

The role of the dietitian in the hospital team. The current situation in Poland in relation to the needs of society

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Abstract: (1)Background: Nutrition that is adequate to the patient's health status is a component of co-determining factors in improving the patient's health. Moreover, appropriate activities of a dietitian, such as assessing the nutritional status or educating patients, are counted among the determinants conditioning the effectiveness of the conducted treatment. The number of employed dietitians in hospitals is low, which results in 76-740 patients per one specialist, which in turn makes effective education impossible. The aim of this study was to compare the duties of dietitians working in Polish hospitals in relation to the needs of the society. (2) Material and methods: The research tool consisted of two original, anonymous questionnaires, addressed to the Polish public and to active dietitians. The analysis of results was based on 595 questionnaire results, including 93 from nutritionists. (3)Results: Of the respondents who were admitted to the hospital ward, 83.3% had no contact with a nutritionist (N=347). The surveyed dietitians most often declared that there were two dietitians working at the health care provider employing them, with the smallest number being 1 and the largest number being 55. Only one in three respondents received dietary recommendations upon discharge from the hospital (N=133; 32.1%). Nearly half of dietitians do not prepare menus (48.4%). According to the public, a dietitian should be involved in nutritional counseling, developing menus for the hospital kitchen or catering, and nutritional recommendations for patients discharged from the hospital. (4) Conclusions: Dietitians with the right qualifications and specialties, integrated into the health care workforce, can have a huge impact on the proper dietary therapy of patients. As a result, there is a high probability of increasing the effectiveness of treatment, resulting in health service savings and support for the medical community.

Keywords: hospital team, dietitian, role of the dietitian

1. Introduction

Health education, assisting treatment through the selection of an appropriate diet, helping with weight reduction, and changing eating habits are examples of activities carried out by a dietitian with extensive knowledge of nutrition for both healthy and sick people [1]. According to the Lalonde model, lifestyle accounts for half of the determinants of human health [2,3]. It is composed of many aspects, such as age, gender, social status, current health status, or the availability of health, medical, or pharmaceutical professionals [2]. It should be noted that the generally promoted pro-healthy lifestyle refers to elements that belong to modifiable factors, such as proper diet or physical activity [3].

Human health consists of many elements, including the need for consumption [2]. This factor influences the growth of productive power [2] and is a component of possible prevention or risk of developing non-communicable diseases, such as obesity, diabetes, or cardiovascular diseases [4]. The prevalence of the aforementioned ailments is steadily increasing. According to the WHO (World Health Organization), more than 650 million people worldwide were struggling with obesity (BMI>30kg/m²) in 2016 [5]. A report by the National Institute of Public Health (NIZP-PZH) indicates that in 2020 in Poland, the percentage of the population with obesity was 10%, with 54% of Poles overweight [6]. The NCD Risk Factor Collaboration's projection for 2025 suggests that obesity will affect one in three men and one in four women in Poland [7]. It is considered a risk factor for the development of cardiovascular disease (e.g., ischemic heart disease, heart failure) [8,9,10], diabetes [10], and cancer [10,11].

Eating habits can be divided based on their beneficial effects on human health (health-promoting) and those that indict disorders of the body's functioning (self-destructive), contributing to the development of, among other things, inflammation and its further consequences. The creation of eating behavior begins in early childhood and depends on the immediate environment - most often parents. It is the pro-health attitude of adults that will contribute to the formation of proper eating habits among younger generations [12]. Awareness of healthy lifestyles and their components is steadily increasing year after year. According to the Center for Public Opinion Research (in Polish *Fundacja Centrum Badań Opinii Społecznej -CBOS*), nearly half of Poles believe that regular physical activity and healthy eating have a significant impact on the quality of a person's health [13]. Research indicates that women are characterized by greater attention to a pro-healthy lifestyle compared to the opposite sex. In addition, nutrition awareness is positively influenced by the level of training of the subjects. According to Borowiec and Aranowska, those with higher levels of education were characterized by better knowledge of nutrition, while they fared less well in terms of the regularity of the meals they consumed, which may be due to the type of work they do [14].

1.2. Dietitian in the hospital

The nutrition of patients in hospitals should be adapted to the patient's condition. A properly balanced menu should cover human needs in terms of both macro- and micronutrients. According to Jarosz, nutrition that is adequate to the patient's state of health is a component of co-determining factors in improving the patient's health. In addition, appropriate activities of the dietitian, such as assessment of the nutritional status and education of patients, are also among the determinants that determine the effectiveness of the treatment provided [15,16,17].

Hospital malnutrition is a significant health as well as an economic problem. It is estimated that one in three patients is malnourished at the time of hospital admission. Nutritional screening aims to identify patients in terms of the prevalence and risk of malnutrition. In this aspect, standardized questionnaires provide a diagnostic tool. It is worth noting that malnutrition is rarely diagnosed, which is related to the fact that it remains untreated. The consequences of this are many, ranging from a poorer response to the patient's treatment to

prolonged hospital stays and additional associated costs [18]. A report by the Supreme Audit Office (SAC) emphasizes that the participation of dietitians in daily hospital practice is not satisfactory. Assessment of patients' nutritional status, the need for dietary orders and education are handled by physicians, where ultimately these tasks are expected to be performed in collaboration with a dietitian. The lack of regulation of the profession results in dietitians being assigned an excess of duties that hinder the fulfillment of their key role, which is education. Those who work in this position often perform additional roles, such as kitchen helper, stockman or even archivist. In addition, the number of dietitians employed in hospitals is small, resulting in 76 to 740 patients per specialist [16].

The purpose of this study was to compare the duties of dietitians working in Polish hospitals in relation to the needs of society.

2. Materials and Methods

2.1 Study organization and eligibility criteria

The research tool consisted of two proprietary, anonymous questionnaires, which were verified for reliability, relevance, and correctness. The first questionnaire was aimed at Polish residents, while the second was aimed at active hospital dietitians. The first survey was conducted among 502 respondents, and 94 dietitians responded to the second survey. The selection of the sample was not random, as the snowball method was used. The research tool of the study was the author's anonymous questionnaire, which was validated for reliability, correctness and relevance. The study does not require the approval of the Bioethics Committee, as it is not a medical experiment in light of the Act of December 5, 1996 on the professions of physician and dentist (Journal of Laws of 2011 No. 277.item 1634 as amended). In addition, the study was conducted in accordance with the provisions of the Declaration of Helsinki.

2.2 Study procedure and research tool

The exclusion criterion for the survey of dietitians was that they were not actively working in a hospital. As a result, the analysis was based on 93 survey results from dietitians. The questionnaire addressed to the public included a metric - age, place of residence, gender and education, as well as questions relating to the situation taking into account the presence of a dietitian in a hospital where the respondent had been in the past. The questionnaire also referred to the preferred tasks a dietitian should perform in a health care facility. In turn, the questionnaire aimed at specialists included both closed and open-ended questions that verified the tasks performed in the workplace.

2.3 Statistical compilation

The database and graphical results were compiled using MS Excel, while statistical analysis was performed using Statistica 13.3 (TIBCO Software Inc.). The NW test was used to assess statistical significance, while the strength of the relationship between the compared characteristics was carried out using the V-Cramer coefficient. The level of statistical significance was considered to be $p < 0.05$.

3. Results

A total of 390 women (77.7%) and 112 men (22.3%) participated in the survey directed at the public. The age structure of respondents is shown in Figure 1. The vast majority of respondents were urban residents (N=413;82.3%), while rural residents accounted for 17.7% (N=89). Among the study group, 5.0% (N=25) of respondents declared their primary education, 6.8% (N=34) indicated vocational, while 38.4% (N=193) indicated secondary education. The largest group of respondents were those with higher education 49.8% (N=250).

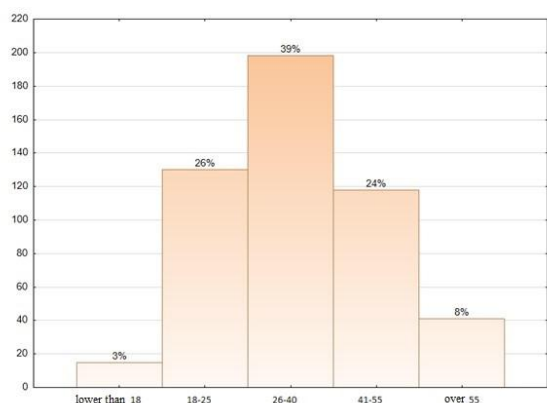


Figure 1. Age of respondents by group.

In the surveyed group of people, the vast majority (N=412; 80.1%) declared that they had been admitted to a hospital ward in the past. Of these respondents, only 10.1% (N=42) had ever had contact with a nutritionist. Nearly 7% of respondents (N=27) indicated that a dietitian was present in the ward, but they had no contact with one. In contrast, the remainder - 83.3% (N=347) - indicated that they had no contact with a dietitian during their hospital stay and did not remember whether such a person was present in the ward. Respondents were also asked whether their health condition required dietary consultation. The results obtained are shown in Table 1. Statistical analysis showed no significant differences between actual contact with a dietitian in the hospital ward and subjective assessment of the health condition necessitating consultation with a dietitian ($p=0.05$), however, more frequent contact with a dietitian was observed in those who declared that their disease entity required it.

Table 1. Subjective assessment of health condition needed to consult a nutritionist

Did your health condition require a dietary consultation?	N ¹ - number of results (%)
Definitely yes	95 (23,1)
Rather yes	149 (36,2)
Rather no	100 (24,3)
Definitely no	30 (7,3)
I don't know	41 (9,2)

¹ N=412 - respondents who said they had been admitted to the hospital in the past.

At the time of discharge from the hospital, only one in three respondents (N=133; 32.1%) had received dietary recommendations. Respondents were asked whether they thought a dietitian should be present on the ward and whether they would be interested in using his services. The results are shown in Table 2. The vast majority of respondents believed that a dietitian should always be present in a hospital ward (63.0%), and nearly one in three respondents would benefit from his guidance if given the opportunity (68.1%). Statistical analysis showed a significant relationship between opinion on the necessity of a nutritionist's presence in the hospital and willingness to use his services in health units ($p=0.001$).

Table 2. Respondents' opinion on the presence of a nutritionist in a hospital unit and willingness to use his services

Opinion	The presence of a dietitian N (%)	Willing to take advice from a dietitian N (%)	p-value ¹
Definitely yes	316 (63,0)	342 (68,1)	p=0,001
Rather yes	146 (29,1)	136 (27,1)	
Rather no	16 (3,2)	12 (2,4)	
Definitely no	4 (0,9)	2 (0,4)	
No opinion	20 (4,0)	10 (2,0)	

¹ NW test, Gamma correlation coefficient=0.7, correlation strength strong

Nearly half of the respondents (N=224; 44.6%) believed that a dietitian should have a master's degree. A similar opinion on the subject was held by a group of dietitians, according to whom a dietitian working in a hospital should have at least a second degree (N=73; 78.5%). In a survey of the public, one in three respondents believed that a bachelor's degree was sufficient (N=179; 35.6%), while 6.7% of respondents (N=33) indicated a high school education. The remaining respondents had no opinion on the subject (N=66; 13.1%). An analysis of the questionnaires addressed to dietitians showed that the largest number of dietitians had a university education - a master's degree in dietetics (N=68; 72.3%). A university degree - a bachelor's degree with a major in dietetics was indicated by 10 people (11.7%), while a university degree - a major other than dietetics was indicated by 6 people (6.4%). A doctoral degree in health sciences or medical sciences characterized by less than 7% of the respondents (N=6; 6.4%). The title of dietetics technician was held by 3 people (3.2%).

Respondents were asked whether they would use the services of a dietitian under reimbursement from the National Health Fund (NFZ) if there was such an opportunity. The results are shown in Table 3. There was a correlation between willingness to use the services of a nutritionist under National Health Fund benefits and gender (p=0.006). It is worth mentioning that less than 34.7% of respondents (N=174) had used the services of a nutritionist in the past.

Table 3. Gender and willingness to use the services of a nutritionist as part of the basket of guaranteed benefits

Gender	Willingness to take the advice of a nutritionist for reimbursement National Health Fund in Poland (in Polish NFZ); n (%)					Total	p-value ¹
	Definitely yes	Rather yes	Rather no	Definitely no	No opinion		
Female	248 (63)	81 (21)	17 (4)	34 (9)	10 (3)	390 (100)	p=0,006
Male	55 (49)	36 (32)	5 (5)	7 (6)	9 (8)	112 (100)	
Total	303	117	22	41	19	502	

¹ NW test, correlation coefficient V Cramer=0.18, correlation strength weak

The dietitians surveyed were asked to indicate their response to a question relating to the frequency of nutrition education they provide to patients and/or their families (Tab.4).

Table 4. Frequency of nutrition counseling provided by dietitians, among patients and/or their families

Frequency	N- number of results (%)
Daily	25 (26,6)
Several times a week	23 (25,5)
Once a week	8 (8,5)
At the doctor's request	29 (30,9)
Never	8 (8,5)

Respondents most often declared that two dietitians were working at the health care provider employing them. Some respondents declared the presence of a dietitian in every hospital ward. The nutritional status of all patients admitted to the hospital ward was examined by 37.2% of the surveyed dietitians (N=34), and one in five respondents declared using NRS (Nutritional Risk Score) and SGA (Subjective Global Assessment) scales for this purpose (N=16; 18.1%). Nearly ¾ of respondents (N=69; 73.4%) prepared special dietary recommendations for patients discharged from the hospital. Dietitians who claimed to prepare recommendations for patients discharged from the hospital were more likely to provide nutrition education (p=0.001; Tab.5).

Table 5. Frequency of nutrition education among patients admitted to the ward, taking into account the preparation of nutrition recommendations

¹ NW test, correlation coefficient V Cramer=0.6, correlation strength strong

The survey tool aimed at dietitians also included a question on the preparation of menus

Frequency of nutrition education	Preparation of dietary recommendations; N (%)		Total N (%)	p-value ¹
	Yes	No		
Daily	25 (27)	-	25 (27)	p=0,001
Several times a week	20 (21)	3 (4)	24 (26)	
Once a week	6 (6)	2 (3)	8 (9)	
At the doctor's request	17 (18)	12 (13)	29 (31)	
Never	1 (1)	7 (7)	8 (9)	
Total	69 (73)	25 (27)	93 (100)	

(e.g., weekly). Nearly half of the respondents - 48.4% - declared that this is not part of their duties, which is because they have a contract for the external provision of patient catering services. Of the dietitians surveyed, 36.6% (N=34) declared that the hospital where they worked had its kitchen, of which 19.4% (N=18) of dietitians are in charge of arranging menus. In contrast, 7.53% (N=7) of dietitians prepare menus, which are then sent as an order to a catering company. The remaining respondents did not answer the above question.

The surveyed dietitians were asked whether they are involved in the preparation of meals for special medical purposes, such as high-protein meals. Only 15.1% (N=14) of them handled this themselves, while 3.2% (N=3) controlled the preparation of enriched meals by kitchen staff. One in three dietitians surveyed (N=35; 37.6%) outsourced this task to cooks, without supervising the production run. Nearly half of the respondents (44.1%) did not prepare this type of meal, as the patient sourced special dietary and medical products on their own. In addition, 68.8% of dietitians (N=64) were present when serving meals to patients, and 20.4% (N=19) assisted patients while eating.

Table 6 presents the duties performed by dietitians while working at the treatment facility. The most common tasks included dietary counseling (N=75; 78.1%), checking the quality of prepared food and the aesthetics of its serving (N=66; 71.0%), and developing dietary recommendations for patients being discharged from the hospital (N=61; 65.6%). Dietitians were also asked what activities they thought dietitians should be involved in at inpatient facilities. Almost all respondents said that a dietitian working in this type of facility should be involved in dietary counseling (N=92; 98.9%). Equally important activities indicated by respondents were developing dietary recommendations for patients being discharged from the hospital (N=88; 94.6%) and identifying patients at risk of malnutrition or obesity (N=87; 93.6%). Similar results were obtained in a survey aimed at the public. According to respondents, the main tasks of a dietitian working in the hospital should include dietary counseling (N=451; 89.8%), developing menus for the hospital kitchen/hospital catering per the health status of patients in the ward (N=388; 77.3%), and developing dietary recommendations for patients being discharged from the hospital (N=362; 72.1%) (Table 6).

Table 6. Frequency of nutrition counseling provided by dietitians, among patients and/or their families

Frequency	N- number of results (%)
Daily	25 (26,6)
Several times a week	23 (25,5)
Once a week	8 (8,5)
At the doctor's request	29 (30,9)
Never	8 (8,5)

4. Discussion

According to the position statement of the European Federation of the Association of Dietitians, a qualified clinical dietitian is responsible for diagnosing and treating nutritional problems, and his or her competence and skills in dietary counseling, meal planning and preparation, behavioral strategies, and conducting diet therapy allow interpreting scientific research and translating it into theoretical knowledge in such a way as to enable patients to make the right choices concerning food and a healthy lifestyle [19]. The use of appropriate counseling techniques makes it possible to support people with excess body weight or obesity-related conditions, such as type 2 diabetes and cardiovascular disease, with short- and long-term effectiveness. According to EFAD, clinical dietitians can work in all healthcare settings, including as part of a hospital-based interdisciplinary team [20].

Dietitian, as a professional title, is associated with different legalities around the world. In the UK, it can only be held by a person with at least a bachelor's degree in dietetics or a related field that will allow them to complete postgraduate studies in nutrition, registered with the Health Professions Council [21]. A registered dietitian is qualified to diagnose nutritional problems and provide diet therapy, unlike a nutrition specialist (nutritionist), who does not meet the above conditions, and whose job is to provide nutrition education. Thanks to their presence in the Health Professions Council's official registry of medical professionals authorized to practice the profession, patients have the opportunity to verify the qualifications of a given specialist and raise any concerns about diet therapy. A similar law prevails in the United States, where a dietitian is a person registered with the Commission on Dietetic Registration [22]. In Poland, on the other hand, medical entities may employ dietitians with the appropriate qualifications, which are regulated by the Regulation of the Minister of Health of July 20, 2011, on the qualifications required of employees in particular types of jobs in medical entities that are not entrepreneurs. According to the aforementioned regulation, the minimum education needed for employment in a health care facility is equivalent to obtaining

a professional degree as a dietitian or nutrition technology technician in the specialty of dietetics at a post-secondary school, or at least a bachelor's degree in dietetics [23]. The vast majority of dietitians surveyed in our study who worked in a hospital ward had a second-degree university degree, which coincided with their opinion of the qualifications that a dietitian employed in a hospital should have. In contrast, according to one-third of the patients surveyed, a bachelor's degree is sufficient, and nearly half suggested a master's degree.

According to a 2021 NIK report, the healthcare system does not guarantee proper nutrition for patients in hospitals; most doctors have never been to nutrition training, and only 5% have been certified in obesity treatment. This implies that harmful dietary recommendations are quite often given to patients, making it difficult or impossible to effectively treat obesity. In the opinion of the vast majority of managers of the inspected PCP units, this situation would be facilitated by the introduction of dietary advice into the basket of guaranteed services [24]. At the time of editing this article, internal work is underway on a draft law on certain medical professions to regulate the position of dietitians in health care.

Most of the surveyed dietitians employed in hospital departments declared that they regularly conducted nutrition education among patients. This involved comprehensive patient care - dietitians involved in education in the ward, most often also developed nutritional recommendations and were involved in the process of preparing food for special nutritional and medical purposes.

In contrast, the majority of respondents who were current or past patients of the hospital ward said they had no contact with a dietitian. At the same time, the surveyed patients believed that a dietitian should be present on the ward and would be willing to use his services.

Providing nutrition education and active participation in therapy is particularly important among older patients. Again referring to the position of the European Federation of the Association of Dietitians, the main role of a dietitian working in a geriatric ward is to initiate and coordinate screening programs to identify the risk of malnutrition, apply the process of nutritional care (assessment, diagnosis, intervention, monitoring, and reassessment), or train healthcare professionals [25]. Meanwhile, only one in three dietitians surveyed was concerned with identifying patients at risk of malnutrition or obesity, while 93% believed that this was a task that a clinical dietitian should be concerned with. This view was shared by more than half of the patients surveyed.

Prevention of malnutrition is also particularly important in oncology patients. Dietary counseling, supplementation planning, and enteral and parenteral nutrition are important duties of a dietitian employed in an oncology unit. In addition, the dietitian's work includes supporting patients receiving palliative care to make their nutrition comfortable and on target [26]. In our study, common tasks of dietitians employed in an inpatient unit included overseeing the serving of meals, and some of them also assisted patients with feeding. More than half of them also said they were involved in the planning and preparation of specialty medical foods.

According to the patients surveyed, a dietitian employed at the treatment facility should be involved in developing menus for the hospital kitchen, according to the health status of the patients staying in the unit. This opinion was shared by only 38% of the surveyed dietitians, and even fewer dealt with this in their work on the ward. This is related to the growing popularity of hospitals' cooperation with catering companies, which are taking over the duties of developing nutritional plans. In the hospitals where the surveyed dietitians worked, the median number of people employed in this position was 2, with the least being one dietitian per medical entity. The Supreme Audit Office's observations are as follows: "Some hospitals did not see the need for a dietitian to participate in the process of feeding patients. Nor did employing a dietitian always mean that each patient received proper dietary care. With as

many as 740 patients per dietitian, and additionally directing dietitians to other tasks (kitchen help, archivist, storekeeper), it was difficult to provide such care properly. (...) Almost half of the hospitals using catering companies did not have a dietitian. There was no analysis and no verification or unreliable verification of the menus provided by these companies." [27]. A similar problem has been observed in Israel, with Yona et al [28] noting that patients do not always receive meals that meet their nutritional and medical needs, which may be related to the lack of employment of dietitians among health care personnel. Once dietitians are implemented in the role of food service nutritionists (Food Service Dietitians), there have been improvements in tailoring meals to patients' clinical needs and saving annual nutrition costs [28]. In contrast, Rushton et al. from Australia [29] note that dietitians are unable to provide adequate nutritional care to a growing number of patients and referrals, especially in the absence of an increase in funding for dietetic services. Accordingly, they suggest considering delegating some elements of dietary care to dietetic assistants in a multidisciplinary model of nutritional care [29].

According to the dietitians surveyed, their main duties at the treatment facility should include nutritional counseling, developing dietary recommendations for patients being discharged from the hospital, and identifying patients at risk of malnutrition or obesity. This largely overlaps with their actual duties, except participation in assessing the risk of malnutrition - among the most common duties, its place is taken by checking the quality of the food prepared and the aesthetics of its serving. Real duties largely coincide with the vision of the dietitian's duties according to the surveyed patients.

5. Strengths and limitations

The strength of the study conducted is its innovation about the needs of Polish society vs. the real tasks of dietitians working in the hospital. At the time of editing the article, database search engines did not record results similar to our own. The above survey takes into account the tasks, as well as the duties of dietitians, which overlap both in the opinion of the public, as well as active practicing dietitians, and therefore can be a guideline for hospital directors/heads of hospital departments as to what duties dietitians should perform. A web-based research survey (CAWI) may be a limitation in this work, however, everything was done to preserve the reliability of the survey conducted.

6. Conclusions

There is a need for more widespread employment of dietitians in medical entities to better meet the nutrition needs of society. Dietitians with the right qualifications and specialties, integrated into the health care staff, can have a huge impact on the proper diet therapy of patients. As a result, there is a high probability of increasing the effectiveness of treatment, resulting in health service savings and support for the medical community.

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