interventions:</p> <p>Post abortion treatment and healing interventions which can be used within nursing care, which consist of seven modules: (1) <u>introductory module</u> to welcome and explain the purpose of the intervention, (2) <u>psycho-education module</u> to provide information about post abortion psychological distress,</p>	<p>The study provides a population based mechanism which can be used within nursing to understand, identify and treat psychological distress after abortion. It provides an evidence-based, patient-centred preliminary model for a manual based intervention to relieve psychological distress after abortion for university students. It looks at the patients preferences for group treatment, which addresses unforeseen guilt, improves coping skills and educates women on psychological distress reactions after abortion. Negative psychological responses to abortion were to be understood via the</p>	<p>Post abortion treatment and healing interventions in the model was not tested, therefore the effectiveness of the interventions could not be determined. Therefore it is not known if the model of post-abortion treatment and healing can effectively treat psychological distress in women who had an induced abortion (Curley, 2011:233-234).</p> <p>The findings can be viewed as a form of care of unknown effectiveness (Enkin <i>et al.</i>, 2000:485).</p>

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
	<p>(3) <u>coping module</u> to build skills, (4) <u>psychotherapeutic module</u> to process the stressful event, (5) <u>guilt and forgiveness module</u> in order to reduce guilt, (6) <u>pregnancy prevention module</u>, (7) <u>spiritual module</u> to promote resolution of pregnancy and abortion experience and hope for future. A <u>grief module</u> was also developed for use as needed.</p> <p>This model was developed via the use of the United Kingdom Medical Research Guidelines. From the five-phase method, two phases were used. The Pre-Clinical Phase was first developed: (a) the theoretical and (b) evidential basis for target symptoms of the intervention.</p> <p>The second phase, the Modelling Phase used these results to establish: (c) the design, (d) patient preferences,</p>	<p>model. The model provides psychotherapeutic strategies, psycho-educational strategies and spiritual support which target symptoms, which can be used by healthcare professionals (Curley, 2011:233-234).</p>	

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
	<p>and (e) feasibility for delivering the intervention.</p> <p><u>Phase one</u> used the psychological stress theory to guide the intervention.</p> <p>Phase one had two parts, part one reported on a Systematic Review of Psychological Distress after Abortion and provided a detailed description of the theory used to frame the intervention.</p> <p>The <u>second phase</u> designed the intervention which was based on the preferences of the participants regarding group treatment addressing unanticipated guilt, enhanced coping skills, and education on psychological distress reactions after abortion (Curley, 2011:21-22,232-233).</p>		

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
<p>3. David, P. H., Reichenbach, L., Savelieva, I., Vartapetova, N. & Potemkina, R. 2007. Women's reproductive health needs in Russia: what can we learn from an intervention to improve post-abortion care. <i>Health policy and planning</i>, 22:83–94.</p>	<p>The study aimed to report the results of an evaluation of the interventions to improve post-abortion care and reduce repeated abortions.</p> <p>Specific interventions:</p> <p>Before the interventions could be implemented, nurses had to undergo training courses to improve family planning post-abortion. The courses included training in common principles of counselling in family planning, communication skills and the fundamental elements of post-abortion family planning services, together with the discussion of different contraceptive methods available, managing complications and side effects.</p> <p>The courses included the nurse's ability to insert an intra-uterine device (IUD) and to remove it. Brochures</p>	<p>The project's effectiveness and impact was measured by pre- and post-intervention surveys of the providers and clients. The surveys measured changes in key indicators of the quality of the services.</p> <p>The following key indicators were measured for changes to assess the effectiveness of the family planning interventions:</p> <p>1) Women who conceived when they were on contraception; 2) women who received contraceptive counselling from their provider on the same day as the abortion; 3) women who were planning to use a modern contraceptive method after the abortion; 4) women who chose a specific contraceptive method before they were discharged; 5) women who discussed the contraceptive method chosen with a medical staff member; 6) women who received a brochure with information regarding contraception to take home; 7) women who were given an</p>	<p>Training courses to increase nurse's knowledge and skills regarding contraceptive use and counselling, can improve nursing care to women who have an abortion. The number of women receiving counselling increases, which in turn should eventually decrease future unwanted pregnancies and thus induced abortions. Therefore mortality and morbidity rates of such women could decrease. However this study found that although counselling of post-abortion women increased, abortion rates did not decrease (David <i>et al.</i>, 2007:92-93).</p> <p>Based on the findings this form of care is unlikely to be beneficial (Enkin <i>et al.</i>, 2000:485).</p>

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
	<p>providing information were also part of the project. Women were also informed regarding contraceptive options on a national media campaign which were held from December 2001 and February 2002.</p> <p>Therefore in short, the interventions were post-abortion family-planning counselling (David <i>et al.</i>, 2007;85-86).</p>	<p>explanation by their counsellor on when to make a follow-up visit to a health care provider; 8) women who received key information such as when their fertility will return, through the counselling session; 9) women with a history of a previous abortion, who had a repeated abortion within the previous calendar year.</p> <p>In the three year period there was an increase from 25% to 40% in women who wanted an abortion who did not want to have any more children.</p> <p>There was a decline in the number of women who wanted an abortion who never used contraceptives before. Seventy one percent (71%) of women in the year 2000 used a contraceptive method before, but in 2003 it reduced to 61%.</p>	

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
		<p>The following findings were applicable to the 9 key indicator outcomes:</p> <p>1) Before the intervention 50% of women reported to have conceived while on contraception, this decreased to 42% and 38% following the two post-intervention surveys. Women who never used contraception before the interventions, who reported contraception failure declined from 70% to 62% during the course of the project. 2) Women receiving counselling before the project were 41%; it increased to more than 90% by the year 2003. 3) Before the intervention there was a high percentage of women who wanted to use modern contraception in future; the percentage stayed high throughout the course of the project. 4,5,6,7,8) There was a significant increase in the women who had chosen a specific contraceptive method before discharge who received method-specific counselling by a health care provider over the</p>	

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
		<p>course of the project. There was also an increase in women who could report when they will return to their fertile state. The number of women who received an information brochure increased 10-fold. 9) Seventeen percent of women who had a repeated abortion returned within a year for a repeat abortion; the percentage stayed constant over the course of the project.</p> <p>There was an inconsistency between the women's choice of modern contraceptive methods and the same women seeking abortions repeatedly. The results in the study specify the complexity related to change, which indicate abortion is customary. The interventions from the project were successfully implemented, but did not prove to be effective. A disparity continues to exist between knowledge and successful contraception practice.</p>	

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
		<p>There was an increase in post-abortion contraceptive counselling from providers on the day of the abortion. Forty one percent (41%) of the clients were counselled about how to prevent another unplanned pregnancy and this was later increased to more than 90% of all abortion clients. There was an increase in method-specific counselling by a health provider and more clients could correctly report when they would return to their fertile state.</p> <p>There was an increase in women receiving an informational brochure. In spite of the positive results some women still had repeated abortions (David <i>et al.</i>, 2007:86-92).</p>	

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
<p>4. Schwandt, H.M. 2009. Abortion, unmet need, and family planning service provision among gynecology patients in Ghana. Baltimore, Maryland: The Johns Hopkins University. (Dissertation – PhD.).</p>	<p>Three focus points in the study:</p> <ol style="list-style-type: none"> 1) To explore the pathways to unsafe abortions, the role of the male partners, women and the healthcare providers; 2) to identify comparisons between induced abortion, spontaneous abortion, and ectopic pregnancy in patients; 3) to evaluate the effectiveness of group family counselling in comparison to individual family counselling (Schwandt, 2009:ii). <p>For the purpose of the current research study the last part of this study was chosen - to determine if group family planning counselling was as effective in comparison to individual family planning counselling to increase women's intention to use</p>	<p>The study measured two different outcomes:</p> <ol style="list-style-type: none"> 1) Primary outcomes - pre- and post-counselling intent to use family planning and to test for no inferiority of group counselling (compare the difference in the differences in the female patients' intention to use family planning before and after counselling) (Schwandt, 2009:99,100). 2) Secondary outcomes - knowledge regarding contraceptive methods and method choice pre- and post-counselling (Schwandt, 2009:101). <p>Primary outcome results:</p> <p>Before the intervention at the baseline, the intended to use family planning was 82% in group one (individual counselling) and 87% in group two (group counselling). After the counselling both groups had an increase, group one increased to 86% and group two to 90%. It was also found that group family</p>	<p>There was no noteworthy difference in female patients in the intent to use family planning post-abortion between the individual family planning counselling and group family planning counselling. Group family planning counselling was as effective as individual family planning counselling in increasing intent to use family planning and in increasing knowledge regarding family planning methods in female patients post-abortion. Thus group family planning counselling was no inferior to individual family planning counselling (Schwandt, 2009:93,109,110).</p> <p>Based on the findings this form of care can be known as a form of care that is likely to be beneficial (Enkin <i>et al.</i>, 2000:485).</p>

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
	<p>family planning - the last part of the study is applicable to the current research study's objectives (Schwandt, 2009:93, 96).</p> <p>Participants were divided into two groups: Group one with 316 female gynaecology patients and group two with 332 female gynaecology patients (Schwandt, 2009:93).</p> <p>Specific interventions:</p> <p><u>Group one:</u> Female gynaecology patients who received post-abortion individual family planning counselling.</p> <p><u>Group two:</u> Female gynaecology patients who received post-abortion group family planning counselling.</p> <p>Before the counselling a baseline survey was done on the two different groups. The female patients received</p>	<p>planning counselling was noninferior to individual family counselling (Schwandt, 2009:93,106,107).</p> <p>Secondary outcome results:</p> <p>There was an increase in knowledge in family planning methods in both groups – before the intervention of family planning counselling each group had a mean number of 2 of modern methods known and 6 again after the intervention. Again the group family planning counselling was noninferior to individual family counselling (Schwandt, 2009:93,107-109).</p>	

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
	<p>family planning counselling post-abortion in a group or individually from an experienced trained family planning nurse (Schwandt, 2009:98).</p> <p>The family planning counselling in both groups included three main themes:</p> <p>1) An introduction to the basic physiology of reproduction; 2) an overview on the different methods available and on family planning itself; 3) individual messages were adapted to fit each female patient to help her decide on what contraceptive method to choose and what possible side effects are associated with that method (Schwandt, 2009:99).</p> <p>After the first counselling session each female patient had a follow-up interview to measure the</p>	<p>The study concluded that both group family planning counselling and individual family planning counselling is effective in increasing intention to use family planning post-abortion in female patients. It was also concluded that group family planning counselling is noninferior to individual family planning counselling. Both interventions increased female patients' knowledge regarding family planning methods.</p>	

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
	<p>effectiveness of the counselling session. With the follow-up, 17 patients declined (7 from the individual counselling and 10 from the group counselling) (Schwandt, 2009:99,105).</p> <p>A counselling guide was used in all the counselling sessions, to ensure the intervention was the same for all the female patients (Schwandt, 2009:99).</p> <p>The study had a null hypothesis which was that group counselling was less likely to increase intent to use family planning than individual family planning counselling. The other hypothesis was that group and individual family planning counselling were both equally increasing intent to use family planning in female patients (Schwandt, 2009:96, 97).</p>		

STUDIES ON SPONTANEOUS ABORTIONS – N:5

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
<p>5. Adolfsson, A., Berterö, C. & Larsson, P.G. 2006. Effect of a structured follow-up visit to a midwife on women with early miscarriage: a randomized study. <i>Acta Obstetrica et Gynecologica</i>, 85(3):330-335.</p>	<p>The study aimed to see if a structured follow-up visit after a miscarriage to a midwife decreases grief.</p> <p>Specific interventions:</p> <p><u>Intervention group (group one):</u> Women seen by a specific midwife for 60 minutes, with the focus on the woman's experience of the miscarriage and applying Swanson's caring theory.</p> <p><u>Comparison group (group two):</u> Women can be seen by any one of the five different midwives, for 30 minutes, with the focus on the question if the women had any complications, the midwife did not ask the women about their emotions and feelings (Adolfsson <i>et al.</i>, 2006:330,331).</p>	<p>The reduction of women's grief was measured using the Perinatal Grief Scale Swedish Short Version (PGS) at one and four months after the miscarriage when they have their follow-up visit to the midwife. The PGS measures three subscales of grief, difficulty in coping and despair (Adolfsson <i>et al.</i>, 2006:331).</p> <p>There was no statistically significant difference between the intervention group and the comparison group's reduction in grief as measured by the PGS. There was a difference of 30% of greater reduction in grief in group one than in group two with the second measurement. When the study had a look at the subscales, active grief and difficulty in coping made the biggest difference. Women in the subgroup who had a miscarriage had much higher grief scores with the second measurement; the structured follow-up visit had no positive effect (Adolfsson <i>et al.</i>, 2006:334).</p>	<p>Women who received a structured follow-up visit to a midwife, who focussed on the women's experiences and applying Swanson's caring theory was ineffective in reducing the levels of grief as measured with the PGS at one and four months post-abortion.</p> <p>This intervention can be a form of care that is unlikely to be beneficial (Enkin <i>et al.</i>, 2000:485).</p>

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
<p>6. Johnson, O.P. 2009. The impact of a bereavement intervention on levels of grief in pregnant women who experience pre-twenty week loss. Denton: Langford, Rae School: Texas Woman's University School. (Dissertation - Ph.D.).</p>	<p>To examine the impact of a secondary bereavement intervention on the levels of grief in the women who experienced a pre-twenty week pregnancy loss in comparison to women who received the usual standard of care.</p> <p>Specific interventions:</p> <p>The secondary bereavement intervention refers "to a reactive approach which was implemented after a stressor has entered the patient's normal line of defence. The focus of a secondary prevention was to stop the reaction by utilizing the patient's internal and external resources to strengthen the line of resistance".</p> <p><u>Control group:</u> Received routine follow-up care from the hospital</p>	<p>The Medical Professional Guidelines for Health Care Professionals were constructed and implemented as a secondary bereavement intervention. The bereavement intervention was effective in improving the levels of grief, by decreasing the levels of despair in low income women who had an early pregnancy loss.</p> <p>The Perinatal Grief Scale (PGS) was used to measure the results. The total overall levels of grieving showed no significant difference ($t=2.518, p=.065$), but there was a significant difference between levels of despair ($t=4.80, p=.000$) between the two groups and therefore the intervention was effective to decrease despair (Johnson, 2009:50-52,55-56).</p>	<p>Women who received a specific bereavement intervention (as developed from the Guidelines for Medical Professionals Providing Care to the Family Experiencing Perinatal Loss, Neonatal Death, Sudden Infant Death Syndrome (SIDS), or other Infant Death) experienced less despair (Johnson, 2009:55-56) and therefore had an increased satisfaction with nursing care, which in turn may decrease morbidity and mortality.</p> <p>According to Enkin <i>et al.</i> (2000:485) this form of care is likely to be beneficial, because although there was no significant difference in the overall levels of grief, there was a significant difference in the levels of despair.</p>

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
	<p>where they were admitted. Specifics regarding the type of follow-up care were not stated. Intervention group: Received specific care which was developed from the Guidelines for Medical Professionals Providing Care to the Family Experiencing Perinatal Loss, Neonatal Death, Sudden Infant Death Syndrome (SIDS), or other Infant Death.</p> <p><u>The intervention:</u> Included a memory box which was placed at the mother's bedside, the mother was asked if she needed to see her spiritual leader and if she or the family has any special requests regarding the loss of their baby. The memory box was opened with the mother and/or family and contents inside the box was shared with the family/mother and was associated with certain aspects, such as planting some seeds in the</p>		

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
	<p>garden at home as a memory of the baby. Discharge information was given with information such as support groups and a two week follow-up appointment. A follow-up call was made to the mother/family to inquiry about their progress (Johnson, 2009:8, 42-44, 53-57, 88-90).</p>		
<p>7. Murphy, F.A., Lipp, A. & Powles, D.L. 2012. Follow-up for improving psychological well-being for women after miscarriage (review). <i>The cochrane library</i>, 3:1-30.</p>	<p>The aim of the study was to find out if follow-up visits to a midwife, nurse or psychologist have an effect on the psychological well-being of women who had a miscarriage before 23 weeks gestation.</p> <p>Specific interventions:</p> <p><u>Studies included:</u> Follow-up visits to a midwife, nurse or psychologist post-abortion.</p>	<p>Six studies were included for the final sample. Three of the studies compared counselling with no counselling, with no significant difference in the psychological well-being (anxiety, grief, depression avoidance and self-blame). One study compared three one-hour counselling sessions to no counselling at four and twelve months post-abortion, with a statistical significance in some of the subscales – some favour counselling, others favour no counselling. One of the other two studies compared multiple interventions and</p>	<p>The findings of the study was insufficient to support the intervention of follow-up visits to a midwife, nurse or psychologist to have an effect on the psychological well-being of women who had a miscarriage before 23 weeks gestation (Murphy <i>et al.</i>, 2012:1, 2).</p> <p>The findings of this study can be classified as a form of care that is unlikely to be beneficial due to a lack of evidence (Enkin <i>et al.</i>, 2000:485).</p>

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
		the other study compared two counselling session with no counselling – both the studies found that counselling was not favoured (Murphy <i>et al.</i> , 2012:1).	
8. Rowsell, E., Jongman, G., Kilby, M., Kirchmeier, R. & Orford, J. 2001. The psychological impact of recurrent miscarriage, and the role of counselling at a pre-pregnancy counselling clinic. <i>Journal of Reproductive and Infant Psychology</i> , 19(1):33-45.	<p>The aim of the study was to look at the psychological impact of recurrent miscarriage and to see if an intervention at the pre-pregnancy counselling clinic (PPCC) makes a difference in the psychological alterations.</p> <p>Specific interventions:</p> <p><u>First session:</u> A counselling session with a midwife, taking a detailed history, allowing the participants to talk about their experiences, what the causes of their miscarriages could have been and offering tests.</p> <p><u>Second session:</u> In a month's time after the first session, to see the</p>	<p>Results were measured with the 14-item Hospital Anxiety and Depression Scale (HADS), the Impact of Event Scale (IES) which measures levels of intrusive thoughts and avoidance and the 25-item Coping Schedule which consists of three sub-scales with different response strategies, a cognitive coping strategy, an active behavioural coping strategy and an avoidance coping strategy which was measured on a 4-point scale. A before and after design was used in this study, but it was not possible to have a group in the clinic which received no treatment. Measurements were taken at three points in time, questionnaires were sent with the initial appointment letter (time 1), again before the first visit (time 2, 4.6 weeks later) and lastly</p>	<p>The changes in the study's findings could not be accredited to the pre-pregnancy counselling intervention used, even though there were a few positive changes, none of the hypotheses could be successfully supported. Therefore the pre-pregnancy counselling intervention was ineffective to reduce the psychological impact recurrent miscarriages have on women (as measured by the HADS and IES scales and the Coping Schedule) (Rowsell <i>et al.</i>, 2001:41-44).</p> <p>This intervention can be a form of care that is unlikely to be beneficial (Enkin <i>et al.</i>, 2000:485).</p>

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
	<p>specialist and the midwife. This session focuses on the results of the first session and on future plans (RowSELL <i>et al.</i>, 2001:35-37).</p>	<p>after the second visit (time 3, 6.7 weeks later).</p> <p>The following hypotheses/outcomes were measured:</p> <p>1) Women who were referred to the PPCC clinic will have higher psychological stress levels than the norm. The HADS and IES scores were compared with norms to measure hypothesis 1. The results/scores of previous studies were used as the norm(s). 2) Women's levels of distress will be the same between time 1 and 2, but will be reduced between time 2 and 3. Measure analysis of variance was repeatedly done to compare coping style, HADS and IES scores, before and after the intervention.</p> <p>3) Levels of avoidance coping will be reduced and active coping will be increased after the implementation of the intervention.</p>	

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
		<p>Measure analysis of variance was repeatedly done to compare coping style, HADS and IES scores, before and after the intervention.</p> <p>4) Emotional adjustment will be affected if credit can be given to the cause of the miscarriage. After that intervention, there will be a reduction in levels of distress after the women received a medical explanation after the investigations were done in comparison to women who did not receive an explanation. "Two-factor mixed analyses of variance were carried out for HADS and IES scores, with time as the within-subject factor and whether or not an explanation for miscarriage was given as the between subject factor".</p> <p>The findings were as follow:</p> <p>1) HADS anxiety scores were higher; HADS depression scores were higher during time 1 and 3, but lower at time 2. IES intrusion scores and avoidance scores were similar and not</p>	

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
		<p>higher or lower, but at time 3 the IES avoidance scores remained higher.</p> <p>2) Scores over time had a reduction in all the measures. HADS anxiety and depression scores and IES intrusion had the most change between time 1 and 2, and not at time 2 and 3 as predicted. IES avoidance scores (which support the hypothesis) had no significant change between time 1 and 2, but there was a reduction in distress between time 2 and 3.</p> <p>3) Avoidance coping and active behavioural coping were reduced between time 1 and 3, but there was no change in active cognitive coping (does not support the hypothesis).</p> <p>4) There was a significant reduction in scores in the women who received a medical explanation at all the time points, but the difference was not statistically significant. There was no significant difference between the groups and the interaction effect between the two variables was not significant (does not</p>	

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
		<p>support the hypothesis).</p> <p>Findings cannot be generalised to all women having recurrent miscarriages, due to a very specific sample. High levels of anxiety, intrusive and avoidant distress was evident in the sample before the intervention was implemented. A number of women reported that the physical process of the miscarriage was the most stressful (Rowse et al., 2001:35-38, 41-44).</p>	
<p>9. Swanson, K.M., Chen, Hsien-Tzu, Graham, J. Christopher Wojnar, Danuta M. Petras, Anthippy. 2009. Resolution of depression and grief during the first year after miscarriage: a randomized</p>	<p>The study was to examine the effects of three couples focused interventions on women and men's resolution of depression and grief during the first year after miscarriage in comparison to a control group which received no treatment.</p> <p>Specific interventions:</p> <p><u>Group 1:</u> Couples were assigned to the nursing care (NC) group, who</p>	<p>Three counselling sessions described as 'nursing care', had the biggest impact on grief and depression outcomes for couples after their miscarriage. Nursing care (NC) had the most widely positive impact on the couples' outcome in grief and depression. Pure grief (PG) and grief-related emotions (GRE) was found to be accelerated by self-caring (SC) for women and combined care (CC) for men (Swanson et al., 2009:1247,1249,1253-1254).</p>	<p>Three one hour long counselling sessions as part of nursing care was effective in reducing grief and depression in couples after their miscarriage (Swanson et al., 2009:1249-1254).</p> <p>This is a beneficial form of care (Enkin et al., 2000:485).</p>

REFERENCE	FOCUS OF STUDY	STUDY'S FINDINGS	FINDINGS RELEVANT TO THIS STUDY
<p>controlled clinical trial of couples-focused interventions. <i>Journal of women's health</i>, 18(8):1245-1257.</p>	<p>received three one hour counselling sessions.</p> <p><u>Group 2:</u> Couples were assigned to the self-caring (SC) group, which offered a lower cost, self-administered and mailed intervention. Three videos were provided on coaching couples on ways to practice self and partner caring. Two workbooks were given with the videos.</p> <p><u>Group 3:</u> Couples in the combined care (CC) group received counselling sessions as well as the videos (Swanson <i>et al.</i>, 2009:1246-1248).</p>		

APPENDIX F

CONCLUSION GRADING SYSTEM

EVIDENCE ANALYSIS MANUAL (ADA, 2008:62).

Grade Definitions: Strength of the Evidence for a Conclusion Statement

Grade I: Good - The evidence consists of results from studies of strong design for answering the question addressed. The results are both clinically important and consistent with minor exceptions at most. The results are free of serious doubts about generalisability, bias, and flaws in research design. Studies with negative results have sufficiently large sample sizes to have adequate statistical power.

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 among the results from different studies or because of doubts about generalisability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from weaker designs for the questions addressed, but the results have been confirmed in separate studies and are consistent with minor exceptions at most.

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 done or because the studies that have been done are inconclusive due to lack of generalisability, bias, design flaws, or inadequate sample sizes.

Grade IV: Expert Opinion Only - The support of the conclusion consists solely of 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.

Adapted by the American Dietetic Association from: Greer N, Mosser G, Logan G, Wagstrom Halaas G. A practical approach to evidence grading. *Jt Comm. J Qual Improv.* 2000; 26:700-712.

*The addition of Grade V was adopted in September 2004. As the systematic reviews were accomplished by the Work Groups and the trained Evidence Analysts, situations occurred where none of the original four grades were applicable resulting in the designation of “not assignable.” The designation of Grade V was added to capture the ‘not assignable’ category.

Of note, ICSI also reviewed and modified their grading system and in November 2003 they adopted a “not assignable” grade.