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Maternal Coping Mechanism and Its Associated Factors Following Perinatal Loss in Hospitals of Wolaita Zone, South Ethiopia 2021

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Abstract

Perinatal loss is the most painful and unanticipated experience for those who conceived and it is a major global concern worldwide, especially in developed countries like Ethiopia. Women who lost their pregnancy are believed to be at higher risk of developing severe grief following a loss. To reduce the risk of complications after perinatal loss, healthcare providers need to appreciate the grieving process and identify grief factors in mothers for early copying and to be managed promptly by providing adequate emotional, social, and psychological support. This study aimed to assess the level of maternal coping mechanisms and associated factors

following perinatal loss in Hospitals of Wolaita Zone, Ethiopia, 2021. A hospital-based cross-sectional study design was conducted from June 30/2021-August15/2021. Study participants were selected through systematic random sampling. Epi-data manager version 4.6 was used for template preparation and data entry and SPSS version 25 was used for analysis. Logistic regression was employed. The strength of association was declared at a p-value < 0.05 with 95% CI. Out of the total 393 participants, 51.4% had positive coping mechanisms whereas the rest, 48.6% had a poor coping mechanism following perinatal loss. Participants who have been satisfied with marriage (AOR = 5.64, 95% CI(3.10-10.29)), history of Antenatal care(ANC) follow-up(AOR = 2.52, 95% CI(1.39-4.57)), profession-based support(AOR = 2.91, 95% CI(1.64-5.15)), support from their own spiritual belief (AOR = 3.87, 95% CI(2.33-6.43)), support from their parents(AOR = 8.11, 95% CI(3.94-16.69)), support from their husband(AOR = 3.2, 95% CI (1.74-5.89)) and discussed/received information from those who had a history of loss(AOR = 2.65, 95% CI (1.31-5.32)) were some of the factors associated with positive maternal copying following perinatal loss. Maternal coping following the perinatal loss was relatively low. Thus, healthcare providers need to be more cautious and ensure mothers receive adequate care, and giving adequate emotional, social, and psychological support for them during grieving moments is essential.

Keywords
Coping mechanism; perinatal loss; reproductive woman; Ethiopia

1. Introduction

Perinatal loss is the death of a fetus through intra-uterine death, stillbirth, or neonatal death [1, 2]. The largest proportion of the world's perinatal loss occurs in the late preterm, term, and intrapartum periods [3]. The loss of an infant is the most stressful, traumatic, and devastating life event of all the possible losses mothers may experience [4]. Following a perinatal loss, a woman might experience a range of emotions (might find themself in shock or disbelief, also feel angry, lose interest in normal activities, and self-blame), particularly in subsequent pregnancy loss, they manifest significant depression and anxiety [5, 6].

Coping strategies are any system women have used to successfully navigate through the difficult experience of perinatal loss [7]. A woman following her loss tried to use many coping strategies. For instance, excessive use of substances(chatting, alcoholic drinks, smoking), avoiding painful reminders(talking about loss, memories, and experience of the life and death of a loved one), involving in new roles/activities and helping others, listening to music and watching refreshment video, using a cognitive framework to deal with one's experience, performing arts, and other creative work, and some might seeking professional help to escape the memories [4, 8, 9].

Perinatal loss and maternal mortality are major public health challenges, especially in developing sub-Saharan countries [10, 11]. Perinatal loss is one of the devastating pregnancy outcomes affecting millions of families in many low and middle-income countries. Counties still experience high maternal and perinatal deaths despite a decade of maternal and perinatal death review programs. For example, lately, it affects marital relationships which may further lead to separation

and divorce, a suicide attempt, or withdrawal and isolation from social life is not easily minimized [10-12].

Losing a new fetus can lead to sadness and grief [13]. Currently, loss of any pregnancy through stillbirth, intrauterine fetal death, or neonatal death presents a significant life crisis for any woman. It has far-reaching implications for a couple's future aspirations. Stress, depression, substance abuse, and related mental problems [14] are some traumatic events following a mother's failure to cope after perinatal loss. It potentially strains mothers and other family members [14-16]. For example, studies showed that depression and anxiety were highly associated with a previous loss which may have a persisting pattern that continues after the birth of a subsequent (healthy) child [1, 17, 18].

Even though a significant reduction in child mortality has been recorded recently in Ethiopia, its perinatal loss is highest in Sub-Saharan Africa [19, 20] and perinatal death in Wolaita Sodo is tremendously high, which seeks due attention [21]. Women pregnant after a previous perinatal loss and who have a pregnancy loss history are skeptical about their health and subsequent pregnancy. In many cases, there is a risk that the sadness and anxiety felt by individuals and families affected may go on to cause longer-term problems [16]. Loss of interest in normal activities, fear of an impact and losing another baby on my future, emotional instability, lack of support from others, fear of bad news from society, and own impact on self and the baby, were the most common emotions reported by women following a loss [16, 18].

Existing care provided for women following a loss (particularly psychological, spiritual, and social supports) was inadequate in assessing and acting to help those struggling to cope [15, 16, 22]. This inadequate care given to women following loss often led to feelings of anger and hurt, and experiences of isolation and abandonment [23]. The respondent who had friend support/lack of support, previous history of loss, younger maternal age, religious beliefs, had children, gestational age, the number of pregnancies, maternal agreement with social norms, coping efforts, mother's level of education, cultural, individual and social factor were some of the factors which affect mothers level of copying following a loss which are listed in the previous literature [17, 18, 22, 24].

The median birth interval in Ethiopia is 35.8 months; thus, half of the non-first births occur within 3 years of the first birth. The contraceptive prevalence rate (CPR) among currently married women aged 15-49 in Ethiopia is 41%. Many married women use a modern method (41%), while only 1% use a traditional method (EDHS 2019). Planning another pregnancy following perinatal loss is still difficult and full of ambivalence, and doubts [13, 16]. Regardless of these challenges, most women become pregnant within a year following pregnancy loss. Issues surrounding the effect of the grief process, vulnerable child syndrome, and parenting issues with the subsequent live-born child are documented consistently in the literature; however, less is known about the maternal coping mechanisms and factors affecting maternal coping behaviors in the study area. So, this study aimed to assess the maternal coping mechanisms and associated factors of women following perinatal loss in the Hospitals of Wolaita Zone, Ethiopia 2021.

2. Methods

2.1 Study Area and Setting

Wolaita is an administrative zone in Ethiopia's Southern Nations, Nationalities, and Peoples' Region (SNNPR). It is named for the Wolaita people, whose homeland is in the zone. Wolaita is bordered on the south by Gamo Gofa, on the west by the Omo River which separates it from Dawro, on the northwest by Kembata Tembaro, on the north by Hadiya, on the northeast by the Oromia Region, on the east by the Bilate River which separates it from Sidama, and on the southeast by the Lake Abaya which separates it from Oromia Region. Wolaita is one of the fourteen zones of the Southern Nations, Nationalities and Peoples' Regional State (SNNPRS), which also has eight special Weredas. With a total area of 4,471.3 km² or 438,370 hectares, Wolaita is inhabited by **over 1.9 million** people. Two private and eight public hospitals exist in the zone and the study will be conducted on these hospitals [21].

2.2 Study Design and Period

A hospital-based cross-sectional study design from June 30/2021-August15/2021 was conducted.

2.3 Source Population

All reproductive age woman living in Wolaita Zone, Southern Nations, Nationalities and Peoples' Regional State (SNNPRS), Ethiopia.

2.4 Study Population

All mothers with a perinatal loss on the day of the data collection period attended postnatal care service (after a month of delivery) and ANC in hospitals in Wolaita Zone.

2.5 Inclusion Criteria

Study participants who came for postnatal and those who had a history of loss and attended ANC care services during the study period were included.

2.6 Exclusive Criteria

Subjects with a history of perinatal loss who came for postnatal and ANC care services but are severely ill/grief (like severe post traumatic distress syndrome) and involuntary will be excluded.

2.7 Sample Size Determination

The actual sample size of the study was calculated using single proportion formula by considering the proportion of maternal coping (P) = 45.3% [24], A 95% confidence level (CI), and a margin of error (d) (0.05) [24].

$$n = \frac{(1.96)^2 \times 0.453(1 - 0.453)}{(0.05)^2} = 381 \quad (1)$$

By adding a 5% non-respondent rate, the final sample size becomes 19 + 381 = 400.

2.8 Sampling Technique/Procedure

Of the existing two private and eight public hospitals in the study area, five were selected by using the Lottery method (Sodo teaching and referral hospital, Bombe hospital, Boditi primary hospital, Humbo primary Hospital, and Gesuba primary Hospital), and the Subjects were selected every each exit interview. The total sample size was proportionally allocated to selected Hospitals first. Then exit interviews were employed (participants who had lost were taken every exit interview, i.e., using every k^{th} exit (k^{th} value of 2)).

2.9 Dependent Variable

Maternal coping mechanism.

2.10 Independent Variable

- Parent socio-economic and demographic factors (age of the woman at the time of the loss, marital status, educational level, employment status, religion, religious practice, visits by religious individuals, marriage time).
- Reproductive-related factors (gestational age at the loss, previous pregnancies, previous gestational losses, pregnancy planning, and time of the loss).
- Maternal-related factors (family support, medical issue, mental issue).
- Healthcare-related factors (ANC follow-up, number of visits, use or non-use of a professional support group).
- Pregnancy-related factors (planned/wanted vs unplanned/unwanted, marital satisfaction/happiness, marriage duration, trust in a partner, thought about separation).

2.11 Operational Definition

The Brief COPE **Scale (BCS)** was developed for clinical use to identify and predict the coping mechanism of parents after perinatal loss.

The Brief COPE consists of 28 items used to measure coping or regulating cognitions in response to stressors. These items are again divided into 14 two-item subscales within the Brief COPE, and each subscale is analyzed separately [18, 24].

Perinatal loss: a mother who had at least one history of fetal death (stillbirth, intrauterine death, neonatal death) in her life [21, 25].

Coping Mechanism: This is a women's ability or means by which external or internal tension/pressure is controlled, adapted to, or acted upon [24].

Positive/high coping: A participant that score's more than or equal to the mean value of 28-Brief COPE scale (BCS) item measures [24, 25].

Negative/low/Poor Coping: A woman who scores less than the mean value of 28-Brief COPE scale (BCS) item measures [24, 25].

History of loss: those women who had the least loss history (lost her pregnancy in her life).

2.12 Methods of Data Collection and Tools

A structured pre-tested questionnaire was used. A pre-test was done in Shone primary Hospital which is near but found outside the study area. The questionnaire was adapted by reviewing the perinatal Brief COPE scale (BCS) and factors assessing questions were modified from different works of literature [18, 24, 26, 27]. The investigator designed the questionnaire in English, translated it into the local Wolaitigna language and then transcribed it back to English by experts to check its uniformity.

2.13 Data Collection Procedure and Quality Control

Face-to-face structured interview questionnaires were employed. BSc and MSc Midwives professionals were selected for data collection and supervision purposes. High prominence was given before data collection to designing a data collection tool to assure the data quality. A pre-tested on 10% of the total sample size in hospitals outside the study area was done (in Shone Primary Hospital). The questionnaire was evaluated by both academic (three assistant professors) and clinical expertise (four clinical staff (BSc Midwives and gynecologists)) and the validity ad reliability test was tested with the software once after the pre-test (using Cronbach's alpha test which is = 0.81). The template used for data entry was prepared and programmed by the principal investigator.

2.14 Data Analysis and Processing

Epi Data version 4.6, was used for template preparation and data entry. Before the entry, data cleaning was done. After data entry, it was exported to SPSS version 25.0 for analysis. A Mean, frequency, and proportion were computed to describe study variables to the study population. Once checked the normality of data is using SPSS software (Shapiro-Wilk test), Logistic regression was used to determine the effect of independent variables on the outcome variables. Variables with $p < 0.2$ in binary logistic regression were entered into multiple logistic regression and the strength of association was declared at a p-value < 0.05. Model fitness was checked using the Hosmer-Lemeshow test and co-variables were assessed using multi-collinality and the variance inflation factor (VIF) using SPSS software. Finally, results were compiled and presented using texts, tables, and graphs. Ethical clearance and an approval letter were obtained from Wolaita Sodo University's ethical review committee (IRB) of reference number CRCSD/65/01/13. Informed written consent was taken from all participants. In addition, an Assent form was obtained from their legally authorized representative or guardian for the participants whose age was less than 18 years old and for uneducated participants. Personal client information was not recorded. After finishing the data collection, the questionnaire was kept in an appropriate place and the information was used for study purposes only.

3. Result

3.1 Socio-Demographic Characteristics of the Participants

Out of the total of 400 mothers who were requested for the interview, 393 completed the tool correctly, giving a response rate of (98.3%). The majority of the participants 227(57.8%) fall in the

age category of 18-35 years. Out of the total participants, 158(57.8%) of the study participants were protestant followers. Of the total subjects; 119(30.3%) had attended up to secondary education (up to grade 12) followed by college/university 81(20.6%). Regarding the marital status of the respondents, 287(73%) were married, followed by a single with a relationship which accounts arround16%. Nearly half, 177(45%) of the participants were government employees and around 71.8% of them were reported multi and grand-multigravidas. Of the total participants, 174(44.3%) of them had got a monthly salary of <500 Ethiopian birrs (Table 1).

Table 1 Socio-demographic and Socio-economic characteristics of the participants in selected Hospitals of Wolaita Zone, South Ethiopia from June 30-August1/2021 (n= 393).

Variables	Frequency	Percentage
Maternal-age		
<18 years	61	15.5
18-35 years	227	57.8
>35 years	105	26.7
Maternal monthly-Income		
<500	174	44.3
500-1000	81	20.6
1000-1499	31	7.9
>1500	107	27.2
Religion		
Muslim	124	31.6
Orthodox	76	19.3
Protestant	158	40.2
Catholic	35	8.9
Marital-status		
Married	287	73
Single with relationship	63	16
Divorced	27	6.9
Widowed	16	4.1
Educational level		
Unable to read and write	59	15
Grade 1-8	48	12.2
Grade 9-10	86	21.9
Grade 11-12	119	30.3
Diploma and above	81	20.6
Job		
Government employee	177	45
Housewife	59	15
Private Employee	128	32.6
Student	29	7.4
Gravida		
One	111	28.2

Two	143	36.4
Three and above	139	35.4

3.2 Maternal Factors and Desire for Pregnancy

The majority of the participants, 363(92.4%), were less than 35 years during their first childbirth and, more than half, 227(57.8%) of them fell under the age category of 18-35 years at the time of pregnancy loss. All of them reported a previous history of pregnancy/perinatal loss. Out of the total participants, 108(27.5%) reported that their lost pregnancies were unplanned/unwanted and around 28.2% of the lost pregnancy were their first pregnancies. More than half, 202(51.4%) of pregnancy loss occurred at a gestational age greater than 28 weeks followed by 164(41.7%) at 20-28 weeks of gestation. Three-fourths of the participants, 287(75.3%), were reported to be satisfied and have trust in their partners. Around 87(22.1%) of participants mentioned prolonged labor as the main reason for their pregnancy loss followed by abdominal trauma/accident (8.4%). The majority, 257(65.5%) of the participants wanted another pregnancy later (Table 2).

Table 2 Participants' desire for pregnancy and its factors in selected Hospitals of Wolaita Zone, South Ethiopia from June 30-August1/2021.

Variables	Frequency	Percentage
Age of mother during childbirth		
Less than 35	363	92.4
Greater than or equal to 35	30	7.6
History of previous pregnancy loss		
Yes	393	100
No	0	0
Age of mother at the time of loss?		
less than 18	61	15.5
18-35	227	57.8
Greater than 35	105	26.7
Was your pregnancy planned/wanted?		
Yes	285	72.5
No	108	27.5
Was your perinatal loss your first pregnancy?		
Yes	111	28.2
No	272	71.8
G/age of your pregnancy loss		
Less than 20	27	6.9
20-28 weeks	164	41.7
>28 weeks	202	51.4
Do you have medical issues during pregnancy?		
Yes	75	19.1
No	318	80.9
History of mental issues during pregnancy?		
Yes	3	0.8
No	390	99.2

If married, are you satisfied with your marriage?		
Yes	287	75.3
No	94	24.7
If you are married, Did you trust your partner?		
Yes	280	94
No	18	6
If you are satisfied with your marriage, Did you think about separation from your partner?		
Yes	74	19.2
No	311	80.8
Do you want another pregnancy?		
Wanted then	22	5.6
Wanted latter	257	65.4
Wanted no more	114	29
Is there any problem with perinatal loss during delivery?		
None	238	60.6
Prolonged labor	87	22.1
Ruptured uterus	11	2.8
Abdominal trauma/accidental fall	33	8.4
Medical problem (DM, Hypertension, cardiac case)	24	6.1
Do you have children?		
Yes	279	71
No	114	29
If you want a child, mention how many.		
One	153	54.8
Two	100	35.8
Greater than two	26	9.3

3.3 Health-Seeking Behavior (for Previous Pregnancy) and Bereavement Support of Mother's

Regarding participant's health-seeking behavior during their previous loss, more than three-fourths 305(77.6%) of them had a history of ANC follow-up and 173(56.7%) of them reported as they followed ANC more than three times before loss whereas 88(22.4%) reported as they had no follow-up. The majority of 302(76.8%) of the participants used vaginal delivery to deliver their lost baby and 80.2% were delivered in health facilities/hospitals. In contrast, around 19.8% of them were delivered in their homes by traditional birth attendants. Nearly three-fourths of 296(75.3%)) of the participants had got parental support followed by support from husbands (203(51.7%) and profession-based support like support from health care providers counseling/support groups/organizations (269(68.4%)) at the time of their pregnancy loss (Table 3).

Table 3 Health-seeking behavior (for previous pregnancy) and bereavement support of the participant's in selected Hospitals of Wolaita Zone, South Ethiopia from June 30-August 1/2021.

Variables	Frequency	Percentage
Did you have ANC follow-up before loss?		
Yes	305	77.6
No	88	22.4
If you had ANC follow-up, what number of visits?		
Once	17	5.6
Twice	84	27.5
Three times	173	56.7
Greater than three times	31	10.2
In what way to deliver the baby?		
Non-cesarean section	302	76.8
Cesarean section	91	23.2
Where do you deliver?		
In my home	78	19.8
In the health facility	100	25.4
In the government Hospital	205	52.2
In the private clinic/hospital	10	2.5
Who attended your delivery?		
Traditional Birth attendant	78	19.8
Health professional	263	66.9
Specialties	52	13.2
Did you get profession-based support like support from health care provider counseling/support groups/organizations?		
Yes	269	68.4
No	124	31.6
Did you get spiritual support from your own spiritual belief?		
Yes	203	51.7
No	190	48.3
Do you get any support from your husband?		
Yes	284	72.3
No	109	27.7
Do you get any support from your parent?		
Yes	296	75.3
No	97	24.7
Did you get any support from your friends?		
Yes	234	59.5
No	159	40.5
Did you discuss/receive information from family members/close friends who had a history of loss?		
Yes	70	17.8
No	323	82.2

3.4 Behavioral and Cultural Characteristics of the Participants

Only 18(4.6) participants were reported as having a history of smoking at the time of loss and almost all 14(77.8%) had started smoking after their pregnancy loss. The majority 167(42.5%) of them reported that newborn deaths and stillbirths were hidden. Around 204(51.9%) reported the burial practice of their lost baby was not age-based and 129(32.8%) reported that newborn deaths and stillbirths had been considered as it was because of malevolent spirits in their community (Table 4).

Table 4 Behavioral and cultural characteristics of the participants in selected Hospitals of Wolaita Zone, South Ethiopia from June 30-August1/2021.

Variables	Frequency	Percentage
Do you use smoking?		
Yes	18	4.6
No	375	95.4
If smoke, When do you start smoking?		
After perinatal loss	14	77.8
Before perinatal loss	4	22.2
Do use alcohol?		
Yes	53	13.5
No	340	86.5
If drinking alcohol, When do you start drinking?		
After perinatal loss	53	1.3
Before perinatal loss	0	0
Do you use substances other than cigarettes and alcohol?		
Yes	18	4.6
No	375	95.4
Newborn deaths and stillbirths are hidden?		
Hidden	167	42.5
Attend secretly	119	30.3
No need for exaggeration	107	27.2
Burial practice is age-based?		
Yes	189	48.1
No	204	51.9
Stillbirth and neonatal death are mostly due to malevolent spirits.		
Yes	129	32.8
No	264	67.2

3.5 Coping Mechanisms of the Woman after Perinatal Loss

Regarding mechanisms of copying, the Majority 159 (40.5%) of the participants reported as they have been trying to turn to work or other activities to take their mind off things followed by trying to do something to think about it less such as going to movies, watching TV, reading, sleeping or shopping151 (38.8%), to find comfort in their religion or spiritual beliefs (137(34.9%)), and getting help and advice from others/friends what to do (121(30.8%) as a strategy to do always to cope from the grief they faced (Table 5).

Table 5 Coping mechanisms of a woman during a perinatal loss in selected Hospitals of Wolaita Zone, South Ethiopia from June 30-August1/2021.

Brief COPE Items	I haven't been doing this at all	I've been doing this a little bit	I've been doing this a medium amount	I've been doing this a lot
I haven't been turning to work or other activities to take my mind off things	130(33.1%)	92(23.4%)	159(40.5%)	12(3.1%)
I've been concentrating my effort on doing something about the situation I'm in	97(24.7%)	128(32.6%)	160(40.7%)	8(2.0%)
I've been saying to myself "this isn't real"?	147(37.2%)	157(39.9%)	74(18.8%)	16(4.1%)
I've been using alcohol or other drugs to myself feel better	302(76.8%)	66(16.2%)	17(4.0%)	8(2.0%)
I've been getting emotional support from others	86(21.9%)	92(23.4%)	64(16.4%)	151(38.4%)
I've been giving up trying to deal with it	89(22.6%)	109(27.7%)	154(39.2%)	41(10.4%)
I've been using action to try to make the situation better	118(30.0%)	95(24.2%)	139(35.4%)	41(10.4%)
I've been refusing to believe that it has happened	140(35.6%)	167(42.5%)	77(19.6%)	9(2.3%)
I've been saying things to let my unpleasant feelings escape	108(27.5%)	143(36.4%)	134(34.1%)	8(2.0%)
I've been getting help and advice from other people	112(28.5%)	80(20.4%)	64(16.3%)	137(34.9%)
I've been using alcohol or other drugs to help me get through it	292(74.3%)	49(12.5%)	44(11.2%)	8(2.0%)
I've been trying to see it in a different light, to make it seem more positive	124(31.6%)	106(27.0%)	131(33.3%)	32(8.1%)
I've been criticizing myself	106(27.0%)	173(44.0%)	92(23.4%)	22(5.6%)
I've been trying to come up with a strategy about what to do	113(28.8%)	97(24.7%)	155(39.4%)	28(7.1%)
I've been getting comfort and understanding from someone	95(24.2%)	90(22.9%)	87(22.1%)	121(30.8%)
I've been giving up the attempt to cope	114(29.0%)	179(45.5%)	73(18.6%)	27(6.9%)
I've been looking for something good in what is happening	132(33.6%)	110(28.0%)	123(31.3%)	28(7.1%)
I've been making jokes about it	259(65.9%)	68(17.3%)	49(12.5%)	17(4.3%)
I've been doing something to think about it less, such as going to movies, watching TV, reading, sleeping, or shopping	122(31.4%)	80(20.6%)	151(38.8%)	36(9.3%)
I've been accepting the reality of the fact that it has happened	120(30.5%)	91(23.2%)	162(41.2%)	20(5.1%)

I've been expressing my negative feelings	107(27.2%)	93(23.7%)	150(38.2%)	43(10.9%)
I've been trying to find comfort in my religion or spiritual beliefs	135(34.4%)	57(14.5%)	64(16.3%)	137(34.9%)
I've been trying to get advice or help from other people about what to do	121(30.8%)	80(20.4%)	81(20.6%)	111(28.2%)
I've been learning to live with it	134(34.1%)	64(16.3%)	87(22.1%)	108(27.5%)
I've been thinking hard about what steps to take	122(31.0%)	109(27.7%)	118(30.0%)	44(11.2%)
I’ve been blaming myself for things that happened.	310(78.9%)	44(11.2%)	31(7.9%)	8(2.0%)
I've been praying or meditating	155(39.4%)	137(34.9%)	58(34.9%)	43(10.9%)
I've been making fun of the situation	310(78.9%)	44(11.2%)	31(7.9%)	8(2.0%)

3.6 The Analysis of Subscales (14 Two-item) within the Brief COPE

According to this study, nearly half (51.4%) were positively coping or had high coping following loss whereas only 48.6% coped negatively/poorly coping following perinatal loss. The Brief COPE is a 28-item multidimensional measure of strategies for copying or regulating cognitions in response to stressors. The 28 Brief COPE was re-categorized into 14 two-item subscales within the Brief COPE. According to 14 two-item subscales scoring, the majority (26.9%) of the participants fall under the scale of use of emotional support followed by the use of instrumental support subscale (25.0%), religion (24.3%), and Acceptance (24.0%) as a major measure of strategies used for copying or regulating cognitions in response to stressors following their previous loss (Table 6).

Table 6 The analysis of subscales (14 two-item) within the Brief COPE among mothers with perinatal loss in selected Hospitals of Wolaita Zone, South Ethiopia from June 30-August1/2021.

Brief COPE subscales	Brief COPE scoring	percentage
Self-Destruction	COPE1 + COPE19	22.9
Active Cope	COPE2 + COPE7	22.1
Denial	COPE3 + COPE8	11.2
Substance Use	COPE4 + COPE11	4.8
Use of Emotional Support	COPE5 + COPE15	26.9
Use of Instrumental Support	COPE10 + COPE23	25.0
Behavioral Disengagement	COPE6 + COPE16	18.8
Venting	COPE9 + COPE21	21.3
Positive Reframing	COPE12 + COPE17	19.9
Planning	COPE14 + COPE25	21.9
Humor	COPE18 + COPE28	6.7
Acceptance	COPE20 + COPE24	24.0
Religion	COPE22 + COPE27	24.3
Self-Blame	COPE13 + COPE26	9.3

3.7 Factors Associated with Woman's Copying Following Perinatal Loss

As shown in the Table below, participants who have been satisfied with marriage (AOR = 5.64, 95% CI (3.10-10.29)), history of ANC follow-up before the loss (AOR = 2.52, 95% CI (1.39-4.57)), those who have been profession-based support(AOR = 2.91, 95% CI (1.64-5.15)), support from their own spiritual belief (AOR = 3.87, 95% CI (2.33-6.43)), support from their parents(AOR = 8.11, 95% CI (3.94-16.69)), support from their husband (AOR = 3.2, 95% CI (1.74-5.89)) and discussed/receive information from those who had a history of loss (AOR = 2.65, 95% CI (1.31-5.32)) were more likely cope from their perinatal loss or grief than others (Table 7).

Table 7 Factors associated with Woman's copying following perinatal loss in selected Hospitals of Wolaita Zone, South Ethiopia from June 30-August1/2021 (Table 7).

Variables	Yes	No	OR (95% CI)	AOR (95% CI)
Are you stratified with your marriage?				
Yes	177	21	5.59(3.26-9.6) ***	5.64(3.10-10.29) **
No	110	73	1	1
History ANC follow-up before loss?				
Yes	181	21	4.66(12.71-7.99) ***	2.52(1.39-4.57) **
No	124	67	1	1
The number of visits?				
Once	4	13	1	1
Twice	36	48	2.68(0.71-10.10)	2.676(0.711-10.07)
Three times	127	46	1.10(0.48-2.51)	1.098(0.48-2.52)
Greater than three times	14	17	0.30(0.14-0.65)**	2.80(1.42-5.52)**
Do you have children?				
Yes	156	46	1.88(1.20-2.92)**	1.25(0.76-2.10)
No	123	68	1	1
Did you have profession-based support?				
Yes	174	28	6.28(3.85-10.25) * **	2.91(1.64-5.15) **
No	95	96	1	1
Did you get spiritual support from your own spiritual belief?				
Yes	147	55	6.44(4.15-9.99) * **	3.87(2.33-6.43)***
No	56	135	1	1
Do you get any support from your husband?				
Yes	181	21	7.36(4.36-12.56) * *	3.2(1.74-5.89)**
No	103	88	1	1
Do you get any support from your parent?				
Yes	191	11	14.22(7.27-27.83) * **	8.11(3.94-16.69)***
No	105	86	1	1
Did you get any support from your friends?				
Yes	164	38	7.46(4.71-11.8) * *	0.14(0.88-1.22)
No	70	121	1	1
Did you receive information from those who had a history of loss?				
Yes	58	144	6.01(3.11-11.615)	2.65(1.31-5.32)**
No	12	179	1	1

NB: * = p-value < 0.2, ** = p-value < 0.05, *** = p-value < 0.01.

4. Discussion

According to the study, 48.6% of the participants cope poorly/negatively following perinatal loss. This result was higher than the study on assessing coping mechanisms among mothers with perinatal death in Addis Ababa [24] which showed that 54.7% of the respondents had negatively coped with their grieving following perinatal death. This difference might be due to the study time difference, and sample size, as well it might be due to study area difference.

In this study, participants who had received professional-based support were 2.91 times more

likely to cope with their grief/bereavement following a perinatal loss than others. This result was analogous to the study done in London [18] on Women's experience of coping with the termination of pregnancy for fetal abnormality which showed that professional support was significantly associated with maternal coping following termination of pregnancy and the study done in India [22] on social and cultural factors associated with perinatal Grief in which grief was significantly higher among women with lack of support. This similarity is because healthcare providers' ability and life experiences in counseling, advice, and education of bereaved mothers can help mothers to cope with their grief more than others.

From this study finding, mothers with a history of ANC follow-up before the loss (AOR = 2.52, 95% CI (1.39-4.57)) were significantly associated with maternal copying following perinatal loss. Similarly, those who had ANC follow-up greater than three times before loss was 2.80 times more likely to cope with their grief than others. This might be due to the reason that participants who might be fully aware of the pregnancy, its risks, and consequence during ANC follow-up and those mothers counseled in detail about its impact may prepare themselves and understand how to react to the loss when faced and may take appropriate measures to cope.

This study found those who had been satisfied with their mirage were 5.61 times more likely to cope with their grief/bereavement following a perinatal loss than others [26]. Similarly, participants who had support from their husbands (AOR = 3.2, 95% CI (1.74-5.89)) were more possibly to cope than others following a loss. This finding was congruent with the study done in the UK on Maternal coping, appraisals, and adjustment following diagnosis of fetal anomaly [26], and the study done in London [18] on Health professionals' perceptions of women's coping with pregnancy termination showed that family and support from husband had a great impact on mothers to cope positively following perinatal loss. The similarity might be due to the reason that families and husbands are the ones who are close to knowing their behaviors and needs so that they can easily engage and help them to easily cope with the grief process.

According to the study finding, participants who had support from their own spiritual beliefs were 3.87 times (AOR = 3.87, 95% CI (2.33-6.43)) more likely to cope with their grief than others. This result was comparable with the study done in London [18], India [22], and Kumasi Gahanna [13] which showed those who had received spiritual support from their own belief coped better following perinatal loss than others. This might be because those who have religious connections have the chance to receive positive messages from their GOD/Allah or their religious leaders, which helps them to cope and consider it as GOD's/Allah's will.

In addition to the above, from this study, those participants who had support from their parents (AOR = 8.11, 95% CI (3.94-16.69)), and discussed/received information from those who had a history of loss (AOR = 2.65, 95% CI (1.31-5.32)) were most likely cope than others. This study was comparable with a study done in London [18], the UK [26], India [22], Kumasi Ghana [13], and Addis Ababa [28] which showed those who had support from parents and received information from those who had a history of loss had cope positively than others. The similarity between the studies might be because those who have awareness of perinatal loss might better understand what it is and how to cope with their grief. Parents are the ones who closely understand and care for their members during the grief process.

5. Limitations of the Study

Respondents may answer or under/inaccurately report their view towards copying following a perinatal loss. The temporal link between the outcome and exposure cannot be determined because both are examined simultaneously. It's difficult to see a cause-effect relationship since the data is collected at a single point in time and biases like recall/information and white coat may not be minimized.

6. Conclusion

In general, from this study's result, maternal copying was relatively low. Only nearly half, of the total participants, cope following perinatal loss using different coping strategies. The majority of the respondents use emotional support, use of instrumental support subscale, religion, and acceptance as major measures of strategies for coping. Participants who have been satisfied with their marriage, have a history of ANC follow-up before the loss, had ANC visit more than three times, got profession-based support, support from their own spiritual belief, support from their parents, support from their husband, and discussed/receive information from those who had a history of loss were identified as major determinants (predictors) of copying following perinatal loss.

7. Recommendation

The Investigators suggest the following recommendations:

Healthcare providers (particularly Midwives): Should provide appropriate counseling on the grieving process and give continuous emotional and psycho-social support to enhance their confidence and morale for better coping for mothers after perinatal loss. Give appropriate education to the community to ensure awareness of the members on perinatal loss and enhance the effect of ANC follow-up on reducing perinatal death.

Ministry of Health and non-governmental organizations: Should prepare and give appropriate training for health care providers and other concerned bodies on copying strategies, factors affecting copying following a perinatal loss, and the grieving process. And should settle separate rooms for better counseling and management.

Community, family, and other stakeholders: Should closely encourage, advise, and reassure that perinatally bereaved mothers receive, reducing complications following a loss.

Policy-makers and Practitioners: Should prepare clear standardized coping strategies and help the concerned bodies to establish separate room which is used by health care providers to give appropriate counseling and care following perinatal loss.

Researchers: Should further investigate additional factors to cope qualitatively.

Abbreviations

TFA-Pregnancy termination for fetal abnormality, Uk-United Kingdom, ANC-Antenatal care,

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Author Contributions

AY was involved in the conception, design, analysis, interpretation, report, manuscript writing, design, analysis, interpretation, and report writing. TA, GA, GA, WA, KA, and BB were involved in the design, analysis, and interpretation of the data. All authors read and approved the final manuscript.

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Competing Interests

The Corresponding author declares that there were no competing interests or Non-declared.

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