

# Social Support and Subjective Assessment of Psychophysical Condition, Health, and Satisfaction with Quality of Life among Women after Pregnancy Loss

**Grażyna Iwanowicz-Palus**

Chair and Department of Development in Midwifery, Faculty of Health Sciences, Medical University of Lublin, 4-6 Staszica St., 20-081 Lublin, Poland

**Mariola Małgorzata Mróz** (✉ [mariolamroz2015@gmail.com](mailto:mariolamroz2015@gmail.com))

Obstetrics and Gynecology Department and Clinic, Cardinal S. Wyszyński Regional Specialist Hospital in Lublin, Poland  
<https://orcid.org/0000-0002-4779-5125>

**Agnieszka Bień**

Chair and Department of Development in Midwifery, Faculty of Health Sciences, Medical University of Lublin, 4-6 Staszica St., 20-081 Lublin, Poland

---

## Research article

**Keywords:** Social support, miscarriage, ectopic pregnancy, pregnancy loss, psychophysical condition, quality of life

**Posted Date:** November 20th, 2020

**DOI:** <https://doi.org/10.21203/rs.3.rs-111119/v1>

**License:** © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License. [Read Full License](#)

---

## Abstract

**Background:** The task of modern medicine is not just to heal, but also to improve the patient's well-being and achieve non-medical goals in the therapy process that enable effective physical, mental and social functioning of the patient. Social support in difficult situations mobilizes an individual's strength and resources to cope with problems. Research on social support and women's condition after pregnancy loss reflects a holistic approach to the patient and is important from the perspective of increasing the level of hospital care. The aim of our study was to assess the impact of social support on the psychophysical condition, health, and satisfaction with quality of life among women after miscarriage and ectopic pregnancy.

**Methods:** The study was carried out among 500 patients after miscarriage and 110 with ectopic pregnancy, hospitalized in hospitals in Lublin (Poland). The study was conducted with the use of a diagnostic survey with the application of the Berlin Social Support Scales (BSSS) and original survey questionnaire.

**Results:** Respondents after miscarriage and those after termination of ectopic pregnancy assigned highest scores to the degree of perceived available instrumental support (respectively, miscarriage:  $M = 3.79$ , EP:  $M = 3.77$ ), emotional support ( $M = 3.68$ ,  $M = 3.65$ ), and actually received support ( $M = 3.61$ ,  $M = 3.57$ ) ( $p < 0.05$ ). Women after pregnancy loss assigned the highest score to the support obtained from their partner (respectively, miscarriage:  $M = 9.26$ , EP:  $M = 9.23$ ), family ( $M = 9.09$ ,  $M = 9.18$ ), midwife ( $M = 8.70$ ,  $M = 8.58$ ), and friends ( $M = 8.49$ ,  $M = 8.61$ ) ( $p < 0.05$ ). Social support was significantly correlated with the condition of patients hospitalized as a result of pregnancy loss ( $p < 0.05$ ).

**Conclusions:** Women hospitalized due to miscarriage and ectopic pregnancy assigned high scores to the level of perceived available instrumental, emotional, and actually received social support. There is a positive relationship between social support and subjective opinion about psychophysical condition, health and satisfaction with quality of life among women after pregnancy loss.

## Background

Social support in difficult situations is understood as a special method and type of assistance, which mobilizes an individual's strength and resources to cope with problems. It helps minimize stress related to a health situation, has a beneficial influence on various aspects of psychophysical well-being, and is associated with the overall assessment of quality of life (QoL) [1, 2].

The notion of support, understood in the broad sense, focuses on issues of social integration as well as sources and systems of support characterized by the existence of bonds, a sense of belonging, and relationships between people, affecting the individual and allowing them to feel that they are surrounded by people on whom they can rely [3, 4].

The research on social support in medical sciences reflects a holistic approach to the patient, a significant aspect of how patients and their families function. It is also important for improving the level of care provided by hospital staff [1, 2, 5].

Pregnancy loss is regarded as a critical event, as it is usually traumatic in nature. The consequence of this painful experience is mourning, which is a multidimensional process with mental, somatic, behavioral, and social aspects. A person in mourning requires comprehensive assistance, and social support plays an important role in moving through its successive stages [6, 7].

Improper behavior of the environment, inadequate support, or a complete lack thereof means that women cannot afford to fully process their negative emotions, which may lead to mental disorders (depression, anxiety, post-traumatic stress disorder – PTSD) and loss of confidence in medical personnel [8-10].

Unfortunately, in many countries, the main focus of clinical practice is the patient's clinical condition and treatment, while the extrasomatic consequences are of secondary importance. It is also unfortunate that training for medical personnel in the field of pregnancy loss management and providing appropriate support is often absent. Scientific research shows that providing support in a professional manner, adapted to the expectations and needs of the patient, has an impact on their satisfaction with the care received. The actions of hospital staff also have very significant implications for the women's immediate and long-term well-being. Therefore, the importance of non-medical goals in the therapy process is emphasized, including

improvements in the patient's well-being to enable effective functioning, not only physical but also mental and social [1, 11, 12, 13].

Because of the significance and complexity of the issue of pregnancy loss, it is important to assess social support and its impact on the subjective assessment of the psychophysical condition and health of women affected by this problem, as well as to conduct a comparative analysis between the different types of loss among women who have experienced a miscarriage or ectopic pregnancy, which is less frequently considered in non-clinical research. The research conducted will help determine the effectiveness of the support provided, facilitate the planning and implementation of care adjusted to the needs of this group of patients, and exert an influence on improving the quality of care for hospitalized women.

## Methods

The study was conducted with the use of a diagnostic survey. The research tool applied was a questionnaire consisting of two parts:

- Berlin Social Support Scales (BSSS) R. Schwarzer, U. Schulz – a set of tools measuring specific dimensions of social support: perceived available, actually provided and received support, need for support, support seeking, and protective buffering. Respondents rate their agreement with the statements included in the questionnaire on a scale of 1-4, with 1 denoting strong disagreement and 4 strong agreement. The higher the score, the higher the intensity of social support. The Cronbach's  $\alpha$  coefficient for this tool is 0.80 [14, 15].
- Original survey questionnaire – this takes into account the characteristics of the women surveyed (age, residence, relationship status, education, professional activity, self-reported financial standing) and questions concerning the subject of the study. The respondents scored the level of support received from specific sources (obstetrician-gynecologist, midwife, psychologist, husband/partner, family, friends, clergy, patients in a similar situation staying at the hospital at the same time), marking their answers on a 10-point scale, where 1 meant that the support was completely insufficient and 10 completely sufficient. The respondents made a subjective assessment of their mental and physical condition, overall health, and satisfaction with health and quality of life on a scale of 1-4, where 1 denoted poor, and 4 very good, (Supplementary file 1, Supplementary file 2). The Cronbach's  $\alpha$  coefficient for this tool is 0.90.

## Datacollection

The study was carried out from August 2016 to February 2019 among patients hospitalized in Lublin in medical units with the highest referral level of perinatal care. The study included 645 participants, with 610 correctly completed questionnaires being qualified for further statistical analysis (including 500 by women after miscarriage and 110 from respondents with ectopic pregnancy). The effectiveness index of this data was 94.57%.

The survey was conducted on the last day of the patients' hospital stay. The inclusion criteria for the study were: consent to participate in the diagnostic survey, age over 18, diagnosis of a single pregnancy loss as a result of spontaneous abortion up to the 22nd week of the pregnancy or a diagnosis of ectopic pregnancy, normal clinical condition, no psychophysical disorders. The study excluded patients in a poor mental state or undergoing psychological therapy or psychiatric treatment. Each time, before contact with a patient, information was obtained from the medical staff about the stage of treatment and time of hospitalization, as well as opinions on the patient's mental and physical condition.

## Statistical analysis

The collected research material was analyzed statistically using the IBM SPSS Statistics (version 21) statistical package. Quantitative variables were described by means of mean (M), median (Me), standard deviation (SD), as well as minimum (Min) and maximum (Max) values. For qualitative variables, the number (n) and percentage were provided for each category. The Mann-Whitney U test (Z) was used to compare two independent groups. The Chi-Square test of independence ( $\chi^2$ ) and the

*Spearman's Rank Correlation Coefficient (rho) were used to determine the relationship between variables measured on a qualitative scale. The test results were considered statistically significant at the level of  $p < 0.05$ .*

## **Ethical approval**

The study was approved by the Bioethics Committee at the Medical University of Lublin (*KE-0254/221/2016*) and the executive boards of the medical units and the heads of the hospital departments where the research was conducted. The respondents were informed that their participation in the study was voluntary and anonymous, and that the results were used only for scientific purposes. Written consent to participate in the study was obtained from the patients after discussing its course and purpose.

## **Results**

Table 1 presents the characteristics of the women participating in the diagnostic survey. The study included 610 patients hospitalized as a result of pregnancy loss; 500 (82.0%) with miscarriage and 110 (18.0%) with ectopic pregnancy (EP). The group of respondents after miscarriage consisted predominantly of women aged 31-35 (32.4%), living in voivodship capital cities (50.2%), married (78.8%), with higher education (61.0%), performing intellectual work (48.6%), and considering their socio-economic standing to be good (61.2%). On the other hand, the majority of the respondents diagnosed with ectopic pregnancy were women between 26 and 30 years of age (35.5%), living in the countryside (40.9%), married (88.2%), with higher education (61.8%), performing intellectual work (49.1%), and considering their socio-economic standing to be good (59.1%), (Table 1).

Table 1  
Participants' characteristics

Participants' Characteristics		Miscarriage		EP		Statistics
		n	%	n	%	
Age	< 25 y/o	65	13.0	12	10.9	$\chi^2 = 0.847$
	26–30 y/o	160	32.0	39	35.5	df = 3
	31-35 y/o	162	32.4	33	30.0	p = 0.838
	> 35 y/o	113	22.6	26	23.6	
Residence	Urban – province capital	251	50.2	40	36.4	$\chi^2 = 6.938$
	Urban – other	91	18.2	25	22.7	df=2
	Rural	158	31.6	45	40.9	p = 0.031
Relationship status	Married	394	78.8	97	88.2	$\chi^2 = 4.474$
	Single	106	21.2	13	11.8	df = 1 p = 0.034
Education	Other than college/university	195	39.0	42	38.2	$\chi^2 = 3.202$
	College/university	305	61.0	68	61.8	df = 2 p = 0.202
Professional activity	Professionally inactive	117	23.4	18	16.4	$\chi^2 = 3.345$
	White-collar work	243	48.6	54	49.1	df = 2
	Blue-collar work	140	28.0	38	34.5	p = 0.188
Self-reported financial standing	Very good	80	16.0	13	11.8	Z = -1.539
	Good	306	61.2	65	59.1	p = 0.124
	Moderate	112	22.8	32	29.1	

*EP – ectopic pregnancy*

Both the respondents after miscarriage and termination of ectopic pregnancy assigned high scores to the degree of perceived available instrumental support (respectively, miscarriage: M = 3.79, EP: M = 3.77), emotional support (M = 3.68, M = 3.65), and actually received support (M = 3.61, M = 3.57). Their need for support and support-seeking were less intense. There were no statistically significant differences between the groups studied in their assessment of social support (p > 0.05), (Table 2).

Table 2

Assessment of social support by women after miscarriage and women after termination of ectopic pregnancy

<b>BSSS subscales</b>		<b>M</b>	<b>SD</b>	<b>Me</b>	<b>Min</b>	<b>Max</b>	<b>Statistics</b>
Perceived available emotional support	Miscarriage	3.68	0.45	3.75	1.00	4.00	Z=-0.705
	EP	3.65	0.43	3.75	2.50	4.00	p=0.481
Perceived available instrumental support	Miscarriage	3.79	0.43	4.00	1.00	4.00	Z=-0.218
	EP	3.77	0.43	4.00	2.00	4.00	p=0.827
Need for support	Miscarriage	3.17	0.56	3.25	1.00	4.00	Z=-0.490
	EP	3.14	0.60	3.25	1.50	4.00	p=0.624
Support seeking	Miscarriage	3.10	0.66	3.20	1.00	4.00	Z=-0.311
	EP	3.07	0.69	3.00	1.00	4.00	p=0.756
Actually received support	Miscarriage	3.61	0.40	3.80	1.00	4.00	Z=-1.634
	EP	3.57	0.39	3.73	1.40	4.00	p=0.102
Protective buffering	Miscarriage	1.87	0.68	1.83	1.00	4.00	Z=-1.668
	EP	1.98	0.64	2.00	1.00	4.00	p=0.095
<i>EP – ectopic pregnancy; BSSS – Berlin Social Support Scales;</i>							
<i>M – mean; SD – standard deviation; Me – median; Min – minimum, Max – maximum</i>							

Women after miscarriage and women after termination of ectopic pregnancy assigned the highest score to the support obtained from their partner (respectively, miscarriage: M = 9.26, EP: M = 9.23), family (M = 9.09, M = 9.18), midwife (M = 8.70, M = 8.58), and friends (M = 8.49, M = 8.61), and then from the obstetrician-gynecologist (M = 8.03, M = 7.74). The clergy (M = 5.57, M = 5.92) and psychologists (M = 3.97, M = 3.33) constituted a smaller source of support for the hospitalized patients. There was no correlation between the groups ( $p > 0.05$ ) in their assessment of support obtained from specific sources (Table 3).

Table 3  
Opinion of women after miscarriage and women after termination of ectopic pregnancy on the level of social support received from specific sources of support during hospitalization

Sources of support		M	SD	Me	Min	Max	Statistics
Gynecologist	Miscarriage	8.03	2.43	9.00	1.00	10.00	Z = -1.660
	EP	7.74	2.41	8.00	1.00	10.00	p = 0.097
Midwife	Miscarriage	8.70	1.93	10.00	1.00	10.00	Z = -0.786
	EP	8.58	2.05	9.00	1.00	10.00	p = 0.432
Psychologist	Miscarriage	3.97	3.73	1.00	1.00	10.00	Z = -1.257
	EP	3.33	3.47	1.00	1.00	10.00	p = 0.209
Partner	Miscarriage	9.26	2.03	10.00	1.00	10.00	Z = -1.930
	EP	9.23	1.87	10.00	1.00	10.00	p = 0.054
Family	Miscarriage	9.09	2.07	10.00	1.00	10.00	Z = -0.861
	EP	9.18	1.71	10.00	1.00	10.00	p = 0.389
Friends	Miscarriage	8.49	2.66	10.00	1.00	10.00	Z = -0.423
	EP	8.61	2.33	10.00	1.00	10.00	p = 0.672
Spiritual	Miscarriage	5.57	3.84	5.00	1.00	10.00	Z = -0.729
	EP	5.92	3.49	5.00	1.00	10.00	p = 0.466
Patients at hospital after pregnancy loss	Miscarriage	7.80	3.03	9.00	1.00	10.00	Z = -0.635
	EP	7.76	2.80	9.00	1.00	10.00	p = 0.525
<i>EP – ectopic pregnancy; M – mean; SD – standard deviation; Me – median; Min – minimum, Max – maximum</i>							

Women after miscarriage and women after termination of ectopic pregnancy assigned the highest scores to their overall health (respectively, miscarriage: M = 3.00, EP: M = 2.82), while the lowest scores was assigned to satisfaction with their overall health (M = 2.62, M = 2.39) and mental condition (M = 2.68, M = 2.63). Data analysis showed that women after miscarriage statistically significantly more often ( $p < 0.001$ ) expressed satisfaction with their overall health (M = 2.62) and scored it as more positive (M = 3.00) when compared to women with ectopic pregnancy (respectively: satisfaction with health: M = 2.39, overall health: M = 2.82), (Table 4).

Table 4  
Subjective assessment of the psychophysical condition, health, and quality of life of women after miscarriage and women after termination of ectopic pregnancy

Condition		M	SD	Me	Min	Max	Statistics
Mental condition	Miscarriage	2.68	0.83	3.00	1.00	4.00	Z=-0.874
	EP	2.63	0.75	3.00	1.00	4.00	p=0.382
Physical condition	Miscarriage	2.85	0.65	3.00	1.00	4.00	Z=-0.803
	EP	2.78	0.72	3.00	1.00	4.00	p=0.422
Health	Miscarriage	3.00	0.58	3.00	1.00	4.00	Z = -3.252
	EP	2.82	0.56	3.00	1.00	4.00	p = 0.001
Health satisfaction	Miscarriage	2.62	0.71	3.00	1.00	4.00	Z = -3.268
	EP	2.39	0.72	2.00	1.00	4.00	p = 0.001
Quality of life	Miscarriage	2.93	0.72	3.00	1.00	4.00	Z = -1.915
	EP	2.81	0.70	3.00	1.00	4.00	p = 0.055

*EP – ectopic pregnancy; M – mean; SD – standard deviation; Me – median; Min – minimum, Max – maximum*

Table 5 presents the results of analysis concerning correlations between the individual dimensions of social support and the assessment of the condition of women after a prenatal loss. Statistically significant ( $p < 0.05$ ) positive correlations were found between perceived emotional and instrumental support of women after miscarriage and their physical condition (respectively: EMO  $\rho = 0.103$ , INSTR  $\rho = 0.111$ ), overall health ( $\rho = 0.118$ ,  $\rho = 0.013$ ), and health satisfaction ( $\rho = 0.126$ ,  $\rho = 0.138$ ). QoL in this group of patients positively correlated with perceived emotional ( $\rho = 0.209$ ), instrumental ( $\rho = 0.265$ ), and actually received ( $\rho = 0.228$ ) social support. Moreover, a negative correlation of the need for support with the assessment of mental condition ( $\rho = -0.138$ ) and health satisfaction ( $\rho = -0.119$ ) was found among patients after miscarriage.

A significant ( $p < 0.05$ ) positive correlation of perceived available instrumental ( $\rho = 0.201$ ) and actually received support ( $\rho = 0.272$ ) with mental condition was found in the group of respondents after termination of ectopic pregnancy. Satisfaction with quality of life among women with ectopic pregnancy correlated significantly ( $p = 0.002$ ) with perceived emotional ( $\rho = 0.290$ ) and actually received support ( $\rho = 0.286$ ), (Table 5).

Table 5

Analysis of correlations between various dimensions of social support and the psychophysical condition, health, and quality of life of women after miscarriage and ectopic pregnancy

BSSS Subscales		correlations									
		Mental condition		Physical condition		Health		Health satisfaction		Quality of life	
		rho	p	rho	p	rho	p	rho	p	rho	p
BSSS I EMO	Miscarriage	0.086	0.054	0.103	0.022	0.118	0.008	0.126	0.005	0.209	<0.001
	EP	0.185	0.054	-0.001	0.994	0.036	0.711	0.159	0.097	0.290	0.002
BSSS I INSTR	Miscarriage	0.122	0.006	0.111	0.013	0.111	0.013	0.138	0.002	0.265	<0.001
	EP	0.201	0.036	0.182	0.057	0.104	0.279	0.108	0.263	0.149	0.121
BSSS II	Miscarriage	-0.138	0.002	-0.028	0.530	-0.028	0.536	-0.119	0.008	-0.002	0.958
	EP	-0.122	0.205	0.056	0.561	0.073	0.445	-0.093	0.333	-0.051	0.600
BSSS III	Miscarriage	-0.002	0.972	0.011	0.811	0.024	0.590	-0.015	0.744	0.080	0.075
	EP	-0.019	0.846	0.112	0.244	0.148	0.124	-0.056	0.560	0.042	0.660
BSSS IV	Miscarriage	0.070	0.117	0.082	0.067	0.039	0.387	0.052	0.246	0.228	<0.001
	EP	0.272	0.004	0.056	0.559	0.050	0.603	0.099	0.306	0.286	0.002
BSSS V	Miscarriage	-0.041	0.362	0.008	0.863	0.042	0.347	-0.054	0.228	-0.087	0.052
	EP	-0.184	0.055	-0.051	0.595	-0.018	0.853	0.054	0.576	-0.147	0.124

*EP – ectopic pregnancy; BSSS I Emo – Perceived available Emotional Support; BSSS I Instr - Perceived available Instrumental Support; BSSS II - Need for Support; BSSS III - Support Seeking; BSSS IV - Actually Received Support; BSSS V - Protective Buffering Support*

Data analysis showed statistically significant ( $p < 0.05$ ) positive correlations between mental condition and support provided to patients with ectopic pregnancy by the gynecologist-obstetrician ( $\rho = 0.346$ ), psychologist ( $\rho = 0.327$ ), and partner ( $\rho = 0.231$ ). On the other hand, in the case of women after miscarriage, mental condition significantly ( $p < 0.05$ ) positively correlated with support from the family ( $\rho = 0.104$ ).

In the group of patients with EP, a positive relationship was found between overall health and support from other patients ( $\rho = 0.244$ ). Moreover, among women with EP, a statistically significant positive ( $p < 0.05$ ) relationship was reported between satisfaction with health and support from the midwife ( $\rho = 0.229$ ), doctor ( $\rho = 0.226$ ), and friends ( $\rho = 0.232$ ), while among respondents who had miscarried, satisfaction with health positively correlated with support from the clergy ( $\rho = 0.128$ ).

Quality of life in both groups of respondents showed a statistically significant ( $p < 0.05$ ) positive correlation with support received from their relatives ( $\rho$  range = 0.130 - 0.328), gynecologist-obstetrician (respectively: miscarriage:  $\rho = 0.132$ , EP:  $\rho = 0.195$ ), midwife ( $\rho = 0.137$ ,  $\rho = 0.198$ ), and the clergy ( $\rho = 0.180$ ,  $\rho = 0.264$ ). Support from other patients in a similar situation significantly ( $p = 0.001$ ) positively correlated in the group of patients after miscarriage ( $\rho = 0.182$ ), (Table 6).

Table 6

Analysis of correlations between the support obtained from specific sources and the subjective assessment of psychophysical condition, health, and quality of life among women after miscarriage and ectopic pregnancy

Źródła wsparcia	correlations										
		Mental condition		Physical condition		Health		Health satisfaction		Quality of life	
		rho	p	rho	p	rho	p	rho	p	rho	p
Gynecologist	Miscarriage	0.023	0.613	0.013	0.779	-0.045	0.316	0.003	0.947	0.132	0.003
	EP	0.346	<0.001	0.133	0.166	0.166	0.084	0.226	0.017	0.195	0.041
Midwife	Miscarriage	0.059	0.200	0.059	0.194	0.036	0.431	0.089	0.052	0.137	0.003
	EP	0.178	0.063	0.098	0.310	0.131	0.174	0.229	0.016	0.198	0.039
Psychologist	Miscarriage	0.003	0.966	0.107	0.097	0.063	0.332	0.089	0.168	0.002	0.974
	EP	0.327	0.026	0.019	0.901	-0.017	0.908	-0.022	0.884	-0.033	0.827
Partner	Miscarriage	0.037	0.416	-0.003	0.943	0.006	0.895	-0.019	0.681	0.130	0.004
	EP	0.231	0.016	0.102	0.291	0.147	0.128	0.180	0.061	0.328	<0.001
Family	Miscarriage	0.104	0.024	0.051	0.270	0.025	0.590	0.018	0.701	0.175	<0.001
	EP	0.121	0.211	0.095	0.327	0.100	0.302	0.088	0.362	0.201	0.036
Friends	Miscarriage	0.087	0.068	0.013	0.783	-0.002	0.968	0.007	0.885	0.151	0.001
	EP	0.119	0.226	0.129	0.189	0.186	0.057	0.232	0.017	0.261	0.007
Spiritual	Miscarriage	0.094	0.115	0.065	0.273	0.089	0.134	0.128	0.031	0.180	0.002
	EP	0.029	0.821	-0.083	0.512	-0.026	0.836	0.052	0.680	0.264	0.033
Patients at hospital after pregnancy loss	Miscarriage	0.088	0.077	0.021	0.680	0.015	0.768	0.064	0.197	0.182	<0.001
	EP	0.071	0.507	0.183	0.084	0.244	0.021	-0.049	0.644	0.168	0.112
EP – ectopic pregnancy											

## Discussion

The contact of medical personnel with a woman after pregnancy loss is a special type of social interaction involving the exchange of emotions and instruments of action. Both medical staff, because of their competences and the nature of their work, as well as the patient's relatives belong to the group of people considered significant in the process of adapting to this difficult situation. Social support tailored to the patient's expectations and needs reduces stress, provides a sense of security, and affects the process of diagnosing, treating, and handling the health problem. Assessment of patient expectations and their constant monitoring is conducive to the development of modern medicine and nursing, as well as to meeting the ever-greater requirements towards medical personnel [1, 12].

The type of social support that received the highest score from women after pregnancy loss, both as a result of miscarriage and termination of ectopic pregnancy (EP), was perceived available instrumental, emotional, and actually received social support. The statistical data presented in the present paper is comparable to the results of a study conducted by Konczelska et al. among parents who had experienced the death of a child [16].

The need for support, both in the present study and the analysis by Konczelska et al., was less intense. On the other hand, patients after miscarriage and ectopic pregnancy sought support to a lesser extent than respondents who had experienced the death of an older child. This is may be due to the fact that among the respondents studied by Konczelska et al. satisfaction with the support received was assigned the lowest score, while the score for support from individual sources given by the respondents participating in the present study was high [16].

Social support plays an important role in supporting therapy and maintaining health. It is also a recognized factor positively affecting an individual's quality of life (QoL). Along with the decreasing scope of social support, the incidence of poor overall health, mental stress, symptoms of anxiety and depression, limited activity, and disability increases [1, 17, 18]. Providing social support and assessing it in the medical community is therefore extremely important [19].

The present study showed a positive correlation between support from both primary (relatives, other patients) and secondary support systems (medical staff, clergy) and satisfaction with quality of life among women in such unique circumstances as pregnancy loss. Moreover, QoL was positively influenced by the perceived available emotional and actually received support in both study groups, while in the case of respondents who had miscarried, this was also true for perceived available instrumental support. The present analysis corresponds with the studies by Dębska et al. and Sitjar-Suñer et al., who demonstrated that social support is a key factor for perceived quality of life [20, 21].

In a regression analysis by Bastardo et al., social support was significantly correlated with all HRQL domains except for physical functioning [22]. The work by Pietnoczko et al. showed that a growing deficit of social support from professionals increases the number of somatic symptoms and health problems [5]. The present analysis of the correlations between the individual dimensions of social support and the overall health of women after pregnancy loss showed the impact of perceived available emotional support on mental and physical condition, overall health, and health satisfaction. Perceived available instrumental support positively correlated with the psychophysical condition of respondents after miscarriage, their overall health and health satisfaction, as well as the mental condition of women with EP. Moreover, higher scores for actually received support were associated with better mental condition in the case of respondents with ectopic pregnancy.

Natural sources of support are considered the most durable and reliable. According to researchers, they are more accessible and beneficial, generate lower costs, and do not stigmatize. Moreover, their mutual and voluntary nature significantly increases the effectiveness of the aid provided [23].

Interpretation of the results obtained in the course of this study showed that women who had experienced prenatal loss gave the highest scores to natural sources of support, such as their partner and family. Other sources of support that received high scores were the midwife, friends, and the doctor. The present analysis corresponds to the qualitative research conducted by Bellhouse et al. among Australian women after miscarriage, where the partner was identified as the main source of social support [24]. A study conducted by Song et al. indicated that marital closeness mitigated the negative effects of mourning [25]. Social support plays an important role in moving through its successive stages. Based on the theory of stress, it is concluded that it provides a buffering effect, while a low level of support from the family and friends contributes to the emergence of complex mourning reactions [7]. A review of the literature on the subject indicates that a weak marriage relationship or lack of support from the partner are strong factors that intensify the feeling of grief after perinatal loss [6, 7].

By analyzing the correlations associated with the impact of support on the condition of patients after pregnancy loss, we showed that support from the partner of women with EP and the family of respondents after miscarriage were significant for improving their mental state. It should be noted, however, that women who had had a miscarriage assigned slightly higher scores to the level of support received from their partners compared to patients with EP who, in turn, received slightly greater support from their families. It can therefore be assumed that the very initiation of supportive actions on the part of relatives was a factor affecting the condition of patients after pregnancy loss. Moreover, it should be noted that the necessary condition for supportive social interactions to meet the expectations of a person in need is their purposefulness, consistency between the amount of aid provided and the needs and expectations of the recipient, and also mutual (donor-recipient) understanding and

mobilization. The effectiveness of these actions also depends on the recipient's resources, such as self-esteem, competences, conviction about their own effectiveness, social position, sense of control, and coherence [24].

In the research conducted by Mess et al. among women who had experienced the loss of a child at various stages of pregnancy, most respondents, when asked about the support received in hospital conditions, indicated that this had come from their family and the midwife [26]. In the present analysis, the support provided by the latter also received high scores. The midwife creates, or should create, a special relationship with a patient after pregnancy loss, provides contact with another woman, a person who is a source of safety and support during pregnancy, and who then becomes a witness of the child's death and the mother's despair.

Patients after miscarriage and ectopic pregnancy indicated friends as another source of support, and then their gynecologist-obstetrician. 40% of women after pregnancy loss surveyed by Mess et al. indicated their doctor as a supportive person at the hospital [26]. Another important source of social support for patients participating in the diagnostic survey for this study turned out to be other patients in a similar situation who were staying at the hospital at the same time. Bellhouse et al. obtained comparable results among individuals after pregnancy loss [24].

Psychological care received a high score from the women after the loss of a child surveyed by Mess et al.: it ranked third in terms of support provided to the women during hospitalization [26]. The results of the present study did not correspond with Mess et al.'s data. The psychologist was one of the least effective sources of support for patients. This was probably due to the fact that a significant number of women with diagnosed pregnancy loss did not have contact with a psychologist or did not express an opinion on the care provided by this specialist. It should be emphasized that for patients with ectopic pregnancy, psychological care had a significant impact on improving their mental state. Therefore, it should be noted that it is necessary to include psychological care in management algorithms and monitor this process through systematic research in the field of social support among patients after prenatal loss. The task of a psychologist should not only be to provide immediate help in a difficult situation, but also to refer individuals who cannot cope with pregnancy loss to a mental health clinic, crisis intervention center, and support groups [27, 28].

Spiritual support, especially in the event of death, where suffering dominates, is very valuable. Religion reduces the feeling of irreversibility of death, explains its meaning, and offers rituals to help process the loss. In the present study support from the clergy received a low score (however, it should be noted that, as in the case of psychological care, a large group of patients did not have contact with a priest or did not express an opinion on this source of support). This result was identical with the data from the analysis conducted by Mess et al., where support from a priest was received by a small group of patients after perinatal loss (approx. 3%) [26]. A literature review also shows that religious communities constitute beneficial sources of support, and religion is associated with increased perception of social support [7]. Studies conducted among patients after miscarriage and ectopic pregnancy also showed a correlation between the support from the clergy and perceived available emotional support, instrumental support, actually received support, and social support seeking. The present analysis also showed a positive correlation between clerical support and satisfaction with the quality of life in women who had experienced obstetric failure.

One of the current challenges facing the healthcare system is the appropriate response to patient expectations. The quality of the services provided should be assessed constantly in order to make improvements by designating and implementing appropriate strategies. Patient expectations, as well as their experiences and opinions on maternity care, should constitute an important message for both health care employees and administrators, while ensuring the psychosocial comfort of patients, in addition to effective treatment and care, should be one of the priorities in medical personnel's daily work. Raising public awareness of the impact of pregnancy loss on psychophysical health seems necessary to shed more light on this profoundly personal experience, as well as to better understand and provide proper support to people affected by prenatal loss.

## **Strengths And Limitations Of This Study**

The advantage of our work is the size of the study group (610 people) and the fact that our questionnaire was delivered to each respondent in person. It should also be emphasized that the study utilized a standardized tool, which allows other authors studying the issue of miscarriage and ectopic pregnancy to compare research results and explore the subject, as well as to monitor changes. The available studies conducted among women after pregnancy loss are usually performed several weeks or months after the event. The present study was carried out during hospitalization, as the struggle with this difficult situation in most cases begins in the hospital.

Another important aspect of this study is the attention paid to patients diagnosed with ectopic pregnancy, which is most often treated as a life-threatening condition, while the fact of losing a child is considered secondary. Although there are studies on the negative impact of ectopic pregnancy on women's mental health, these patients are often not taken into account in the procedures implemented after pregnancy loss. Conducting research on social support in this group of women and recognizing them as individuals experiencing the loss of a child, not just clinical cases, is therefore extremely important and can significantly affect their overall biopsychosocial well-being.

One of the difficulties related to this study was delivering questionnaires in person during a hospital stay. This resulted from the duration of the stay (3-6 days), during which intensive diagnostic and therapeutic procedures were performed. Therefore, in order to ensure the highest quality and credibility of the research, information on the stage of treatment, hospitalization time, and opinions on the clinical condition of the women was obtained from medical personnel before contact with each respondent.

The study is also limited by its cross-sectional nature, which does not allow for the establishment of cause-effect relationships between social support and subjective assessment of psychophysical condition, health, and satisfaction with quality of life.

## Conclusions

1. Women hospitalized due to miscarriage and ectopic pregnancy assigned high scores to the level of perceived available instrumental, emotional, and actually received social support.
2. Mental condition positively correlated with perceived available instrumental support and the need for support on the part of patients after miscarriage, as well as with instrumental and actually received support on the part of respondents with ectopic pregnancy. The assessment of the health and physical condition of women who had experienced miscarriage was positively affected by instrumental and emotional support, while satisfaction with health was also influenced by the need for support. Satisfaction with quality of life correlated positively with perceived available instrumental, emotional and actually received support for patients after miscarriage, as well as with emotional support and actually received support for women with ectopic pregnancy.
3. Mental condition was positively correlated with the support from a psychologist, gynecologist-obstetrician, and the partner of women with ectopic pregnancy and with the support obtained from the family of patients after miscarriage. The health satisfaction of respondents after miscarriage was influenced by support from the clergy, while among women with ectopic pregnancy, it was impacted by support from friends, doctors, and midwives; moreover, in this group, support obtained from other patients had a positive effect on overall health. The quality of life of patients hospitalized as a result of pregnancy loss correlated positively with all sources of support, except for the help of a psychologist.

The present study indicates that health and social policy should be implemented in all countries with greater awareness by introducing training for medical personnel in the field of professional support in difficult situations related to motherhood, management algorithms and control of their implementation, as well as by providing appropriate psychological help, which is not received by patients to a sufficient degree. Proper conduct of medical personnel and support from relatives may contribute to the optimization of obstetric care and minimization of negative effects on the mental health of patients after pregnancy loss and positively affect their psychophysical condition, health, and quality of life.

## Abbreviations

**BSSS:** Berlin Social Support Scales

**BSSS I Emo:** Perceived available Emotional Support

**BSSS I Instr:** Perceived available Instrumental Support

**BSSS II:** Need for Support; **BSSS III -** Support Seeking

**BSSS IV:** Actually Received Support

**BSSS V:** Protective Buffering Support

**EP:** ectopic pregnancy

**M:** mean

**Me:** median

**QoL:** Quality of Life

**SD:** standard deviation

## Declarations

### Ethics approval and consent to participate

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee (The Bioethics Committee of the Medical University of Lublin (KE-0254/221/2016) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

### Consent for publication

Not applicable

### Availability of data and materials

All data generated or analysed during this study are included in this published article

### Competing interests

The authors declares that they have no competing interests in this section

### Funding

This research received no external funding.

### Author's contributions

GI-P: study design, analyse the research material, wrote the paper, performed the manuscript review. MM: data collection, analyse the research material, manuscript preparation, wrote the paper. AB: statistical analysis, interpreted the data, wrote the paper, and performed the manuscript review. All authors read and approved the final manuscript.

# Acknowledgements

We would like to express our deepest gratitude to the heads of health care services (hospital care) that hosted the study, and to all the women who agreed to participate.

## Author's information

GI-P – Chair and Department of Development in Midwifery, Faculty of Health Sciences, Medical University of Lublin, Lublin, Poland

MM – Obstetrics and Gynecology Department and Clinic, Cardinal S. Wyszyński Regional Specialist Hospital in Lublin, Poland

AB – Chair and Department of Development in Midwifery, Faculty of Health Sciences, Medical University of Lublin, Lublin, Poland

## References

1. Sereshti M, Nahidi F, Simbar M, Ahmadi F, Bakhtiari M, Zayeri M. Mothers' Perception of Quality of Services from Health Centers after Perinatal Loss. *Electron Physician*. 2016;8(2):2006-2017.
2. Tabali M, Ostermann T, Jeschke E, Dassen T, Heinze The Relationship between health-related quality of life and care dependency among nursing home residents in Germany: A longitudinal study. *J Gerontol Geriatr Res*. 2015;4:1–6.
3. Lotfi-Kashani F, Vaziri S, Akbari ME, Kazemi-Zanjani N, Shamkoeyan L. Predicting posttraumatic growth based upon self-efficacy and perceived social support in cancer patients. *Iran J Cancer Prev*. 2014;7(3):115–122.
4. Mirczak A: Determinants of the Social Support Among Elderly People Living in Rural Areas. *Labor et Educatio*. 2014;2:189-192.
5. Pietnoczko MK, Steuden SJ: The need for social support and the health condition of parents of children with cancer. ***Palliative Medicine in Practice* 2020;11-18. doi:10.5603/PMPI.2020.0014.**
6. Lasker JN, Toedter LJ. Acute versus chronic grief: the case of pregnancy loss. *Ami J Orthopsychiatry*. 1991;61:510–522.
7. Kersting A, Wagner B. Complicated grief after perinatal loss. *Dialogues Clin Neurosci*. 2012;14(2):187–194.
8. Christiansen DM, Olf M, Elklit A. Parents bereaved by infant death: sex differences and moderation in PTSD, attachment, coping and social support. *Gen Hosp Psychiatry* 2014;36(6):655-661.
9. Łuczak-Wawrzyniak J, Czarnecka-Iwańczuk M, Bukowska A, Konofalska N. Early and late psychological effects of pregnancy loss. *Ginekol Pol*. 2010;81(5):374-377.
10. Sun S, Li J, Ma Y, Bu H, Luo Q, Yu X. Effects of a family-support programme for pregnant women with foetal abnormalities requiring pregnancy termination: A randomized controlled trial in China. *Int J Nurs Pract*. 2018;24(1), doi: 10.1111/ijn.12614.
11. Boyle A, Preslar PP, Hogue C, Silver R, Reddy UM, et al. Route of delivery in women with stillbirth: results from the stillbirth collaborative research network. *Obstet Gynecol*. 2017;129(4):693–698.
12. Raitio K, Kaunonen M, Aho AL. Evaluating a bereavement follow-up intervention for grieving mothers after the death of a child. *Scand J Caring Sci*. 2015;29(3):510–20.
13. Ellis A, Chebsey C, Storey C, Bradley S, Jackson S, Flenady V, et al. Systematic review to understand and improve care after stillbirth: a review of parents' and healthcare professionals' experiences. *BMC Pregnancy Childbirth*. 2016;16(16), org/10.1186/s12884-016-0806-2.
14. Schulz U, Schwarzer R. Soziale Unterstützung bei der Krankheitsbewältigung: Die Berliner Social Support Skalen (BSSS). 2003;49:73-82.
15. Berlin Social Support Scales:  
[[https://www.midss.org/sites/default/files/berlin\\_social\\_support\\_scales\\_english\\_items\\_by\\_scale.pdf](https://www.midss.org/sites/default/files/berlin_social_support_scales_english_items_by_scale.pdf)]

16. Konczelska K, Sikora J. Potraumatyczny wzrost, wsparcie społeczne i zdrowie psychiczne w sytuacji doświadczenia śmierci dziecka [Post-traumatic growth, social support and mental health after child loss]. *Humanum*. 2017;25(2):39-51.
17. El Sayed Gaafar MM, El Habashy MM. Anxiety, social support and quality of life of pregnant women after previous abortion. *ASNJ* 2017;19(2):119-130.
18. Flenady V, Boyle F, Koopmans L, Wilson T, Stones W, Cacciatore J. Meeting the needs of parents after a stillbirth or neonatal death. *Br J Obstet Gynaecol*. 2014;121(4):137–40.
19. Strine TW, Chapman DP, Balluz L, Mokdad AH. Health-related quality of life and health behaviors by social and emotional support. *Soc Psychiatry Psychiatr Epidemiol*. 2008;43(2):151-159.
20. Dębska G, Milaniak I, Skorupska-Król A. The Quality of Life as a Predictor of Social Support for Multiple Sclerosis Patients and Caregivers. *J Neurosci Nurs*. 2020;52(3):106-111.
21. Sitjar-Suñer M, Suñer-Soler R, Masià-Plana A, Chirveches-Pérez E, Bertran-Noguer C, Fuentes-Pumarola Quality of Life and Social Support of People on Peritoneal Dialysis: Mixed Methods Research. *J Environ Res Public Health*. 2020;17(12),4240, <https://doi.org/10.3390/ijerph17124240>.
22. Bastardo YM, Kimberlin CL. Relationship between quality of life, social support and disease-related factors in HIV-infected persons in Venezuela. *AIDS Care*. 2000;12(5):673-684.
23. Koetsenruijter J, Eikelenboom N, Lieshouta J, Vassilev I, Lionis Ch, Todorova E, et.al. Social support and selfmanagement capabilities in diabetes patients: An international observational study. *Patient Educ Couns*. 2016;99:638–642.
24. Bellhouse C, Temple-Smith MJ, Jade E, Bilardi JE. “It’s just one of those things people don’t seem to talk about...” women’s experiences of social support following miscarriage: a qualitative study. *BMC Women's Health*. 2018;18(176), [doi.org/10.1186/s12905-018-0672-3](https://doi.org/10.1186/s12905-018-0672-3).
25. Song J, Floyd FJ, Seltzer MM, Greenberg JS, Hong J. Long-Term Effects of Child Death on Parents' Health-Related Quality of Life: A Dyadic Analysis. *Fam Relat*. 2010;59:269-282.
26. Mess E, Bartoszczyk I, Jerczak BJ. **Poród martwego dziecka. Sytuacja kobiety rodzącej w Polsce w świetle badania ankietowego [Stillbirth. Situation of Polish women in labour in light of a survey questionnaire]**. *Med Paliat*. 2016;8(4):182–185.
27. Lacasse JR, Cacciatore J. Prescribing of psychiatric medication to bereaved parents following perinatal/neonatal death: an observational study. *Death Stud*. 2014;38(6-10):589-96.
28. Meredith P, Wilson T, Branjerdporn G, Strong J, Desha L. “Not just a normal mum”: a qualitative investigation of a support service for women who are pregnant subsequent to perinatal loss. *BMC Pregnancy Childbirth*. 2017;17(6):1-12.

## Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [Supplementaryfile1Originalauthorssurveyquestionnaire.doc](#)
- [Supplementaryfile1Originalauthorssurveyquestionnaire.doc](#)
- [Supplementaryfile2SurveyquestionnaireinEnglish.doc](#)
- [Supplementaryfile2SurveyquestionnaireinEnglish.doc](#)
- [Supplementaryfile3statisticaldatabase.xlsb](#)
- [Supplementaryfile3statisticaldatabase.xlsb](#)