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## Nutritional status and quality of life of patients after pacemaker implantation

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### Summary

**Introduction.** Nutritional status is one of the factors determining the quality of life of patients. However, there are few reports on the correlation between nutritional status and quality of life in the group of patients with implanted cardiac pacing system.

**Purpose of research.** The aim of the study was to assess the impact of nutritional status on the quality of life of patients with implanted pacemakers.

**Material and methods.** 100 patients after pacemaker implantation, hospitalized at the cardiology clinic and treated at the SPSK 4 cardiology clinic in Lublin were examined. Standardized research tools were used - the WHOQOL-Bref questionnaire to assess the quality of life and the shortened scale to assess the nutritional status (MNA-SF). The results of the obtained research are summarized in the statistical analysis.

**Results.** The average result of the respondents obtained in the MNA scale was 11.86 points with a standard deviation of 2.26. The nutritional status of the most of respondents (61%) was normal. In the studied group 35% were at risk of malnutrition, while 4% were malnourished. Statistically significant relationships between the nutritional status and quality of life were demonstrated in all domains. If the nutritional status of the respondents was better, their overall quality of life was higher, as well as their self-assessment of health.

**Conclusions.** The overall assessment of the nutritional status of the studied patients is within the normal ranges. Nutritional status has an impact on the quality of life of respondents after pacemaker implantation in all QoL domains. High quality of life conform to the correct assessment of the nutritional status in the most of the studied patients.

**Key words:** quality of life; pacemaker; assessment; nutritional status

## **Introduction**

Implantation of the pacing system forces the introduction of certain changes in the patient daily functioning. In most cases, the implantation of a pacemaker does not require a separate diet. It is well known, however, that the nutritional status and daily eating habits affect the occurrence of cardiovascular diseases, and thus the presence and progression of the underlying disease. [2]. For this reason, the assessment of the nutritional status is one of the components of the quality of life in various groups of patients, especially in geriatric patients, when malnutrition may lead to disorders of both physical, mental and social functioning, and in the case of hospitalization - it may be one of the factors increasing the risk of death , and decreasing the overall quality of life[3].

## **Objective of the work**

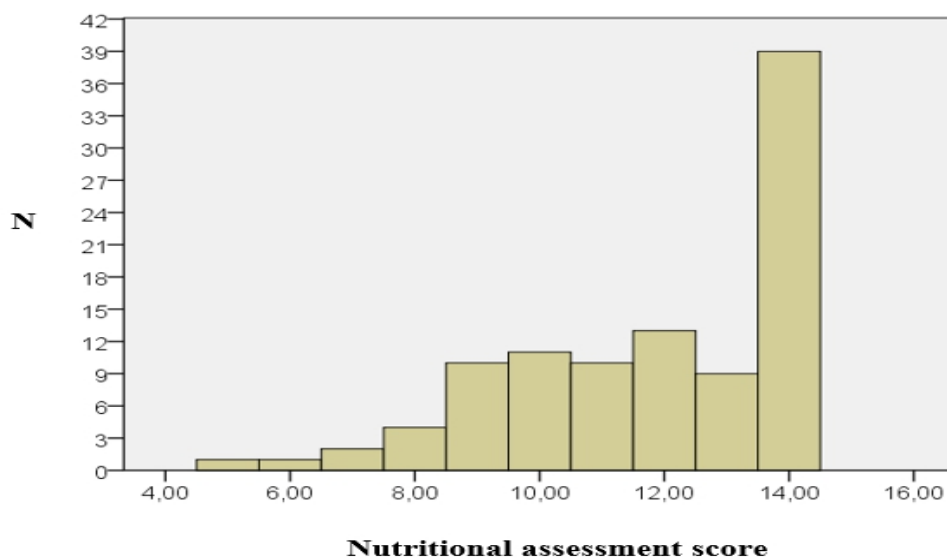
The aim of the study was to assess the impact of nutritional status on the quality of life of patients with implanted pacemakers.

## Material and methods

The study was conducted after obtaining the consent of the bioethical commission and heads of organizational units of SPSK 4 in Lublin. The subject of the study was a group of 100 hospitalized patients with a previously implanted pacemaker. The research was carried out by the method of diagnostic survey with the use of the WHOQOL-Bref quality of life questionnaire and the shortened scale to assess the nutritional status - Mini Nutritional Assessment (MNA-SF). The results of the obtained tests were compared in the statistical analysis, where the  $p < 0.05$  coefficient was adopted as the level of significance.

## Results

Figure 1 presents the distribution of the results obtained by the respondents on the MNA scale.



**Fig. 1. Assessment of the respondents nutritional status**

The average result of the respondents obtained in the MNA scale was 11.86 points with a standard deviation of 2.26. The nutritional status of the most of respondents (61%) was normal. In the studied group 35% were at risk of malnutrition, while 4% were malnourished.

Table 1 presents the results of the analysis of the correlation between the nutritional status of the respondents and the assessment of their quality of life.

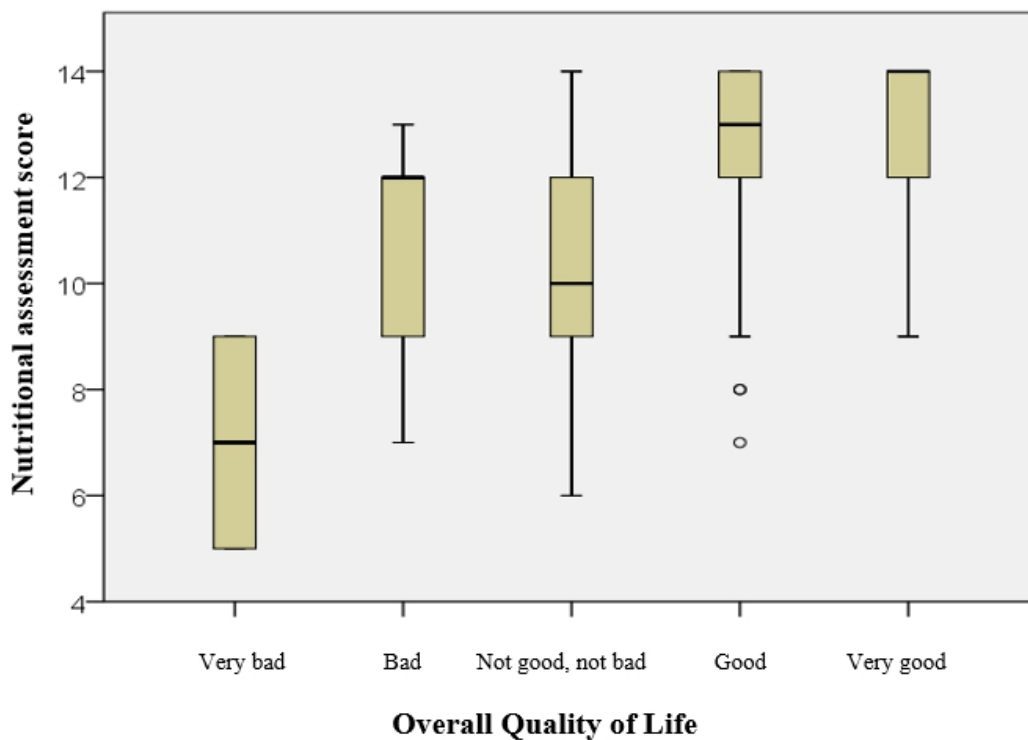
**Table 1. Assessment of the quality of life of the respondents and their nutritional**

Variable	Value	Physical domain	Psychological domain	Social relations	Environment	Overall quality of life	Self-assessment of health condition
Nutritional status	rho	<b>0.608</b>	<b>0.537</b>	<b>0.427</b>	<b>0.434</b>	<b>0.482</b>	<b>0.498</b>
	p	<b>0,000</b>	<b>0,000</b>	<b>0,000</b>	<b>0,000</b>	<b>0,000</b>	<b>0,000</b>

**status**

rho - Spearman's rho coefficient; p - test probability

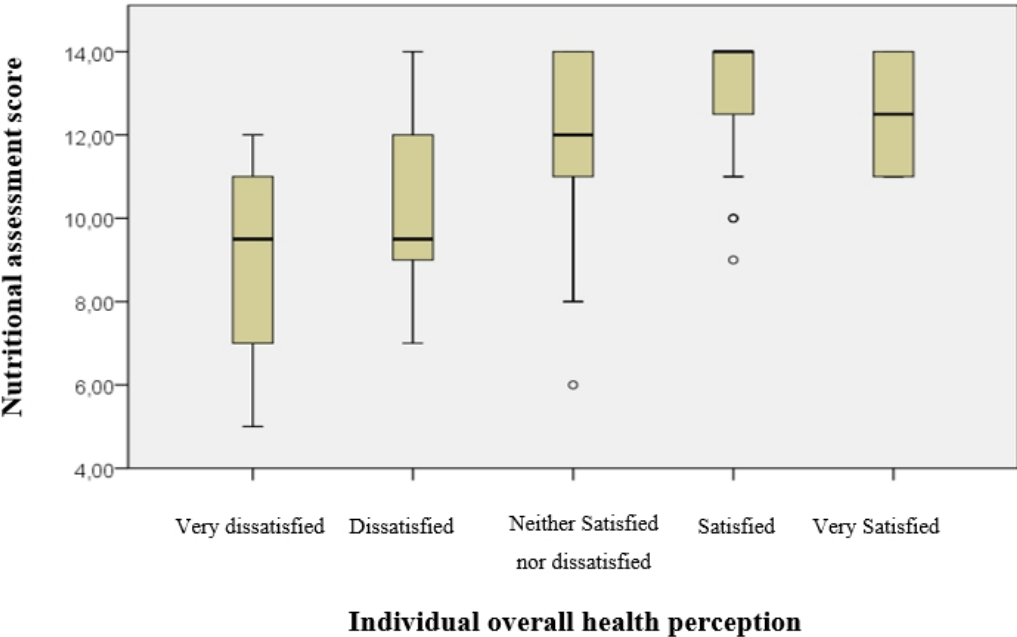
The conducted analyses showed statistically significant relationships between the nutritional status of the respondents and the sense of quality of life in all domains. These dependencies are presented in the charts below.



**Fig. 2. Quality of life and the nutritional status of the respondents**

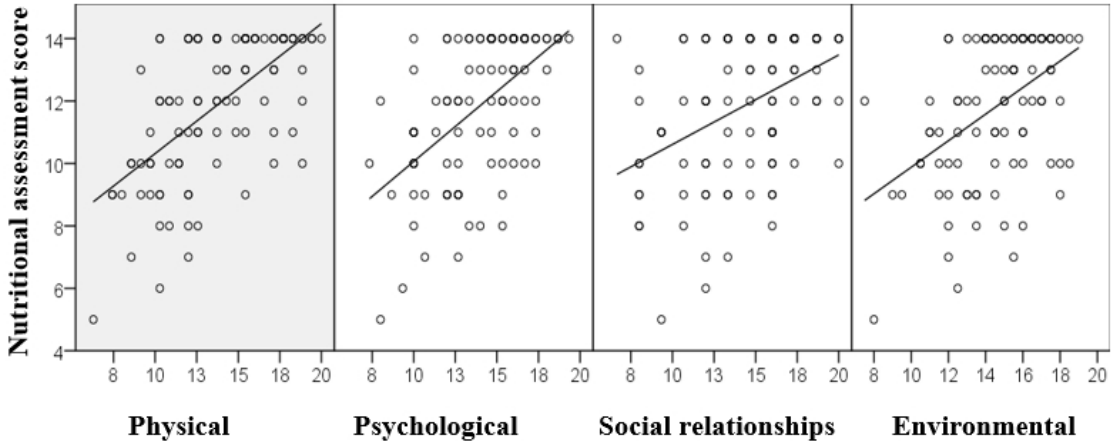
If the nutritional status of the respondents was better, their overall quality of life was higher. The relationship between the variables was moderate.

Figure 3 presents the relationship between the assessment of nutritional status and self-assessment of health condition.



**Fig. 3. Nutritional status and self-assessment of the health condition of the respondents**

If the nutritional status of the respondents was better, their self-assessment of health condition was higher. The relationship between the variables was moderate.



**Fig. 4. The nutritional status of the respondents and the level of quality of life in its individual areas**

The conducted analyses showed statistically significant, moderate dependencies between the respondents assessment of the quality of life in domains of physical,

psychological, social and environmental relations and their nutritional status. If the respondents nutrition status was higher, the higher was the assessment of their quality of life in these domains.

## **Discussion**

In the studies of the authors dealing with the life of patients with an implanted pacemaker, it is said that it is not a significant burden and does not cause sudden changes in the patient's current life, but only introducing partial restrictions. [6]. However, there are no clear indications for an in-depth assessment of the nutritional status in patients qualified for resynchronization therapy, especially in young people. However, such an assessment may be an important element in the risk assessment of pacemaker implantation [7].

In the research published by E. Borowiak, the influence of nutritional status on the quality of life was not shown, despite the similar selection of the research sample - 90 patients with diabetes and after myocardial infarction. E. Marcinkowska also did not observe a decrease in the quality of life with the coexistence of underweight or overweight [1,5]. On the other hand, the subjective assessment of patients' opinion on the impact of nutritional status on quality of life - made by M. Korpys among patients with cirrhosis of the liver showed the influence of nutritional status on quality of life for the vast majority of patients [4]. Our own research showed the influence of nutritional status on the quality of life in all its domains, with an average score of  $11.86 \pm 2.26$  in the shortened MNA scale. Due to the discrepancy in the results of research on the impact of nutritional status on the quality of life, the observation should be extended, including a larger research group and the complete, extended version of the tool.

## **Conclusions**

1. The overall assessment of the nutritional status of the studied patients is within the normal ranges.
2. Nutritional status has an impact on the quality of life of respondents after pacemaker implantation in all its domains.
3. High quality of life corresponds to the correct assessment of the nutritional status in the most of the studied patients.

## Bibliography:

1. Ewa Borowiak, Katarzyna Rosiak, Tomasz Kostka: *Analiza porównawcza wpływu cukrzycy i przebytego zawału serca na jakość życia pacjentów*. W: Nursing Problems/ Problemy Pielęgniarstwa. 2009, t. 17, nr. 2, s. 86–91.
2. Kaszyńska A. M., Humańska M.: *Funkcjonowanie pacjentów w życiu codziennym po zabiegu wszczepienia stymulatora lub kardiowertera - defibrylatora serca*. W: Pielęgniarstwo w Opiece Długoterminowej. 2017, nr. 1.
3. Kawalec-Kajstura E., Rajchel J., Padykuła M., Puto G., Kuźmich I., Reczek A.: *Wpływ stanu odżywienia na sprawność funkcjonalną osób po 65 roku życia hospitalizowanych z przyczyn endokrynologicznych*. W: Sztuka Leczenia. 2018, t. 33, nr. 2.
4. Korpys M.: *Wpływ stanu odżywienia na jakość życia pacjentów z marskością wątroby*. W: Long-Term Care Nursing. 2019, t. 2, nr. 1.
5. Marcinkowska E., Grzymisławski M., Swora-Cwynar E., Dobrowolska-Zachwieja A.: *Wpływ stanu odżywienia pacjentów z nieswoistymi zapalnymi chorobami jelit na jakość ich życia*. W: Piel. Zdr. Publ, 2013, nr.3, s. 241–8.
6. Rolka H., Pilecka E., Kowalewska B., Krajewska-Kułak E., Jankowiak B., Klimaszewska K., Kowalczyk K.: *Ocena akceptacji choroby i jakości życia pacjentów ze wszczepionym rozrusznikiem serca*. W: Piel. Zdr. Publ. 2012, t. 2, nr. 3, s. 183–192.
7. Yamaguchi T., Nozato T., Miwa N., Sagawa Y., Watanabe K., Nagata Y., Miyazaki R., Mitsui K., Nagase M., Nagamine T., Yamaguchi J., Masuda R., Kaneko M., Hara N., Ashikaga T.: *Impact of the preprocedural nutrition status on the clinical outcomes of patients after pacemaker implantation for bradycardia*. W: Journal of Cardiology. 2019, t. 74, nr. 3, s. 284–289.