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Dietitian in health care – the missing link of the medical staff

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Abstract

So far forecasting and planning of medical personnel in health care has not included a professional nutritionist, even though it was entered in the International Standard Classification of Occupations (International Standard Classification of Occupations, ISCO) as early as in 1967. It has been determined that this is the person responsible for planning and supervising the preparation of therapeutic diets for individuals and population groups in hospitals, as well as supervising the choice and preparation of food and meals, participating in programs of nutrition and educating the public. The development of medicine and nutritional science has provided evidence that a balanced diet is one of the most important factors that reduce the risk of chronic non-communicable diseases (cardiovascular diseases, diabetes, cancer, obesity, osteoporosis and tooth decay). It has been shown that treatment of most diseases requires the use of dietary treatment, which increases the effectiveness of drug therapy, reduces the risk of complications, shortens hospitalization and rehabilitation, thus reducing health spending. That is why the health care system in Poland should introduce dietary advice to the range of medical services.

Key words: **shortage of medical staff, health care, dietary counseling, education and employment of dietitians**

Słowa kluczowe: **niedobór kadr medycznych, opieka zdrowotna, poradnictwo dietetyczne, kształcenie i zatrudnienie dietetyków**

Introduction

Dietetics is a nutritional science in relation to both a healthy and sick person which, in recent years, has been dynamically developing all over the world, while a dietician is defined, according to the European Federation of the Associations of Dieticians (EFDA), as a person with legally recognized qualifications who makes use of nutritional science to educate groups of people as well as individual patients, both healthy and sick ones [1, 2]. A dietician being a specialist in human nutrition and dietary counseling is obliged to implement correct nutritional habits in the population of the healthy and sick persons as well as to select an appropriate and rational diet for the needs of patients. In literature, many authors presented benefits arising from diet therapy. Research carried out by the Dietetic Association from the state of Massachusetts deserves special attention. It has been noticed that dietary counseling and following a diet in line with recommendations made by a dietician by patients with hypercholesterolaemia are a successful way of reducing the cholesterol concentration in blood serum. Test results have shown that the average reduction of cholesterol concentration in blood serum by 8.6% correlated with the reduction of risk of the coronary heart disease by approximately 17.2%. It has also been proved that the reduction of cholesterol concentration in blood serum correlates with a higher number of dietary consultations ($r = 0.118$, $p < 0.001$), which in turn was translated into more time devoted to a patient. The fall in the cholesterol concentration due to the applied diet was also translated into a drop in the cost of treatment. The estimated cost of pharmacological treatment of patients with hypercholesterolaemia amounted to 1450 dollars whereas the average cost of nutritional intervention at a dietician's was 163 dollars, which allowed to save about 1300 dollars annually per patient, in comparison to the cost of pharmacological treatment [3]. That is why, according to the

American Dietetic Association (ADA), nutritional treatment should be considered as preliminary, effective and cheap in the treatment of patients with mild and moderate hypercholesterolaemia.

The above mentioned tests as well as the consecutive ones imply that when applying nutritional treatment, it is possible to obtain body mass reduction, the drop in the cholesterol and glucose concentration in blood serum and to lower the blood pressure which is very significant in the prevention of cardio-vascular diseases, diabetes, obesity and neoplasm [4–8]. Considering the fact that 75% of the overall population is affected by at least one chronic disease and that it is estimated that the population of the chronically ill patients will be growing by 1% annually until 2030, it would be reasonable to implement a system of dietary counseling to the primary and specialist healthcare, as dietary treatment lowers the overall cost of treatment due to, among others, discontinuation of drug administration or dose reduction, such as e. g. in the treatment of diabetes [9, 10].

Numerous earlier research findings, as well as the recent ones published in *Nutrients* in 2015, showing a connection between the level of knowledge and the quality of diet and cardiovascular risk factors have provided evidence that dietary knowledge has a direct impact on the quality of diet; however if we consider individual economic and social factors, the outcome will be better [11]. The authors emphasize that the impact of nutritional awareness upon the quality of diet seems to be a promising area for the promotion of health. We can extend health promotion run by dieticians to both healthy individuals and sick persons, e.g. patients with diabetes. According to data provided by the Public Health Committee of the Polish Academy of Science (PAN) defining the prevalence of diabetes among health insurance holders on the National Health Fund database who purchased a refunded drug or stripes (ATCA 10 or V groups), received counseling or whose hospitalization was reimbursed by the National Health Fund, 2,173,616 people suffer from diabetes in Poland, out of whom 350 thousand purchased refunded drugs but did not receive any counseling [12]. According to research conducted by Małachowska and Ciok, 84.2% of doctors have no time for dietary counseling, 50% admit that they do not have sufficient knowledge about dietary issues and 48% do not believe in its effectiveness [13].

The report by the Chief Audit Chamber (NIK) of 2009 titled "Information on nutritional inspection results and the standard of cleanliness in state hospitals" reveals that the method of feeding patients and dietary counseling in hospitals raise objections as well [14]. Irregularities in the quality of food have been revealed. Some of the researched institutions did not employ a dietician at all and the number of dieticians hired by hospitals was insufficient. In a group of hospitals outsourcing preparation of meals the percentage of hired dieticians amounted on average to 29. The standard of nourishing patients in the inspected institutions was unsatisfactory, mainly because of inappropriate energy value and nutritional value of meals. The role of a dietician in state hospitals was mostly reduced to giving instructions to the kitchen concerning the quantitative requirements for the meals for a particular day or to serving meals on the wards, which does not correspond in any way with a role that should be played by a dietician in healthcare and with the treatment of patients. Such a situation delays the process of treatment and hampers recovery, which should never take place in hospitals. Inappropriate diet has a negative outcome upon the effectiveness of medical procedures. Therefore, a dietician as a member of a therapeutical team should take active part in the overall process of treating patients, which would considerably improve the success of treatment.

1. Dietary counseling, the historical outline versus current situation (the reality)

Poland belongs to the leading countries in establishing recommendations concerning human nourishment for a healthy or sick person. As early as 1897, Jaworski's *Hygienic Cuisine and detailed dietetics for the sick* [15] was published and in 1933 – *Dietetics* (including instructions how to prepare dishes) by Galewski [16] which was addressing doctors, students and patients. In 1947 the Ministry of Health appointed a Dietary Commission as part of the National Institute of Hygiene (PZH) in Warsaw. Thanks to the Commission efforts, nutritional values charts and menus for medical institutions were drawn up.

In the 1950's a textbook for students titled "Science about nutrition for the healthy and sick person" was published in which Professor Kierst [17] highlighted the role of dieticians and their knowledge saying "[...] a lot of attention is being paid to the education of dieticians employed by hospitals, canteens, hotels and guest houses [...]" and later "[...] the review of events shows [...] what great importance is attached today to rational, scientifically based nutrition and to dietary treatment as our state wants citizens who are both morally and physically healthy". In 1963 Professor Szczygieł, the author of a textbook titled "Basics of Nutritional Physiology", with the support of the UN opened up the Institute of Nutrition (IŻŻ) in Warsaw and he raised many generations of food researchers [18]. Another Polish pioneer in dietetics , Professor Rutkowski, put forward an initiative to create the first Polish Provincial Dietary Centre attached to II Clinic of Internal Diseases at the Medical Academy in Poznań, as well as the Commission for the Nutrition of Sick Persons of the Polish Academy of Science PAN. Later its activity was continued by the Dietary Commission of the Polish Academy of Science. In 1968 the Dietary Commission of the VI Department of the Polish Academy of Science submitted a memorandum to the Minister of Health and Social Welfare on the subject of trainings and supplementary trainings for, among others, dieticians and for creating a Provincial Dietary Institute whose primary aim would be to organize and supervise dietary nutrition at all levels of healthcare. It was suggested at that point that one dietician should be employed per 80 hospital beds as a standard; the position to be obligatory excluded from the overall number of full-time

nursing positions. The need to open a dietary outpatient clinic at different levels was also postulated [18].

Unfortunately, the current access to services provided by qualified dietitians in Poland is limited. Tis is due to the fact that the job description of a dietician is still unregulated and legal rules concerning the job are inconsistent [19–22]. It was not until the Regulation of the Minister of Health of 22 November 2013 concerning guaranteed services within the scope of hospital treatment with later amendment, that the profession of a dietician was described as the remaining personnel employed only in the diabetic ward and the children's diabetic ward with the minimum of 50% of full-time employment in the capacity of a diet planner (part 1. Detailed conditions that providers of services should fulfil when granting guaranteed services in the form of hospitalization and planned hospitalization) [22]. Besides, none of the above mentioned documents contains the conditions of providing services by a dietician (understood as the tasks they would have to perform). The only document stating that the dietician's task is an "appropriate diet" (with no extra information such as e.g. who it is planned, prepared and served by) as well as "running health education and health promotion", is the Regulation by the Minister of Health dated 19.12.2014 bringing changes to the regulations concerning guaranteed services from the range of spa treatment [23].

At present, dietary counseling is not treated as a guaranteed service covered by the National Health Fund (NFZ), however anyone who registers a business activity and opens up their own private dietary consultancy has the right to provide dietary services. Such state of affairs results from the fact that there is no verification of professional competences of the people using the title of "dietician" in Poland; there is no quality control of the services provided by dieticians, nor is there any register of dieticians.

Currently, we can look for solutions in the counseling systems of our neighbouring countries. In Germany, nutritional counseling is financed by the healthcare fund (called die Gesundheitskasse, AOK – family insurance in Germany). Special Centres for National Counseling are created, which employ nutritional counselors, secondary school graduates and ecotrophologists who completed university studies. Education of dieticians lasts for 3 years, it is uniform all over Germany and it ends up with a state examination. Having passed the examination, dieticians are registered in Bundesland. The professional title of "Diatassistent" is legally protected. In Great Britain a dietician (or dietitian) is a job title which is legally protected and it must be registered in Health and Care Professions Council, HCPC. To be registered, dieticians must complete 4-year Bachelor's studies and 2-year post-diploma studies. Afterwards, they may continue education participating in courses and trainings organized, among others, by the British Dietetic Association, BDA under the auspices of the British Queen. BDA comprises over 7000 members [2]. A visit at a dietician's is reimbursed by the National Health Service (NHS). A patient visiting a GP may be referred to a specialist dietician. A dietician's job in Great Britain belongs to the medical professions and it entitles to work in hospital. The highest position is occupied by the chief dietician who is in charge of dieticians of different specializations who cooperate with assistant dieticians. One hospital hires 5 to 10 dieticians. People employed in this position can also find employment in education.

In France, education of dieticians is not standardized. The diplomas upon completing education are awarded by the Ministry of Health and the Ministry of Education [24]. The title of a dietician is restricted exclusively to the persons who passed a state examination. Then they are registered in ADELI register, subject to the Public Health Code. A dietician in France deals with dietary counseling and creates nutritional programmes tailored to the needs of patients. Both in Britain and Germany unlawful use of the title of dietician is liable to penalty.

2. Education of dieticians

In 1999, in Bologna, a Joint European Declaration of the European Ministers of Education, also called the Bologna Declaration, concerning higher education was signed. The system based on two main cycles of education was adopted – a lower, "undergraduate" cycle followed by a higher "graduate" cycle. Access to the second cycle of education requires the completion of the first one, lasting for the minimum of 3 years. The grade awarded after the first cycle is recognized on the European labour market as the specific level of qualifications. The second stage awards "Master's degree" and/or "doctorate degree". No bridging studies were provided for which would make it possible for graduates of post-secondary schools to continue their education. Education in Europe takes place at different levels and educational programmes for dieticians can be divided into two groups:

1. Enabling to obtain the title of Bachelor of Science (BSc – a title lower than Master's degree) or the equivalent one (Austria, Denmark, Greece, Italy, Ireland, Belgium, Spain, Turkey, Holland, Finland, Hungary, Norway, Sweden and Great Britain) or Master of Science (MSc; the equivalent of the Polish "magister"), PhD (the equivalent of the Polish "doktorat").
2. Enabling to obtain a different title – education at a higher or lower level than BSc, e.g. Master of Science – the equivalent of the Polish title of "magister" (France, Germany, Norway, Spain, Switzerland). Dieticians gathered in dietary societies in European countries which keep registers of people performing the job of dietician with the membership in EFAD are educated in 4 specializations [2]:

- Administrative dietician – educated in the scope of nutritional management and responsible for group feeding of both healthy and sick people, in institutions or in the society.
- Clinical dietician – educated in the scope of clinical nutrition and dietetics; responsible for the prevention and dietary treatment of individual patients in institutions or in the society.
- General dietician – educated in the scope of clinical nutrition and dietetics as well as attendance and nutritional management.

- Public health dietician – educated in the scope of health promotion and the development of health policy.

According to the Regulation of the Minister of Health of 20 July 2011, a dietician in Poland is a person who has appropriate qualifications (education) and professional experience. The following positions are distinguished [20]:

- senior assistant dietician – 7 years of experience in the profession of a dietician or at least a PhD degree in dietetics (job title of a MSc in the field of dietetics or the commencement of university studies before 1 October 2007 with specialization in dietetics comprising at least 1784 hours of classes in the scope of dietetics and obtaining a Master's degree or the commencement of university studies in the field of nutritional technology and human nutrition before 1 October 2007 and obtaining a Master's degree or a degree of Master of Science engineer in this field);
- assistant dietician – 5 years of experience in the profession of a dietician (job title of a Master of Science or Bachelor of Science in the field of dietetics or the commencement of university studies before 1 October 2007 with specialization in dietetics comprising at least 1784 hours of classes in the field of dietetics and obtaining a Master's degree or the commencement of university studies before 1 October 2007 in the field of nutritional technology and human nutrition with specialization in human nutrition and obtaining a Master's degree or a degree of Master of Science engineer in this field);
- junior assistant dietician – 3 years of experience in the profession of a dietician (job title of a Master or Bachelor of Science in the field of dietetics or the commencement of university studies before 1 October 2007 with specialization in dietetics comprising at least 1784 hours of classes in the field of dietetics and obtaining a Master's degree or the commencement of university studies in the field of nutritional technology and human nutrition with specialization in human nutrition and obtaining a Master's degree or a degree of Master of Science engineer in the same field);
- senior dietician – 3 years of experience in the profession of a dietician (the completion of a state post-secondary school or a private post-secondary school with the powers of a state school and obtaining the job title of a dietician or a diploma confirming professional qualifications in the profession of a dietician or the completion of a technical college or post-secondary school and obtaining a professional job title of a nutritional technology technician with specialization in dietetics or a Master's degree or Bachelor's degree in the field of dietetics or the commencement of university studies with specialization in dietetics before 1 October 2007 comprising at least 1784 hours of classes in the field of dietetics and obtaining Master's degree or the commencement of university studies in the field of nutritional technology and human nutrition with specialization in human nutrition before 1 October 2007 and obtaining a Master's degree or a degree of Master of Science engineer in the same field);
- dietician (the completion of a post-secondary state school or a post-secondary private school with the powers of a state school and obtaining a job title of a dietician or a diploma certifying professional qualifications in the profession of a dietician or the completion of a technical college or a post-secondary school and obtaining a job title of a nutritional technology technician with specialization in dietetics or a Master's degree or Bachelor's degree in the field of dietetics or the commencement of university studies with specialization in dietetics before 1 October 2007 comprising at least 1784 hours of classes in the field of dietetics and obtaining a Master's degree or the commencement of university studies in the field nutritional technology and human nutrition with specialization in human nutrition before 1 October 2007 and obtaining a Master's degree or a degree of Master of Science engineer in this field).

Currently, in Poland dieticians are educated at 44 different higher education institutions (agricultural as well as medical ones) at two levels over different periods of time. But as of 1 October a new Regulation of the Minister of Science and Higher Education was enforced which standardizes the conditions of running university studies [25]. According to §3.1 of the above mentioned regulation, "the description of the intended learning outcomes for the fields of studies, the levels and educational profiles provides for universal characteristics of the first cycle of studies as defined in the act dated 22 December 2015 on the Integrated System of Qualifications ("Journal of Law" 2016; entries 64 and 1010) and characteristics of the second cycle of studies as defined in the regulations issued on the basis of art. 7, par. 3 of this act, including the chosen learning outcomes appropriate for the area or areas of learning to which the field of study was assigned:

1) for the qualifications at the level of 6th Polish Qualification Framework – for the first cycle of studies;
2) for the qualifications at the level of 7th Polish Qualification Framework – for the second cycle of studies and the long-cycle Master's degree studies.

3. Employment of dieticians

In Poland, in healthcare institutions (ZOZ), employment of a dietician at a specific position and the assignment of specific duties and granting them powers lies entirely in the hands of employer. This results from the fact that the profession of a dietician is not regulated while legal rules referring to the profession are inconsistent.

According to the analytical data provided by the Centre of Health Information Systems, in 2005 dieticians were employed only in 711 out of 2193 State Healthcare Institutions (32.4%) and in 220 out of 19533 Private Healthcare Institutions (1.1%) (**Table I**) [26].

In the consecutive years the employment of dieticians fell dramatically (**Table II**) [27].

As the dieticians' register does not exist, we do not know exactly what percentage of dieticians is employed in their own profession, how many of them are hired in other sectors, and how many moved abroad as they are welcome in foreign healthcare institutions, mainly in Germany and Great Britain. It would be worthwhile, however, to make use of a big popularity of the field of "dietetics" among young people (5, 6 candidates per 1 place) [28]; (3666 students admitted to university to study dietetics in 2013/14 academic year – according to the Ministry of Science and Higher Education data from 35 higher education institutions [29]) and a growing number of hospitalized patients (**Table III**), the elderly (**Table IV**),who suffer from many illnesses which require more time to treat them [30, 31]. That is why when planning medical personnel in healthcare, dieticians cannot be excluded.

Conclusion

The health reform has been implemented since 1999, however the transition from a modified, centrally planned model of the healthcare system by Siemaszko until the adoption of the act on therapeutic activity of 1 July 2011 has not been accompanied by the improvement in health condition in Poland or in the accessibility to the services provided by dieticians. On the contrary, on the basis of the data provided by the Chief Audit Chamber , the nutrition departments in hospitals have been closed down in favour of catering companies, which has significantly worsened the quality of the food served and the condition of nourishment of patients [14]. Dieticians employed by hospitals were made redundant. Taking into consideration the fact that the society is ageing and that the number of services which will be granted to the sick is rising, the profession of a dietician should be legally regulated as soon as possible and its potential should be made use of in both primary and secondary prevention, which will considerably lower the cost of treatment and refresh medical staff. Employers should be aware that the condition of health in the society depends on the number of medical staff, also including dieticians, their qualifications and motivation.

Public healthcare institution (ZOZ*)			**Non-public healthcare institution (ZOZ*)**		
Total	Number of ZOZ with employment of dietician	% ZOZ with employment of dietician	Total	Number of ZOZ with employment of dietician	% ZOZ with employment of dietician
2193	711	32.4	19 533	220	1.1

Table I. *Number of healthcare institution (hospital departments, outpatient clinics) with the employment of dietician (31.12.2005). Source: Data from Centrum Systemów Informacyjnych Ochrony Zdrowia [26].*

Territorial unit – voivodeship	**Dieticians with higher education**	**Including dieticians – master's degree dietetics studies**
Dolnośląskie	68	42
Kujawsko-pomorskie	54	40
Lubelskie	45	34
Lubuskie	41	34
Łódzkie	36	13
Małopolskie	67	43
Mazowieckie	137	111
Opolskie	13	6
Podkarpackie	36	23
Podlaskie	41	32
Pomorskie	41	37
Śląskie	66	43
Świętokrzyskie	36	27
Warmińsko-mazurskie	59	56
Wielkopolskie	61	39
Zachodniopomorskie	48	37
Polska	849	617

Table II. *Number of dieticians employed in Poland in 2013.*
Source: Data from Centrum Informacyjne Ochrony Zdrowia [27].

Age groups	Hospitalized Patients	
	% population	Including CVD (cardiovascular diseases)
total	15.4	2.6
0–14	42.8	0.4
15–19	9.1	0.4
20–24	8.7	0.2
25–29	11.3	0.2
30–34	10.9	0.3
35–39	9.0	0.5
40–44	8.7	0.7
45–49	10.2	1.2
50–54	12.7	2.1
55–59	16.3	3.5
60–64	20.3	5.2
65–69	26.6	7.5
70–74	31.1	9.6
75–79	37.5	12.5
80–84	41.2	14.9
85+	44.1	17.3

Table III. *Indicator of hospitalization for polish population in age groups.*

Source: Own elaboration based on data from Centrum Systemów Informacyjnych Ochrony Zdrowia [26] and Rocznik Statystyczny Rzeczypospolitej Polskiej 2014 [30].

Year	2005	2010	2012	2013
Hospital beds total	187 423	190 387	188 820	187 763
Hospitalized patients	7 115 691	7 758 643	7 897 872	7 867 664
Number of patients/1 bed	37.97	40.75	41.83	41.9

Table IV. *Health care in hospitals.*

Source: Own elaboration based on data from Centrum Systemów Informacyjnych Ochrony Zdrowia [26] and Rocznik Statystyczny Rzeczypospolitej Polskiej 2014 [30].

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