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The Experience and Meaning of Miscarriage

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Abstract

Objective: This study aimed to describe women's experiences of miscarriage and to compare the meanings of miscarriage for Burundian women and men using the Revised Impact of Miscarriage Scale (RIMS).

Methods: This cross-sectional study used both qualitative and quantitative methods in a rural area of Rutana, Burundi, East Africa. In the qualitative method with an inductive approach, a psychologist conducted semi-structured interviewed with women one month after their miscarriage. Additionally, the women responded to questions regarding their health. The results were analyzed using Heidegger's interpretative phenomenology, "Being and Time," and thematic content analysis.

In the quantitative study, men and women responded to the validated Kirundi-translated RIMS questionnaire after two weeks. The women responded to questions regarding their health.

Results: Eleven women shared their everyday lived experiences with miscarriage from past, present, and future perspectives. The results were categorized into seven themes. Women expressed feelings of happiness regarding their pregnancies and a sense of loss following miscarriage. Some women blamed themselves for actions they believed may have contributed to the miscarriage. Women noted a lack of information about miscarriages from healthcare providers. However, they appreciated the quality of care they received during the miscarriage and valued the follow-up appointments offered

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by healthcare providers afterwards. Twenty-three couples responded to the RIMS questionarrie. All three RIMS factors and four additional questions had a more significant impact on women than on men.

Conclusions: Women experienced feelings of isolation and guilt, self-blame, and devastation after a miscarriage, leading to a sense of loss. The three RIMS factors had a more significant impact on women than on men. Women appreciated the quality of care and the follow-up provided by their healthcare providers.

Keywords: Emotion; Experience; Meaning; Miscarriage; Gender.

Introduction

The meaning of miscarriage holds an individual significance in a person's life [1]. Miscarriage can lead to feelings of anxiety, depression, shock [2], depressive symptoms [3], and post-traumatic stress disorders (PTSD), grief, and postnatal depression [4].

Women at the highest risk for experiencing anxiety and depression following a miscarriage include those who are younger or of lower socioeconomic status. Women with loss of a prior miscarriage, planned pregnancy, history of infertility, and poor social support or coping skills [2]. Women with miscarriage are at risk of suffering from guilt and self-blame that may even be present in subsequent pregnancies [5].

Approximately 10-26 % of all pregnancies end in miscarriage. There are several types of miscarriages: complete miscarriage, incomplete miscarriage, and missed miscarriage. Over 50 % of all miscarriages result from chromosomal abnormalities. Approximately 80% of all miscarriages occur in the first trimester, specifically up to thirteen weeks of pregnancy. Healthcare providers can use ultrasonography and human gonadotropin (hCG) levels test to diagnose clinical miscarriages [6].

Treatment options for a miscarriage include expectant management, medical management, and or surgical treatment [6]. Involving women in the treatment decision--making process can improve their mental health outcomes [7].

A woman's age, history of previous miscarriages [8], and uterine abnormalities, and cervix insufficiency are known risk factors for miscarriage. Lifestyle factors, such as cigarette smoking, alcohol consumption, and having a high body mass index (BMI), and environmental factors can also contribute to the risk [9]. Infections, such as malaria, as well as endocrinological issues and certain chronic diseases may be a cause of miscarriage [10].

The Impact of the Miscarriage Scale (IMS) was developed to capture the significance and meaning of miscarriage. IMS does not measure grief, depression, depressive symptoms, or anxiety [11].

The IMS was revised in the United States (U.S.) and is now referred as the Revised Impact of Miscarriage Scale (RIMS). This scale consists of three main factors: isolation and guilt, loss of a baby, and experiences of devastating events. It includes 16 items and demonstrates acceptable internal consistency for both genders combined in the U.S [1].

The Kirundi translation of RIMS has recently been validated in the Republic of Burundi. It has maintained the original factor structure, which consist of three factors and has demonstrated excellent internal consistency for both genders [12]. By using the Kirundi translated questionnaire, RIMS healthcare providers can get a better understanding of how a miscarriage affects the meaning of miscarriage in men and women in the Republic of Burundi.

This research's contextual perspective focuses on the limited studies of the experiences of miscarriage in women and the meaning of miscarriage in women and men in the Republique of Burundi. Therefore, this study aimed to describe women's experiences of miscarriage and to compare the meanings of miscarriage for both Burundian wom-

en and men using the RIMS questionnaire. This research aims to improve the knowledge and understanding of miscarriage care.

Material and Methods

Study Design

This cross-sectional study employs a mixed methods approach, incorporating both qualitative and quantitative data.

Inclusion and Exclusion Criteria

The inclusion criteria included women who had experienced miscarriages between pregnancy week 6 and 0 days and pregnancy week 21 and 6 days. All study participants needed to understand Kirundi. Women diagnosed with ectopic pregnancies [13], molar pregnancies [14], or those who had experienced recurrent miscarriages [15] were excluded from the study.

Qualitative Data Collections

Healthcare providers collected the qualitative data from Centre de Santé in Gakwende, in a rural area of Rutana, Burundi, East Africa between March 3, 2022, and March 1, 2024. The healthcare providers randomly selected the participants before discharge from the hospital. A psychologist conducted semi-structured interviewed with women one month after their miscarriage. The women responded to questions regarding their sociodemographic characteristics, lifestyle factors, and reproductive health issues. The authors reflected on their pre-understanding before the interviews started. The researcher used semi-structured interviews with an inductive approach and open-ended questions. (Table 1). The total time required for each interview was 12 minutes, ranging from 10 to 15 minutes [16].

Table 1: The table shows the open-ended questions used in the semi structed interviews

"Tell me about your thoughts and feelings when you knew you were pregnant."
"Tell me about your thoughts and feelings when you had your miscarriage."
"Tell me about your thoughts and feelings after miscarriage."
"Tell me about your family members' thoughts and feelings after your miscarriage."
"Tell me about the healthcare providers and their care."
"Tell me about information and follow-up appointment after miscarriage."

Qualitative Data Analyses

An inductive approach using content latent analysis was applied to the verbatim transcripted interviews. In the first stage, the transcripts of the interviews were reread and reviewed by the researcher.

During the second stage, the researcher examined the text to ensure it aligned with the aim of the study to describe women's experiences with miscarriage, thereby validating and ensuring the reliability of the analyses.

In the third stage, linguistic units with similar meanings, ranging from individual words to lines of text, were grouped together. This was followed by condensing these meaningful units to capture their essence. Codes were then developed from the condensed meaning-bearing units, comprising words and phrases that represented the content of these units.

In the fourth stage, sub-categories and main categories were identified, who reflected the manifest content of the text.

Finally, in the fifth stage, themes were created from the latent content of the categories [16].

The researcher used Heidegger phenomenology, "Being and Time," as the interpretative framework to explore the qualitative study focused on women's lived experiences of miscarriage. By listening to women's responses to the interview questions, the researcher aimed to interpret

the experiences of several women who have experienced a miscarriage. "Being and Time" emphasizes the interconnectedness of the past, present, and future and maintains that these three distinct time frames are connected and significantly influence the interpretation of a person's lived experience following a miscarriage [17].

Quantitative Data Collection

Midwives and doctors collected the quantitative data from the Centre de Santé in Gakwende, Rutana, a rural area in Burundi, East Africa, between March 3, 2022, and March 7, 2023. The health care providers randomly selected the participants before discharge from the hospital. The researcher asked the women to complete the RIMS questionnaire designed for women. (Table 2), as well as another survey that include questions about their sociodemographic characteristics, lifestyle factor and reproductive health issues. The researcher asked the men to respond to the RIMS questionnaire designed for men [1]. (Table 2).

Table 2: The table presents the Revised Impact of the Miscarriage Scale (RIMS) factors and questions for both women and men. RIMS factors, isolation and guilt, loss of baby, and devastating events and 16 included questions with answers options: The answer options are revised and coded. (1) Definitely true for me (very good), (2) Quite true for me (good), (3) Rarely true for me (average), (4) Definitely not true for me (poor).

RIMS factors	RIMS questions
Isolation and guilt	I felt much alone in my loss.
	My (our) miscarriage destroyed my zest for life.
	I feel my (partner's) body has betrayed me.
	Through my (our) miscarriage, I have experienced a loss of pride in myself.
	I feel guilt about my (our) miscarriage.
	I feel very isolated by my (our) miscarriage.
Loss of a baby	Through miscarriage, I feel I lost a part of myself.
	I feel there will always be a place in my heart for the miscarried baby.
	Through miscarriage, I feel that I have lost a person.
	I get irritated when my (our) miscarried baby is called a fetus.
	I dwell on the fact that my child will only exist in my memory.
Devastating events	My (our) miscarriage was a horrendous, devastating event.
	Miscarriage equals one big loss of control.
	Miscarriage is like going from one extreme of happiness to the other total unhappiness.
	Miscarriage is a nightmare.
	My (our) miscarriage represents a major setback for me.

Participants responded to questions independently during a hospital follow-up appointment with a healthcare provider two weeks later.

RIMS Questionnaire

The RIMS questionnaire consists of 16 Likert-type questions, scored 1 - 4. It measures three factors: isolation and guilt, loss of a baby, and devastating events, with maximum scores of 64 (24, 20, and 20, respectively). Respondents can answer each question using one of the following options:

1) "Definitely true for me,"

2) "Quite true for me,"

3) "Rarely true for me," and

(4) "Definitely not true for me."

The responses are reverse-coded, meaning that higher scores indicate greater personal meaning and significance [1]. (Table 2).

Ethical Approval

The study received ethical approval from the Ethics and Human Health Research Committee of the Faculty of Medicine at the University of Burundi with the approval number (FM/CE/18/01/2022). Before they participated, the healthcare providers informed the individuals about the study's objective and that their participation was voluntary. Before being discharged from the hospital, the participants signed a consent form and were given a unique code to maintain confidentiality. They were assured that the researcher would use their provided information solely for research.

Furthermore, the researcher would store all data in a coded password-protected computer and a secure locker. Ethical principles involving human participants were used in this research. https://www.wma.net/what-we-do/medical-ethics/declaration-of-helsinki/

Statistical Analyses

The researcher conducted statistical analysis using IBM CORP., SPSS version 29.0 (SPSS, IBM, (Armonk, NY, USA). Descriptive statistics were used to analyze women's sociodemographic characteristics, lifestyle factors, and reproductive health issues. Categorical variables were reported as percentages (%) and numbers (n), while continuous variables were expressed as median and range.

A Mann-Whitney U-test was used to compare the RIMS scores between men and women. Means and standard deviations (SD) were calculated, with the level of statistical significance set a $p < 0.05$. The power calculation was based on a Swedish study that estimated a sample size of (n =45) participants needed to demonstrate sufficient statistical power. This calculation assumed a score difference of 3.5 on one of the RIMS factors, with a significance level of 0.05 and a desired power of 0.8 [18]. The data was obtained from the original American study [11].

Results

Results of Qualitative Data

Women's Health

The qualitative results include sociodemographic characteristics, lifestyles factors, reproductive health issues, and subjective mental health reported by the women. The median pregnancy week of miscarriage was 9 weeks and 3 days. (Table 3).

Table 3: The table shows scores of women's sociodemographic characteristics, lifestyle factors, and reproductive health issues. Data are given as median and range = (a) and as numbers (n) and percentage (%) = (b). Women with miscarriage (n = 11)

Sociodemographic characteristics	
Born in Burundi (b)	11 (100)
Parents born in Burundi (b)	11 (100)
Partner born in Burundi (b)	11 (100)
Partner parents born in Burundi (b)	11 (100)
Woman's age (a)	32 (19–48)
Married (b)	11 (100)
Cohabitating (b)	0 (0)
Unmarried (b)	0 (0)
Vocational training (b)	0 (0)

Primary school or no schooling (b)	7 (63.6)
Secondary school (b)	4 (36.4)
University (b)	0 (0)
Working as a farmer (b)	11 (100)
Lifestyle factors	
Smoking (b)	0 (0)
Never drinking alcohol (b)	10 (91.0)
Sometimes drinking alcohol (b)	1 (9.1)
Body Mass Index, underweight (b)	5 (45.5)
Body Mass Index, normal weight (b)	6 (54.5)
Exercise (b)	1 (9.1)
Reproductive health issues	
Week of miscarriage (a)	9+3 (6+5–12+4)
Ultrasound diagnosis (b)	11(100)
Spontaneous miscarriage (b)	11 (100)
Medical treatment (b)	11 (100)
How many times have you been pregnant (a)	4 (2–10)
Previous miscarriage (b)	11 (100)
Previous children (b)	11 (100)
Number of previous children (a)	3 (1–8)
Infertility treatment (b)	0 (0)
Planned pregnancy (b)	10 (91.0)
Subjective mental health	
Not good not bad (b)	10 (91.0)
Good subjective (b)	1 (9.1)

Study Participants

A total of eleven women were eligible to participate in the study, and there were no dropouts among them. The study was based on eleven interviews. Saturation was reached after the seventh interview, and the researchers conducted four additional interviews to further confirm saturation.

Results of the Interpretative Phenomenology of Heidegger "Being and Time," and Content Analysis

The results include perspectives from the past, present, and future [17]. Seven themes emerged from the content analysis [16]. (Table 4).

Past Perspective

Theme One: Perceptions of women's emotions, thoughts, and feelings regarding the happiness of becoming pregnant Women who had planned their pregnancies reported feeling joyful when they received positive pregnancy test results. One woman shared, ‘’I was happy to be pregnant and thanked the Lord." The quote highlights her happiness about the pregnancy.

Present Perspective

Theme Two: Women's perspectives on the quality of care during miscarriage. Each woman shared her experiences of emotional and physical pain during her miscarriage. Women reported their appreciation for the quality care they received from their healthcare providers at the clinic. One woman shared, "I thanked the healthcare providers for the care they provided to me during my miscarriage." The quote highlights the quality of care the woman felt she received from her healthcare providers during her miscarriage.

Table 4: The table shows (n=11) Interviews with women and content analysis. Meaning-bearing units, condensed meaning-bearing units, codes, sub-categories, categories, themes numbers, and themes.

Meaningbearing units	Condensed meaning bearing units	Codes	Sub-Categories	Categories	Themesnumber	Themes
"I was happy to be pregnant and thanked the Lord"	The women felt happy when they became pregnant	Women Happy Emotions Thoughts Feelings Pregnancy	The women were happy to get pregnant	The women felt happy emotions, thoughts and feelings about pregnancy	No. 1	Perceptions of women's emotions, thoughts, and feelings regarding the happiness of becoming pregnant
"I thanked the healthcare providers for the care they provided to me during my miscarriage"	Women received quality care from their healthcare providers during miscarriage	Quality care Healthcare providers DuringMiscarriage	Health care providers delivered quality care to the women during miscarriage	Women received quality care from their healthcare providers during miscarriage	No. 2	Women's perspectives on the quality of care during miscarriage
"I am devastated; I have lost my baby "	Women's thoughts and feelings of losing a baby during the miscarriage	Women Emotions Thoughts Feelings of losing a baby Miscarriage	Women's emotions, thoughts, and feelings of losing a baby	Women's emotions, thoughts, and feelings of losing a baby due to miscarriage	No. 3	Perception of women's emotions, thoughts, and feelings after miscarriage
"During the early stages of my pregnancy. I worked too hard; I was farming and walked a long distance to collect water and firewood. I believe that's why I had a miscarriage"	Women believed their actions during pregnancy caused the miscarriage	Women Emotions Thoughts Feelings Self-blame Following Miscarriage	Women ' s feelings of self-blame following the miscarriage	Women ' s emotions, thoughts, and feelings of self-blame following a miscarriage	No. 4	Perceptions of women's emotions, thoughts, and feelings of self-blame following a miscarriage

"My family members' feel sadness and grief after my miscarriage"	Family members were saddened and grieving after the women experienced the miscarriage	Family members' Emotions Thoughts Feelings Women Miscarriage	Family members' emotions	Family members' emotions, thoughts, and feelings following the woman's miscarriage	No. 5	Perception of women's emotions, thoughts, and feelings after miscarriage
"I did not receive any miscarriage information before I left the hospital, and I don't understand why I got a miscarriage"	Women did not received any information about the miscarriage from healthcare providers	WomenLack of InformationAbout miscarriage Healthcare providers	Lack of information about miscarriage from healthcare providers	Women reported lack of information about the miscarriage from healthcare providers	No. 6	Women's perception of insufficient miscarriage information from healthcare providers
"Thank you for your counseling. now I feel peace and hope for the future"	The health care providers offer the woman a follow-up appointment following the miscarriage	WomenFollow-up Appointment Healthcare providers	Women appreciated a follow-up appointment from their healthcare providers	Women appreciated a follow-up appointment from healthcare providers following their miscarriage	No. 7	Women's perceptions of follow-up appointments with healthcare providers after experiencing a miscarriage

Theme Three: Perception of women's emotions, thoughts, and feelings after miscarriage Women shared their emotions and feelings surrounding the loss of their baby due to miscarriage. One woman shared, "I feel devastated; I have lost my baby." The quote emphasizes the sense of loss a woman experiences during and after her miscarriage.

Future Perspective

Theme Four: Perceptions of women's emotions, thoughts, and feelings of self-blame following a miscarriage. Many women felt that their actions during pregnancy may have influence the outcome. One woman shared, "During the early stages of my pregnancy, I worked too hard; I was farming and walked a long distance to collect water and firewood. I believe that's why I had a miscarriage."

The quote indicates that the woman believed her actions during pregnancy were responsible for the miscarriage. Many women often find themselves feeling sad because they struggle with thoughts of self-blame.

Theme Five: Perceptions of family members' emotions, thoughts, and feelings after a woman's miscarriage. Women shared that their spouses and family members experienced feelings of sadness and grief after their miscarriages.

One woman shared, "My family members feel sadness and grief after my miscarriage." The quote highlights her feelings that her family members were affected by the loss of the miscarriage.

Theme Six: Women's perception of insufficient miscarriage information from healthcare providers. Many women reported a sense of confusion due to the lack of information provided by their health care providers. One woman shared, "I did not receive any information before I left the hospital, and I don't understand why I had a miscarriage." The quote indicates that she felt uninformed about miscarriages after her experience.

Theme Seven: Women's perceptions of follow-up appointments with healthcare providers after experiencing

a miscarriage. A counselor reached out to women, inviting them for a follow-up appointment a month after their miscarriage. During this appointment, the counselor encouraged them to express their emotions. The women appreciated the counseling they received. One woman expressed her gratitude to the healthcare provider, "Thank you for your counseling. Now, I feel peace and hope for the future." The quote indicates that the woman valued the follow-up care provided by healthcare providers after her miscarriage.

Results of Quantitative Data

Women's Health

The quantitative results include sociodemographic characteristics, lifestyles factors, reproductive health issues, and subjective mental health reported by the women. The median pregnancy week of miscarriage was 9 weeks and 1 day. (Table 5).

Table 5: The table shows scores of women's socio-demographic characteristics, Lifestyle factors, and reproductive health issues. Data are given as median and range = (a) and as numbers (n) and percentage (%) = (b). Women with miscarriage (n = 23).

Sociodemographic characteristics	
Born in Burundi (b)	23 (100)
Parents born in Burundi (b)	23 (100)
Partner born in Burundi (b)	23 (100)
Partner parents born in Burundi (b)	23 (100)
Woman's age (a)	33.5 (21–40)
Married (b)	23 (100)
Cohabitating (b)	0 (0)
Unmarried (b)	0 (0)
Vocational training (b)	10 (43.5)
Primary school (b)	8 (34.8)
Secondary school (b)	5 (21.7)
University (b)	0 (0)
Working as a farmer (b)	23 (100)
Lifestyles factors	
Smoking (b)	0 (0)
Sometimes drinking alcohol (b)	5 (21.7)
Body Mass Index, underweight (b)	9 (39.1)
Body Mass Index, normal weight (b)	14 (60.9)
Exercise (b)	1 (4.3)
Diseases	
Malaria (b)	5 (21.7)
Reumatism (b)	1 (4.3)
Anemi (b)	3 (13.0)
Tyfoid (b)	1 (4.3)
Reproductive health issues	

Week of miscarriage (a)	9+1 (6+1–12+3)
Ultrasound diagnosis (b)	23 (100)
Spontaneous miscarriage (b)	23 (100)
Medical treatment (b)	23 (100)
Previous miscarriage (b)	23 (100)
Numbers of previous miscarriage (a)	2 (1–5)
Previous children (b)	23 (100)
Number of previous children (a)	4.5 (0–12)
Infertility (b)	0 (0)
Infertility treatment (b)	0 (0)
Planned pregnancy (b)	16 (69.6)
Subjective mental health	
Poor (b)	4 (17.4)
Not good not bad (b)	18 (78.3)
Good (b)	1 (4.3)

Study Participants

A total of twenty-three couples (23 women and 23 men), were eligible to participate in the study, and there were no dropouts among them.

Comparison of RIMS Scores Between Women and Men

The significance of miscarriage was generally more pronounced among women compared to men in all three RIMS factors. Burundian women scored significantly higher in the isolation/guilt factor (p =0.034*), in the loss of a baby factor (p=0.002**), and in the devastating events factor (p= 0.006**). (Table 6).

Women scored significantly higher (p=0.028*) than men on the third question in the Isolation/guilt factor: "I feel my body has betrayed me." Women also had significantly higher scores than men on the second question (p=0.035*)," I feel there will always be a place in my heart for the miscarried baby." Additionally, women scored significantly higher than men on the fourth question (p=0.005**) in the loss of baby factor, "I get irritated when my miscarried baby is called a fetus" within the factor loss of a baby.

In the devastating events factor, women scored significantly higher than men on the first question (p=0.024*): "My miscarriage was a horrendous devastating event [1]." (Table 6).

Table 6: Scores from the Revised Impact of Miscarriage Scale (RIMS) in women with miscarriages (n=23). The answer options are revised and coded. (1) Definitely true for me (very good), (2) Quite true for me (good), (3) Rarely true for me (average), (4) Definitely not true for me (poor).

Isolation and guilt			
RIMS questions with answers 1- 4	Women n = (23) Mean ± SD	Men n = (23) Mean ± SD	P-value
Factor; Isolation and guilt	22.05 ± 3.79	20.70 ± 4.82	0.034*
Question 1 (%)	3.83 ± 0.38	3.83 ± 0.65	0.430

1	0 (0)	1 (4.3)	–
2	0 (0)	0 (0)	–
3	4 (17.4)	1 (4.3)	–
4	19 (82.6)	21 (91.3)	–
Question 2 (%)	3.52 ± 0.79	3.48 ± 0.73	0.655
1	1 (4.3)	1 (4.3)	–
2	1 (4.3)	0 (0)	–
3	6 (26.1)	9 (39.1)	–
4	15 (65.3)	13 (56.6)	–
Question 3 (%)	3.65 ± 0.71	3. 09 ± 1.04	0.028*
1	1 (4.3)	3 (13.0)	–
2	0 (0)	2 (8.7)	–
3	5 (21.7)	8 (34.8)	–
4	17 (74.0)	10 (43.5)	–
Question 4 (%)	3.70 ± 0.70	3.26 ± 1.14	0.162
1	1 (4.3)	4 (17.4)	–
2	0 (0)	0 (0)	–
3	4 (17.4)	5 (21.7)	–
4	18 (78.3)	14 (60.9)	–
Question 5 (%)	3.78 ± 0.42	3.91 ± 0.29	0.223
1	0 (0)	0 (0)	–
2	0 (0)	0 (0)	–
3	5 (21.7)	2 (8.7)	–
4	18 (78.3)	21 (91.3)	–
Question 6 (%)	3.57 ± 0.79	3.13 ± 0.97	0.053
1	1 (4.3)	3 (13.1)	–
2	1 4.3)	0 (0)	–
3	5 (21.8)	11 (47.8)	–
4	16 (69.6)	9 (39.1)	–
Loss of a baby			
Factor; Loss of a baby	19.08 ± 1.67	17.39 ± 4.42	0.002**
Question 1 (%)	3.78 ± 0.42	3.48 ± 0.78	0.163
1	0 (0)	1 (4.3)	–
2	0 (0)	1 (4.3)	–
3	5 (21.7)	7 (30.5)	–
4	18 (78.3)	14 (60.9)	–

Question 2 (%)	3.87 ± 0.34	3.39 ± 0.94	0.035*
1	0 (0)	2 (8.7)	–
2	0 (0)	1 (4.3)	–
3	3 (13.0)	6 (26.1)	–
4	20 (87.0)	14 (60.9)	–
Question 3 (%)	3.65 ± 0.49	3.52 ± 0.90	0.925
1	0 (0)	2 (8.7)	–
2	0 (0)	0 (0)	–
3	8 (34.8)	5 (21.7)	–
4	15 (65.2)	16 (69.6)	–
Question 4 (%)	4.00 ± 0.00	3.52 ± 0.90	0.005**
1	1 (4.3)	2 (8.7)	–
2	0 (0)	0 (0)	–
3	4 (17.4)	5 (21.7)	–
4	18 (78.3)	16 (69.6)	–
Question 5 (%)	3.78 ± 0.42	3.48 ± 0.90	0.269
1	0 (0)	2 (8.7)	–
2	0 (0)	0 (0)	–
3	5 (21.7)	6 (26.1)	–
4	18 (78.3)	15 (65.2)	–
Devastating events			
Factor; Devastating events	18.75 ± 2.34	17.34 ± 3.97	0.006**
Question 1 (%)	3.83 ± 0.39	3.39 ± 0.78	0.024*
1	0 (0)	1 (4.3)	–
2	0 (0)	1 (4.3)	–
3	4 (17.4)	9 (39.2)	–
4	19 (82.6)	12 (52.2)	–
Question 2 (%)	3.57 ± 0.59	3.43 ± 0.94	0.979
1	0 (0)	2 (8.7)	–
2	1 (4.3)	1 (4.3)	–
3	8 (34.8)	5 (21.8)	–
4	14 (60.9)	15 (65.2)	–
Question 3 (%)	3.78 ± 0.52	3.39 ± 0.94	0.095
1	0 (0)	2 (8.7)	–
2	1 (4.3)	1 (4.3)	–
3	3 (13.1)	6 (26.1)	–

4	19 (82.6)	14 (60.9)	–
Question 4 (%)	3.83 ± 0.39	3.61 ± 0.72	0.279
1	0 (0)	1 (4.3)	–
2	0 (0)	0 (0)	–
3	4 (17.4)	6 (26.1)	–
4	19 (82.6)	16 (69.6)	–
Question 5 (%)	3.74 ± 0.45	3.52 ± 0.59	0.194
1	0 (0)	0 (0)	–
2	0 (0)	1 (4.3)	–
3	6 (26.1)	9 (39.1)	–
4	17 (73.9)	13 (56.6)	–

Note: Statistical analysis was performed with the Mann-Whitney U-test and data are reported as mean ± SD or n (%). $P < 0.05$ was a significant difference. *p<0.05 **p<0.01.

Discussion

This study aimed to describe women's experiences of miscarriage and to compare the meanings of miscarriage for Burundian women and men using the RIMS questionnaire. In this study, the women interviewed who planned their pregnancies reported feeling happy about their pregnancy.

After experiencing a miscarriage many women expressed feelings of self-blame, believing they had done something during the pregnancy that caused the loss. One woman shared, "During the early stages of my pregnancy, I worked too hard; I was farming and walked a long distance to collect water and firewood. I believe that's why I had a miscarriage."

A previous study from Sweden about women's experiences of miscarriage found that miscarriage can lead to feelings of guilt and emptiness [19]. Women reported significantly higher levels of isolation and guilt compared to men. Isolation and guilt defined as how a person feels alone and isolated after a miscarriage [11].

In this study, women scored significantly higher than men on question three: "I feel my body has betrayed me" in the factor of Isolation and guilt [1]. In previous findings from Sweden, both American and Swedish women reported significantly more feelings of isolation and guilt compared to men [20].

In this interview study, women expressed confusion about their miscarriages and noted a lack of information regarding miscarriages from their healthcare providers. Research from the United Kingdom indicates that women who received a medical explanation for their miscarriage experienced significantly less self-blame. This finding was especially notably among those who had a routine ultrasound examination between 10 and 14 weeks of gestation [21].

Women in this study appreciated having a follow-up appointment with a psychologist. During this appointment, they were able to discuss their miscarriage experiences and share their emotions, thoughts and feelings. A study from Australia found that women have several recommendations for improving the care provided by healthcare providers. These suggestions include referrals to psychologists and improved information and follow-up care after experiencing a miscarriage [22].

In this study, Burundian women scored significantly higher than men on the factor of loss of a baby, which is defined as the person viewing the miscarriage as losing a baby or losing a pregnancy [11]. All women interviewed in this study perceived their miscarriage as the loss of a baby. One woman shared, "I feel devastated; I have lost my baby."

Women scored significantly higher than men on the second and fourth questions within the factor of loss of baby. Previous research conducted in Burundi, Sweden, and the U.S. has revealed significant findings related to question two in the factor concerning the loss of a baby. Question two stated, "There will always be a place in my heart for the miscarried baby [1,12,20]." In this study, women reported that their family members' experienced feelings of sadness and grief after their miscarriages. One woman shared, "My family members' feel sadness and grief after my miscarriage."

In this study, Burundian women scored significantly higher than men on the factor related to devastating events, which explains how a miscarriage could be viewed as hope-destroying or devastating [11]. Additionally, women scored significantly higher than men on the first question on the same factor; Question one stated: "My miscarriage was a horrendous devastating event [1]." However, a recent study conducted in Burundi found no significant differences between women and men regarding the factor of devasting events [12].

A study from Australia found that women have provided recommendation to improve the service offered by healthcare providers. They suggest that healthcare providers should provide follow-up appointments and offer referrals to psychologist following a miscarriage. The women believe that this support could help them better manage their feelings after experiencing a miscarriage [23].

All the women participating in this study have experienced at least one previous miscarriage. Research conducted in Burundi has shown that the effects of miscarriage are more significant in women who have had prior miscarriages. These women are impacted in all three RIMS factors when compared to women who have never experienced a miscarriage [12].

Previous research has shown that individual emotional reactions following a miscarriage can be influenced by factors as culture, and religious beliefs [24].

The women in this study expressed gratitude to their healthcare providers from antenatal care (ANC) at the healthcare center for their quality of care during the miscarriage and follow-up after the miscarriage. One woman shared, "I thanked the healthcare providers for the care they provided to me during my miscarriage." Another woman expressed her gratitude to the healthcare provider, "Thank you for your counseling. Now, I feel peace and hope for the future."

A previous study involving 8,941 women from the Burundian Demographic and Health Survey (DHS) indicated that women's socio-demographic charateristics, and socioeconomic factors influenced their likelihood of seeking antenatal care (ANC) during pregnancy [25].

Clinical Implications

Healthcare providers can improve patient care by offering both verbal and written information about lifestyle factors, risk factors, and causes of miscarriage with empathy, knowledge, and care [26].

Moreover, healthcare providers could schedule a follow-up appointment for patients before they are discharged from the hospital. During this follow-up, they can administer the Kirundi validated and translated the RIMS questionnaire to both women and men [12].

The RIMS questionnaire can help to identify questions and topics and highlights areas that may require additional support after a miscarriage or during a subsequent pregnancy. The strengths of this study are the integration of both quantitative and qualitative research data, which makes a more profound understanding of the experience and meaning of miscarriage in women and men in Burundi. The Kirundi translation of RIMS has been validated in Burundi. It has maintained the original factor structure, which consist of three factors and 16 questions. RIMS has demonstrated excellent internal consistency for both genders [12].

Additionally, the uniformity of the participants is a significant advantage, as they all come from rural backgrounds and share similar sociodemographic characteristics, lifestyles factors, and reproductive health issues. However, a limitation of the study is its primary focus on women who experienced a miscarriage during the first trimester of pregnancy.

Future Research

Healthcare providers and researchers can use RIMS and conduct interviews to identify individuals who may need additional support after experiencing a miscarriage in the second trimester or during a subsequent pregnancy.

Conclusion

Women expressed feelings of happiness regarding their pregnancies but also experienced a sense of loss after a miscarriage. Many blamed themselves for actions they thought might have contributed to the miscarriage. Additionally, they noted a lack of information about miscarriage from healthcare providers. However, they appreciated the quality of care they received during the miscarriage.

Family members also shared feelings of sadness and grief. Women appreciate having a follow-up appointment after their miscarriage, as it offers continuity of care and emotional support. The Kirundi translated and validated RIMS, which showed validity and reliability. Additionally, all three RIMS factors more significantly impacted women than men.

Authors Contributions

Caroline Lundqvist-Jansson, Ph.D., Midwife, planned and designed the study, analyzed the data, and contributed to the writing of the article.

Jean-Bosco Ndayavurwa, Literary. conducted the data collection and also contributed to the writing of the article.

Patrick Igiraneza, Psychologist, was responsible for data collection in Gakwende and contributed to the writing of the article.

All authors have given their approval for the final version of the paper to be published.

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Conflicts of Interest

All authors report no conflict of interest.

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