




RESEARCH ARTICLE

Disease acceptance and social support in patients with peripheral vascular diseases treated in the surgical ward

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Abstract

Aim: The purpose of this study is a comparative analysis of the degree of disease acceptance and social support in patients with peripheral vascular diseases and other medical conditions treated in surgery ward.

Design: A cross-sectional study.

Methods: This cross-sectional study compares disease acceptance and social support in a group of 212 patients with peripheral vascular diseases and other conditions treated in surgery ward. A standardized Acceptance of Illness Scale (AIS) and Social Support Scale were used to collect the research data.

Results: Overall, on the AIS, 14% of patients with surgical diseases and 34% of patients with vascular diseases had a low disease acceptance rate. A high level of support was demonstrated in 41% of study participants with surgically treated diseases and in 17% of participants with vascular diseases.

KEYWORDS

disease acceptance, patient, peripheral vascular diseases, social support, surgery

1 | INTRODUCTION

Each surgery is an emotional stimulus associated with fear of its consequences (Aliche, Ifeagwazi, & Eze, 2020). The scar after a surgery makes a physical, emotional and psychological mark with symptoms of depression, anxiety, anger and post-traumatic stress (Ngaage & Agius, 2018). Surgical treatment, however justified, is an interference with the physical integrity of the patient. The closer to the procedure, the more the patient considers the dangers arising from it. The patient's mental state becomes changeable, hope appears, but also anxiety associated with the fear of not waking up after surgery, fear of death, complications and anaesthesia, fear of control-loss and complete dependence on staff as well as fear of postoperative pain (Niechwiadowicz - Czupka, 2014; Bedaso & Ayalew, 2019). Studies show that the incidence of pre-operative anxiety in patients waiting

for scheduled surgery may be high (47%) and having strong social support significantly reduces its intensity (Bedaso & Ayalew, 2019). Increased anxiety increases the number of complications and reduces the pain threshold (Kim et al., 2014; Marik & Flemmer, 2012). Lack of a support group along with subjective sense of loneliness significantly reduces the mental and physical immunity of the patient (Aliche, Ifeagwazi, Chukwuorji, et al., 2020). Reports from other authors indicate that emotional reactivity in patients qualified for a scheduled surgery is positively associated with pre-operative anxiety only with low level of support from friends and important individuals, but not with moderate or high support (Aliche, Ifeagwazi, & Eze, 2020). Postoperative pain felt by the patient during treatment and recovery, in both acute and chronic diseases, is one of the factors worsening the quality of life and causing less disease acceptance (Chabowski et al., 2017; Szpilewska et al., 2018).

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Disease acceptance means adapting to it, accepting the limitations resulting from the disease, restoring positive emotions, positive attitude to a given situation. Acceptance is an important part of participation in the treatment process and in coping with the disease (Chabowski et al., 2017). It is therefore worth controlling and eliminating the pain which occurs in the patients, encouraging them to mobilize their own forces which serve to improve physical comfort and prevent deterioration of health and to educate in healthy behaviour, in order to better cope with a difficult situation and to accept the disease (Piotrkowska et al., 2021). Disease acceptance creates a sense of security, reduces the intensity of negative reactions and emotions related to the disease, allows for better adaptation to new conditions and decreases the sense of mental discomfort (Boryczko-Pater et al., 2011).

Social support is a multidimensional construct and has been described as a special type of helping the sick in order to mobilize their own strength and resources to cope with a difficult situation (Lin et al., 1979). They can be divided into emotional support (liking, love, empathy); instrumental support (goods and services); informational support (environmental information); or evaluation support (information relevant to self-evaluation). In terms of the relationship between recipient and donor, social support can be based on family or people coming from outside the family (e.g. friends, neighbours, co-workers) (Song, Son & Lin 2011). Social support is a type of social interaction undertaken in a stressful, difficult, problematic or critical situation (Sęk & Cieślak, 2012). It is important that the support provided is continuous and personal. The greater the support, the greater the motivation to fight the disease and hope for recovery, and thus acceptance of oneself as a sick person and limitations related to the existing situation (Sęk & Cieślak, 2012).

In the disease drama, proper psychological preparation of the patient for surgery by medical nursing staff, and in particular the provision of informational support, which encourages a better understanding of the situation, problem and life situation, is important in the adaptation to the limitations imposed by the disease. It is also about providing feedback on the effectiveness of the proposed remedial action taken by the supported person. Information reduces anxiety and stress and improves self-esteem and the well-being of the sick person (Kopański et al., 2011; Sęk & Cieślak, 2012). Studies show that the level of hope in patients before kidney transplantation increased together with an increase in social support of family or relatives (Goktas et al., 2019). Results showed a clear connection between family support and recovery in patients after cholecystectomy (Cardoso-Moreno & Tomás-Aragones, 2017).

The literature points out that intervention programmes aimed at reducing anxiety in surgical patients should take into account the inclusion of social support due to its protective nature in improving results of a surgery (Aliche, Ifeagwazi, & Eze, 2020). One of the four main strategies for venous rehabilitation is based on psychological and social support (Caggiati et al., 2018). Building a relationship with a sick person should be therapeutic, empowering and, above all, full of openness and kindness (Mastalski, 2018).

2 | BACKGROUND

In medical sciences, it is becoming increasingly common to determine the degree of disease acceptance and to apply acceptance and commitment therapy, which aims to help patients improve psychological flexibility so that they can accept various unavoidable events instead of fighting them (Wilson et al., 2013). The ability to accept certain limitations makes it easier for a patient to adapt to the disease, which helps with disease acceptance, important in the process of treatment and coping with the disease. Adapting to the disease is an understanding of the actual health condition, which allows the patient to cope with the problems of the disease, including the sensation of pain (Bono et al., 2013; Dance, DeBerard, Gundy Cuneo 2016). Studies have confirmed that people who accept the disease show greater trust in doctors, treatment methods, a positive hopeful approach to life and active participation in therapy (Boryczko-Pater et al., 2011; Piotrkowska et al., 2021). The disease acceptance is an important element in the process of adapting to living with the disease, especially one with a troublesome tendency to relapse as well as situations related to a certain perception of the disease by society. It requires a person affected by the disease to activate a variety of adaptive mechanisms, allowing to maintain psychological balance and develop effective coping strategies (Moczyłowska et al., 2014). Positive disease acceptance translates into far better psychological and physical well-being, contributes to a lower sense of discomfort associated with the disease and provides better adaptation (Andruszkiewicz et al., 2014).

Various studies have shown that psychosocial factors play an important role in recovery and affect the results of surgical operations (Rosenberger et al., 2006). Social support generally refers to the availability of relationships that give an individual the sense that they are cared for, appreciated or loved (Shumaker and Czajkowski, 2013). Anxiety, depression and especially lack of social support are described as well-known risk factors for postoperative recovery (Pignay-Demaria et al., 2003; Pinto et al., 2016). It is estimated that the frequency of incidence of depression or depressive symptoms in patients with peripheral vascular diseases ranges from 11%–48% in cross-sectional studies and from 3%–36% in longitudinal studies (Brostow et al., 2017). Data suggest that social support and loneliness are indirectly related with surgical outcomes by an association with depression (Krampe et al., 2018). The study results confirm a clear link between family support and recovery in patients with cholecystectomy (Cardoso-Moreno & Tomás-Aragones, 2017). Patients who showed a greater sense of social support demonstrated greater self-confidence, less pain, better health, more energy and less movement limitations than patients who felt a lower level of social support (Clark et al., 2012; Janssen et al., 2014). Support significantly affects the entire functioning of the patient, increases the motivation to fight the disease, gives more hope and satisfaction with treatment and improves the quality of his life and thus the acceptance of the disease.

Social support is one of the psychological factors related to the quality of life and physical functioning of patients with peripheral artery disease (Wongkongkam et al., 2019). Peripheral artery disease

has a pronounced negative impact on the quality of life of patients (Maksimovic et al., 2014; Nordanstig et al., 2014; Piotrkowska et al., 2011). An important aspect of living with this disease is that it is a symptom of generalized atherosclerosis, often characterized by a high rate of concomitant diseases, and unlike other cardiovascular diseases, it impairs the movement and functioning of the lower extremities. The authors of a systematic review, which aimed at identifying factors affecting the quality of life after lower limb amputation due to coronary atherosclerosis, showed that being able to walk with a prosthesis significantly improves quality of life, and one of the factors that reduces the quality of life is low level of social support (Davie-Smith et al., 2017).

Most literature on social support and cardiovascular diseases refers to support provided by significant individuals in the life of a patient or support provided by healthcare professionals in medical institutions or after medical discharge. Social support has been shown to be important in stressful situations for patients with peripheral artery disease (PAD) after revascularisation. Some patients felt that they often received support from a loved one outside the family, such as a home nurse or other care staff. However, many of them felt that they had not received such support. The lack of social support among PAD patients after revascularisation was related to a decrease in quality of life and a decrease in walking ability (Remes et al., 2010). Another study showed that patients who were receiving low social support had increased progression of coronary atherosclerosis (Angerer et al., 2000). PAD patients who have received good social support have better surgery results (Wongkongkam et al., 2019). The results of the study, involving patients with limb amputation due to vascular disease or diabetes who showed low social support were identified as belonging to people more prone to develop depression symptoms after amputation. These results support the stress buffering hypothesis and suggest that perceived social support may be an important modifiable target for intervention in people with lower level of daily functioning (Anderson et al., 2017).

3 | METHODS

3.1 | Aim

The aim of this study is a comparative analysis of the degree of disease acceptance and social support in patients with peripheral vascular diseases and other medical conditions treated in the general and vascular surgery ward.

3.2 | Research design

A cross-sectional study.

3.3 | Participants and data collection

The study was conducted over a period of 3 months at the General and Vascular Surgery Clinic in a group of 212 patients. Convenience sampling of patients was used for the study. The criteria for

inclusion in the study group were as follows: duration of the disease >3 months (chronic disease), scheduled surgery, good verbal communication with the patient and patient's written consent to participate in the study. The surveys were directly distributed to patients and collected by the principal investigator. For the purposes of comparative analysis, patients were divided into two groups: patients with vascular diseases ($N = 104$) and patients with other surgically treated diseases ($N = 108$). This group included patients with diseases of the endocrine system, diseases of the gastrointestinal system (cholelithiasis, stomach ulcer, hernias), kidney diseases (renal failure, post-transplant kidney condition, postnephrectomy condition) and tumours. A group of patients with vascular diseases included patients with PADs and venous vascular diseases.

3.4 | Instruments

3.4.1 | Sociodemographic and clinical information

The questionnaire was used to collect sociodemographic and clinical data. It included a set of sociodemographic data: age, gender, place of residence, marital status, education level and employment status. Disease-related variables included the following: the reason for hospital admission, the duration of the disease and the presence of concomitant diseases.

3.4.2 | Acceptance of Illness Scale

Acceptance of Illness Scale (AIS) developed by Felton et al. (1984) and adapted to Polish conditions by Juczyński (2012) included eight statements describing the negative consequences of ill health. This scale is used to measure the degree of disease acceptance, which is manifested in a smaller intensity of negative reactions and emotions associated with the current disease. The scale consists of eight statements rated from 1–5 on a Likert scale. During the study, the patient determines his current condition on a scale, where 1 means that the patient strongly agrees with the statements of the scale, while 5 that he strongly disagrees with the given statements. Strong consent implies poor adaptation to the disease, a definite disagreement means acceptance of the disease. Total score is a general measure of the degree of disease acceptance and is within the range of 8–40 points. The results were grouped into the following degrees of acceptance: <30 pts—low disease acceptance, 30–34 points—average disease acceptance, 35 and above—high disease acceptance (Juczyński, 2012). The Cronbach's alpha for the method is 0.82 (Juczyński, 2012; Felton et al., 1984).

3.4.3 | Social Support Scale

Social Support Scale (SSS) by Zarzycka (2001) was used for measurement and assessment of the social support. It is a tool for assessing the social support available, mainly used for nursing purposes, as it

takes into account the scope and nature of the data that are relevant to this type of activity, enabling the nurse to identify the level of social support available. The scale used consists of eight determinants of support: family structure, network size, financial security, physical collateral, time availability of the family, the availability of unprofessional assistance, the availability of professional assistance and patient's information about his health condition. A numerical range of 0–3 points was used for each determinant. In a single study participant, a value of 0–24 points can be obtained. This study used a scale in the linear system, allowing to determine the levels of support: low 0–6 points, medium-low 7–12 points, medium-high 13–17 points, high 18–24 points.

3.5 | Data analysis

Statistica 10.0 (StatSoft Inc., 2011) was used for the purposes of statistical analysis. The results are presented using numerical tables with percentage indicators, and in the case of quantitative variables, mean, standard deviations, medians and quartiles were given. The compatibility of the distributions of quantitative variables with the normal distribution was tested using the Shapiro–Wilk test (distributions differ significantly from normality). The analysis of the compounds was carried out using the chi-square test of independence and Spearman's rank correlation coefficient. For intergroup comparisons, the Mann–Whitney *U* test and the Kruskal–Wallis *H* test were used. The results were considered statistically significant if the calculated probability met the condition: $p \leq .05$.

3.6 | Ethical issues

It was voluntary for the patients to answer the questionnaire, and they had the right to withdraw their undertaking of participation at any time. The study was approved by the Bioethics Committee (AkBEa66-13).

4 | RESULTS

4.1 | Characteristics of the participants

Table 1 contains data on the characteristics of the study group. A comparable number of men and women took part in the study. In the group of people with vascular diseases, compared to other patients, there were significantly more patients aged >70 years (39%), retired (61%), coming from towns/cities (79%). The duration of the disease was significantly longer in patients with vascular diseases ($p = .014$).

Table 2 presents data on the self-evaluation of the patient and others. Patients with other surgically treated diseases, compared to those treated due to vascular diseases, show a higher self-evaluation of coping with the disease (very well 25% vs. 13%) and a higher assessment of coping with their disease by others (very well 29% vs.

26%), and therefore, these differences are not statistically significant ($p > .05$).

4.2 | Disease acceptance

Table 3 shows the results obtained by patients on the AIS scale. The lowest average disease acceptance rate in the two patient groups compared was obtained in the statement “due to my health, I am not able to do what I like the most.” The highest average value in the two compared groups was achieved in the statement “the disease makes me a burden for my family and friends.” Of the eight AIS statements, as many as five statements patients with other surgical diseases showed higher acceptance compared to patients with vascular diseases ($p \leq .05$).

The study found a positive correlation between the AIS score and patients' self-evaluation of coping ($r = .379$; $p = .000$) and an assessment of the extent to which others cope with his disease ($r = .299$; $p = .001$).

Figure 1 illustrates the degrees of disease acceptance in the compared groups. Overall, on the AIS scale, within the group, 14% of patients with surgical diseases and 34% of patients with surgical diseases had a low acceptance rate. The differences in the patient groups compared were statistically significant ($p = .000$).

4.3 | Social support

Table 4 shows data regarding different determinants of the SSS. It was demonstrated that in multi-generation families, there are more patients with surgical (42.59%) than vascular diseases (23.08%). The analysis of network size, that is the number of potential givers of support, revealed that surgical patients can usually count on the support of 14 or more close individuals (23.15%). Among patients with vascular diseases, only 16.35% can count on the support of such a large group of people. For the material support determinant, only 26.92% of individuals with vascular diseases had the necessary equipment. One in three vascular patients (35.58%) stated that non-professional help was difficult for them to obtain.

Table 5 shows the results of patients in the evaluation of social support. The group of patients with other surgical diseases ($p = .000$) rated the social support received significantly higher. For support determinants such as family structure ($p = .004$), network size ($p = .000$), physical collateral ($p = .000$), availability of non-professional assistance ($p = .008$) and informing the patient about the state of health ($p = .001$), the level of support received in patients with other diseases was significantly higher compared to patients with vascular diseases.

Figure 2 includes data on levels of social support in the study group of patients. In patients with surgical diseases, a high level of support was demonstrated in 41% of respondents and 17% in respondents with vascular diseases. Overall, the level of social support was significantly lower in patients with vascular diseases ($p = .000$).

TABLE 1 Characteristics of the study group—sociodemographic and clinical variables

Sociodemographic variables	Patients with surgical diseases	Patients with vascular diseases		<i>p</i>
		Indicator	%	
Age	Up to 60 years	58	34	.000
	61–70 years old	29	27	
	>70 years old	13	39	
Gender	Female	56	43	.073
	Male	44	57	
Resident	Village	48	21	.000
	Town/city	52	79	
Marital status	Single	36	34	.707
	In a relationship	64	66	
Education	Primary/lower secondary	27	18	.064
	Basic vocational	27	26	
	Secondary	36	33	
	Higher	10	23	
Professional status	Retired	39	61	.015
	Pensioner	30	18	
	Unemployed	7	7	
	Working	24	14	
Duration of the disease	>3 months to 1 year	36	30	.014
	1–5 years	27	42	
	6–10 years	8	13	
	>10 years	29	15	
Concomitant diseases	Do not occur	35	22	.096
	1 disease	43	48	
	2 diseases and more	22	30	

Note: *p*, statistical significance.

Data show that patients with surgical diseases achieved significantly higher results at both scales than patients with vascular diseases.

5 | DISCUSSION

The purpose of this study was a comparative analysis of the degree of disease acceptance and social support in a group of patients with vascular diseases and other conditions treated in the general and vascular surgery department. The mean disease acceptance and social support score measured among patients was 25.90 and 13.75 for patients with vascular diseases and 29.46 and 16.12 for patients with other surgical diseases, respectively. This study showed that in all AIS statements, patients with vascular disease had lower average scores than patients with other surgically treated diseases. The difference was statistically significant in five out of eight statements of scale: a sense of not being able to do things one enjoys the most,

self-sufficiency, limitations imposed by the disease, maintenance of undiminished self-evaluation and a lack of a sense that the disease can have a negative impact on people. A third of patients with vascular diseases (34%) showed a low disease acceptance rate, significantly higher than those in patients treated surgically for other diseases in this study (14%) and a study by other authors (16.4%) (Lelonek & Kaczmarczyk, 2011). The results presented in this study in terms of mean values obtained for the entire AIS in patients with vascular diseases (25.90) are comparable to those of other authors in the group of patients with PAD (25.17) (Piotrkowska et al., 2021) and slightly lower than in the group of patients after operation of varicose veins of lower limbs (27.00) (Wiśniewska-Szumacher et al., 2013).

Respondent participants with other surgical diseases surveyed in this study showed on the AIS an average of 29.46, which is comparable to that of patients with ulcerative colitis (29.65) (Chrobak-Bień et al., 2018) and higher compared to patients hospitalized in the surgical ward (27.04) (Lelonek & Kaczmarczyk, 2011), cancer patients

TABLE 2 Self-evaluation of coping with the disease

Self-evaluation		Patients with surgical diseases	Patients with vascular diseases	p
		%	%	
Degree of coping with the disease	Very well	25	13	.088
	Well	51	50	
	Neither well nor badly	21	28	
	Badly	3	8	
	Very badly	1	0	
Other people's degree of coping with the patient's disease	Very well	29	26	.337
	Well	65	65	
	Neither well or badly	5	9	
	Badly	2	0	
	Very badly	0	0	

Note: p, statistical significance.

(26.53) (Cipora et al., 2018), patients with a tracheotomy tube (25.40) (Zarzycka et al., 2015), dialysis patients (25.32) (Adamczuk et al., 2019) and patients undergoing surgery (24.42) (Chabowski et al., 2017).

The level of health is determined, among other things, by effective ways of coping with stress and subjective resources, among which self-esteem plays an important role. Positive self-evaluation motivates the patient to act for health (Lelonek & Kaczmarczyk, 2011; Moczyłowska et al., 2014). The self-study showed that higher acceptance of the disease is accompanied by a higher self-esteem of the patient in terms of coping with his own disease and assessing how others cope with his disease.

In this study, approximately 50% of patients received support at the mid-high level, which is a lower value compared to the results of studies of other authors in the group of patients operated due to appendicitis, hernia, thyroid diseases, cholecystitis (73.6%) (Lelonek & Kamusińska, 2011) and higher than patients with multiple sclerosis (31%) (Grochans et al., 2008). A lower average value of social support was achieved in patients with vascular diseases (13.75) compared to those with other surgical diseases (16.13).

An important determinant of social support for patients struggling with surgical diseases is the family structure, the network size, the time availability of the family, the availability of non-professional and professional assistance and physical collateral. The family is a natural support system, helping to overcome a difficult life situation, that is a disease (Sęk & Cieślak, 2012). The most difficult system is when a person is left alone or is isolated, which causes institutions such as a hospital or outpatient clinics to become an essential source of social support. In the study group, about 12% were single. Studied patients with vascular diseases rated the support rate of family structure significantly lower. In this group, 41% of patients live in single-generational families compared to 42% of multi-generational families of patients with other surgical diseases.

This study showed a significantly lower social support network score for patients with vascular diseases (1.4) compared to those

with other surgical diseases (1.8). This is also a significantly lower result (2.1) compared to the groups studied by other authors (Lelonek & Kamusińska, 2011). In both groups studied, the social support indicator of family time availability was rated quite high (2.1). Most patients felt that the family was devoting enough time to them when they needed it. Although both groups had numerous contacts with their family, friends and acquaintances and could always get help when they needed it most, the support was perceived to be significantly lower in people with vascular diseases than in people in the second group. It is easier for people to provide one-time assistance in extreme situations than to do it continuously (Lelonek & Kamusińska, 2011). A qualitative systematic review of studies on patients' concerns about life with PAD shows that in any period of illness (before surgery, postoperative and long-term), the company and support of family, friends and acquaintances (Abaraogu et al., 2018) is important to them.

Patients with vascular diseases are more likely to have significantly more difficult access to assistance from non-professionals compared to surgical patients. This may be related to greater physical limitations of people with vascular diseases before and after surgery. Lengthiness and nuisance of the disease process and the necessity for frequent medical appointments can affect the patient's restriction of social contact, the gradual decrease in social interactions, increase the sense of isolation and loneliness. Patients with vascular diseases were significantly more likely to indicate that they could not perform the activities they liked the most.

An alternative may be a support group. Most often in such groups, people with similar psychological problems meet, suffering from the same diseases. Long-term life experiences with PAD indicate that patients are beginning to look for ways to adapt to the limitations of the disease. Patient compares himself with other sick persons, perceived as "disadvantaged" (Wann-Hansson et al., 2008). Chronically ill patients often compare with each other during group interactions, which potentially give them a chance to change their perceptions of themselves and adapt to the constant risks to their

TABLE 3 Acceptance of the disease according to the AIS. Comparative analysis

AIS statements	Patients with surgical diseases					Patients with vascular diseases					Z	p	
	M	SD	Me.	Q ₁	Q ₃	M	SD	Me.	Q ₁	Q ₃			U
I have problems with adjusting to the limitations imposed by the disease	3.53	1.12	3	3	4	3.12	1.27	3	2	4	4,596.0	-2.28	.018
Due to my health. I am not able to do what I like the most	3.14	1.26	3	2	4	2.46	1.26	2	1	3	3,929.0	-3.78	.000
The disease makes me feel unwanted	3.83	1.30	4	3	5	3.69	1.44	4	2.5	5	5,412.0	-0.45	.630
Health problems make me more dependent on others than I would like to be	3.39	1.30	3	3	5	3.11	1.34	3	2	4	4,950.5	-1.49	.127
The disease makes me a burden for my family and friends	4.15	1.21	5	4	5	3.81	1.35	4	3	5	4,963.5	-1.46	.113
Due to my health condition I do not feel like a really valuable man	3.78	1.25	4	3	5	3.23	1.47	3.5	2	5	4,464.0	-2.58	.007
I will never be as self-sufficient to the extent to which I would like to be	3.76	1.20	4	3	5	3.02	1.23	3	2	4	3,758.0	-4.16	.000
I believe people that stay with me are often embarrassed because of my disease	3.89	1.31	4	3	5	3.43	1.33	3	2	5	4,482.5	-2.53	.008
Total score	29.46	6.99	29.5	25	35	25.90	7.34	27	20.5	31	4,028.5	-3.55	.000

Abbreviations: AIS, Acceptance of Illness Scale; M, mean; Me, median; p, statistical significance; Q₁, lower quartile; Q₃, upper quartile; SD, standard deviation; U, U value for the Mann-Whitney test; Z, Z value for the Mann-Whitney test.

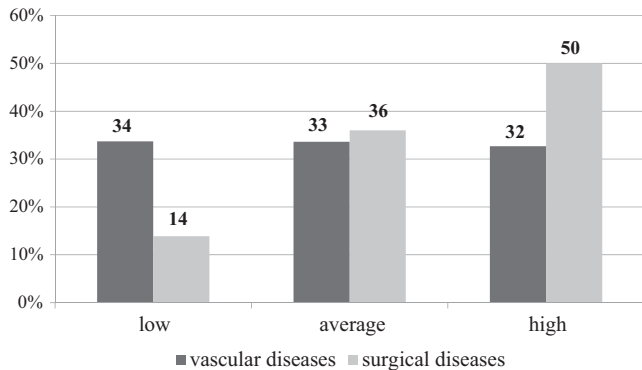


FIGURE 1 Degrees of disease acceptance according to the Acceptance of Illness Scale

health, including mental and physical health (Morgan et al., 2004). The functioning of the social support system in the local environment is important for the noticeable improvement in the quality of life of chronically ill patients (Megari, 2013).

Studied patients with vascular diseases show significantly greater deficiencies in the material security in terms of care, medical and rehabilitation equipment than patients with other surgical diseases. This may be related to the health of these patients. Clinical analysis shows that the patients with lower limb artery atherosclerosis indicate that the group treated surgically shows more advanced disease compared to the group of patients treated with endovascular angioplasty. More advanced lower limb ischaemia, rest pain and foot ulcerations were observed significantly more frequently in the group of patients qualified for surgical treatment than in the endovascular group. Additionally, most common concomitant in the operating group were hypertension, diabetes, coronary heart disease and myocardial infarction (Piotrkowska et al., 2017). In a self-study, a third of patients with vascular disease showed two or more concomitant diseases. This may generate additional financial costs related to more frequent medical appointments, commuting, security in auxiliary and rehabilitation equipment, dressings, medicines and the care of other persons. It should be noted that in the study group of patients with vascular diseases, 39% were over 70 years of age, retired (61%). An additional difficulty is the impairment of the daily activity of patients.

The determinant of social support, which is informing the patient about his state of health, was one of the lower rated in the patients' study group, including significantly lower by patients with vascular diseases, which is a result comparable to the result shown in the study Lelonek and Kamusińska (2011). A qualitative systematic review of studies on patients' life concerns with PAD shows that in the pre-operative period, it is important for the patient, among others, to be clearly informed about the disease, treatment and prognosis; receive support from the therapeutic team; openly communicate with medical personnel (Abaraogu et al., 2018). According to the literature review, a lack of understanding of the pathology of the disease is common throughout the trajectory of PAD, even among patients who have undergone intervention. Research in several countries indicates that the level of knowledge about PAD is

very low (Morr et al., 2017; Ayeed et al., 2017). Patients are willing to obtain clear, consistent and concrete information about their condition, and medical staff do not meet these expectations. Patients felt uninvolved in treatment decisions and usually had erroneous or unrealistic expectations about the planned intervention. The need for PAD patients to participate in treatment decisions was highlighted (McDermott et al., 2010). Patients do not receive information that would not only enable them to decide on the choice of care, but would also allow them to cultivate important lifestyle behaviour that reduces risk and improves symptoms. One way to take advantage of this opportunity may be a well-designed structured educational programme available to PAD patients (Abaraogu et al., 2017).

In the postoperative period, the patient has concerns about the future, experiences anger, frustration and lack of support from healthcare professionals. It becomes important for him to receive postoperative care and support, as well as clear and specific instructions, obtain skills in self-care and being able to openly communicate with members of the therapeutic team (Abaraogu et al., 2018). Studies show that patients lack a strategy of self-control, knowledge and the skills to move around in the reality of their health. Patients begin to struggle with awareness of PAD as a chronic disease (Cunningham et al., 2014). In the long term, it is important for the patient to engage and communicate openly with healthcare professionals, educate himself about the disease and improve self-care skills (Abaraogu et al., 2018).

In this study, respondents rated the most the availability of professional care in the two groups compared. In a hospital setting, medical staff provide support. This is most often instrumental support, consisting of a kind of instruction on how to deal with the patient during the disease and information support, which is an exchange of information that allows the patient to better understand the situation in which he found himself, his life situation and problem. The help of professionals, provided through adequate emotional support and verbal persuasion and motivation, was assessed at the same level in both groups studied. The significant impact of nursing staff support on reducing stress levels, depression and improving coping after surgery (Grochans et al., 2009) has been confirmed.

Psychosocial factors can have an indirect effect on the occurrence of relapses, as they affect activities related to self-care. Data show that the presence of lower limb ulcers was significantly associated with single and worse levels of social support (Moffatt et al., 2006). Chronic venous leg ulcers heal slowly and often recur, resulting in years of suffering and intensive use of healthcare resources. The study, which aimed, among other things, at identifying the relationship between psychosocial factors and relapses of lower leg ulcers in patients with chronic venous ulcers, showed that higher social support scores and higher levels of self-efficacy were significantly associated with a lower risk of recurrence (Finlayson et al., 2011). Although venous ulcers are not a common cause of limb loss, they force frequent visits to healthcare facilities, cause loss of productivity in young people and increased disability in the elderly, require the use of dressings and also cause recurrent hospitalizations (Lal, 2015).

TABLE 4 Determinants of social support scale

Determinant		PSD (%)	PVD (%)
Family structure	Single person	11.11	14.42
	One-generation family	26.85	41.35
	Single-parent two-generation family	19.44	21.15
	Multi-generation family	42.59	23.08
Network size	0–2	7.41	12.50
	3–6	29.63	54.81
	7–13	39.81	16.35
	≥14	23.15	16.35
Financial security	There is no money for basic expenses	11.11	5.77
	There is enough money for less than half of expenses	15.74	22.12
	There is enough money for more than half of expenses	30.56	38.46
	There is enough money for all expenses and money can be saved	42.59	33.65
Physical collateral	Does not have any equipment	29.63	42.31
	Has less than half of the necessary equipment	0.93	11.54
	Has more than half of the necessary equipment	16.67	19.23
	Has all the necessary equipment	52.78	26.92
Family time availability	Never	7.41	2.88
	Rarely	19.44	22.12
	Often	25.00	35.58
	Always	48.15	39.42
Availability of non-professional assistance	It is difficult to obtain help	19.44	35.58
	8.00 a.m.–1.00 p.m. (Mon–Fri)	25.93	19.23
	7.00 a.m.–8.00 p.m. (Mon–Sun)	18.52	25.00
	24 hr a day (Mon–Sun)	36.11	20.19
Availability of professional assistance	it is difficult to obtain help	5.56	7.69
	3.00 p.m.–8.00 p.m. (Mon–Fri)	1.85	0.96
	7.00 a.m.–8.00 p.m. (Mon–Sun)	6.48	7.69
	24 hr a day (Mon–Sun)	86.11	83.65
Patient information regarding the state of his own health	No information	3.70	8.65
	Having the majority of information	33.33	44.23
	Using information for oneself	37.04	39.42
	Promoting information	25.93	7.69

Abbreviations: PVD, patients with vascular diseases; PSD, patients with surgical diseases.

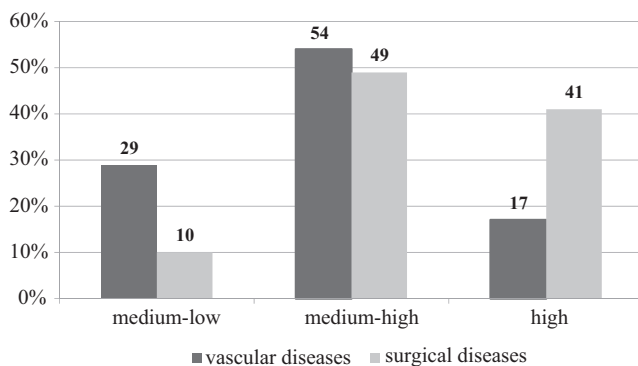
It can be assumed that properly provided support is one of the elements testifying to the quality of the nurse's work (Grochans et al., 2009). Nursing uses assumptions about the buffering role of support, which protects against the negative effects of life events, especially those that are related to human health. The results of the study confirm the important role of social support in the acceptance of the disease by patients. According to previous findings, patients who received more social support expressed greater energy, felt less pain, greater self-confidence, better health and less physical limitations than patients with less support (Clark et al., 2012; Janssen

et al., 2014). Some researchers suggest that patient–nurse communication support may play an important role in caring for and improving the sense of self-efficacy in people with chronic diseases including heart failure (Currie et al., 2015; Richards & Cai, 2016). The research carried out so far highlights the positive impact of social support on disease acceptance and recovery after surgery (Andruszkiewicz et al., 2014; Sęk & Cieślak, 2012). Acceptance of the disease by patients reduces negative emotional reactions and improves the quality of life of these patients (Adamczuk et al., 2019). Participants with high social support performance showed less

TABLE 5 Social support by the SSS. Comparative analysis

Determinant of SSS	Patients with surgical diseases					Patients with vascular diseases					U	Z	p
	M	SD	Me.	Q ₁	Q ₃	M	SD	Me.	Q ₁	Q ₃			
Family structure	1.9	1.0	2	1	3	1.5	1.0	1	1	2	4,402.5	-2.71	.004
Network size	1.8	0.9	2	1	2	1.4	0.9	1	1	2	4,089.0	-3.42	.000
Financial security	2.0	1.0	2	1	3	2.0	0.9	2	1	3	5,302.5	-0.70	.458
Physical collateral	1.9	1.3	3	0	3	1.3	1.3	1	0	3	4,160.0	-3.26	.000
Family time availability	2.1	1.0	2	1	3	2.1	0.9	2	1.5	3	5,372.0	-0.54	.560
Availability of non-professional assistance	1.7	1.1	2	1	3	1.3	1.1	1	0	2	4,481.0	-2.54	.008
Availability of professional assistance	2.7	0.7	3	3	3	2.7	0.8	3	3	3	5,473.5	-0.32	.609
Patient information regarding the state of his own health	1.8	0.8	2	1	3	1.5	0.8	1	1	2	4,242.0	-3.07	.001
Total score	16.12	3.52	16	14	19	13.75	3.38	13.5	11	16	3,421.0	-4.91	.000

Abbreviations: M, mean; Me, median; p, statistical significance; Q₁, lower quartile; Q₃, upper quartile; SD, standard deviation; SSS, Social Support Scale; U, U value for the Mann-Whitney test; Z, Z value for the Mann-Whitney test.

**FIGURE 2** Levels of social support

anxiety, improved health and better self-care behaviour and well-being (Graven & Grant, 2014).

In conclusion, assessing patients' need for social support is an important part of a nurse's work. By assessing the patient's environmental and family situation, his relationship with the caregiver, the material situation and the availability of pro-professional and unprofessional assistance, the nurse obtains information enabling him to accurately assess the need for social support and correct nursing diagnosis. It also supports better preparation of patients for discharge and outpatient observation with a view to better rehabilitation.

6 | LIMITATIONS

The main limitations of this study have been identified. This study took place only in one ward, thus limiting the generalization of these results to other centres in Poland. A small number of patients took part in the study, convenience sampling was used, which means that only available patients were included in the study. The data for the analysis were obtained at one time point; therefore, trends in the

intensity of disease acceptance over a longer period of time and possible factors associated with it were not studied. In comparing the results received in terms of social support, the discussion referred to two studies carried out on the SSS scale, which was primarily used for nursing. According to the literature review, there are no data to compare these data directly due to the use of different research tools.

7 | CONCLUSIONS

This study provides evidence that patients with peripheral vascular diseases rate the available social support below and show lower acceptance of the disease compared to patients staying in the surgery ward due to other diseases. The results of this study identified the social support indicators assessed by patients with lower vascular diseases: deficiencies in physical collateral in care, medical and rehabilitation equipment and difficult access to assistance from non-professionals. There is a need to assess the degree of acceptance of the disease in patients and to include the results of this assessment in the care plan. There is a need to involve non-professional caregivers in patient care.

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CONFLICT OF INTEREST

No conflict of interest has been declared by the authors.

AUTHOR CONTRIBUTIONS

The study idea and study design were conceived by JC and EK. JC, EK, and ZS wrote the first draft. JC and EK collected the data. JC

and EK performed the statistical analyses. All authors have been involved in the interpretation of the results and made important contributions to the drafting of the manuscript. All authors read and approved the final manuscript.

DATA AVAILABILITY STATEMENT

The data sets used for the current study are available from the corresponding author on reasonable request.

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