



Navigating the Patient with Heart Failure through the Health-care System – The Perspective of Hospital Nurses

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Abstract

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BACKGROUND: Navigating the complex health-care system requires the patients to have comprehensive knowledge, active participation, and self-efficacy in health management to effectively engage in planned activities that include diagnosis, treatment, and rehabilitation, to ensure a high quality of life and successfully prevent disease-related complications.

AIM: This study aims to investigate which activities nurses in hospital settings perform to support patients with heart failure to increase health literacy and navigate effectively through the health-care system.

METHODS: Based on qualitative research, the data were collected through semi-structured interviews with 11 nurses from hospitals where patients with heart failure are treated. After reviewing and analyzing the transcribed interviews, a qualitative content analysis of the text followed.

RESULTS: Based on an inductive approach, we first identified coding units, which were grouped into 10 subcategories, and these into five categories: General health literacy, digital literacy, communication health literacy, interprofessional collaboration, and navigation through the health-care system. We found that the treatment of patients with heart failure varies in Slovenian hospitals.

CONCLUSION: Inequality in the treatment of patients between different hospitals highlights the need for a coordinated approach in the Slovenian health-care system. It is crucial to establish uniform national guidelines that would define treatment standards, ensure evidence-based patient care, and thus reduce the disparity in the quality of treatment between different medical institutions.

Introduction

Patient navigation is the process of guiding patients through the health-care system, with the aim of supporting them in overcoming barriers and accessing health care, and providing referrals to appropriate sources of help to ensure timely, optimal, and quality care for each individual [1]. Receiving help with navigating the health-care system is especially important for vulnerable populations who face barriers to accessing health-care services, such as patients with low socioeconomic status, people with limited health literacy, people without insurance, or people with limited language skills in their environment [2], [3]. In addition to issues with access to the health-care system, the vulnerable groups mentioned face distance from health-care institutions, social isolation, and poor transport options, and they also face multi-morbidity which increases the need for health-care services, affecting navigation through the health-care system [4]. Griese *et al.* [5] point out that, due to the rapid expansion and complexity of health-care systems and the range of health-care services offered, it is increasingly difficult for patients to navigate them.

Navigational health literacy relates to the relationship between the health-care environment and its structures, which contribute to individual abilities to orientate and navigate individuals through the health-care system [6]. It includes understanding how the health-care system works, including how to find health-care providers, make an appointment for an examination or test, navigate insurance systems, and access community resources [2]. According to the World Health Organization [7], navigational health literacy involves the ability to handle information in a way that enables individuals to “find the right care, at the right time, in the right place.” This ability depends on the individual’s ability to “find, understand, evaluate, and use health information to restore, maintain, or enhance health in everyday life” [8]. Authors Perez *et al.* [9] and Fields *et al.* [10] state that navigation skills are related to information and experience as a source of knowledge and are conceptualized as a potential outcome of health literacy. Research confirms that a reduced ability to understand information, which is a reflection of low health literacy, is associated with poor health outcomes and frequent use of health-care services [11]. Therefore, encouraging and supporting patients in strengthening navigational health literacy

as an intervention strategy for political decision-makers and health workers is one of the conditions for providing emotional, instrumental, and informational support to patients entering the health-care system [12].

In the process of health-care treatment, the promotion of navigational health literacy facilitates the provision of uniform guidelines and orientations, an easy and safe transition for the patient through the health-care system, as well as effective diagnosis, treatment, and rehabilitation. Nurses meet the patient upon entering the health-care system at different levels of healthcare, they follow them from the suspicion of a disease/condition, during diagnosis, through treatment, rehabilitation, and living with the disease, which means they can be an important factor in raising health literacy and promoting self-care and empowerment in heart failure patients. According to the World Health Organization, coronary heart disease was the most common cause of death worldwide between 2000 and 2019, accounting for the largest increase in deaths during this period [13]. Living with heart failure is a lifelong experience full of challenges, as unpleasant symptoms reduce the patient's independence and ability to perform many daily life activities and reduce their quality of life [14]. As with many other chronic diseases, there is no cure for heart failure, but treatment and self-care believed to reduce the impact on quality of life and disease progression.

Modern guidelines [15] highlight the key role of the patient in self-management of the disease, which contributes to better self-care [16], as it is the foundation of heart failure management and health promotion to support specific behaviors that the patient chooses for their own free will to manage the disease and maintain health [17]. Within health educational work, the nurse educates patients with heart failure on how to manage their condition, including the importance of following the treatment regimen, monitoring symptoms, and making lifestyle changes. However, patients with limited health literacy may have difficulty understanding this information, which may lead to poor health outcomes [18], especially in patient populations with reduced cognitive ability to evaluate and process information associated with monitoring and managing symptoms for self-care in individuals with heart failure [19]. Authors Cui *et al.* [20] find that health-educational work performed by nurses improves self-management and clinical outcomes of patients with heart failure, including a reduction in hospital readmissions. The effect was seen mainly in the consistency of medication intake, monitoring of well-being and symptoms, and adherence to nutritional recommendations [20]. Efforts by health-care professionals to understand the experience and emotional impact of living with heart failure, a holistic approach to communication, and a focus on using appropriate terminology to better understand and engage with the heart failure patient and their family members [14] can significantly contribute to increasing the health literacy of patients with heart failure. Last but not least, as a factor influencing the consistent and safe treatment of a

patient with heart failure and enabling good navigational health literacy, it is important to ensure the same services regardless of where in Slovenia the patient enters the health-care system.

The described qualitative research was carried out within the framework of the project entitled Improving Health Literacy in Slovenia, which was carried out under the auspices of the Ministry of Health, and the purpose of which was to study the journey of a patient with heart failure in Slovenian hospitals and to determine which activities are carried out to increase the health literacy of patients with heart failure in nursing.

Methods

A descriptive research method was used with a qualitative interpretive research approach with semi-structured individual interviews.

The research design was based on conducting interviews guided by 12 baseline questions. These were formulated based on scientific and professional literature and a previously designed journey of a patient with heart failure through the health-care system, which was designed by experts from practice who were included in the working group due to their recognized professional competencies. The planned optimal journey of the patient includes entry points into the health-care system, diagnostics, treatment, rehabilitation, and integration into the quality of life of the patient with heart failure. The questions therefore referred to the mentioned factors of the optimal patient journey through the health-care system.

The aim of the research was to include nurses who work in heart failure outpatient clinics or cardiology clinics and who know best the journey of a patient with heart failure. Eleven nurses from 11 Slovenian hospitals were included in the final survey. Two hospitals do not have an organized outpatient clinic for treating patients with heart failure, and one hospital does not have any nurses working in the outpatient clinic who could participate in the interview. Nurses were recommended by hospital management. To carry out the research, we obtained verbal consent from the responsible person of the hospital and the interviewed nurses. All the interviewees were female registered nurses and were informed about the purpose and goals of the research before conducting the interviews.

Interviews took place between September 2022 and January 2023, either in person in a clinical setting or through telephone conversation. The audio of the interviews was recorded with the permission of the participants and lasted on average 30–40 min. We then transcribed the interviews verbatim. The transcripts were first read independently by two researchers. Using the

text analysis method, we performed open coding, and the resulting codes were then meaningfully classified into subcategories (subtopics) and then into categories (topics). Verbatim statements of the participants were added to the recorded codes. The research was conducted according to the Declaration of Helsinki.

Results

Table 1 shows the categories that we created based on the coding of data from the transcripts of the conducted interviews and their meaningful grouping into subcategories. The table shows that a patient with heart failure often receives various health education activities during treatment in the hospital that help to strengthen and promote health literacy. Most activities are found in the general health literacy category, in the health-care subcategory.

Discussion

Based on the review of the obtained data, we found that nurses can play an important role in

empowering the patient at all points of the journey through the health-care system, from entering the hospital the first contact occurs with a registered nurse up to monitoring at all key points in the hospital and in connection with structures outside the hospital, such as health-care institutions and non-governmental organizations working in the field of heart failure. Nurses have a significant impact on raising the patient's health literacy in the field of heart failure management on the patient's journey through the health-care system by promoting self-efficacy and empowering the patient. After reviewing various studies for the American area, Fleg [21] and Del Gobbo *et al.* [22] found that a patient with heart failure has a higher 5-year survival risk than a cancer patient, therefore it is crucial for a patient with a diagnosis, in addition to medical treatment, to also receive support in changing lifestyle habits. That rehospitalization is reduced where patients have received health education about self-management measures is also the opinion of Marques *et al.* [23]. With a healthy lifestyle, the incidence of heart failure can be reduced by 45–81% [24], and a healthy lifestyle also improves survival after diagnosis [25]. Raising health literacy by empowering the patient throughout all dimensions of health literacy related to information for the heart failure patient is key to enabling a self-efficacious patient who is able to change lifestyle habits and take care of their health. Traveling through the Slovenian health-care system, the patient works with various

Table 1: Coding results based on the transcripts of the conducted interviews

Categories (topics)	Subcategories (subtopics)	Codes
General health literacy	Health promotion	Healthy lifestyle Maintaining well-being Vaccination recommendations Self-care (weight control and regular weighing)
	Disease prevention	Maintaining a balanced diet (restrictions on salt, liquids, and habits) Self-monitoring (regular monitoring of blood pressure and pulse) Adapted physical activity
	Health care	Providing knowledge about the disease Guidelines for living with heart failure Instructions for disease management in the home environment Instructions on the importance of medication and regular medication intake Instructions on filling in the treatment diary and measurements of a patient with heart failure Walking test (6 min) Instructions for recognizing signs and symptoms of deterioration
Navigation in health-care system	Regular monitoring of the patient	Regular monitoring in the heart failure clinic Control check with the cardiologist
	Guidance of the patient	Regular follow-up at the family medicine clinic Guidance through the health-care system in the event of problems Referral to family medicine outpatient clinic Referral to workshops for a healthy lifestyle at the primary level Referral to non-governmental organizations
Digital health literacy	Patient monitoring	24-h blood pressure measurement Telemedicine
Communication health literacy	Communication with the patient	Conversation (individual and group) Written instructions Educational aids: leaflets, brochures with recommendations Checking understanding and knowledge during the controls
	Checking the patient's understanding of the provided information and knowledge	Individual health education work Review of the measurement diary Option of a telephone conversation Individual questions and questions with discussion Education and re-education of patients during hospitalization Regular and targeted education (re-education) of the patient during check-ups Education during rehabilitation
	Cooperation of relatives	Contacts with relatives Inclusion of relatives Education of relatives
Inter- and multi-professional cooperation	Interdisciplinarity multidisciplinary team	Doctor, registered nurse, clinical pharmacist, physiotherapist, dietitian and occupational therapist, if necessary, social worker, psychologist, laboratory assistant, X-ray engineer, nurse, and preventive visit by the community nurse.

experts, such as ...*specialist doctors, registered nurses, clinical pharmacists, physiotherapists, dieticians, and occupational therapists, if necessary, social workers, psychologists, laboratory technicians, X-ray engineers, health technicians*, and in the continuation of the treatment in the domestic environment, ...*community nurses, nurses in the family doctor's clinic within the Primary Health-Care Centers, interdisciplinary teams in Health Promotion Centers...* which can effectively support the patient with heart failure in changing their health-related behavior and strengthening their self-efficacy with coordinated action and uniform instructions. Most of the mentioned specialists already accompany the patient while they are in the hospital, which has a positive effect on improving self-care and quality of life and reduces the risk of rehospitalization due to heart failure [26], [27]. A multidisciplinary approach is highly recommended to ensure the continuity of care in the chain-of-care journey with a particular focus on guiding and supporting patients in changing lifestyle habits [28].

Due to the rapid expansion and complexity of the health-care system and the range of health-care services, it is increasingly difficult for the patient to orientate within it [29]. An important factor that health-care workers must take into account is the vulnerability of the patients and their families when entering the health-care system, which represents a lower level of health literacy at a given moment [30]. A low level of health literacy in patients with heart failure was directly linked by Oscalices *et al.* [31] with a lower level of adherence and the presence of barriers to following instructions for taking prescribed medications, as well as a higher rate of rehospitalization and more frequent mortality as a treatment outcome. Oscalices *et al.* [31] also point out that the low level of health literacy is worrying and affects all health interventions and plans for the prevention of diseases and injuries, regarding which it is desirable to encourage the self-care of individuals in the prevention or control of diseases. Fleg [21] points out that regular physical activity, a healthy diet, maintaining the desired body weight, and quitting smoking, as well as blood pressure control, and cholesterol and blood glucose regulation are also important for managing heart failure, as is adherence to regular medication intake, reduction of excessive fluid and salt intake, monitoring of daily body weight, and the monitoring and recognition of worsening symptoms [32], [33], [34]. Nurses in Slovenian hospitals ensure that patients obtain information regarding ...*weight management, balanced diet (restriction of salt, liquids, and vices), regular monitoring of blood pressure and heart rate, adapted physical activity, information about the disease, and instructions for living with heart failure at home, instructions on the importance of medication and regular intake of medicines, and instructions for recognizing signs and symptoms of deterioration...* of diseases, which facilitates making appropriate decisions and taking timely action [32], [33]. In clinical practice, the management of heart failure generally includes

treatment of the underlying causes of heart failure and associated conditions (e.g., hypertension or diabetes), monitoring and preventive treatment, management and coordination of care, patient education and support for disease self-management, and health promotion, rehabilitation, palliative care, implant therapy and, in some cases, heart transplantation [35]. The goals of heart failure management are aimed at reducing morbidity, i.e., reducing symptoms and hospital admissions while simultaneously improving functional status and quality of life, and improving survival by slowing disease progression [16]. Self-care interventions improve clinical outcomes and reduce the risk of unplanned hospital readmissions by 30% in patients with heart failure [36]. Frequent monitoring of vital signs (blood pressure, heart rate, and oxygen saturation) is an important factor in strengthening the patient's self-efficacy [27], which the nurses supplement in Slovenian hospitals with a ...*6-min walking test...*, which is an indicator of patient physical fitness. Digital technology is also being introduced in the monitoring of patients with heart failure, such as *24-h blood pressure measurement and remote medical monitoring...* Malik *et al.* [27] point out that the constant monitoring of heart rate and rhythm with telemetric monitoring is an element of effective patient monitoring. It is essential when using digital technologies to provide health educational literacy to patients, as understanding the operation of technology is key to obtaining realistic results of the intended measurements. Understanding the disease and health education instructions is one of the key elements that affect the implementation of effective self-care and quality of life when living with the disease [37], which in turn helps to improve the patient's health literacy. Nurses are aware of this importance when giving instructions, so they use clear and simple language when explaining medical terms and indicate methods of testing knowledge ...*during check-ups in the outpatient clinic, we check understanding and knowledge, carry out individual health education work, review the diary of vital sign measurements and monitor body weight...*, which directs them to plan further health education activities. They often detect problems in understanding instructions and directions when observing the patient, which is why they also provide patients with written educational materials and include relatives in health education activities. Patients' knowledge about their disease and self-care increases significantly when they receive ongoing and continuous education from nurses, both during hospitalization and during the 6-month follow-up period after hospitalization [38], [39]. Authors Riegel *et al.* [40] and Huesken *et al.* [38] also note that the health-educational work of nurses concerning disease knowledge and self-care has a beneficial and lasting effect.

By analyzing the obtained data, we found that nurses play an important role in the treatment of patients with heart failure at the secondary level of health care, as they perform many of the above-mentioned interventions

independently. Riegel *et al.* [40] observed that, although nurses routinely educate patients about the importance of adherence to treatment and health-related behaviors that heart failure patients should adopt, adherence to self-care recommendations declined rapidly after hospitalization. Linking the secondary and primary levels of health care is therefore crucial. ...*Family medicine clinics are absolutely necessary because they monitor the patient and notice changes in time...*, said nurses in Slovenian hospitals. When patients arrive home, they need support in changing health-related behavior and strengthening perceived self-efficacy, as this is the only way they can consolidate newly learned behavioral patterns. Nurses in Slovenian hospitals, after hospitalization, direct patients to ...*family medicine clinics, to health-educational workshops for a healthy lifestyle at the primary level of health care, and to non-governmental organizations...* that focus on the content of supporting a patient with heart failure.

Based on the obtained data, we can state that in the Slovenian health-care system at the secondary level, all the activities are performed to support patients with heart failure, which has an impact on general health literacy with all dimensions are carried out: Health promotion, chronic disease management, and knowledge of the organization of the health-care system in the field of heart failure. The research confirms that patients with heart failure need not only medical treatment but also support in changing lifestyle habits, where a healthy lifestyle plays a key role.

Limitations of the research

We processed the obtained data as a whole. We decided not to point out differences in the treatment of patients with heart failure in individual Slovenian hospitals, but instead searched for elements of nursing treatment in all hospitals which, when examined together, represent the optimal nursing treatment of patients with heart failure during hospitalization. This does not allow us to generalize the findings to all hospitals. The data are still important, however, as they can encourage the reader to introduce better quality nursing care for patients with heart failure.

Practice implications

The findings highlight the key role of nurses who have a significant impact on the patients' general health literacy. The importance of coordinated health education activities and supporting the patient in changing lifestyle habits is emphasized. A multidisciplinary approach and coordinated action of different professionals contribute to more effective management of heart failure patients. To promote patient self-efficacy and empowerment in the management of heart failure, a seamless link between levels of health care should be established, with the aim of continuity of care at all levels of health

care, throughout the health-care system patient's journey. Family medicine clinics are identified as key in following patients from admission to rehabilitation after hospitalization. The importance of referring patients to health education workshops and involving NGOs to support heart failure patients in everyday life is highlighted. The development of standardized national patient journey pathways is recommended to enable consistent, evidence-based management of patients with heart failure, thereby ensuring equal treatment. Health-care professionals will be aware of the capacity of the health-care system, which helps to rationalize health-care services, treat the patient holistically, reduce health inequalities, and increase health literacy.

Conclusion

Evaluation and implementation of the whole range of nursing activities to increase health literacy, which we have identified in all Slovenian hospitals, would enable optimal nursing treatment of patients with heart failure in hospitals and excellent connection with other stakeholders in the chain of important actors for monitoring and supporting the patient with heart failure. The key elements of the independent work of nurses are mainly linked to health education work, which extends to all key points on the patient's journey through hospital treatment. The displayed results show all activities in all hospitals, which would in the form of a unified patient journey, represent optimal treatment in the field of heart failure. As there are no uniform guidelines for the treatment of patients with heart failure in Slovenia, the quality of treatment often depends on the individual nurses and specialists in the team, who have a strong interest in doing what is best for the patient. To standardize patient treatment and reduce inequalities, we need uniform national treatment guidelines that define all the key elements to support the patient in navigating the health-care system.

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Authors Contributions

All authors have contributed to the manuscript substantially in the conception and design of the study,

acquisition of data, analysis and interpretation of data, drafting of the article, or revising it critically for important intellectual content, and all authors agree with the final submitted version.

Credit roles: Conceptualization, data management, formal analysis, funding acquisition, research, methodology, project management, resources, software, supervision, validation, and visualization; writing: original draft; writing: editing and review.

Tamara Štemberger-Kolnik: Conceptualization, data management, formal analysis, methodology, project management, visualization, writing – original draft.

Bojana Filej: Formal analysis, supervision, writing – reviewing and editing.

Silva Nemeš: Conceptualization, data management, formal analysis, research, methodology, project management, writing – reviewing and editing.

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