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Meta-analysis to obtain a scale of psychological reaction after perinatal loss: focus on miscarriage

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Abstract: Pregnancy has different meanings to different women depending upon their circumstances. A number of qualitative studies have described the experience of miscarriage by women who had desired to carry their pregnancy to full term. The aim of this meta-analysis was to identify a scale of psychological reaction to miscarriage. Meta-analysis is a quantitative approach for reviewing articles from scientific journals through statistical analysis of findings from individual studies. In this review, a meta-analytic method was used to identify and analyze psychological reactions in women who have suffered a miscarriage. Different reactions to stress associated with the period following miscarriage were identified. The depression reaction had the highest average, weighted, unbiased estimate of effect ($d_+ = 0.99$) and was frequently associated with the experience of perinatal loss. Psychiatric morbidity was found after miscarriage in 27% of cases by a diagnostic interview ten days after miscarriage. The grief reaction had a medium d_+ of 0.56 in the studies included. However, grief after miscarriage differed from other types of grief after perinatal loss because the parents had no focus for their grief. The guilt is greater after miscarriage than after other types of perinatal loss. Measurement of the stress reaction and anxiety reaction seems to be difficult in the included studies, as evidenced by a low d_+ (0.17 and 0.16, respectively). It has been recommended that grief after perinatal loss be measured by an adapted instrument called the Perinatal Grief Scale Short Version.

Keywords: psychological, perinatal loss, pregnancy, depression

Introduction

The incidence of miscarriage in one study was determined to be approximately 15%–20% of all pregnancies.[1] The authors of that study acknowledge that their figures are rough because of methodological difficulties. Also, not all women report their miscarriage to health care services. A Danish study has estimated the number of pregnancies resulting in fetal loss but intended to be carried to full term to be 13.5%.[2] The same study identified that, for women experiencing their first pregnancy in the age group 20–24 years, the risk of miscarriage was 8.9%. At the age of 42 years, the risk for miscarriage was determined to be approximately half of all pregnancies, and for women aged 45 years and older was 74.7%. In Sweden, the number of women experiencing a miscarriage who subsequently give birth to a child has been determined to be 21%.[3] The World Health Organisation suggests that approximately 46 million legal abortions are performed each year around the world.

Pregnancy can have different meanings to different women, depending upon their circumstances. Some pregnancies are planned and others are not. Some pregnancies are wished for and some are not. Women also experience different levels of difficulty in getting pregnant. Furthermore, perinatal loss comes in different forms and at different

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stages of fetal development. In addition to miscarriage (defined as fetal loss before week 22 of pregnancy), there is neonatal death from week 22 up until birth. Extrauterine pregnancy is another form of perinatal loss, which can be considerably more risky to the mother, requiring a higher level of care than for miscarriage.

A number of qualitative studies have described and evaluated the experience of miscarriage by women who desired to carry their pregnancy to full term. The traumatic aspects of miscarriage, including pain, bleeding, and rapid hospitalization, are discussed in one study.[4] Some women regarded their miscarriages as a personal failure,[5] and were concerned that a disease, something they had eaten, or even inhalation of car exhaust fumes may have been the catalyst for the miscarriage. Women also held themselves responsible for the event psychologically if they felt they were under undue stress, if they did not want the baby enough, or perhaps their own negative thoughts triggered the miscarriage.[5]

Other qualitative studies have been performed to address issues such as guilt, anxiety, and grief. In one study, it was determined that there is a definite connection between miscarriage and the guilt and anxiety experienced by women after the event.[6] Women were afraid that they would suffer perinatal loss again in the next pregnancy.[6] Women tended to search for understanding the cause of the loss. Their level of guilt and anxiety was found to be significantly reduced if some medical clarification was provided about the cause of the miscarriage.[7] Other studies have found that, after suffering a miscarriage, it is normal for a woman to experience some level of grief.[5,7,8] Grief can be defined as a dynamic, pervasive, highly individualized process with a strong normative component.[9] Although the level of grief may vary between different cultural groups, it is painful and disruptive to the woman's life.[8,9] The grief experienced after a miscarriage is intense for the first few days and gradually subsides over the following four to six weeks, and finally resolves over a period of three to four months.[4] The emotions and symptoms commonly associated with grief are sadness, loss of appetite, sleeplessness, increased irritability, and inability to return to activities of daily living. These are the typical symptoms of grieving, as well as those of depression, so can be a source of confusion for the woman.[7,9,10] The primary purpose of this meta-analysis was to identify a scale of psychological reaction after a perinatal loss, in particular, for miscarriage.

Methods

Meta-analysis is a quantitative approach for reviewing articles from scientific journals by statistical analysis of findings from individual studies.[11] In this review, a meta-analytic method[12] was used to identify and analyze psychological reactions in women who have suffered a miscarriage.

Data collection

Literature identification strategies included searches of three computerized databases, ie, CINAHL, PubMed, and PsycINFO, using the following keywords: "anger", "anxiety disorder", "depressive symptom", "grief", "grief reaction", "grief theory", "miscarriage", "women's experience", and "women's view", for papers published between January 2002 and April 2006. The scales that were identified were tabled according to the reaction that they were designed to measure. The type of reaction that were identified and measured fell into three categories. The scales that measured anxiety and depression are presented in Table 1, the scales that measure grief are presented in Table 2, and the scales that measure stress and other effects are presented in Table 3. Each scale was identified as to whether or not it was used in the analysis by noting if it was included or excluded.

Four selection criteria and two exclusion criteria were used for this research. Studies were selected if they measured the psychological reaction in women after perinatal loss, used an experimental, quasi-experimental, or pre/post single-group study design, included an outcome measure for psychological stress when an effect-size value was discernable, and measured anxiety, depression, grief, or stress. Studies were excluded if they examined other hypotheses or if treatment and control groups were not selected from the same settings (see Table 4).

The criteria indicative of treatment and control group nonequivalence determined that the effect-size value was ≥ 1 or if the ratio of treatment to control group standard deviation (SD) was <0.25 or >4. In addition, because psychological reactions are highly personal, measurements of subjective experience of psychological reactions were judged to be inappropriate for this research.[40] Fourteen studies met all the selection criteria and were included in the review, whereas another 26 relevant studies could not be included because no effect-size values for psychological reaction could be calculated. Most of the 26 studies that did not meet the selection criteria included only narrative commentaries on the experience of perinatal loss (eg, from case study data) and suggested a beneficial effect on reaction. Information on these studies is available from the researcher.

Measures

The major variables included were characteristics of the study, sample, concept, setting, and outcomes. Study characteristics

Table 1 Scales which measure postpartum anxiety and/or depression

Included/ excluded	Name of scale/ instrument	Reference	Year	Country	Patients	No. item	Type of scale	Measure	Comments
Included	Center for Epidemiologic Studies Depression scale	Rådestad et al;[13] Neugbauer et al;[14,15] Radloff;[16] Swanson;[17] Geller et al[18]	1991[13]	Sweden[21]	380[13]	20	4 definitions	Depression	Self-reported 40% of nulliparous women are depressed 1 week after miscarriage
Excluded	Edinburgh Postnatal Depression Scale	Wickberg and Hwang[19]	1991	Sweden	1655	10	Scale 4 step	Postpartum depression	10 items specific to postpartum women with depression
Excluded	Hospital Anxiety and Depression Scale	Nikcevic et al[21]	1992	England	69	7	4 explication to each item	Anxiety	After miscarriage 1, 6, and 12 weeks after miscarriage
Excluded	Hospital Anxiety and Depression Scale	Prettyman et al[20]	1992	England	69	7	4 explication to each item	Depression	After miscarriage 1, 6, and 12 weeks after miscarriage
Included	Hospital Anxiety and Depression Scale	Lee and Slade;[4] Nikcevic et al;[21] Prettyman et al[20]	1996	England[21]	143[21]	14	4 explication to each item	Anxiety and depression psychological stress and miscarriage	A standardized instrument Swedish version with validity (Herrman 1997)
Excluded	Present State Examination	Friedman and Gath;[22] Lee and Slade[4]	1989					Depression	Standard instrument to find and measure cases, 48% have symptoms of depression four weeks after miscarriage*,[2]
Excluded	Self-esteem	Swanson[23]	1996	US	185[9]	10	4-point Likert	Overall well-being, Depression, Anxiety, Stress	Standardize to pain of menstruation
Excluded	Spielberg State Anxiety Inventory	Nielsen et al[24]	1993	Sweden	86	30	Adjectives Par	Patient's perception of their well-being	Utilize at one miscarriage study at Gothenburg, Sweden
Excluded	The State-Trait Anxiety Inventory	Rådestad et al[13]	1991	Sweden	380	20		Anxiety, fright, fear	Utilize in psychological study, anxiety inventory is used by midwives in Sweden after stillbirths
Excluded	The State-Trait Anxiety Inventory	Rådestad et al[13]	1991	Sweden	380			Questionaire on respondent's anxiety	The status at the moment. Used by midwives in Sweden after stillbirths
Excluded	The State-Trait Anxiety Inventory	Rådestad et al[13]	1991	Sweden	380				Measures the respondent's normal status

Table 2 Scales that measure postpartum grief

Included/ excluded	Name of scale/ instrument	Reference	Year	Country	Patients	No. item	Type of scale	Measure	Comments
Excluded	Expanded Texas Inventory of Grief	Zisook et al[25]	1981	US	211	58	5-point Likert[26]	Feelings and behaviors	Measures individual differences in grief and degree of difficulty
Included	The Grief Experience Inventory	Lasker and Toedter [27]	1989	US		135		Different dimension of grief	Face validity but no reliability and validity
Excluded	Grief Experience Questionnaire	Bailly et al[28]				8	5-point Likert[26]	Different grief factors/ dimension	Grief reaction
Excluded	Hogan Grief Reaction Scale	Hogan et al[29]	1999	US	586	61			Measures multidimensional aspects of grief
Excluded	Mourning Score	Kennell et al[30]	1969	US	21	6	5 score with definition		
Excluded	Perinatal Bereavement Scale	Theut et al[31]	1985	US	25		4-point Likert[26]		
Included	Perinatal Grief Scale	Toedter et al;[32] Lin and Lasker[33]	1989	US	138	104	5-point Likert[26]	Thoughts, behaviors, and grief	Three factors, ie, active grief, difficulty coping, despair
Excluded	Perinatal Grief Scale (33-item short version)	Potvin et al[34]	1989	US	138	33			
Excluded	Perinatal Grief Intensity Scale	Hutti et al[35]	1998	US	186	14		Measures intensity and length of grief	New item in development, reliability and validity acceptable
Excluded	Texas Grief Inventory	Zisook et al[36]		US		20		Immediate behaviors	
Included	Texas Grief Inventory adjusted for miscarriage	Nikcevic et al[21]	1995	UK	207		5-point Likert[26]		

Table 3 Scales which measure stress or other effects

Included/ excluded	Name of scales	Reference	Year	Country	Patients	No. item	Type of scale	Measure	Comments
Included	Göteborg Quality of Life Instrument	Tibblin et al;[37] Wiklund et al;[38] Rådestad et al[13]	1991[31]	Sweden	380 4	18	7-point scale with definition of each point	Social, physical and psychological well-being	Personal estimate of well-being and symptoms; has been utilized in Sweden
Included	Impact of Events Scale	Lee et al[39]	1994	UK	60			Destructive thoughts and avoidance of these	Effect of psychological debriefing after miscarriage
Included	Impact of Miscarriage	Swanson[23]	1996	US	185	24	4-point Likert, 5-point	Personal significance	Developed in three phases in this study from 105 to 24 items
Excluded	Perception of Care	Lee et al;[39] Swanson et al[24]	1994 1996	UK US	60 18			Women write openly to give more information	Effect of psychological debriefing after miscarriage not tested by psychometrics
Included	Profile of Mood State	Swanson et al[23]	1996	US	185	65	5-point Likert	Subscales of anxiety, depression-dejection, energy, fatigue, anger, confusion	Standardized feelings
Excluded	Reaction to Miscarriage Questionnaire	Lee et al[39]	1994	UK	60			Women's behavior and relation to care	Effect of psychological debriefing after miscarriage
Included	Self-esteem	Swanson[23]	1996	US	185	10	4-point Likert	Overall well-being, Depression, anxiety, stress	Standardized to pain of menstruation
Included	Symptoms of stress	Swanson[23]	1996	US	185	8	5-point Likert	Stress measure with depression scale	

Table 4 Conclusion about identified study

	Identified	Included
Article	45	14
Instrument	29	12
Included	10,023	3454
Country	6	5
Institutions	9	7
Site	3	3
Gender	2	2
Date	1969–1996	1984–1996

included publication form and date, institution, type of loss, and type of control group. Sample characteristics of age, gender, ethnicity, and type of loss were coded. Treatment characteristics included the content, timing, duration, frequency, and mode of delivery of the intervention. Setting characteristics included the country and site (eg, hospital, clinic, community) at which the intervention occurred.

Outcomes were coded according to the actual measure, timing, and manner of data collection, sample size, and direction and magnitude of psychological reaction. The outcome selected for analysis was women self-reported answers. Reliability of coding information from the research reports, based on percent agreement, was acceptable at 90%.

Procedures

The scale-free, size-of-effect statistic used in this meta-analysis was based on Cohen's[40] population statistic delta (d), which represents the standardized mean difference between treatment and control groups measured in SD units. The effect-size statistic provides information about both the direction and magnitude of treatment effect. The basic formula for the effect size is $g = [(M_c - M_e) \pm SD]$. When the control group mean (M_c), experimental group mean (M_e), and the pooled within-group SD were not available in the research report, (g) was calculated from the selected statistics (eg, *t*-values or exact *P*-values) or from proportions using formulae and tables, and demonstrated that small studies overestimated the population effect-size value (d).[40]

We removed the effect size of bias by multiplying the effect-size statistic (g) by a coefficient that included information on the sample size of the experimental and control groups, which resulted in a statistically unbiased effect-size statistic, ie, (d). Studies with a large sample size provide more stable estimates of (d) than studies with a small sample size.[12] To give greater weight to studies with larger sample sizes, each effect-size value (d) was then weighted by the inverse of its variance before averaging the effect-size values across studies. Because (d) values were calculated from proportions with different sampling distributions, d values were calculated from means or *t* values and their variance was calculated.

In this research, (d_+) was used to represent the average, weighted, unbiased estimate of effect. According to Cohen, 0.2, 0.5, and 0.8 correspond to small, medium, and large effects, respectively.[40] For all effect-size values, the convention was adopted to ascribe them a positive sign when the experimental group had a better outcome than the control group (eg, reported less grief) and a negative sign when the control group had less grief. Whenever pretreatment and post-treatment scores were reported for the same outcome, a pretreatment (d) value was calculated, and the observed post test effect-size value was adjusted for any pretreatment difference between the groups by subtracting the (d) value estimated from pretest data from the (d) value estimated from the post-test data.

Statistical analysis

Studies were allowed to contribute only to effect-size value, (d), to any estimate effect obtained by averaging effect-size values across multiple studies, ie, (d_+). Because some studies had multiple outcomes, control groups, or experimental groups, several procedures were needed to obtain the single effect-size value for self-answered psychological stress for each study. For example, when two or more measures of self-answered psychological stress were found in a study, all effect-size values for measures of pain calculated for the comparison between the experimental treatment and control groups were averaged to provide a single estimate of effect. When multiple experimental treatment groups were used, several decision rules were applied. If the primary researcher made a prediction about which experimental treatment would have the largest effect on psychological stress, the effect-size value calculated for the treatment group was selected to represent the study. If no prediction was made, in most instances, the effect-size values for psychological stress were averaged across all experimental treatment groups. However, if the design was factorial, the effect-size value for the experimental group that received the largest number of treatments (ie, factors) was selected to represent the study.[12]

A modified sample of studies was used for subgroup analysis, ie, analysis of the effect of each type of treatment on psychological stress. A study could be represented by more than one effect-size value, as long as only one effect-size value (d) from the study was used in the calculation of any average, weighted, unbiased estimate of effect (d_+). For example, in studies with two experimental treatment

groups (eg, follow-up) the effect-size value for each of those treatments was included in the appropriate type of treatment subgroup. If a study had two experimental treatment groups that received the same treatment content, only the effect-size values for the two experimental groups in the study would be averaged to obtain a single effect-size value for the appropriate type of treatment subgroup.[12]

Results

Fourteen instruments were included in the meta-analysis (Tables 1-3 and 5). When multiple reports of the same research were available, they were reviewed for relevant information and included in the reference list. However, for analysis, all research reports based on a single sample of subjects were considered a single study.

Study characteristics

The studies were from 1984–1996. All were published in a journal. Two of these articles are also part of doctoral dissertations. Of the 14 scales included, the study sites comprised care and science (33%), fetal medicine (7%), psychiatry (13%), psychology (33%), psychosomatic medicine (7%), and social medicine (7%). With regard to design, eight studies (57%) included a control group. The other six studies involved pretest and post-test analysis of a single group. Of the studies with control groups, most (n = 6) of the control treatments involved community populations with the same age, delivery, etc. Individual subjects were randomly assigned to treatment groups in nine studies (40%). Sample sizes in the studies ranged from 60–459 women, and the median sample size was 242.

Subject characteristics

The 14 instruments included data from 1839 women who had experienced perinatal loss, including miscarriage. As reported in 14 papers, the age of the subjects ranged from 29 to 35 years. Only one study included men. Two studies reported the race or ethnicity of their subjects. One study's subjects were Chinese,[41] and, in seven studies, all subjects were described as Caucasian or Anglo Saxon. Two studies described their subjects as black, white, or Hispanic. Included in the reports were marital status and education level, as well as early perinatal loss and number of deliveries. None of the studies reported separate analyses of treatment effect by age, gender, race, and/or ethnicity. The type of loss was reported for all 15 studies. In 13 studies, all subjects suffered miscarriage, and one study included different types of perinatal loss.[33] Documented psychological stress was identified in all studies, including depression (40%), anxiety (7%), stress feelings (40%), and grief (27%). In the studies reviewed, various measures of present or usual feelings were employed, but a five-point Likert[26] scale was the most common (53%).

Setting characteristics

Seven studies (45%) were conducted in the US and 36% were conducted in the UK. The other studies were conducted in China, Germany, and Sweden. Of the 14 studies that reported the setting of the experimental treatment, four (29%) were conducted in a university, three (17%) had a combination of treatments were conducted in a hospital, and the remaining seven (50%) were conducted in an outpatient setting, with a subsequent practice component conducted in the subjects' home.

Treatment characteristics

At least one effect-size value could be coded for 46 experimental treatment groups identified in the 14 studies in the sample. Analysis of the narrative descriptions of psychological stress (eg, stress, anxiety, depression, thought, or grief) was undertaken. Study durations were from two days to two years after the experience of perinatal loss. Several measures could be conducted in the same study. Treatments lasting less than one week accounted for 47%, those lasting six weeks accounted for 40%, and those lasting four months comprised 33% of the studies. Long-lasting effects requiring treatment after one year comprised 20% of the studies, and effects requiring treatment after two years accounted for 13% of the studies.

Threats to validity

Before determining an average of psychological stress threats to validity based on publication bias, low internal validity was examined with coefficient (α)[42] or split-half reliability with correction by Spearman–Brown (r_{SB}).[43] Coefficient (α) should be higher than 0.7 and reliability (r) should be near 1.0.[12] This was performed to determine whether the magnitude or direction of treatment effect differed among studies that were and were not affected by threats to validity and size effect. No statistical invalidity was found in the relationships between threats to validity and effect-size values.

Psychological stress after perinatal loss

Psychological stress was measured using self-answered questionnaires. Across all studies, a moderately sized, statistically significant, beneficial difference after perinatal

Table 5 Calculated (d) for included studies

S. no.	Study	Allocation	Subjects, sample size, attrition, first measurement of psychological stress	Intervention	Psychological stress measures, effect-size values,[b] timing of post-test measure
1	Alderman et al[53]	First in treatment group, matched with men	Women with miscarriage treatment, n = 129; control, n = 19 Attrition: Average stress intensity at pretest? on a 1–5 scale	Treatment Control	Impact Event Scale d = 0.11 (intrusive) d = –0.73 (avoidance)
2	Beutel et al[54]	First in treatment group, matched pair assigned	Women with miscarriage treatment, n = 125; control, n = 80 Attrition: 27% Average grief intensity at pretest? on a 1–5 scale	Treatment Control	Munich Grief Scale d = 1.24
3	Lee et al[39]	Random assignment	Women with miscarriage treatment, n = 21; control, n = 18 Attrition: None was reported Average stress at pretest? on a 1–5 scale	Treatment Control	Impact Event Scale Phase 1 d = 0.17 intrusive d = –0.26 avoidance Phase d = 0.43 intrusive d = –0.18 avoidance
4	Lee and Slade[4]	First in treatment group, matched pair assigned	Women with miscarriage treatment, n = 21; control n = 18 Attrition: Average intensity at anxiety and depression pretest? on a 1–4 scale	Treatment Control	Hospital Anxiety and Depression Scale Phase 1 d = –0.11 anxiety d = –012 anxiety Phase 3 d = –0.29 depression
5	Lee et al[41]	First in treatment group, matched pair assigned	Women with miscarriage treatment, n = 18; control, n = 150 Attrition: Average intensity at pretest? on a 1–5 scale	Treatment Control	Beck Depression Inventory d = –2.37
6	Geller et al[18]	First in treatment group, matched pair assigned	Women with miscarriage treatment, n = 229; control, n = 230 Attrition: Average intensity at pretest? on a 1–5 scale	Treatment Control	Center for Epidemiologic Studies Depression Scale d = –1.45
7	Lin et al[33]	Pre- and post-test	Women with perinatal loss single group, n = 122 Attrition: Average intensity at pretest? on a 1–5 scale	Treatment Control	Perinatal Grief Scale d = –0.65
8	Neugebauer et al[15]	First in treatment group, matched pair assigned	Women with miscarriage treatment, n = 229; control, n = 230 Attrition: Average intensity at pretest?	Treatment Control	Center for Epidemiologic Studies Depression Scale d = –2.7
9	Nikcevic et al[6]	First in treatment group, matched pair assigned	Women with miscarriage treatment, n = 207; control, n = 211 Attrition: Average intensity at grief pretest? on a 1–5 scale	Treatment Control	Texas Grief Inventory (adjusted to miscarriage) d = –0.32
10	Nikcevic et al[21]	First in treatment group, matched pair assigned	Women with miscarriage treatment, n = 129, control n = 19 Attrition: 4% Average intensity at grief pretest? true/false scale	Treatment Control	Texas Grief Inventory d = –0.98 despair d = –0.62 anger d = –0.20 guilt d = –0.24 social isolation d = –0.17 loss of control d = –1.09 rumination d = –0.55 depression d = –0.91 somatize d = –0.29 death anxiety

(*Continued*)

Table 5 (*Continued*)

S. no.	Study	Allocation	Subjects, sample size, attrition, first measurement of psychological stress	Intervention	Psychological stress measures, effect-size values,[b] timing of post-test measure
11	Swanson et al[23]	Random assignment	Women with miscarriage treatment, n = 42, control n = 36 Attrition: Average intensity at pretest? on a 1–5 scale	Treatment Control	Impact of Miscarriage (IES) After six weeks d = –0.07 overall d = –0.13 lost baby d = –0.06 personal significance d = –0.02 divesting event After four months d = –0.05 overall d = –0.02 lost baby d = –0.25 personal significance d = 0.02 divesting event
12	Swanson et al[23]	Random assignment	Women with miscarriage treatment, n = 43, control, n = 40 Attrition: Average intensity at pretest? on a 1–5 scale	Treatment Control	Profile of Mode State After six weeks d = –0.26 overall impact d = 0.16 anxiety d = 0.23 depression d = 0.29 anger d = 0.15 confusion After four months d = –0.21 overall impact d = 0.01 anxiety d = 0.14 depression d = 0.37 anger d = 0.15 confusion
13	Swanson et al[23]	Random assignment	Women with miscarriage treatment, n = 45, control n = 42 Attrition: Average intensity at pretest? on a 1–5 scale	Treatment Control	Self-esteem d = –0.11
14	Swanson et al[17]	Random assignment	Women with miscarriage treatment, n = 45, control n = 42 Attrition: Average intensity at depression pretest? on a 0–4 scale Cronbach $\alpha = 0.48$	Treatment Control	Symptoms of Stress Inventory d = –1.04

loss was found, ie, (d) = 0.02 or larger. Across the different concepts, a moderately sized, statistically significant, beneficial effect on depression was found (d_+ 0.99, 95% confidence interval [CI]: 1.06–0.92, Q = 117.5, df = 9) and grief (d_+ 0.52, 95% CI: 0.46–0.58, Q = 25.7, df = 11). No statistically significant difference was identified for anxiety (d_+0.16, 95% CI: 0.05–0.29, Q = 2.1, df = 6) or stress (d_+0.75, 95% CI: 0.69–0.81, Q = 117.5, df = 10, see Table 5).

Discussion

Studies of women's experience of miscarriage have been performed in different disciplines of research, including psychiatry, psychology, and nursing. Different aspects of stress after miscarriage are identified in this study. Depression had the highest (d_+) at 0.99, and is frequently used in connection with experience of perinatal loss.[15,21,23,39,41] Psychiatric morbidity are found following miscarriage in 27% of cases on diagnostic interview ten days after the event.[44] Grief had a medium d_+ (0.56) in the included studies.[21,27,33] However, the grief experienced after perinatal loss was different to other types of grief, in that the parents had no focus for their grief, guilt was greater[7] and with broader manifestations, and only 47% of cases appeared to reflect the experience of a normal grieving process.[33] The experience of miscarriage was considered to be distressing and significant.[45] Measurement of stress seems to have been difficult in the included studies, which had a d_+ of 0.17.[23,39] Women with high stress levels ten days after miscarriage comprised 47.4% using the Impact of Event

scale.[46] Anxiety as measured in these studies yielded a d_+ of 0.16.[21,23] Brier[47] proposes that women need to be screened for anxiety and depression after miscarriage. In accordance with that, we propose that feelings of stress are common after miscarriage, and are more like a grief reaction. Recommendations have been made measure grief after perinatal loss[48,49] using an adapted instrument known as the Perinatal Grief Scale Short Version.[34] This scale has international normal values[50] and has been translated into Swedish.[51] When women were evaluated using this instrument and treated accordingly, their wellbeing was observed to improve.[52]

Clinical implications

After experiencing perinatal loss, women tend to have different types and degrees of reaction to the event. It is considered normal and healthy to have a grief reaction that most women can work through and resolve by themselves. When the level of depression is used as a measurement of a woman's reaction to such a loss, it is considered to be a measurement of a diagnosed illness. However, when the measurement of loss is done in terms of grief, eg, by using the Perinatal Grief Scale, the woman's reaction is regarded as normal under the circumstances. The symptoms of depression and grief are very similar, but depression is regarded as an illness and grief is regarded as a normal reaction. By using a measurement of grief, we can identify women experiencing grief outside normal limits, and these women can be assisted by the health care system when the support of their intimate circle of friends, family, and colleagues is inadequate. Studies have shown that approximately 10% of women who have suffered a perinatal loss experience such an extreme level of grief that they need specialist treatment.[5]

Disclosure

The author reports no conflict of interest in this work.

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